The 49 studies contained in this volume, which were originally published and distributed as individual State Dentist Manpower Reports, are the first reports to be drawn from survey data gathered through a national data compilation system designed to collect essential information on the dental manpower supply from all licensed dentists at the time of their annual or biennial registration with state licensing boards. This initial nationwide survey of dentists began with the 1965 registration period and covered a period of approximately 1 year. Information is provided on the location, age, and current professional activity of dentists in each state (except Alabama and California), their professional background, and selected practice characteristics, including the area of specialization and utilization of auxiliary personnel. (Author)
DISCRIMINATION PROHIBITED--Title VI of the Civil Rights Act of 1964 states: "No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subject to discrimination under any program or activity receiving Federal financial assistance." Therefore, the dentist manpower data collection system, like every program or activity receiving financial assistance from the Department of Health, Education, and Welfare, must be operated in compliance with this law.
COMPILATION
STATE DENTIST MANPOWER REPORTS
1965-1967

DONALD W. JOHNSON, D.D.S., M.P.H.
Deputy Chief, Resource Analysis Branch

MARY B. THOMPSON, B.A.
Statistician, Resource Analysis Branch

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Public Health Service · National Institutes of Health
Bureau of Health Professions Education and Manpower Training
Division of Dental Health · Resource Analysis Branch
Bethesda, Maryland 20014

1970
The 49 studies contained in this compilation present the results of a national survey in which the dental profession, the Federal Government, the American Association of Dental Examiners, and State licensing boards cooperated. But the ultimate success of the survey, of course, resulted from the willingness of nearly 80,000 dentists across the Nation to complete and return a detailed questionnaire providing information on their professional characteristics and activities.

Although the Division of Dental Health has conducted dental resource studies over a period of years, the urgent need for improving manpower supply to meet increasing demands for care prompted dental manpower surveys on an individual State basis. The value of individual State reports has been attested to in their use by planners of new and expanded dental schools and by developers of training facilities for dental auxiliaries. For convenience and wider use, the individual reports were assembled into this single reference volume. At a later date, national and regional summaries based on analyses of data from these State surveys will be published, in conjunction with data from other sources.

This compilation provides basic source data that can be utilized in projections of future dental manpower requirements, in planning programs for increasing the dental manpower supply, in the development of new dental care programs, and in the implementation of needed State and Federal dental legislation. It is hoped that these data will be helpful to the dental profession in its efforts to achieve a more adequate manpower supply, and will prove of value to governmental agencies and private organizations as well as to individual researchers, health planners, educators, legislators, students, and others concerned with dental manpower.

Viron L. Diefenbach, D.S.
Assistant Surgeon General
Director, Division of Dental Health
Since 1965, the Division of Dental Health, National Institutes of Health, has been working under contract with the American Association of Dental Examiners to develop a national data compilation system designed to collect essential information on the dental manpower supply from all licensed dentists and dental hygienists by questionnaires supplied at the time of their annual or biennial registration with State licensing boards. The initial survey of dentists began with the 1965 registration period, and in 1966 the program was expanded to include a national survey of licensed dental hygienists. In a further expansion of the system, a second nationwide survey of dentists was initiated in 1967.

The questionnaires of the first survey, on which this volume is based, gathered information on the location, age, and current professional activity of dentists, their professional background, and selected practice characteristics, including area of specialization and utilization of auxiliary personnel. As each dentist returned the completed questionnaire to his State examining board, the board, in turn, forwarded all questionnaires to the American Association of Dental Examiners. The Association coded the questionnaires and punched the survey data onto cards, which were forwarded to the Division of Dental Health for machine tabulation. The Division then tabulated and analyzed the data, preparing a narrative report for each State. In addition, each participating State was furnished a detailed book of tabulations of the basic statistical data on which the report was based.

Because reregistration dates vary among the States, the first survey of dentists was spread over approximately a 2½-year period from December 1964 to July 1967. Questionnaire mailing dates for the States covered in the survey are shown in the accompanying table. All States except Alabama and California participated.

Survey response rates averaged about 90 percent for individual States, based on the total number of licensed dentists as reported by the State dental boards. Even though response rates varied from 70 percent to 99 percent, only 8 States fell below 80 percent. Thirty-three States had response rates of 90 percent or more, including 10 States with rates of 95 percent or higher. Every effort was made to obtain as much data as possible concerning dentists who failed to respond to the survey, especially in those States having a relatively low response rate. Information on nonrespondents, including location of the dentists, their ages, dental school attended, and year of graduation, were obtained from the respective State dental boards or from the appropriate annual edition of the American Dental Directory published by the American Dental Association.
<table>
<thead>
<tr>
<th>State</th>
<th>Questionnaire mailing date</th>
<th>State</th>
<th>Questionnaire mailing date</th>
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<td>*South Dakota</td>
<td>5-65</td>
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<tr>
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<td>Louisiana</td>
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<td>*Texas</td>
<td>5-65</td>
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<td>Utah</td>
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<tr>
<td>Montana</td>
<td>12-66</td>
<td></td>
<td></td>
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</tbody>
</table>

1/ Questionnaire mailing dates coincide with mailing dates for license renewal for all States except Georgia, New Hampshire, Ohio, and Texas, which were surveyed by a special mailing a few months after their license renewal dates.

* Reports for States marked with an asterisk were prepared according to the rather detailed outline originally developed. All other State reports, except Oregon with a unique format, were prepared according to a simplified outline.
Preparation of the individual State reports extended over a period of approximately 3 years, from mid-1966 to mid-1969. The first 17 reports completed prior to November 1967 were prepared according to a rather detailed outline as follows:

I. Dentists Licensed in State

II. Civilian Dentists Located in State
   A. Sources of Supply
      1. Dental schools
      2. Dentists relocating in State
   B. Personal Characteristics
      1. Age
      2. Advanced training
   C. Distribution and Current Status
      1. Distribution of dentists
      2. Professional status
      3. Active dentists in relation to population
   D. Professional Activity
      1. Current employment
      2. Activity last year
   E. Practice Characteristics
      1. Limited practice
      2. Employment of auxiliaries

III. Out-of-State Civilian Dentists

IV. Appendix Table

In order to facilitate the completion of the remaining reports, a simplified format was developed which allowed for the coverage of a subject on a single page, with a tabular presentation and the supporting text. A total of 31 State reports were prepared in the new format according to the following general outline.

I. Dentists Licensed in State

II. Professional Training of Dentists Located in State

III. Distribution of Dentists

IV. Age of Dentists

V. Active Dentists in Relation to Population

VI. Utilization of Auxiliaries

VII. Other Survey Findings

VIII. Appendix Table

In general, the preceding outlines were followed for most States. For some States, however, the outline was modified slightly, in accordance with the findings. For example, in a State with a small number of counties, the county data are presented in the body of the report and the appendix table, where county data usually appear, is omitted. For some of the subjects covered in the reports, such as the utilization
of auxiliaries, the findings proved to be very similar from State to State, and therefore the supporting text is almost identical, with appropriate changes in figures. Findings relative to other subjects, such as dental school attended and distribution of dentists, often differed considerably from State to State, and consequently the descriptions of data vary according to the survey results. Right of the State reports contain maps illustrating the distribution of dentists by county. The Oregon report, with a unique format, features the extensive use of graphic material and the organization of the data differs from all the other reports.

Anyone wishing to make combinations or comparisons of State data should keep in mind that there are certain limitations in the comparability of data from State to State. One reason for this is the difference in survey dates among the States, since the survey period extended over approximately two and a half years. Other reasons have to do with the difference in response rates, which varied from State to State, and the fact that some of the reports include nonrespondent data, while others do not. In combining State data to form regional or national data, the reader should review the individual State reports to become familiar with the variations just described. Statistics presented in terms of relative proportions—for example, the percentages of dentists employing auxiliaries or limiting their practices to a dental specialty—may be compared among the various States with more confidence than statistics which must be expressed in terms of numbers of dentists, such as the number of active dentists in relation to population.

It is with only minor alteration and renumbering of pages that the State Dentist Reports have been brought together in this volume. The original copy has been used, which accounts for the variation in format among individual reports. The States are presented in alphabetical order, and the date of completion of each report is shown in the lower margin of the last text page. Black index strips bearing the State name in white have been added in the upper right-hand corner of the first page, for easy reference.
## CONTENTS

<table>
<thead>
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<th>State</th>
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<td>South Dakota</td>
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<td>Washington</td>
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<td>West Virginia</td>
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<tr>
<td>Wisconsin</td>
<td>599</td>
</tr>
<tr>
<td>Wyoming</td>
<td>611</td>
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</tbody>
</table>
DENTISTS LICENSED IN ALASKA

A total of 131 dentists registered with the Alaska Board of Dental Examiners during the 1966 registration period (Table 1). The survey questionnaire was completed by 120 dentists, or 92 percent of all those registering. Only 69 of the responding dentists, or 57 percent, are actually located in Alaska. About 31 percent of the respondents are civilian dentists located in another State, and another 10 percent are on active duty with the Armed Forces.

Table 1.--Location and Military Status of Dentists Licensed in Alaska

<table>
<thead>
<tr>
<th>Location and military status</th>
<th>All dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total licensed</td>
<td>131</td>
<td>100</td>
</tr>
<tr>
<td>Respondents</td>
<td>120</td>
<td>92</td>
</tr>
<tr>
<td>Nontrespondents</td>
<td>11</td>
<td>8</td>
</tr>
<tr>
<td>Respondents</td>
<td>120</td>
<td>100</td>
</tr>
<tr>
<td>Civilians in Alaska</td>
<td>69</td>
<td>57</td>
</tr>
<tr>
<td>Civilians in another State</td>
<td>37</td>
<td>31</td>
</tr>
<tr>
<td>On active duty with Armed Forces</td>
<td>12</td>
<td>10</td>
</tr>
<tr>
<td>Not reported</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

Only seven of the 120 survey respondents are licensed solely in Alaska. Most of the respondents are licensed in just one other State, but 29 hold licenses in two other States, and 15 are licensed in at least three additional States. Altogether, respondents hold nearly 300 licenses—an average of about two and one-half per dentist. Slightly more than two-fifths of the out-of-State licenses are maintained in Washington, Oregon, and California, while the remainder are held in 33 other States. Civilian dentists located in Alaska hold almost as many licenses as civilian respondents located outside the State. Thirty percent of the in-State dentists are licensed in at least two additional States, compared to 43 percent of the out-of-State respondents.
Civilian Dentists in Alaska

Sources of Supply

Dental schools.--Dentists in Alaska are graduates of 24 dental schools, including one Canadian school. Almost one-third, or 22, of the State's 69 reporting dentists, however, are graduates of the University of Oregon. The next largest source of supply is the University of Washington which graduated six of the in-State respondents. Fourteen dental schools in the North Central States account for 32 of Alaska's dentists, but only two of these schools, Indiana University and the University of Minnesota, have contributed as many as four graduates to the State. More than half of the dentists in Alaska graduated from dental school after 1955.

Dentists relocating in Alaska.--One in every 3 dentists now in Alaska was professionally active as a civilian dentist in another State immediately prior to locating in Alaska. The in-migrant dentists came from eight other States, primarily Washington, Oregon, and Idaho. Almost two-thirds of these dentists relocated during the 1960's.

Personal Characteristics

Age.--Alaska's dentists, as a group, are very young. The median age of reporting dentists is only 38.7 years. Thirty-seven percent of the State's dentists are under the age of 35 and two-thirds are under 45 years of age (Table 2). At the other end of the age scale, one in every five dentists is 55 years old or over, and one in every 10 has reached the age of 65.

<table>
<thead>
<tr>
<th>Age</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
<th>Cumulative percent distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>69</td>
<td>100</td>
<td>-</td>
</tr>
<tr>
<td>Under 30</td>
<td>6</td>
<td>9</td>
<td>9</td>
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<tr>
<td>30 - 34</td>
<td>19</td>
<td>28</td>
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<td>35 - 44</td>
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<td>45 - 54</td>
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<td>14</td>
<td>80</td>
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<tr>
<td>55 - 64</td>
<td>7</td>
<td>10</td>
<td>90</td>
</tr>
<tr>
<td>65 &amp; over</td>
<td>7</td>
<td>10</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 2.--Age Distribution
Advanced training.--Seven of the in-State respondents, or 10 percent, reported the completion of one year or more of advanced training beyond their dental degree. All but one of these dentists took clinical training as an intern or resident, and three completed at least one year of advanced academic training.

Distribution and Current Status

Distribution of dentists.--Alaska has been divided into three areas, as shown in the map on the following page, to permit presentation of data on the geographical distribution of dentists.1/ Forty of the State's dentists, almost three-fifths of the total dentist supply, are concentrated in the South Central and Aleutian Chain area which contains a large part of the southern coastal area as well as the Aleutian Islands. Most of the dentists in this area are located in Anchorage, the largest city in Alaska. Another 19 dentists reside in the Southeastern Panhandle area, which consists of a narrow strip of mainland and an adjacent chain of offshore islands along the southeastern coastline of the State. Dentists in this area are concentrated in two cities, Juneau and Ketchikan. The Inland and Northern Alaska area, which includes about seven-tenths of the total land area of the State, is the location of 10 of the State's reporting dentists. Practically all of the dentists in this area are located in Fairbanks, the second largest city in Alaska. Hereafter, these three areas will be referred to as the South Central area, the Southeastern area, and the Northern area.

Active dentists in relation to population.--Of the 69 civilian dentists responding in the survey, 67 reported that they are active in the profession. Only two regarded themselves as full-retired. Based on these responses, there is one professionally active dentist for every 4,084 persons in Alaska (Table 3). The Southeastern area has the most favorable population per dentist ratio in the State, with 2,418 persons per active dentist. In the South Central area, which contains 54 percent of the population, the persons-per-dentist ratio is 3,670. The Northern area has the least favorable ratio, 8,570 persons for every active dentist.

1/ Geographic areas in Alaska have been adapted from the State Economic Areas designated in the following publication: Bogue, D. J., and Buale, C. L. Economic Areas of the United States. New York, Free Press of Glencoe, 1961. 1161 p.
INLAND AND NORTHERN AREA
Nome
Fairbanks

SOUTHEASTERN PANHANDLE AREA
Spenard
Juneau
19 dentists

SOUTH CENTRAL AND LUTIAN CHAIN AREA
Sitka
Kodiak
40 dentists

GEOREGRAPHIC AREAS AND NUMBER OF CIVILIAN DENTISTS IN ALASKA
1966
Table 3.--Number of Persons Per Active Civilian Dentist

<table>
<thead>
<tr>
<th>Geographic area</th>
<th>Professionally active dentists</th>
<th>Total population*</th>
<th>Persons per active dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>67</td>
<td>273,500</td>
<td>4,084</td>
</tr>
<tr>
<td>South Central and Aleutian Chain area</td>
<td>40</td>
<td>146,800</td>
<td>3,670</td>
</tr>
<tr>
<td>Southeastern Panhandle area</td>
<td>17</td>
<td>41,100</td>
<td>2,416</td>
</tr>
<tr>
<td>Inland and Northern area</td>
<td>10</td>
<td>85,700</td>
<td>8,570</td>
</tr>
</tbody>
</table>

* Copyright 1965, Sales Management Survey of Buying Power.

The above persons-per-dentist ratios underestimate the actual dental force available to the residents of Alaska because dental care is available to approximately 30 percent of the State's population through the services of dentists employed by the Federal Government. The Public Health Service, Division of Indian Health, operates dental care facilities for Alaska Natives, who constitute about 19 percent of Alaska's total population. Military personnel stationed in Alaska, accounting for another 11 percent of the State's population, are provided dental care by the Armed Services. Dentists on duty with the Public Health Service and the Armed Forces are not required to be licensed in the State in which they are assigned and therefore are not likely to be included in this survey.

Adjustment of Alaska's population to exclude an estimated 52,000 Alaska Natives and 30,000 military personnel results in a more favorable persons-per-dentist ratio of 2,850 for the State. Although precise area population data are not available, this adjustment is known to affect the persons-per-dentist ratios in all three geographic areas. In the Northern and Southeastern areas of the State, the Alaska Native population accounts for one-third and one-fourth of the total inhabitants, respectively.

The South Central area, containing the Alaska Defense Command at Anchorage and other large military installations, has a substantial share of the State's military population. Consequently, the persons-per-dentist ratio in each of the three geographic areas is actually more favorable than shown in Table 3.

1/ Alaska Natives include Indians, Eskimos and Aleuts.
Practice Characteristics

Hours worked per week.—All dentists reporting on their professional activity in Alaska last year indicated that they provided care for patients. Those dentists reporting time spent in patient care worked an average of 41.0 hours per week. About one-fourth of these dentists worked exceptionally long hours, 48 or more. In contrast, 30 percent of the respondents devoted 35 hours or less per week to patient care.

Use of auxiliaries.—About nine in every 10 practicing dentists in Alaska reported employment of some type of auxiliary personnel (Table 4). The dental assistant, the most frequently utilized auxiliary, is employed by 82 percent of the dental practitioners. Although employed with considerably less frequency, dental hygienists and secretaries are each employed by a rather sizeable proportion, one-third, of the practitioners. Less than one-sixth of all practitioners reported employment of a dental laboratory technician.

Table 4.—Dental Practitioners Employing One or More Auxiliaries, by Type of Auxiliary

<table>
<thead>
<tr>
<th>Type of auxiliary</th>
<th>Number of practitioners</th>
<th>Percent of practitioners</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>67</td>
<td>100</td>
</tr>
<tr>
<td>With one or more auxiliaries</td>
<td>60*</td>
<td>90*</td>
</tr>
<tr>
<td>With assistant</td>
<td>55</td>
<td>82</td>
</tr>
<tr>
<td>With hygienist</td>
<td>22</td>
<td>33</td>
</tr>
<tr>
<td>With laboratory technician</td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td>With secretary or receptionist</td>
<td>22</td>
<td>33</td>
</tr>
<tr>
<td>With other type of personnel</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>With no auxiliary</td>
<td>7</td>
<td>10</td>
</tr>
</tbody>
</table>

* Individual items add to more than total because some dentists employ more than one type of auxiliary.

By far the majority of dentists employing dental assistants or secretaries do so on a full-time basis. On the other hand, most of the dental hygienists and laboratory technicians are part-time employees. Fourteen practitioners reported vacancies for auxiliary personnel, usually for assistants or hygienists.
Limited practices.--Seven of the reporting dentists in Alaska limit their practice to a dental specialty, most frequently orthodontics or oral surgery. Five of these dentists are located in the South Central area of the State.

Out-of-State Civilian Dentists

Alaska licenses are maintained by at least 37 civilian dentists located in 14 States. Almost one-third of these out-of-State dentists practice in California. Washington and Oregon are the only other States in which as many as four out-of-State respondents are located. Nine of the out-of-State dentists practiced in Alaska prior to assuming their present location.
Of the 926 dentists who registered with the Arizona State Dental Board in 1965, 846 completed the survey questionnaire, resulting in a response rate of 91 percent (Table 1). Only 61 percent of these respondents were civilian dentists actually located in Arizona. Another thirty-three percent were civilians located in other States, and four percent were on active duty with the Armed Forces. There were only three women dentists included among the respondents, two of them located within the State.

Table 1.--Location and Military Status of Dentists Licensed in Arizona

<table>
<thead>
<tr>
<th>Location and military status</th>
<th>All dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>926</td>
<td>100</td>
</tr>
<tr>
<td>Respondents</td>
<td>846</td>
<td>91</td>
</tr>
<tr>
<td>Nonrespondents</td>
<td>80</td>
<td>9</td>
</tr>
<tr>
<td>Respondents</td>
<td>846</td>
<td>100</td>
</tr>
<tr>
<td>Civilians in Arizona</td>
<td>519</td>
<td>61</td>
</tr>
<tr>
<td>Civilians in another State</td>
<td>276</td>
<td>33</td>
</tr>
<tr>
<td>On active duty with Armed Forces</td>
<td>34</td>
<td>4</td>
</tr>
<tr>
<td>Not reported</td>
<td>17</td>
<td>2</td>
</tr>
</tbody>
</table>

Eighty-five percent of the dentists who responded to the survey hold a license in at least one other State. About four out of five civilian dentists located in Arizona are licensed in one or more additional States--62 percent in one other State and only 17 percent in 2 or more other States. By comparison, 43 percent of the out-of-State civilian dentists hold licenses in at least two States in addition to Arizona.

Respondents hold over 1,800 licenses, an average of more than two per dentist. About 30 percent of the out-of-State licenses are held in California, and an additional 20 percent are maintained in other Western States. The remaining half of the out-of-State licenses are held in 33 other States scattered across the Nation.
Civilian Dentists in Arizona

Sources of Supply

Dental schools.—Arizona's dentists graduated from 41 dental schools, including 2 schools (Colorado College and Denver College) which are no longer in existence. Over the years, 16 schools located in the North Central States have been a major source of dentist supply, contributing over one-half of the State's dentists (Table 2). Moreover, the relative contribution of these schools has tended to increase slightly in recent years. While no one school in this part of the country has been an outstanding contributor, three universities in Illinois—Northwestern, Illinois, and Loyola, and three universities in Missouri—Washington, St. Louis, and Missouri at Kansas City, have together trained over one-fourth of the State's dentists. Five other universities in the North Central States—Minnesota, Marquette, Iowa, Creighton, and Nebraska—have each contributed at least 15 dentists to the State's present supply.

Table 2.—School Awarding Dental Degree, by Year Awarded

<table>
<thead>
<tr>
<th>Dental school attended</th>
<th>Number of dentists</th>
<th>Year of graduation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>All</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1955</td>
</tr>
<tr>
<td>Total number</td>
<td>519 1/</td>
<td>220</td>
</tr>
<tr>
<td>North Central</td>
<td>282</td>
<td>55</td>
</tr>
<tr>
<td>Northwestern</td>
<td>43</td>
<td>8</td>
</tr>
<tr>
<td>Missouri (Kansas City)</td>
<td>31</td>
<td>6</td>
</tr>
<tr>
<td>Minnesota</td>
<td>30</td>
<td>6</td>
</tr>
<tr>
<td>Illinois</td>
<td>25</td>
<td>5</td>
</tr>
<tr>
<td>12 other schools</td>
<td>153</td>
<td>30</td>
</tr>
<tr>
<td>West</td>
<td>139</td>
<td>27</td>
</tr>
<tr>
<td>Southern California</td>
<td>68</td>
<td>13</td>
</tr>
<tr>
<td>8 other schools</td>
<td>71</td>
<td>14</td>
</tr>
<tr>
<td>South</td>
<td>72</td>
<td>14</td>
</tr>
<tr>
<td>Baylor</td>
<td>39</td>
<td>8</td>
</tr>
<tr>
<td>9 other schools</td>
<td>33</td>
<td>6</td>
</tr>
<tr>
<td>Northeast (6 schools)</td>
<td>21</td>
<td>4</td>
</tr>
</tbody>
</table>

1/ Individual items in this and succeeding tables may not add to the totals shown due to the failure of some responding dentists to reply to all items on the questionnaire. Where percentages are shown, they are based on data supplied by dentists responding to the item (see Appendix Table A).
Another one-fourth of the State's dentists received their dental degrees from schools in the West. This area's outstanding contributor, the University of Southern California, has supplied 13 percent of Arizona's dentists. Three other schools in the West—Oregon, Pacific (Physicians and Surgeons), and California at San Francisco—have contributed an average of 16 dentists each. The proportionate contribution of Southern California has decreased considerably over earlier years, dropping from 29 percent of all dentists in Arizona who received dental degrees prior to World War II to only 5 percent of those who graduated since 1955.

Schools in the South have contributed 14 percent of the dentist supply, with Baylor University the largest Southern contributor. The increasingly important role of Baylor as a source of dentist supply for the State is demonstrated by the fact that 14 percent of Arizona's dentists who graduated during the last 10 years received their dental education at this school, compared to only 1 percent of those graduating prior to World War II.

Dentists relocating in Arizona.—One in every three dentists now in Arizona first practiced dentistry in one of 34 other States. The largest share of the 175 in-migrants, 19 percent, came from California, Illinois, Minnesota, and Iowa, the three next largest sources of in-migrants, have together supplied one-fourth of the dentists relocating in Arizona. No other State has contributed as many as 10 dentists to the Arizona supply; however, five States—Texas, New Mexico, Washington, Pennsylvania, and Michigan—have each contributed more than five dentists.

Personal Characteristics

Age.—Dentists in Arizona are very young. Their median age in 1965 was 40.1 years, with almost a third under 35 and fully two-thirds under 45 years of age (Table 3). Only 16 percent were 55 or older, including 6 percent who had reached the age of 65.

<table>
<thead>
<tr>
<th>Age</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
<th>Cumulative percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>519</td>
<td>100</td>
<td>-</td>
</tr>
<tr>
<td>Under 30</td>
<td>33</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>30 - 34</td>
<td>122</td>
<td>24</td>
<td>31</td>
</tr>
<tr>
<td>35 - 39</td>
<td>93</td>
<td>19</td>
<td>50</td>
</tr>
<tr>
<td>40 - 44</td>
<td>79</td>
<td>16</td>
<td>66</td>
</tr>
<tr>
<td>45 - 49</td>
<td>56</td>
<td>11</td>
<td>77</td>
</tr>
<tr>
<td>50 - 54</td>
<td>37</td>
<td>7</td>
<td>84</td>
</tr>
<tr>
<td>55 - 59</td>
<td>28</td>
<td>6</td>
<td>90</td>
</tr>
<tr>
<td>60 - 64</td>
<td>22</td>
<td>4</td>
<td>94</td>
</tr>
<tr>
<td>65 - 69</td>
<td>17</td>
<td>3</td>
<td>97</td>
</tr>
<tr>
<td>70 &amp; over</td>
<td>13</td>
<td>3</td>
<td>100</td>
</tr>
</tbody>
</table>
Advanced training.--About 18 percent of all dentists in Arizona have received a year or more of advanced training. One of every ten dentists reported he had taken advanced clinical training as an intern or resident. A larger proportion, about 13 percent, completed at least one year of advanced academic training as graduate or postgraduate students, including 9 percent who earned a master's degree after leaving dental school. About 5 percent of all dentists in the State said they had both clinical and academic advanced training.

Distribution and Current Status

Distribution of dentists.--Eighty-five percent of the dentists in Arizona are located in the State's two metropolitan areas, 62 percent in Phoenix (Maricopa County) and 23 percent in Tucson (Pima County). The remaining 15 percent are in the 12 nonmetropolitan counties in the State (Table 4). Grouping the nonmetropolitan counties by population of the largest central city within each county shows that the number of dentists in a county generally declines as the population of the central city decreases (see Appendix Table B). Of the four counties with central cities having a 10,000-24,999 population, Coconino is the only county with as many as 15 dentists; Yavapai, Cochise, and Yuma each have between 8 and 12 dentists. None of the four counties having a central city population from 5,000-9,999 has as many as 10 dentists. Of the four counties with central cities under 5,000 only one county has more than 3 dentists. Two counties, Greenlee and Santa Cruz, have no reporting dentists; however, both of these counties are served by practitioners who maintain secondary offices--one in Greenlee and two in Santa Cruz.

<table>
<thead>
<tr>
<th>County group</th>
<th>Number of counties</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>All counties</td>
<td>14</td>
<td>519</td>
<td>100</td>
</tr>
<tr>
<td>Metropolitan areas</td>
<td></td>
<td>439</td>
<td>85</td>
</tr>
<tr>
<td>Phoenix area</td>
<td>2</td>
<td>319</td>
<td>62</td>
</tr>
<tr>
<td>Tucson area</td>
<td>1</td>
<td>120</td>
<td>23</td>
</tr>
<tr>
<td>Nonmetropolitan county groups</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Central city 10,000-24,999</td>
<td>4</td>
<td>46</td>
<td>9</td>
</tr>
<tr>
<td>Central city 5,000-9,999</td>
<td>4</td>
<td>24</td>
<td>5</td>
</tr>
<tr>
<td>Central city under 5,000</td>
<td>4</td>
<td>8</td>
<td>1</td>
</tr>
</tbody>
</table>

About 8 percent of Arizona's dentists maintain a second office, usually in the same county as the primary office location. Although the majority of secondary offices are located in either the Phoenix or Tucson metropolitan areas, eight nonmetropolitan counties had one or more secondary
dental offices. In addition to Greenlee and Santa Cruz, the counties with secondary dental offices were Gila (four offices) and Yavapai, Yuma, Navajo, Pinal, and Apache (one office each).

Professional status.--Nearly all of the dentists in Arizona (97 percent) reported that they were active in the profession. Only nine of the 519 responding dentists said they were professionally inactive, including eight who were fully retired and one who was engaged in nondental employment. Another seven failed to report their current status. Among the 30 dentists 65 years old or over, only a fifth regarded themselves fully retired.

Active dentists in relation to population.--Based on reporting dentists, there was one professionally active dentist for every 3,203 persons in Arizona in 1955 (Table 5). In metropolitan areas, the ratio was one dentist for every 2,799 persons compared to one for every 5,543 persons in nonmetropolitan counties. On an individual county basis, the range in the number of persons per dentist varied widely (Appendix Table C). Among the 12 counties known to have dentists, Yavapai County had the most favorable ratio, with one professionally active dentist for every 2,642 persons. At the opposite end of the scale was Apache County with a ratio of 32,000 persons per dentist.

Table 5.--Distribution of Professionally Active Dentists

<table>
<thead>
<tr>
<th>County group</th>
<th>Professionally active dentists</th>
<th>Civilian population</th>
<th>Persons per dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td>All counties</td>
<td>503</td>
<td>1,611.0</td>
<td>3,203</td>
</tr>
<tr>
<td>All metropolitan areas</td>
<td>425</td>
<td>1,189.7</td>
<td>2,799</td>
</tr>
<tr>
<td>Phoenix area</td>
<td>309</td>
<td>865.6</td>
<td>2,799</td>
</tr>
<tr>
<td>Tucson area</td>
<td>116</td>
<td>324.7</td>
<td>2,799</td>
</tr>
<tr>
<td>Nonmetropolitan county groups</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Central city 10,000-24,999</td>
<td>46</td>
<td>203.9</td>
<td>4,453</td>
</tr>
<tr>
<td>Central city 5,000-9,999</td>
<td>23</td>
<td>151.6</td>
<td>6,591</td>
</tr>
<tr>
<td>Central city under 5,000</td>
<td>7</td>
<td>65.8</td>
<td>9,400</td>
</tr>
</tbody>
</table>

Only four counties in the State had dentist-population ratios as favorable as the State average of 3,203. Closely following Yavapai, the metropolitan counties of Maricopa and Pima and the nonmetropolitan county of Mohave each had relatively favorable ratios of about 2,800 persons per dentist. Two counties in the State, Coconino and Gila, had population-per-dentist ratios only slightly higher than the State average, 3,400 and 3,771, respectively. The remaining six counties with reporting dentists had ratios of 4,800 persons or more per dentist. In addition to Apache, these counties were Graham (4,800), Navajo (5,288), Cochise (6,800), Yuma (6,900), and Pinal (8,938).
The number of active dentists available to the residents of some of the counties may be understated. For example, Apache County, with only one civilian dentist for a population of 32,000 persons, has a population which is 75 percent Indian. Since dentists employed by the Federal Government in such agencies as the Public Health Service, Division of Indian Health, are not required to be licensed in the State in which they are assigned, there are undoubtedly more dentists caring for residents of this county than the survey figures indicate. A larger dental force than is indicated by the survey data is also likely in other counties with large Indian populations, such as Navajo (51 percent Indian) and Coconino (28 percent Indian).

Professional Characteristics

Current employment.--As might be expected, most dentists who are active in the profession are in private practice. Of the 503 professionally active dentists located in Arizona, 96 percent are primarily self-employed and another 1 percent are employed by other dentists. The remaining 3 percent are engaged in other dental employment, such as working for a State or local government agency.

Only 38 dentists, or 8 percent of those professionally active, reported a secondary dental employment. All but two of these dentists are located in the Phoenix or Tucson metropolitan areas. A variety of secondary activities were reported, such as part-time employment in the private practices of other dentists, and employment in governmental or voluntary agencies.

Activity last year.--Almost all (about 98 percent) of the dentists reporting on their professional activity in Arizona last year indicated that they had provided care for patients. Dentists reporting on time spent last year in providing patient care devoted an average of 47.4 weeks to this activity and worked an average of 40.2 hours per week. Almost two-thirds spent at least 40 hours per week at this activity for 48 weeks or more during the year (Table 6). About one dentist in seven worked the equivalent of six days a week (48 hours or more) for at least 48 weeks.

Table 6.--Time Spent in Patient Care Last Year

<table>
<thead>
<tr>
<th>Weeks spent in patient care</th>
<th>Dentists providing patient care</th>
<th>Percent distribution by work week</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>100</td>
<td>16  15  43  14  12</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50 weeks or more</td>
<td>45</td>
<td>10  6  22  4  3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>48-49 weeks</td>
<td>35</td>
<td>4   7  14  6  4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 48 weeks</td>
<td>20</td>
<td>2   2  7   4  5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The amount of time worked last year by dentists in private practice declined sharply with age. Over 70 percent of the dentists under 40 reported they worked at least 40 hours per week for 48 weeks or more. The proportion working this amount of time declines to 55 percent for dentists between 40 and 54 years old, to 42 percent among those 55 to 64, and to only 15 percent for those 65 and over.

Limited practices.—Seventy-four dentists in Arizona, about one in seven, reported that they limit their practice to a dental specialty. Orthodontics is the principal area of specialization, accounting for about six percent of all practitioners. Another four percent limit their practices to oral surgery, 2 percent to pedodontics, and 3 percent to such specialties as periodontics, prosthodontics, and endodontics.

Ninety-three percent of the limited practitioners are located in the Phoenix and Tucson metropolitan areas. Only five dentists in the non-metropolitan counties reported a limited practice.

Use of auxiliaries.—Almost nine of every ten practitioners reported that they employ auxiliary personnel (Table 7). Dental assistants, the most frequently employed auxiliary, are utilized by 84 percent of all practitioners, including 76 percent who employ at least one assistant on a full-time basis. Secretaries or receptionists are employed by 38 percent of the dentists with about three-fifths of these dentists utilizing such personnel full time. Only 22 percent of the dentists employ dental hygienists and 10 percent employ dental technicians. A majority of the dentists who employ hygienists or technicians do so only part time.

Table 7.—Dental Practitioners Employing One or More Auxiliaries, By Type of Auxiliary

<table>
<thead>
<tr>
<th>Type of auxiliary</th>
<th>Dental practitioners</th>
<th>Percent of dental practitioners</th>
<th>With one full-time employee (or more)</th>
<th>With only part-time personnel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>497</td>
<td>100</td>
<td>82</td>
<td>7</td>
</tr>
<tr>
<td>With one or more auxiliaries</td>
<td>441</td>
<td>89</td>
<td>82</td>
<td>7</td>
</tr>
<tr>
<td>With assistant</td>
<td>417</td>
<td>84</td>
<td>76</td>
<td>8</td>
</tr>
<tr>
<td>With hygienist</td>
<td>107</td>
<td>22</td>
<td>6</td>
<td>16</td>
</tr>
<tr>
<td>With laboratory technician</td>
<td>52</td>
<td>10</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>With secretary or receptionist</td>
<td>190</td>
<td>38</td>
<td>23</td>
<td>15</td>
</tr>
<tr>
<td>With other type of personnel</td>
<td>14</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>With no auxiliary</td>
<td>56</td>
<td>11</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
Although dentists in the Phoenix and Tucson metropolitan areas are no more likely to employ auxiliary personnel than are those located in non-metropolitan areas, the use of hygienists is much more common in these counties than in the remainder of the State. About 24 percent of the dentists in Phoenix and 21 percent in Tucson reported the employment of a hygienist, compared with only 12 percent of the dentists located elsewhere.

About one out of six dental practitioners in Arizona reported one or more vacant positions for auxiliary personnel. Vacancies were reported most frequently for dental hygienists and dental assistants.

Out-of-State Civilian Dentists

There are at least 276 dentists in 28 other States who maintain licenses in Arizona. More than one-half of these out-of-State dentists are located in adjacent States with 45 percent in California and another 10 percent in Utah, New Mexico, Colorado and Nevada. The remaining 45 percent of the out-of-State respondents are located in 20 other States, primarily Illinois, Texas, and Washington.

About one in every eight of the out-of-State respondents reported they had formerly been professionally active in Arizona. Nearly half of these out-migrant dentists are presently located in the neighboring State of California.
### Appendix Table A.--Summary Statistics for Arizona

<table>
<thead>
<tr>
<th>Description</th>
<th>Number of Dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total dentists licensed in Arizona</strong></td>
<td>926</td>
</tr>
<tr>
<td><strong>Respondents -- total dentists participating in survey</strong></td>
<td></td>
</tr>
<tr>
<td>(number not reporting current location or military status - 17)</td>
<td>846</td>
</tr>
<tr>
<td><strong>Civilian dentists in Arizona</strong></td>
<td>519</td>
</tr>
<tr>
<td>(number not reporting: age - 21, county location - 2, principal current employment - 7, dental school attended - 5)</td>
<td>519</td>
</tr>
<tr>
<td><strong>Professionally active dentists</strong></td>
<td>503</td>
</tr>
<tr>
<td><strong>In limited practice</strong></td>
<td>74</td>
</tr>
<tr>
<td><strong>Dental practitioners</strong></td>
<td>497</td>
</tr>
<tr>
<td><strong>Located in Arizona last year:</strong></td>
<td></td>
</tr>
<tr>
<td>Reported professional activity</td>
<td>456</td>
</tr>
<tr>
<td>Dentists providing patient care</td>
<td>446</td>
</tr>
<tr>
<td>Reported time spent in patient care</td>
<td>382</td>
</tr>
<tr>
<td>Dentists in private practice</td>
<td>412</td>
</tr>
<tr>
<td>Reported time spent in practice</td>
<td>366</td>
</tr>
<tr>
<td><strong>Civilian dentists in another State</strong></td>
<td>276</td>
</tr>
<tr>
<td><strong>Dentists on active duty in Armed Forces</strong></td>
<td>34</td>
</tr>
<tr>
<td><strong>Nonrespondents -- licensed dentists not participating in survey</strong></td>
<td>80</td>
</tr>
</tbody>
</table>

1/ All responding dentists who currently work in Arizona (excluding those in the Armed Forces) or who are retired and currently live in the State.

2/ All active civilian dentists currently in Arizona -- excludes 8 dentists who are fully retired, 1 who is engaged principally in a nondental activity and 7 who did not report their principal current employment.

3/ Dentists who reported they limited their practice to a dental specialty.

4/ All dentists practicing at the chair, that is, dentists who work as clinicians either as primary or secondary activity.

5/ Dentists located in Arizona last year who indicated type(s) of activity in which they engaged.

6/ All dentists who engaged in patient care last year, either as a primary or secondary activity.

7/ Dentists reporting both hours and weeks spent in patient care last year.

8/ Dentists who reported they were primarily self-employed both currently and last year.

9/ Dentists reporting both hours and weeks spent last year as a self-employed dentist.
Appendix Table B.--Arizona Counties by County Group

Metropolitan Areas 1/

<table>
<thead>
<tr>
<th>Area and County</th>
<th>Number of responding civilian dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phoenix area</td>
<td></td>
</tr>
<tr>
<td>Maricopa</td>
<td>319</td>
</tr>
<tr>
<td>Tucson area</td>
<td></td>
</tr>
<tr>
<td>Pima</td>
<td>120</td>
</tr>
</tbody>
</table>

Nonmetropolitan Counties 2/

<table>
<thead>
<tr>
<th>Area and County</th>
<th>Central city</th>
<th>Number of responding civilian dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central city 10,000-24,999</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cochise</td>
<td>Douglas</td>
<td>11</td>
</tr>
<tr>
<td>Coconino</td>
<td>Flagstaff</td>
<td>15</td>
</tr>
<tr>
<td>Yavapai</td>
<td>Prescott</td>
<td>12</td>
</tr>
<tr>
<td>Yuma</td>
<td>Yuma</td>
<td>8</td>
</tr>
<tr>
<td>Central city 5,000-9,999</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gila</td>
<td>Globe</td>
<td>7</td>
</tr>
<tr>
<td>Navajo</td>
<td>Winslow</td>
<td>8</td>
</tr>
<tr>
<td>Pinal</td>
<td>Casa Grande</td>
<td>9</td>
</tr>
<tr>
<td>Santa Cruz</td>
<td>Nogales</td>
<td>-</td>
</tr>
<tr>
<td>Central city under 5,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apache</td>
<td>Mohave</td>
<td>1</td>
</tr>
<tr>
<td>Graham</td>
<td>Safford</td>
<td>4</td>
</tr>
<tr>
<td>Greenlee</td>
<td>Clifton</td>
<td>-</td>
</tr>
<tr>
<td>Mohave</td>
<td>Kingman</td>
<td>3</td>
</tr>
</tbody>
</table>

1/ Arizona counties included in the latest 1966 definition of Standard Metropolitan Statistical areas established by the United States Bureau of the Budget, Office of Statistical Standards, have been grouped as metropolitan areas for the presentation of the survey data.

2/ Counties not included in SMSA’s by definition have been grouped according to the 1960 population of the largest (central) city within each county.
Appendix Table C.—County Data

<table>
<thead>
<tr>
<th>County</th>
<th>Professionally active (in 000's) 1/</th>
<th>Population per dentist</th>
<th>Number of active dentists By age</th>
<th>Reporting use of auxiliaries</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Under 55 years</td>
<td>55 years or more</td>
</tr>
<tr>
<td>All counties</td>
<td>303</td>
<td>1,611.0</td>
<td>3,203</td>
<td>155</td>
</tr>
<tr>
<td>Apache</td>
<td>1</td>
<td>32.1</td>
<td>32,000</td>
<td>-</td>
</tr>
<tr>
<td>Cochise</td>
<td>11</td>
<td>66.0</td>
<td>6,000</td>
<td>4</td>
</tr>
<tr>
<td>Coconino</td>
<td>15</td>
<td>51.0</td>
<td>3,400</td>
<td>3</td>
</tr>
<tr>
<td>Gila</td>
<td>7</td>
<td>26.4</td>
<td>3,771</td>
<td>2</td>
</tr>
<tr>
<td>Graham</td>
<td>3</td>
<td>14.4</td>
<td>4,800</td>
<td>1</td>
</tr>
<tr>
<td>Greenlee</td>
<td>-</td>
<td>10.9</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Maricopa</td>
<td>309</td>
<td>865.0</td>
<td>2,799</td>
<td>100</td>
</tr>
<tr>
<td>Mohave</td>
<td>3</td>
<td>8.4</td>
<td>2,800</td>
<td>-</td>
</tr>
<tr>
<td>Navajo</td>
<td>8</td>
<td>42.3</td>
<td>5,288</td>
<td>2</td>
</tr>
<tr>
<td>Pima</td>
<td>116</td>
<td>324.7</td>
<td>2,799</td>
<td>34</td>
</tr>
<tr>
<td>Pinal</td>
<td>8</td>
<td>71.5</td>
<td>8,938</td>
<td>4</td>
</tr>
<tr>
<td>Santa Cruz</td>
<td>-</td>
<td>11.4</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Yavapai</td>
<td>12</td>
<td>31.7</td>
<td>2,642</td>
<td>4</td>
</tr>
<tr>
<td>Yuma</td>
<td>8</td>
<td>55.2</td>
<td>6,900</td>
<td>-</td>
</tr>
</tbody>
</table>

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DENTISTS LICENSED IN ARKANSAS

During the 1965 registration period, 861 dentists registered with the Arkansas State Board of Dental Examiners. Seventy percent of the registered dentists were civilians located in Arkansas, 25 percent were civilians located in other States, and 5 percent were on active duty with the Armed Forces.

<table>
<thead>
<tr>
<th>Location and Military Status of Dentists Licensed in Arkansas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location and military status</td>
</tr>
<tr>
<td>-------------------------------</td>
</tr>
<tr>
<td>Total licensed</td>
</tr>
<tr>
<td>Respondents</td>
</tr>
<tr>
<td>Nonrespondents</td>
</tr>
<tr>
<td>Total licensed</td>
</tr>
<tr>
<td>Civilians in Arkansas</td>
</tr>
<tr>
<td>Respondents</td>
</tr>
<tr>
<td>Nonrespondents</td>
</tr>
<tr>
<td>Civilians in another State</td>
</tr>
<tr>
<td>On active duty with Armed Forces</td>
</tr>
<tr>
<td>Not reported</td>
</tr>
</tbody>
</table>

* Less than one-half of one percent.

The survey questionnaire was completed by 738 dentists, 86 percent of the total registered. The data provided by the survey respondents have been supplemented, when possible, by information on location, age, dental school attended, and year of graduation for dentists not responding to the survey. The information for nonrespondents was obtained from records maintained by the Arkansas State Board of Dental Examiners and from the 1966 American Dental Directory published by the American Dental Association.

Over three-fifths of the survey respondents (62 percent) hold a license to practice dentistry in one or more other States. Forty-five percent of the dentists located in Arkansas have one other license, while only 6 percent have two or more other licenses. The proportion of out-of-State dentists holding multiple licenses is considerably greater; two-fifths hold two or more licenses in addition to their Arkansas license. Almost four-fifths of the licenses held outside the State were issued by adjacent States, including 25 percent in Missouri, 23 percent in Tennessee, 16 percent in Texas, 6 percent each in Louisiana and Oklahoma, and 2 percent in Mississippi.
Almost nine in every ten, 86 percent, of the 602 dentists in Arkansas are graduates of dental schools located in four adjacent States—Tennessee, Missouri, Texas, and Louisiana. The University of Tennessee, the major contributor, has supplied the State with one-third of its dental force. Furthermore, the contribution of this school has increased in recent years, accounting for more than one-half (55 percent) of the dentists graduating since 1955, compared to 22 percent of those who graduated in earlier years.

The University of Missouri and Washington University have each provided 15 percent of the Arkansas dentist supply. Baylor and St. Louis Universities have also made notable contributions, having supplied the State with 8 percent and 7 percent of its dentists, respectively. Three other schools in adjacent States, Loyola University at New Orleans, Meharry Medical College, and Vanderbilt University (whose dental school closed in 1926) have each provided 2 percent of the dental force.

The remaining 14 percent of the Arkansas dentists received their dental degrees from 23 other schools located in more distant States. Only three of these schools—Emory and Northwestern Universities and Loyola University of Chicago—have supplied as much as 2 percent of the State's dentist supply.
DISTRIBUTION OF DENTISTS

Two-fifths of the 602 dentists in Arkansas are located in the five metropolitan areas of the State. The 2-county Little Rock area has 141 dentists, 23 percent of the total dental force. The Arkansas portion of the interstate Fort Smith area has the next largest dental force, 8 percent of the dentists, and the Pine Bluff area, with 5 percent, has the third largest supply. The Arkansas parts of two other interstate areas, Memphis and Texarkana, each have 2 percent of the State's dentists.

Distribution of Arkansas Dentists, by County Group

<table>
<thead>
<tr>
<th>County group</th>
<th>Number of counties</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>All counties</td>
<td>75</td>
<td>602</td>
<td>100</td>
</tr>
<tr>
<td>Metropolitan areas</td>
<td>7</td>
<td>240</td>
<td>40</td>
</tr>
<tr>
<td>Little Rock-North Little Rock area</td>
<td>2</td>
<td>141</td>
<td>23</td>
</tr>
<tr>
<td>Fort Smith area (Ark. part)</td>
<td>2</td>
<td>48</td>
<td>8</td>
</tr>
<tr>
<td>Pine Bluff area</td>
<td>1</td>
<td>29</td>
<td>5</td>
</tr>
<tr>
<td>Memphis area (Ark. part)</td>
<td>1</td>
<td>12</td>
<td>2</td>
</tr>
<tr>
<td>Texarkana area (Ark. part)</td>
<td>1</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>Nonmetropolitan counties</td>
<td>68</td>
<td>362</td>
<td>60</td>
</tr>
<tr>
<td>Central city 10,000-49,999</td>
<td>9</td>
<td>142</td>
<td>24</td>
</tr>
<tr>
<td>Central city 5,000-9,999</td>
<td>16</td>
<td>103</td>
<td>17</td>
</tr>
<tr>
<td>Central city 2,500-4,999</td>
<td>19</td>
<td>79</td>
<td>13</td>
</tr>
<tr>
<td>Central city under 2,500</td>
<td>24</td>
<td>38</td>
<td>6</td>
</tr>
</tbody>
</table>

* See Appendix Table for definition of interstate and other metropolitan areas and presentation of individual county data.

Three-fifths of the State's dentists (362) are located in the 68 nonmetropolitan counties. The nine counties with central cities of 10,000 or more persons have 142 dentists, almost one-fourth of the State's dental force. Three of these counties—Washington, Union, and Garland—have between 20 and 30 dentists. The 16 counties with central city populations between 5,000 and 9,999 have 103 dentists, one-sixth of the total supply. The remaining 43 counties, with less than 5,000 persons in their central cities, have among them 117 dentists, about one-fifth of all dentists in the State. While only six of these 43 counties have as many as five dentists, 22 counties have fewer than three dentists, including six counties which have no dentists, according to available information.
AGE DISTRIBUTION OF DENTISTS

Dentists in Arkansas are rather young as a group, with a median age of 43.1 years. A full one-fourth of the dentists are under 35, yet an equal proportion are 55 years of age or older, including 13 percent who have reached the age of 65. One-half of all dentists in the State are between 35 and 54, with about one-third between 35 and 44 years of age.

Age Distribution of Arkansas Dentists

<table>
<thead>
<tr>
<th>Age in 1965</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
<th>Cumulative percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>602</td>
<td>100</td>
<td>-</td>
</tr>
<tr>
<td>Under 30</td>
<td>54</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>30 - 34</td>
<td>96</td>
<td>16</td>
<td>25</td>
</tr>
<tr>
<td>35 - 39</td>
<td>77</td>
<td>13</td>
<td>38</td>
</tr>
<tr>
<td>40 - 44</td>
<td>114</td>
<td>19</td>
<td>57</td>
</tr>
<tr>
<td>45 - 49</td>
<td>66</td>
<td>11</td>
<td>68</td>
</tr>
<tr>
<td>50 - 54</td>
<td>40</td>
<td>7</td>
<td>75</td>
</tr>
<tr>
<td>55 - 59</td>
<td>34</td>
<td>6</td>
<td>81</td>
</tr>
<tr>
<td>60 - 64</td>
<td>34</td>
<td>6</td>
<td>87</td>
</tr>
<tr>
<td>65 - 69</td>
<td>30</td>
<td>5</td>
<td>92</td>
</tr>
<tr>
<td>70 - 74</td>
<td>32</td>
<td>5</td>
<td>97</td>
</tr>
<tr>
<td>75 &amp; over</td>
<td>17</td>
<td>3</td>
<td>100</td>
</tr>
</tbody>
</table>

1/ Includes 8 dentists for whom age is not available. Percents are based on total for whom age is known.

The age distribution of dentists is similar throughout the State. Dentists located in the five metropolitan areas, with a median age of 42.6 years, are only slightly younger on the average than are those dentists located in nonmetropolitan counties, where the median age is 43.5 years.
ACTIVE DENTISTS IN RELATION TO POPULATION

Of the 602 licensed dentists in Arkansas, 573, or 95 percent, are active in their profession, giving Arkansas one professionally active dentist for every 3,218 persons. In metropolitan areas, there is one dentist for every 2,547 persons, while the nonmetropolitan counties have a considerably less favorable ratio of one dentist for every 3,655 persons.

Number of Persons Per Active Dentist in Arkansas

<table>
<thead>
<tr>
<th>County group*</th>
<th>Professionally active dentists</th>
<th>Population</th>
<th>Persons per dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td>All counties</td>
<td>573</td>
<td>1,843,900</td>
<td>3,218</td>
</tr>
<tr>
<td>Metropolitan areas</td>
<td>226</td>
<td>575,600</td>
<td>2,547</td>
</tr>
<tr>
<td>Little Rock-North Little Rock area</td>
<td>133</td>
<td>302,400</td>
<td>2,274</td>
</tr>
<tr>
<td>Fort Smith area (Ark. part)</td>
<td>44</td>
<td>102,500</td>
<td>2,339</td>
</tr>
<tr>
<td>Pine Bluff area</td>
<td>28</td>
<td>87,200</td>
<td>3,114</td>
</tr>
<tr>
<td>Memphis area (Ark. part)</td>
<td>11</td>
<td>51,300</td>
<td>4,664</td>
</tr>
<tr>
<td>Texarkana area (Ark. part)</td>
<td>10</td>
<td>31,300</td>
<td>3,180</td>
</tr>
<tr>
<td>Nonmetropolitan counties</td>
<td>347</td>
<td>1,268,300</td>
<td>3,655</td>
</tr>
<tr>
<td>Central city 10,000-49,999</td>
<td>134</td>
<td>418,500</td>
<td>3,123</td>
</tr>
<tr>
<td>Central city 5,000-9,999</td>
<td>101</td>
<td>362,500</td>
<td>3,589</td>
</tr>
<tr>
<td>Central city 2,500-4,999</td>
<td>76</td>
<td>288,200</td>
<td>3,792</td>
</tr>
<tr>
<td>Central city under 2,500</td>
<td>36</td>
<td>199,100</td>
<td>5,531</td>
</tr>
</tbody>
</table>

* See Appendix Table for individual county data.

Among the metropolitan areas, Little Rock has the best ratio with 2,274 persons per active dentist. The persons-per-dentist ratio of 2,339 for the Arkansas portion of the interstate Fort Smith area (Sebastian and Crawford Counties) is only slightly less favorable. The Pine Bluff area and the Arkansas portion of the interstate Texarkana area (Miller County) have ratios which are considerably higher but still below the average for the State, while the Arkansas portion of the interstate Memphis area (Crittenden County) has the least favorable ratio among the metropolitan areas, 4,664 persons per dentist.

Of the 68 nonmetropolitan counties, 17 have ratios better than the State average, while 19 counties have 5,000 or more persons per dentist, including five with 7,500 or more. Generally, the ratio of persons per dentist becomes less favorable as the size of the central city decreases. The counties with central cities of 10,000 or more population have an average of 3,123 persons per dentist, while counties with fewer than 2,500 inhabitants in their central cities average over 5,500 persons per dentist.
UTILIZATION OF AUXILIARIES

Almost nine out of ten responding dental practitioners in Arkansas (i.e., dentists who spend any time working at the chair) employ some type of auxiliary personnel. Dental assistants, the most frequently employed auxiliary, are utilized by 83 percent of all practitioners, including 78 percent who employ at least one assistant on a full-time basis. Secretaries or receptionists are employed by 30 percent of the dentists, with almost two-thirds of these practitioners utilizing such personnel full time. Seven percent of the dentists employ dental hygienists and an equal proportion employ laboratory technicians in their practices.

Arkansas Dentists Employing Auxiliaries, by Type of Auxiliary

<table>
<thead>
<tr>
<th>Type of auxiliary employed</th>
<th>Percent of dental practitioners</th>
<th>Dental practitioners</th>
<th>Total</th>
<th>With one full-time employee</th>
<th>With only part-time employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>511 1/</td>
<td>100</td>
<td>84</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>One or more auxiliaries</td>
<td>428</td>
<td>88</td>
<td>84</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Assistant</td>
<td>405</td>
<td>33</td>
<td>78</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Hygienist</td>
<td>36</td>
<td>7</td>
<td>4</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Laboratory technician</td>
<td>38</td>
<td>7</td>
<td>2</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Secretary or receptionist</td>
<td>145</td>
<td>30</td>
<td>19</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>Other type of personnel</td>
<td>23</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>No auxiliary</td>
<td>61</td>
<td>12</td>
<td>12</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

1/ Includes 22 dentists who did not report on auxiliary utilization.

Employment of auxiliaries varies with the age of the dentist and is more common among the younger dentists. Almost all (98 percent) of the dentists between the ages of 30 and 44 employ auxiliaries. The proportion utilizing auxiliary personnel decreases to 85 percent for dentists 45 to 64 years of age and to only 38 percent among those 65 and over.

Some 17 percent of the Arkansas practitioners reported one or more vacant positions for auxiliary personnel. Thirty-eight percent of these dentists indicated vacancies for full-time dental hygienists and 24 percent for full-time dental assistants.
OTHER SURVEY FINDINGS

Ninety-nine percent of the responding professionally active dentists in Arkansas are primarily engaged in private practice, with 97 percent self-employed and 2 percent employed by other dentists. The remaining one percent are engaged in other dental activities, such as employment by governmental agencies.

Dentists reporting on time spent in providing patient care devoted an average of 39.7 hours per week to this activity for 48.5 weeks during the year preceding the survey. One in every ten dentists worked the equivalent of six days a week, 48 hours or more, for at least 48 weeks.

Thirteen percent of the survey respondents reported they had completed one year or more of advancing after receiving the dental degree. Twenty-eight percent reported the completion of advanced clinical training as interns or residents, and 46 dentists had completed one year or more of academic training as graduate or postgraduate students.

About 9 percent of the responding practitioners reported that they limit their practice to a dental specialty, primarily to orthodontics. Almost one in every five dentists in metropolitan areas limits his practice compared to one in every 25 of the dentists in nonmetropolitan counties.

Of the responding dentists who are licensed in Arkansas but located in another State, seven in every ten reside in the adjacent States, mostly in Texas, Tennessee or Missouri. The remainder of the out-of-State dentists are scattered among 21 other States across the nation.
## APPENDIX TABLE

**Selected Data on Dentists in Arkansas, by Location**

<table>
<thead>
<tr>
<th>County group and county</th>
<th>Civilian dentists</th>
<th>Population (in 000's)</th>
<th>Persons per active dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total respondents</td>
<td>Non-respondents</td>
<td>Age in 1965</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Under 35 or more</td>
</tr>
<tr>
<td>All counties</td>
<td>602</td>
<td>526</td>
<td>76</td>
</tr>
<tr>
<td>Metropolitan areas</td>
<td>240</td>
<td>213</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Little Rock-North Little Rock area</td>
<td>141</td>
<td>124</td>
<td>17</td>
</tr>
<tr>
<td>Pilaski</td>
<td>134</td>
<td>117</td>
<td>17</td>
</tr>
<tr>
<td>Saline</td>
<td>7</td>
<td>/</td>
<td>-</td>
</tr>
<tr>
<td>Fort Smith area (Ark. part)</td>
<td>48</td>
<td>43</td>
<td>5</td>
</tr>
<tr>
<td>Sebastian</td>
<td>44</td>
<td>39</td>
<td>5</td>
</tr>
<tr>
<td>Crawford</td>
<td>4</td>
<td>4</td>
<td>-</td>
</tr>
<tr>
<td>Pine Bluff area</td>
<td>29</td>
<td>26</td>
<td>3</td>
</tr>
<tr>
<td>Jefferson</td>
<td>29</td>
<td>26</td>
<td>3</td>
</tr>
<tr>
<td>Memphis area (Ark. part)</td>
<td>12</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>Crittenden</td>
<td>12</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>Texarkana area (Ark. part)</td>
<td>10</td>
<td>10</td>
<td>-</td>
</tr>
<tr>
<td>Miller</td>
<td>10</td>
<td>10</td>
<td>-</td>
</tr>
</tbody>
</table>
### Selected Data on Dentists in Arkansas, by Location

#### County group and county

<table>
<thead>
<tr>
<th>County group 2/</th>
<th>Civilian dentists</th>
<th>Population 1/ (in 000's)</th>
<th>Persons per active dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Respondents</td>
<td>Non-respondents</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nonmetropolitan counties 3/</td>
<td>362</td>
<td>3</td>
<td>49</td>
</tr>
<tr>
<td>Central city 25,000-49,999</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Garland</td>
<td>49</td>
<td>37</td>
<td>12</td>
</tr>
<tr>
<td>Union</td>
<td>25</td>
<td>17</td>
<td>8</td>
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### APPENDIX TALLE (cont'd.)

Selected Data on Dentists in Arkansas, by Location

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## APPENDIX TABLE (cont'd.)

### Selected Data on Dentists in Arkansas, by Location

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<th>Professionally active</th>
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<th>Persons per active dentist</th>
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### APPENDIX TABLE (cont' i.)

Selected Data on Dentists in Arkansas, by Location

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<th>County group and county</th>
<th>Civilian dentists</th>
<th>Population (in 000's)</th>
<th>Persons per active dentist</th>
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2/ Arkansas counties included in the latest 1967 definition of Standard Metropolitan Statistical Areas, as established by the U.S. Bureau of the Budget, Office of Statistical Standards, have been grouped as metropolitan areas for presentation of the survey data. For interstate SMSA's—Fort Smith, Memphis, and Texarkana—statistics are presented only for dentists located in the Arkansas portions.

3/ Counties not included within an SMSA, as defined by the U.S. Bureau of the Budget, have been grouped according to the 1960 population of the largest (central) city within each county.
During the 1965 registration period, 1,735 dentists registered with the Colorado State Board of Dental Examiners. A total of 1,684 dentists responded to the survey, 97 percent of all those registered. Sixty-three percent of the responding dentists are civilians located in Colorado, 29 percent are civilians located in other states, and the remaining 8 percent are on active duty with the armed forces.

### Location and Military Status of Dentists Licensed in Colorado

<table>
<thead>
<tr>
<th>Location and military status</th>
<th>All dentists</th>
<th>Percent of dentists</th>
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<td>Total</td>
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<tr>
<td>Respondents</td>
<td>1,684</td>
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<tr>
<td>Civilians in Colorado</td>
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<td>Civilians in another state</td>
<td>492</td>
<td>29</td>
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<tr>
<td>On active duty with armed forces</td>
<td>133</td>
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</table>

Multiple licensure is fairly common in Colorado, with well over half of the respondents located in the State (57 percent) holding more than one license. Forty-four percent indicated licensure in at least one additional state and 13 percent in two or more other states. Of those dentists registering in Colorado, but located out-of-state, a relatively high proportion--40 percent--are licensed in two or more states other than Colorado.

Survey respondents hold a total of some 3,300 licenses, an average of almost two per dentist. One-third of the licenses held in states outside of Colorado are held in adjacent states, primarily Nebraska and Kansas, with an additional 23 percent maintained in Missouri and California. The remainder are held in 38 other states scattered across the Nation.
Almost three-fourths (72 percent) of Colorado's 1,059 dentists graduated from 16 dental schools located in the North Central States. Three dental schools in the nearby State of Missouri have provided one-fourth of the total dental force, with the University of Missouri, the principal contributor, supplying 19 percent of Colorado's dentists and the dental schools at St. Louis and Washington Universities together supplying another 6 percent. In addition, two schools in adjacent Nebraska, the University of Nebraska and The Creighton University, have trained 21 percent of Colorado's dentists. The only other school in the North Central States to contribute more than 5 percent of the dental force is Northwestern University. The College of Dentistry, University of Denver, although closed since 1930, has provided another 18 percent of the State supply.

The University of Denver provided almost three-fifths (58 percent) of the dentists in Colorado who graduated prior to World War II. However, the loss of graduates from this school has been largely compensated for by contributions from schools in the North Central States.

<table>
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<th>Dental School Attended</th>
<th>Number of Dentists</th>
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<td>Total number</td>
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<td>371 354 334</td>
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<tr>
<td>(Percent distribution by school)</td>
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<td>19 20 25 10</td>
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<tr>
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<td>12 16 16 4</td>
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<td>The Creighton University</td>
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<td>9 14 8 4</td>
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<td>24 schools in other states</td>
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</table>

Some 19 percent of the survey respondents, 204 dentists, reported that they had completed one year or more of advanced training after receiving their dental degree. Of the 116 with advanced clinical training, 31 completed a residency and 85 an internship. Among the 128 dentists who reported advanced academic training, 79 earned a master's or other advanced degree, and another 49 received no additional degrees but completed one or more years of postgraduate study. These figures include 40 dentists who completed both academic and clinical training.
More than three-fourths (77 percent) of all licensed dentists in Colorado are located in the 3 metropolitan areas of the State. The 5-county Denver area has 683 dentists. 64 percent of the 1,059 dentists in the State. Denver County alone has 432 dentists, while the remaining 4 counties in the area—Adams, Arapahoe, Boulder and Jefferson—each have between 40 and 90 dentists. The Colorado Springs metropolitan area has the second largest dental force, accounting for 9 percent of the State supply. The remaining metropolitan area, Pueblo, has approximately 4 percent of the dentists.

<table>
<thead>
<tr>
<th>County group*</th>
<th>Number of counties</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
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<tbody>
<tr>
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<td>820</td>
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<td>5</td>
<td>683</td>
<td>64</td>
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<td>Colorado Springs area</td>
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<td>Pueblo area</td>
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<td>Nonmetropolitan counties</td>
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</table>

*See Appendix Table for definition of metropolitan areas and presentation of individual county data.

Slightly less than one-fourth (23 percent) of the dentists are located in the 56 nonmetropolitan counties of the State. More than half of these dentists are concentrated in the six counties with at least 10,000 persons in their central cities—Larimer, Weld, La Plata, Las Animas, Logan and Mesa. The number of dentists per county generally declines as the size of the central city decreases. There are 82 dentists in the 16 counties having between 2,500 and 9,999 persons in the central cities, while less than half that number (35 dentists) are scattered throughout the 34 counties with central cities of less than 2,500 population. Among these latter very sparsely populated counties, 14 with a combined population of 29,800 had no dentist reporting, while 10 other counties had only 1 dentist per county.
The median age of the 1,057 dentists who reported their age was 42.3 years. Approximately one-fourth (274) of Colorado's dentists are under 35, and 28 percent (302) are 55 years of age or more. One in every six, or 186 dentists, is 65 years old or over, including 127 who have reached the age of 70.

### Median Age and Age Distribution of Colorado Dentists, by County Group

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<th>County group</th>
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<td>All metropolitan areas</td>
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<td>26</td>
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<tr>
<td>Denver area</td>
<td>42.1</td>
<td>24</td>
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<tr>
<td>Colorado Springs area</td>
<td>40.3</td>
<td>30</td>
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<tr>
<td>Pueblo area</td>
<td>40.7</td>
<td>37</td>
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<tr>
<td>All nonmetropolitan counties</td>
<td>44.1</td>
<td>26</td>
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<tr>
<td>Central city 10,000-49,999</td>
<td>44.6</td>
<td>24</td>
</tr>
<tr>
<td>Central city 2,500-9,999</td>
<td>40.7</td>
<td>29</td>
</tr>
<tr>
<td>Central city under 2,500</td>
<td>52.5</td>
<td>26</td>
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</tbody>
</table>

In metropolitan areas the median age of dentists is 41.8 years, more than two years younger than the 44.1 year median for dentists in the nonmetropolitan counties. In two of the three metropolitan areas, Colorado Springs and Pueblo, the median ages are almost the same, 40.3 and 40.7, respectively. By contrast, the median age in the Denver area is 42.1 years, approximately the same as the average for the State. However, dentists in Denver County itself—the hub of the Denver metropolitan area—have a median age of 45.1 years, considerably older than that of dentists in the four surrounding counties, where the combined median age is 38.0 years.

Among the nonmetropolitan county groups, counties with central cities of less than 2,500 persons have the oldest dentists, with a median age of 52.5, about 10 years higher than the median age for the State as a whole. By comparison, the combined median age in counties having central cities with more than 2,500 inhabitants is a much lower 43.7 years.
ACTIVE DENTISTS IN RELATION TO POPULATION

Of the 1,059 responding dentists in Colorado, 95 percent (1,007 dentists) are active in their profession, giving Colorado one professionally active dentist for every 1,972 persons. In the metropolitan areas—which have 78 percent of all active dentists and 70 percent of the population—the ratio is one dentist for every 1,780 persons. The remainder of the State—which has 22 percent of the active dentists and 30 percent of the population—has a less favorable ratio of one dentist for every 2,647 persons.

### Number of Persons per Active Dentist in Colorado

<table>
<thead>
<tr>
<th>County group and county</th>
<th>Professionally active dentists</th>
<th>Population</th>
<th>Persons per dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td>All counties</td>
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<td>1,985,400</td>
<td>1,972</td>
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<tr>
<td>All metropolitan areas</td>
<td>784</td>
<td>1,395,200</td>
<td>1,780</td>
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<tr>
<td>Denver area</td>
<td>652</td>
<td>1,087,200</td>
<td>1,657</td>
</tr>
<tr>
<td>Colorado Springs area</td>
<td>87</td>
<td>178,900</td>
<td>2,056</td>
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<tr>
<td>Pueblo area</td>
<td>45</td>
<td>129,100</td>
<td>2,669</td>
</tr>
<tr>
<td>Nonmetropolitan counties</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Central city, 10,000-49,999</td>
<td>223</td>
<td>590,200</td>
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<td>258,700</td>
<td>2,192</td>
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<td>76</td>
<td>209,000</td>
<td>2,750</td>
</tr>
<tr>
<td></td>
<td></td>
<td>122,500</td>
<td>4,224</td>
</tr>
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</table>

Among the metropolitan areas, the 5-county Denver area has the best ratio with 1,667 persons per dentist. Denver County itself has an even more favorable ratio of 1,291, compared to a combined ratio of 2,300 in the four other counties in the area. In the Colorado Springs area the ratio is 2,056, and in the Pueblo area the number of persons per dentist is a rather high 2,669.

Among the 56 nonmetropolitan counties of the State, there are 8 counties with persons-per-dentist ratios under 2,000, yet 13 counties have ratios exceeding 3,000 persons for every dentist, and another 16 have no reporting active dentists. (In 2 counties, the one reporting dentist is not professionally active.) Generally, the ratio of persons per dentist becomes less favorable as the size of the central city declines. The group of counties with central cities of 10,000 or more population have an average persons-per-dentist ratio of approximately 2,200. In contrast, the counties with central cities having less than 2,500 inhabitants average more than 4,000 persons for every active dentist.
Slightly more than 8 of every 10 practitioners in Colorado (i.e., dentists who spend any time working at the chair) reported that they employ some type of auxiliary personnel. Dental assistants, the most frequently employed auxiliary, are utilized by 78 percent of all practitioners, including 72 percent who employ at least one assistant on a full-time basis. Secretaries or receptionists are employed by 28 percent of the dentists, with half of these dentists utilizing such personnel full time. Dental hygienists are utilized by an almost equal number of dentists, primarily on a part-time basis. Seven percent of the dentists employ dental technicians, principally for part-time assistance.

<table>
<thead>
<tr>
<th>Type of auxiliary employed by dentists</th>
<th>Dental practitioners</th>
<th>Percent of dental practitioners</th>
<th>With one full-time auxiliary</th>
<th>Part-time (or more) auxiliaries</th>
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<td>Total</td>
<td>1,000</td>
<td>100</td>
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<tr>
<td>One or more auxiliaries</td>
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<td>82</td>
<td>76</td>
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<tr>
<td>Assistant</td>
<td>772</td>
<td>78</td>
<td>72</td>
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<td>Hygienist</td>
<td>225</td>
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<td>Laboratory technician</td>
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<td>5</td>
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<tr>
<td>Secretary or receptionist</td>
<td>277</td>
<td>28</td>
<td>14</td>
<td>14</td>
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<tr>
<td>Other type personnel</td>
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<td>4</td>
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<td>3</td>
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<tr>
<td>No auxiliary</td>
<td>176</td>
<td>18</td>
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</table>

1/ Includes 9 dentists who did not report on auxiliary utilization.

Use of auxiliaries varies with the age of the dentist and is more frequent among younger dentists. Approximately 92 percent of Colorado dentists between the ages of 30 and 44 employ some type of auxiliary. The proportion using auxiliaries decreases to 77 percent among dentists 45 to 64 years of age, and to 49 percent among dentists 65 years and over. Dentists in the early years of their practice generally do not reach peak utilization of assistants until they are 35 years of age and of hygienists until age 40.

Although dentists in metropolitan areas are no more likely to employ auxiliary personnel than are those located in nonmetropolitan counties, the use of hygienists is much more common in metropolitan areas than in the remainder of the State. A relatively high proportion of dentists in metropolitan areas -- 26 percent -- reported employment of a hygienist, as compared to only 11 percent of dentists located elsewhere.
OTHER SURVEY FINDINGS

Ninety-eight percent of the professionally active dentists in Colorado are primarily engaged in private practice, with 97 percent self-employed and one percent employed by another dentist. The remaining two percent are either employed by governmental agencies or are engaged in other dental activities, such as taking advanced training.

Dentists providing patient care in the year prior to the survey devoted an average of 40.3 hours per week to this activity for 47.4 weeks during the year. About one dentist in seven worked the equivalent of six days a week, 48 hours or more, for at least 48 weeks.

About 13 percent of the respondents reported that they limit their practice to a dental specialty, primarily to orthodontics, followed by oral surgery and pedodontics. Fourteen percent of the dentists in metropolitan areas limit their practice as compared to 7 percent in nonmetropolitan areas.

Twenty percent of the dentists responding (208) had practiced as civilian dentists in one of 35 other states immediately prior to assuming their present Colorado location. More than half of these dentists came from the North Central States, primarily Nebraska, Illinois, Kansas and Missouri.

Thirty-two percent of the 492 dentists licensed in Colorado but located in another state are in one of the seven adjacent states, primarily Nebraska (14 percent). Another 21 percent of the out-of-state dentists are located in California, while the remainder are scattered throughout 32 other states, the District of Columbia, or foreign countries.

December 1967.
### APPENDIX TABLE

**Selected Data on Dentists in Colorado, by Location**

<table>
<thead>
<tr>
<th>County group and county</th>
<th>Civilian dentists Age in 1965</th>
<th>Professionally active</th>
<th>Population (in 000's)</th>
<th>Persons per active dentist</th>
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</thead>
<tbody>
<tr>
<td></td>
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<td>1,985.4</td>
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<td>820 212 222 784</td>
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<td>1,667</td>
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### APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Colorado, by Location

<table>
<thead>
<tr>
<th>County group and county</th>
<th>Civilian dentists Age in 1965</th>
<th>Professionally active</th>
<th>Population¹/²</th>
<th>Persons per active dentist</th>
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<tbody>
<tr>
<td></td>
<td>Total Under 55 years or over</td>
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<tr>
<td>Nonmetropolitan counties³/⁴ (cont'd.)</td>
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</table>

¹/² Population in 000's
³/⁴ Nonmetropolitan counties
⁵/⁶ Central city 5,000-9,999
**APPENDIX TABLE (cont'd.)**

Selected Data on Dentists in Colorado, by Location

<table>
<thead>
<tr>
<th>County group and county</th>
<th>Civilian dentists</th>
<th>Population 1/ (in 000's)</th>
<th>Persons per active dentist</th>
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<td></td>
<td>Total Age in 1965</td>
<td>Professionally active</td>
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</tr>
<tr>
<td></td>
<td>Under 35</td>
<td>55 years or over</td>
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<tr>
<td>Nonmetropolitan counties 2/ (cont'd.)</td>
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<td>Central city under 2,500 (cont'd.)</td>
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### Selected Data on Dentists in Colorado, by Location

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<td>Age in 1965</td>
<td>Profesionally active</td>
<td>Population (in 000's)</td>
<td>Persons per active dentist</td>
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<tr>
<td></td>
<td>Total Under 55 years or over</td>
<td>35 or over</td>
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<tr>
<td>Nonmetropolitan counties</td>
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<td></td>
<td></td>
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<td>(cont'd.)</td>
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<tr>
<td>Central city under 2,500 (cont'd.)</td>
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<td>6.6</td>
</tr>
<tr>
<td>Yuma</td>
<td>4</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>8.7</td>
</tr>
</tbody>
</table>

1/ Copyright 1965. Sales Management Survey of Buying Power; further reproduction is forbidden.

2/ Colorado counties included in the latest 1967 definition of Standard Metropolitan Statistical Areas, as established by the U.S. Bureau of the Budget, Office of Statistical Standards, have been grouped as metropolitan areas for presentation of the survey data.

3/ Counties not included within a SMSA, as defined by the U.S. Bureau of the Budget, have been grouped according to the 1960 population of the largest (central) city within each county.
DENTISTS LICENSED IN CONNECTICUT

A total of 2,769 dentists registered with the Connecticut Dental Commission in 1966 (Table 1). Of this total, 2,578 completed the questionnaire for an overall response rate of 93 percent. About 70 percent of the responding dentists were civilians located in Connecticut at the time of the survey. Civilians located in other States or abroad accounted for one-fourth of the respondents, and 5 percent were dentists on active duty in the Armed Forces.

Table 1.--Location and Military Status of Dentists Licensed in Connecticut

<table>
<thead>
<tr>
<th>Location and military status</th>
<th>All dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total licensed</td>
<td>2,769</td>
<td>100</td>
</tr>
<tr>
<td>Respondents</td>
<td>2,578</td>
<td>93</td>
</tr>
<tr>
<td>Nonrespondents</td>
<td>191</td>
<td>7</td>
</tr>
<tr>
<td>Respondents</td>
<td>2,578</td>
<td>100</td>
</tr>
<tr>
<td>Civilians in Connecticut</td>
<td>1,799</td>
<td>70</td>
</tr>
<tr>
<td>Civilians in another State</td>
<td>647</td>
<td>25</td>
</tr>
<tr>
<td>On active duty with Armed Forces</td>
<td>131</td>
<td>5</td>
</tr>
<tr>
<td>Not reported</td>
<td>1</td>
<td>*</td>
</tr>
</tbody>
</table>

* Less than one half of one percent.

The location and military status of the dentists not responding to the survey, as well as certain other items of information, were obtained, when available, from records maintained by the Connecticut Dental Commission or from the 1966 American Dental Directory, published by the American Dental Association. However, because the survey response rate was high, the data presented in the sections which follow will be limited to responding dentists except in those instances where the nonrespondent data are known to differ from the respondent data.

Of all the dentists responding, 46 percent are licensed only in Connecticut (Table 2). Among those dentists located in Connecticut, 62 percent are licensed only in this State, 31 percent are licensed in one other State and only 7 percent are licensed in 2 or more other States. In contrast, 32 percent of the out-of-State civilian dentists are licensed in 2 or more States in addition to Connecticut and the State in which they are presently located.
Table 2.--Percent of Dentists Holding Licenses in Other States

<table>
<thead>
<tr>
<th>Licenses held</th>
<th>All respondents</th>
<th>Civilian dentists</th>
<th>Out-of-State</th>
<th>Civilian dentists</th>
<th>Out-of-State</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Connecticut only</td>
<td>46</td>
<td>62</td>
<td>-</td>
<td>49</td>
<td></td>
</tr>
<tr>
<td>Licensed in 1 other State</td>
<td>41</td>
<td>31</td>
<td>68</td>
<td>45</td>
<td></td>
</tr>
<tr>
<td>Licensed in 2 other States</td>
<td>11</td>
<td>6</td>
<td>25</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Licensed in 3 or more other States</td>
<td>2</td>
<td>1</td>
<td>7</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

Civilian Dentists in Connecticut

Sources of Supply

Dental schools.--Connecticut's dentists are graduates of 49 dental schools in 24 States, the District of Columbia and Canada. However, four-fifths of the State's dentists are graduates of 14 dental schools located in 5 eastern States--Pennsylvania, Massachusetts, Maryland, New York, New Jersey--and the District of Columbia. Of these schools, Tufts University has made the largest single contribution, having trained 15 percent of the State's total dentist supply (Table 3). As a State, Pennsylvania, whose three dental schools have trained one-fourth of Connecticut's dentists, has been the primary source of supply.

Table 3.--School Awarding Dental Degree, by Year Awarded

<table>
<thead>
<tr>
<th>Dental school attended</th>
<th>Number of dentists</th>
<th>Year of graduation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>All years</td>
</tr>
<tr>
<td>Total number</td>
<td>1,7991/</td>
<td>-</td>
</tr>
</tbody>
</table>

(Percent distribution by school)

<table>
<thead>
<tr>
<th>Dental school attended</th>
<th>Number of dentists</th>
<th>Year of graduation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tufts</td>
<td>263</td>
<td>15</td>
</tr>
<tr>
<td>Maryland</td>
<td>260</td>
<td>14</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>232</td>
<td>13</td>
</tr>
<tr>
<td>Temple</td>
<td>190</td>
<td>11</td>
</tr>
<tr>
<td>Georgetown</td>
<td>179</td>
<td>10</td>
</tr>
<tr>
<td>New York</td>
<td>99</td>
<td>6</td>
</tr>
<tr>
<td>Columbia</td>
<td>67</td>
<td>4</td>
</tr>
<tr>
<td>Harvard</td>
<td>62</td>
<td>3</td>
</tr>
<tr>
<td>St. Louis</td>
<td>58</td>
<td>3</td>
</tr>
<tr>
<td>40 other schools</td>
<td>382</td>
<td>21</td>
</tr>
</tbody>
</table>

1/ Individual items in this and succeeding tables may not add to the totals shown due to the failure of some responding dentists to reply to all items on the questionnaire. Where percentages are shown, they are based on data supplied by dentists responding to the item. (See Appendix Table A.)
source of dentists for Connecticut. The University of Pennsylvania and Temple University dental schools together account for almost all of Pennsylvania's contribution to the Connecticut dentist supply. Two other eastern dental schools at Maryland University and Georgetown University have also contributed as much as 10 percent of the State's dentists. Of the remaining one-fifth of the Connecticut dentist supply, 19 percent were trained in dental schools in more distant States and one percent were trained in 5 Canadian dental schools.

Until World War II the dental school at the University of Maryland was the major training ground for Connecticut's dentists. The postwar decline of this school as a source of Connecticut's dentist supply is reflected in the fact that Maryland graduates account for only one out of every 14 dentists who are graduates of the past 10 years, compared with about one in 5 of those who graduated prior to World War II. This decline has been compensated for by increases from Georgetown, Temple, and Tufts. More than 45 percent of those graduating in the past 10 years are from these schools, as compared with 28 percent of the dentists who graduated prior to World War II.

Dentists relocating in Connecticut.--Of the survey respondents now in Connecticut, 232 reported that they had been professionally active as a civilian in another State or abroad immediately prior to assuming their present Connecticut location. Forty-nine percent of these dentists who have relocated in Connecticut came from the three adjacent States—New York, Massachusetts and Rhode Island. The remaining 51 percent came from 36 other States and the District of Columbia. None of these other States has contributed as many as ten dentists to the Connecticut supply. However, six States—Maryland, Virginia, California, New Jersey, Pennsylvania, and Texas—have each contributed more than five dentists.

Dentists relocating in Connecticut account for 13 percent of the State's total dentist supply. New York and Massachusetts have contributed the largest share of the total, 4 and 2 percent, respectively.

Personal Characteristics

Age.--The median age of reporting dentists in Connecticut was a relatively high 46.4 years. Nevertheless, there was almost an even distribution of the dentist supply in the age groups which generally represent the most active professional years. As the data in Table 4 indicate, the proportion of the total supply in each of the 5-year age intervals between the ages of 30 and 54 ranged only from 12 to 15 percent.
Table 4.—Age Distribution

<table>
<thead>
<tr>
<th>Age in 1965</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>1,799</td>
<td>100</td>
</tr>
<tr>
<td>Under 30</td>
<td>96</td>
<td>5</td>
</tr>
<tr>
<td>30 - 34</td>
<td>223</td>
<td>12</td>
</tr>
<tr>
<td>35 - 39</td>
<td>243</td>
<td>14</td>
</tr>
<tr>
<td>40 - 44</td>
<td>262</td>
<td>15</td>
</tr>
<tr>
<td>45 - 49</td>
<td>227</td>
<td>13</td>
</tr>
<tr>
<td>50 - 54</td>
<td>231</td>
<td>13</td>
</tr>
<tr>
<td>55 - 59</td>
<td>155</td>
<td>9</td>
</tr>
<tr>
<td>60 - 64</td>
<td>122</td>
<td>7</td>
</tr>
<tr>
<td>65 - 69</td>
<td>101</td>
<td>6</td>
</tr>
<tr>
<td>70 - 74</td>
<td>77</td>
<td>4</td>
</tr>
<tr>
<td>75 &amp; over</td>
<td>41</td>
<td>2</td>
</tr>
</tbody>
</table>

About one in 8 of all reporting dentists were 65 years old or over, and in this group were 118 dentists who were 70 years old or over including 41 who had reached the age of 75. Although this is a substantial representation among the respondents of dentists who were well along in years, the supply of older dentists in the State is actually somewhat greater than the survey findings indicate. The median age of dentists not responding in the survey was 51.9 years, or 5 years higher than for the respondents. Moreover, almost one-fourth of the nonrespondents were 65 or older, a proportion twice that among respondents.

Advanced training.—One year or more of advanced training has been completed by at least 536 dentists in Connecticut (Table 5). Although a larger number reported advanced clinical training than academic training, there are 14 reporting dentists who have earned a second doctorate, 56 who have earned a master's degree, and another 160 who have received no additional degrees but have completed one or more years of postgraduate study.

There is a growing tendency among Connecticut dentists to take advanced training after receiving their dental degree. Among dentists under 40 years of age, 35 percent reported that they had completed a year or more of advanced training. This percentage is only slightly higher than that recorded for dentists 40 to 54 years old, but is substantially greater than the 21 percent recorded for dentists 55 and over.
Table 5.--Advanced Training

<table>
<thead>
<tr>
<th>Highest level of training completed</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>1,799</td>
<td>100</td>
</tr>
<tr>
<td>With advanced training</td>
<td>536</td>
<td>30</td>
</tr>
<tr>
<td>Clinical training</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residency completed</td>
<td>87</td>
<td>5</td>
</tr>
<tr>
<td>Internship completed</td>
<td>307</td>
<td>17</td>
</tr>
<tr>
<td>Academic training</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ph.D., M.D., or other doctor's degree</td>
<td>14</td>
<td>1</td>
</tr>
<tr>
<td>M.A., M.S., or other master's degree</td>
<td>56</td>
<td>3</td>
</tr>
<tr>
<td>Postgraduate 1 year or more (no degree)</td>
<td>160</td>
<td>9</td>
</tr>
<tr>
<td>With no advanced training</td>
<td>1,263</td>
<td>70</td>
</tr>
</tbody>
</table>

The differences by age groups are even more striking when academic training is considered. More than one in every 5 dentists under 40 has had a year or more of graduate or postgraduate study, compared to one in every 10 dentists between 40 and 54, and only one in every 17 of those 55 and over. This pattern is less pronounced for clinical training, chiefly because many dentists in the younger age groups are still in the process of completing their internships or residencies.

Distribution and Current Status

Distribution of dentists.--The State has been divided into three regions for the presentation of data on the geographical distribution of dentists in Connecticut. Counties which share a metropolitan area have been grouped in the same region. For purposes of discussion these three regions have been named the Bridgeport-New Haven, Hartford, and New London regions.

The Bridgeport-New Haven region includes New Haven, Fairfield and Litchfield Counties which contain the Bridgeport, New Haven, Waterbury, Stamford, Norwalk and Meriden metropolitan areas. Hartford, Middlesex and Tolland Counties, which contain the Hartford and New Britain metropolitan areas, have been combined to form the Hartford region. Windham County, the only one in the State which does not have a metropolitan area, has been combined with New London County, which contains the New London metropolitan area, to form the New London region.

Connecticut's dentists are concentrated in only three of the State's eight counties (Table 6). Fairfield County alone has slightly more than one-third of the State's total dentist supply; Hartford and New Haven Counties each have about one-fourth of the supply. Because of this concentration,
the Bridgeport-New Haven region contains 63 percent of the State's dentists, the Hartford region has 31 percent, and the New London region only 6 percent.

Table 6.--Distribution by Region and County

<table>
<thead>
<tr>
<th>Region and county</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>All counties</td>
<td>1,799</td>
<td>100</td>
</tr>
<tr>
<td>Bridgeport-New Haven region</td>
<td>1,132</td>
<td>63</td>
</tr>
<tr>
<td>Fairfield</td>
<td>616</td>
<td>34</td>
</tr>
<tr>
<td>New Haven</td>
<td>446</td>
<td>25</td>
</tr>
<tr>
<td>Litchfield</td>
<td>70</td>
<td>4</td>
</tr>
<tr>
<td>Hartford region</td>
<td>560</td>
<td>31</td>
</tr>
<tr>
<td>Hartford</td>
<td>478</td>
<td>26</td>
</tr>
<tr>
<td>Middlesex</td>
<td>53</td>
<td>3</td>
</tr>
<tr>
<td>Tolland</td>
<td>29</td>
<td>2</td>
</tr>
<tr>
<td>New London region</td>
<td>107</td>
<td>6</td>
</tr>
<tr>
<td>New London</td>
<td>82</td>
<td>5</td>
</tr>
<tr>
<td>Windham</td>
<td>25</td>
<td>1</td>
</tr>
</tbody>
</table>

There are only slight differences in the average age of dentists in the three counties which together contain most of the State's dentist supply. The median ages of dentists in Fairfield and Hartford Counties are almost the same--45.2 and 45.8 years, respectively (Table 7). In New Haven County the median age is only slightly higher, 47.2 years. In addition, the distribution of dentists among the age groups in each of these three counties is almost the same.

Among the other five counties in the State age differences are much more pronounced. For example, 38 percent of the dentists in Tolland County, which is in the Hartford region, are under 35 years of age, and only 13 percent have reached the age of 55. The median age of dentists in Tolland County is only 39.4 years. By contrast, Windham County in the New London region has no reporting dentists under age 35, and 48 percent are 55 years old or over, including 30 percent who are at least 65. The median age of dentists in this county is 54.5 years.
### Table 7.--Median Age and Age Distribution, by Region and County

<table>
<thead>
<tr>
<th>Region and county</th>
<th>Median age</th>
<th>Under 35</th>
<th>35-39</th>
<th>40-44</th>
<th>45-49</th>
<th>50-54</th>
<th>55-59</th>
<th>60-64</th>
<th>65 &amp; over</th>
</tr>
</thead>
<tbody>
<tr>
<td>All counties</td>
<td>46.4</td>
<td>18</td>
<td>14</td>
<td>15</td>
<td>26</td>
<td>15</td>
<td>12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bridgeport-New Haven region</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fairfield</td>
<td>45.2</td>
<td>18</td>
<td>15</td>
<td>17</td>
<td>24</td>
<td>15</td>
<td>11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Haven</td>
<td>47.2</td>
<td>18</td>
<td>13</td>
<td>14</td>
<td>25</td>
<td>17</td>
<td>13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Litchfield</td>
<td>50.6</td>
<td>9</td>
<td>9</td>
<td>13</td>
<td>34</td>
<td>16</td>
<td>19</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hartford region</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hartford</td>
<td>45.8</td>
<td>19</td>
<td>15</td>
<td>14</td>
<td>25</td>
<td>14</td>
<td>13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Middlesex</td>
<td>49.0</td>
<td>17</td>
<td>13</td>
<td>12</td>
<td>31</td>
<td>21</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tolland</td>
<td>39.4</td>
<td>38</td>
<td>14</td>
<td>7</td>
<td>28</td>
<td>10</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>New London region</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New London</td>
<td>47.7</td>
<td>16</td>
<td>10</td>
<td>14</td>
<td>28</td>
<td>18</td>
<td>12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Windham</td>
<td>54.5</td>
<td></td>
<td>13</td>
<td>9</td>
<td>30</td>
<td>18</td>
<td>30</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Professional status.--Nearly all dentists reported that they are active in the profession (Table 8). Only 4 percent reported themselves either fully retired or engaged primarily in some type of nondental employment.

### Table 8.--Professional Activity Status

<table>
<thead>
<tr>
<th>Activity status</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>1,799</td>
<td>100</td>
</tr>
<tr>
<td>Active in profession</td>
<td>1,725</td>
<td>96</td>
</tr>
<tr>
<td>Inactive in profession</td>
<td></td>
<td></td>
</tr>
<tr>
<td>In nondental employment</td>
<td>74</td>
<td>4</td>
</tr>
<tr>
<td>Retired</td>
<td>68</td>
<td>4</td>
</tr>
</tbody>
</table>

* Less than one-half of one percent.

Although a majority of the retired dentists are in the older age groups, relatively few of the older dentists who responded to the survey consider themselves retired. Of the 219 reporting dentists 65 and over, only one-fourth reported themselves fully retired, but the proportion retired increases with age. Only 17 percent of the group 65 to 69 years old and 23 percent of those 70 to 74 years old are retired. In contrast,
44 percent of those 75 and over are no longer professionally active. These proportions may be low, however, since it is probable that a substantial number of the State's retired dentists elected not to return the survey questionnaire.

Active dentists in relation to population.--The dentist supply in relation to the population is more favorable in Connecticut than in most other States. There was one professionally active respondent for every 1,615 persons in the State in 1966 (Table 9).

Table 9.--Number of Persons Per Active Dentist

<table>
<thead>
<tr>
<th>Region and county</th>
<th>Professionally active dentists</th>
<th>Population</th>
<th>Persons per active dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td>All counties</td>
<td>1,725</td>
<td>2,785,700</td>
<td>1,615</td>
</tr>
<tr>
<td>Bridgeport-New Haven region</td>
<td>1,086</td>
<td>1,569,200</td>
<td>1,445</td>
</tr>
<tr>
<td>Fairfield</td>
<td>596</td>
<td>722,300</td>
<td>1,212</td>
</tr>
<tr>
<td>New Haven</td>
<td>429</td>
<td>716,600</td>
<td>1,670</td>
</tr>
<tr>
<td>Litchfield</td>
<td>61</td>
<td>130,200</td>
<td>2,136</td>
</tr>
<tr>
<td>Hartford region</td>
<td>538</td>
<td>938,500</td>
<td>1,744</td>
</tr>
<tr>
<td>Hartford</td>
<td>459</td>
<td>760,000</td>
<td>1,656</td>
</tr>
<tr>
<td>Middlesex</td>
<td>52</td>
<td>98,200</td>
<td>1,888</td>
</tr>
<tr>
<td>Tolland</td>
<td>27</td>
<td>80,300</td>
<td>2,974</td>
</tr>
<tr>
<td>New London region</td>
<td>101</td>
<td>278,000</td>
<td>2,752</td>
</tr>
<tr>
<td>New London</td>
<td>78</td>
<td>205,600</td>
<td>2,636</td>
</tr>
<tr>
<td>Windham</td>
<td>23</td>
<td>72,400</td>
<td>3,148</td>
</tr>
</tbody>
</table>

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The three counties in Connecticut which contain most of the dentist supply also have the greatest number of active dentists in relation to the population. Fairfield County, with only 1,212 persons for every active dentist, has the most favorable county ratio. The number of persons per dentist is not too much greater in Hartford and New Haven Counties—1,656 and 1,670, respectively. In the other 5 counties the persons-per-dentist ratios range from a rather favorable 1,888 in the Hartford region's Middlesex County to 3,148 for Windham County in the New London region. Because the ratios in each of the 3 most populous counties are very favorable, the persons-per-dentist ratios for the Bridgeport-New Haven and Hartford regions, which contain these 3 counties, are considerably more favorable than for the New London region where the most populous county, New London, has 2,636 persons per dentist.
Professional Activity

Current employment.--Almost all of the professionally active dentists in Connecticut are primarily engaged in private practice: 96 percent are self-employed and another 2 percent are employed by practicing dentists. The remaining 2 percent are either employed by governmental agencies or engaged in other dental employment. About one in every eight active dentists reported a secondary dental activity in addition to his principal professional employment. These dentists reported a variety of secondary activities, such as part-time employment in the private practices of other dentists, and in governmental or voluntary agencies.

Activity last year.--All but 6 of the 1,593 dentists who reported on their professional activity in Connecticut last year indicated they had provided care for patients. A few dentists reported more than one type of activity. Teaching in a dental or dental hygiene school was reported by 53 dentists and research activities were reported by 14. Time spent in some other dental activity, such as taking advanced training, was reported by 67 dentists. In terms of total professional time, however, patient care accounted for nearly 99 percent of the time spent in all activities.

Dentists reporting on time spent last year in providing patient care devoted an average of 48.0 weeks to this activity and worked an average of 39.8 hours per week. Slightly more than four-fifths reported spending 48 weeks or more at this activity (Table 10). These dentists spent longer hours providing patient care than did those who worked only part of the year, or less than 48 weeks. Seven of every 10 dentists spending 48 weeks or more in patient care worked 40 or more hours per week, while only 5 in every 10 of those working less than 48 weeks spent as much time per week in providing care.

Table 10.--Time Spent in Patient Care Last Year

<table>
<thead>
<tr>
<th>Hours spent in patient care</th>
<th>Percent of dentists providing care</th>
<th>Percent distribution by work week</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>100</td>
<td>45</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>48-49 weeks or more</td>
</tr>
<tr>
<td>48 hours or more</td>
<td>15</td>
<td>8</td>
</tr>
<tr>
<td>41-47 hours</td>
<td>19</td>
<td>9</td>
</tr>
<tr>
<td>40 hours</td>
<td>32</td>
<td>16</td>
</tr>
<tr>
<td>35-39 hours</td>
<td>20</td>
<td>7</td>
</tr>
<tr>
<td>Under 35 hours</td>
<td>14</td>
<td>5</td>
</tr>
</tbody>
</table>
Practice Characteristics

Limited practice.--Practices limited to a dental specialty are reported by 228 dentists in Connecticut (Table 11). Orthodontia and oral surgery are the two most frequently reported areas of limited practice. Fairfield County not only has the largest number of limited practitioners, but this count also has a larger proportion of dentists in limited practice than any of the other seven counties in the State.

Table 11.--Limited Practices

<table>
<thead>
<tr>
<th>County</th>
<th>Dentists with limited practices</th>
<th>Percent of dental practitioners</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>All specialty areas</td>
</tr>
<tr>
<td>All counties</td>
<td>228</td>
<td>14</td>
</tr>
<tr>
<td>Fairfield</td>
<td>98</td>
<td>18</td>
</tr>
<tr>
<td>New Haven</td>
<td>62</td>
<td>16</td>
</tr>
<tr>
<td>Hartford</td>
<td>56</td>
<td>13</td>
</tr>
<tr>
<td>Other 5 counties</td>
<td>12</td>
<td>6</td>
</tr>
</tbody>
</table>

Use of auxiliaries.--Seven of every 10 dental practitioners in Connecticut (i.e., dentists who spend any time working at the chair) report that they employ auxiliary personnel. The utilization of auxiliaries among practitioners in the individual counties varies only slightly. Almost 6 of every 10 practitioners employ at least one auxiliary full time (Table 12).

Table 12.--Dental Practitioners Employing One or More Auxiliaries by Type of Auxiliary

<table>
<thead>
<tr>
<th>Type of auxiliary</th>
<th>Dental practitioners</th>
<th>Percent of dental practitioners</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>With only</td>
</tr>
<tr>
<td></td>
<td></td>
<td>part-time person</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(or more)</td>
</tr>
<tr>
<td>Total</td>
<td>1,706</td>
<td>100</td>
</tr>
<tr>
<td>With one or more auxiliaries</td>
<td>1,138</td>
<td>70</td>
</tr>
<tr>
<td>With assistant</td>
<td>921</td>
<td>56</td>
</tr>
<tr>
<td>With hygienist</td>
<td>370</td>
<td>23</td>
</tr>
<tr>
<td>With laboratory technician</td>
<td>56</td>
<td>4</td>
</tr>
<tr>
<td>With secretary or receptionist</td>
<td>335</td>
<td>20</td>
</tr>
<tr>
<td>With other type of personnel</td>
<td>62</td>
<td>4</td>
</tr>
<tr>
<td>With no auxiliary</td>
<td>498</td>
<td>30</td>
</tr>
</tbody>
</table>
The dental assistant, the most frequently utilized auxiliary, is employed by 56 percent of the dentists. Dental hygienists are employed by 23 percent of the dentists. By far the majority of the dentists employing assistants do so on a full-time basis, while more than half of those who employ hygienists utilize these auxiliaries only part time. One practitioner in 5 employs a secretary or receptionist in his practice, but only one in 25 employs a laboratory technician.

Auxiliary utilization varies with the age of the dentist (Table 13). The peak utilization occurs among practitioners between the ages of 35 and 44. About 82 percent of the dentists in this age group employ auxiliaries. In contrast, auxiliaries are utilized by only 41 percent of the practitioners 65 years old or over. Among the younger dentists who are just starting their practices, 58 percent report the employment of one or more auxiliaries.

Table 13.--Dental Practitioners Employing Auxiliaries, by Age

<table>
<thead>
<tr>
<th>Age</th>
<th>Percent of age group</th>
<th>With auxiliaries</th>
<th>With assistants</th>
<th>With hygienists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 30</td>
<td>58</td>
<td>48</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>30 - 34</td>
<td>79</td>
<td>65</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>35 - 44</td>
<td>82</td>
<td>68</td>
<td>31</td>
<td></td>
</tr>
<tr>
<td>45 - 54</td>
<td>68</td>
<td>59</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>55 - 64</td>
<td>60</td>
<td>41</td>
<td>24</td>
<td></td>
</tr>
<tr>
<td>65 &amp; over</td>
<td>41</td>
<td>26</td>
<td>14</td>
<td></td>
</tr>
</tbody>
</table>

About 15 percent of the dental practitioners in Connecticut reported one or more vacant positions for auxiliary personnel. Of these dentists, about 35 percent reported vacancies for full-time dental hygienists, and 28 percent reported vacancies for full-time dental assistants. Three-fourths of the dentists reporting a vacancy already employ at least one auxiliary.

Weeks and hours worked.--The data in Table 14 demonstrate the greatly reduced professional activity among older dentists. More than 60 percent of the dentists under 45 years report working at least 48 weeks and at least 40 hours per week. The proportion of dentists who report working this amount of time decreases for each of the older age groups to a very low 28 percent among dentists 65 years or older. Probably an even smaller proportion of all dentists 65 and over actually work this amount of time since about two-fifths of these dentists, including those who are likely to be least active, did not report on time spent in their practices.

55
### Table 14.--Time Spent in Private Practice Last Year, by Age

<table>
<thead>
<tr>
<th>Age</th>
<th>Dentists reporting time spent in practice</th>
<th>Percent working</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percent of total</td>
</tr>
<tr>
<td>Total</td>
<td>1,260</td>
<td>81</td>
</tr>
<tr>
<td>Under 35</td>
<td>220</td>
<td>90</td>
</tr>
<tr>
<td>35-44</td>
<td>411</td>
<td>86</td>
</tr>
<tr>
<td>45-54</td>
<td>359</td>
<td>82</td>
</tr>
<tr>
<td>55-64</td>
<td>176</td>
<td>72</td>
</tr>
<tr>
<td>65 &amp; over</td>
<td>82</td>
<td>59</td>
</tr>
</tbody>
</table>

### Out-of-State Dentists

Connecticut licenses are maintained by at least 647 civilian dentists located in 33 States and the District of Columbia (Table 15). Three-fifths of the out-of-State dentists are located in two of the three adjacent States, primarily in New York, and to a lesser extent in Massachusetts. New Jersey and Florida are the only other States in which at least 5 percent of the out-of-State dentists are currently located.

### Table 15.--Out-of-State Civilian Dentists, by State

<table>
<thead>
<tr>
<th>Present location</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>647</td>
<td>100</td>
</tr>
<tr>
<td>Adjacent States</td>
<td>401</td>
<td>62</td>
</tr>
<tr>
<td>New York</td>
<td>306</td>
<td>47</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>84</td>
<td>13</td>
</tr>
<tr>
<td>Rhode Island</td>
<td>11</td>
<td>2</td>
</tr>
<tr>
<td>Other States</td>
<td>246</td>
<td>38</td>
</tr>
<tr>
<td>New Jersey</td>
<td>48</td>
<td>8</td>
</tr>
<tr>
<td>Florida</td>
<td>32</td>
<td>5</td>
</tr>
<tr>
<td>California</td>
<td>27</td>
<td>4</td>
</tr>
<tr>
<td>Maryland</td>
<td>20</td>
<td>3</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>15</td>
<td>2</td>
</tr>
<tr>
<td>District of Columbia</td>
<td>13</td>
<td>2</td>
</tr>
<tr>
<td>25 other States</td>
<td>91</td>
<td>14</td>
</tr>
</tbody>
</table>
Eight percent of the out-of-State respondents (52 dentists) reported that they had formerly been professionally active in Connecticut. One half of the dentists who have migrated out of Connecticut are now located in adjacent States, primarily New York, and the other half are in 14 more distant States and the District of Columbia.

December 1966.
### Appendix Table A.--Summary Statistics for Connecticut

<table>
<thead>
<tr>
<th>Description</th>
<th>Number of Dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>All licensed dentists</td>
<td>2,769</td>
</tr>
<tr>
<td>Respondents -- total dentists participating in survey</td>
<td>2,578</td>
</tr>
<tr>
<td>(number not reporting current location or military status - 1)</td>
<td></td>
</tr>
<tr>
<td>Civilian dentists in Connecticut</td>
<td>1,799</td>
</tr>
<tr>
<td>designated simply as &quot;dentists&quot; in text tables (number not reporting: age - 21, dental school attended - 7, and year of graduation - 55)</td>
<td></td>
</tr>
<tr>
<td>Professionally active dentists</td>
<td>1,725</td>
</tr>
<tr>
<td>Dental practitioners</td>
<td>1,706</td>
</tr>
<tr>
<td>In limited practice</td>
<td>228</td>
</tr>
<tr>
<td>Located in Connecticut last year:</td>
<td></td>
</tr>
<tr>
<td>Reported professional activity</td>
<td>1,593</td>
</tr>
<tr>
<td>Dentists providing patient care</td>
<td>1,587</td>
</tr>
<tr>
<td>Reported time spent in patient care</td>
<td>1,288</td>
</tr>
<tr>
<td>Dentists in private practice</td>
<td>1,558</td>
</tr>
<tr>
<td>Reported time spent in practice</td>
<td>1,260</td>
</tr>
<tr>
<td>Out-of-State dentists -- civilian respondents not located in Connecticut</td>
<td>647</td>
</tr>
<tr>
<td>Dentists on active duty in Armed Forces</td>
<td>131</td>
</tr>
</tbody>
</table>

---

1/ All responding dentists who currently work in Connecticut (excluding those in the Armed Forces) or who are retired and currently live in the State.

2/ All active civilian dentists currently in Connecticut--excludes 68 dentists who are fully retired and 6 who are engaged principally in a non-dental activity.

3/ All dentists practicing at the chair, that is, dentists who work as clinicians either as primary or secondary activity.

4/ Dentists who reported they limited their practice to a dental specialty.

5/ Dentists located in Connecticut last year who indicated type(s) of activity in which they engaged.

6/ All dentists who engaged in patient care last year, either as a primary or a secondary activity.

7/ Dentists reporting both hours and weeks spent in patient care last year.

8/ Dentists who reported they were primarily self-employed both currently and last year.

9/ Dentists reporting both hours and weeks spent last year as a self-employed dentist.
DENTISTS LICENSED IN DELAWARE

During the 1966 registration period, a total of 223 dentists registered with the Delaware State Board of Dental Examiners. A total of 216 dentists responded to the survey, 97 percent of all those registered. More than 9 in every 10 of the responding dentists are civilians located in Delaware, 7 percent are civilians located in other States, and 2 percent are on active duty with the Armed Forces.

<table>
<thead>
<tr>
<th>Location and Military Status of Dentists Licensed in Delaware</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location and military status</td>
</tr>
<tr>
<td>Total licensed</td>
</tr>
<tr>
<td>Respondents</td>
</tr>
<tr>
<td>Nonrespondents</td>
</tr>
<tr>
<td>Respondents</td>
</tr>
<tr>
<td>Civilians in Delaware</td>
</tr>
<tr>
<td>Civilians in another State</td>
</tr>
<tr>
<td>On active duty with Armed Forces</td>
</tr>
</tbody>
</table>

Multiple licensure is quite common in Delaware, with two of every three dentists licensed in the State (65 percent) holding more than one license. Of those dentists located in Delaware, 62 percent hold more than one license, with 51 percent licensed in one other State and 11 percent licensed in two or more other States. Among dentists registered in Delaware but located out of State, about one-third hold two or more licenses in addition to their Delaware license.

Almost four-fifths of the out-of-State licenses are held in adjacent States, with 64 percent in Pennsylvania and 15 percent in Maryland and New Jersey. The remainder are held in 15 other States and the District of Columbia.
DENTAL SCHOOL ATTENDED

Almost three-fourths (73 percent) of Delaware's dentists graduated from three dental schools in the neighboring State of Pennsylvania. Temple University, the principal contributor, has supplied more than half (51 percent) of the dental force, while the University of Pennsylvania has provided another 19 percent. The only other school with a significant contribution is the University of Maryland which has graduated 15 percent of Delaware's dentists.

Dental School Attended and Year of Graduation for Dentists in Delaware

<table>
<thead>
<tr>
<th>Dental school attended</th>
<th>Number of dentists</th>
<th>Year of graduation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>All</td>
</tr>
<tr>
<td>Total number</td>
<td>196</td>
<td>-</td>
</tr>
<tr>
<td>(Percent distribution by school)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temple University</td>
<td>101</td>
<td>51</td>
</tr>
<tr>
<td>University of Pennsylvania</td>
<td>37</td>
<td>19</td>
</tr>
<tr>
<td>University of Maryland</td>
<td>29</td>
<td>15</td>
</tr>
<tr>
<td>Georgetown University</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>University of Pittsburgh</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>13 other schools</td>
<td>16</td>
<td>8</td>
</tr>
</tbody>
</table>

1/ Year of graduation not available for one dentist.

A fairly substantial proportion of Delaware's dentists are recent dental school graduates. Two-fifths have completed their dental education since 1955, compared to slightly over one-fourth who received their dental degrees prior to World War II. There has been some change in the relative contribution of the various schools to the State's dentist supply. The proportionate contributions of Temple University and the University of Pennsylvania have increased over the years, while that of the University of Maryland has shown a notable decrease.
Advanced Training

In Delaware a high proportion of survey respondents--approximately three-fifths, or 120 dentists--reported that they had completed one year or more of advanced training after receiving their dental degrees. The vast majority of these dentists reported advanced clinical training, including 103 who completed internships and an additional 9 who completed residencies. Of 26 dentists who reported advanced academic training, 13 had earned a master's degree and another 13 had received no additional degrees but had completed one or more years of postgraduate study. Eighteen dentists had completed both clinical and academic training.

Advanced Training Completed by Delaware Dentists

<table>
<thead>
<tr>
<th>Highest level of training completed</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number</td>
<td>196</td>
<td>100</td>
</tr>
<tr>
<td>With advanced training</td>
<td>120</td>
<td>61</td>
</tr>
<tr>
<td>With no advanced training</td>
<td>76</td>
<td>39</td>
</tr>
<tr>
<td>Clinical training</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residency completed</td>
<td>9</td>
<td>5</td>
</tr>
<tr>
<td>Internship completed</td>
<td>103</td>
<td>53</td>
</tr>
<tr>
<td>Academic training</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M.A., M.S., or other master's degree</td>
<td>26</td>
<td>14</td>
</tr>
<tr>
<td>Postgraduate 1 year or more (no degree)</td>
<td>13</td>
<td>7</td>
</tr>
</tbody>
</table>

Additional education beyond receipt of the dental degree is more common among dentists in the younger age groups. Of dentists under 40 years of age, 68 percent reported that they had completed some form of advanced training. This percentage is slightly greater, 72 percent, among dentists 40 to 54 years of age. Of the dentists who are 55 or older, however, only 28 percent reported the completion of one or more years of advanced training. Considering internship training alone, 60 percent of the dentists under 40, and 64 percent of the dentists 40 to 54, have completed an internship, compared to 15 percent of the dentists in the older age group.
DISTRIBUTION OF DENTISTS

More than four-fifths, 159, of the 196 responding dentists in Delaware are located in New Castle County, which comprises the Delaware portion of the interstate Wilmington metropolitan area. The remaining one-fifth of the dentists are located in the two nonmetropolitan counties of the State. Of these counties, Sussex County has the largest dental force, 22 dentists, or 11 percent of the State supply, while Kent County, with 15 dentists, has only 8 percent.

<table>
<thead>
<tr>
<th>County</th>
<th>All dentists</th>
<th>Professionally active dentists</th>
<th>Population (in 000's)</th>
<th>1/Persons per active dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td>All counties</td>
<td>196</td>
<td>195</td>
<td>501.3</td>
<td>2,571</td>
</tr>
<tr>
<td>Wilmington area 2/</td>
<td>159</td>
<td>159</td>
<td>346.7</td>
<td>2,181</td>
</tr>
<tr>
<td>New Castle County</td>
<td>159</td>
<td>159</td>
<td>346.7</td>
<td>2,181</td>
</tr>
<tr>
<td>Nonmetropolitan counties</td>
<td>37</td>
<td>36</td>
<td>154.6</td>
<td>4,294</td>
</tr>
<tr>
<td>Sussex County</td>
<td>22</td>
<td>22</td>
<td>78.2</td>
<td>3,555</td>
</tr>
<tr>
<td>Kent County</td>
<td>15</td>
<td>14</td>
<td>76.4</td>
<td>5,457</td>
</tr>
</tbody>
</table>

2/ Defined by the U.S. Bureau of the Budget as the Delaware part of the interstate Standard Metropolitan Statistical Area of Wilmington.

Almost all, 195, of the dentists in Delaware are active in their profession, giving the State one professionally active dentist for every 2,571 persons. There is one dentist for every 2,181 persons in New Castle County, while the nonmetropolitan counties have a considerably less favorable ratio of 4,294 persons per dentist. Of the nonmetropolitan counties, Sussex County has the best ratio, with 3,555 persons for every dentist. In Kent County, the ratio is substantially less favorable--5,427 persons per dentist.
Dentists in Delaware are rather young, as a group, with a median age of 41.0 years. Approximately one-third of the State's dentists are under 35, while only one-fifth are 55 years of age or over, including just 6 percent who have reached the age of 65. Almost half (46 percent) of all dentists in the State are in the age group 35 through 54, with one-fourth between the ages of 35 and 44.

<table>
<thead>
<tr>
<th>Age in 1965</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
<th>Cumulative percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 30</td>
<td>21</td>
<td>11</td>
<td>11</td>
</tr>
<tr>
<td>30 - 34</td>
<td>46</td>
<td>23</td>
<td>34</td>
</tr>
<tr>
<td>35 - 39</td>
<td>26</td>
<td>13</td>
<td>47</td>
</tr>
<tr>
<td>40 - 44</td>
<td>26</td>
<td>13</td>
<td>60</td>
</tr>
<tr>
<td>45 - 49</td>
<td>21</td>
<td>11</td>
<td>71</td>
</tr>
<tr>
<td>50 - 54</td>
<td>17</td>
<td>9</td>
<td>80</td>
</tr>
<tr>
<td>55 - 59</td>
<td>13</td>
<td>7</td>
<td>87</td>
</tr>
<tr>
<td>60 - 64</td>
<td>14</td>
<td>7</td>
<td>94</td>
</tr>
<tr>
<td>65 - 69</td>
<td>7</td>
<td>4</td>
<td>98</td>
</tr>
<tr>
<td>70 &amp; over</td>
<td>5</td>
<td>2</td>
<td>100</td>
</tr>
</tbody>
</table>

Dentists in the Wilmington area (New Castle County) have a median age of 39.5 years, about 6 years younger, on the average, than dentists in the two nonmetropolitan counties, where the median age is 45.8 years. Thirty-seven percent of the dentists in New Castle County are under 35 years of age, and only 16 percent are 55 or older. In contrast, 22 percent of the dentists in the nonmetropolitan counties are under 35, while more than a third (35 percent) are 55 years of age or over.
UTILIZATION OF AUXILIARIES

Well over four-fifths of the dental practitioners in Delaware (i.e., dentists who spend any time working at the chair) report that they employ some type of auxiliary personnel. Dental assistants, the most frequently employed auxiliary, are utilized by 72 percent of the dentists, including 64 percent who employ at least one assistant on a full-time basis. Almost 40 percent of the practitioners employ dental hygienists, most often on a part-time basis. Secretaries or receptionists are employed by 51 percent of the practitioners, with more than three-fourths of these dentists utilizing such personnel full time.

Delaware Dentists Employing Auxiliaries, by Type of Auxiliary

<table>
<thead>
<tr>
<th>Type of auxiliary employed</th>
<th>Dental practitioners</th>
<th>Percent of dental practitioners</th>
<th>With one full-time employee (or more)</th>
<th>With only part-time employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>194</td>
<td>100</td>
<td>78</td>
<td>8</td>
</tr>
<tr>
<td>One or more auxiliaries</td>
<td>161</td>
<td>86</td>
<td>78</td>
<td>8</td>
</tr>
<tr>
<td>Assistant</td>
<td>135</td>
<td>72</td>
<td>64</td>
<td>8</td>
</tr>
<tr>
<td>Hygienist</td>
<td>73</td>
<td>39</td>
<td>14</td>
<td>25</td>
</tr>
<tr>
<td>Laboratory technician</td>
<td>18</td>
<td>10</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Secretary or receptionist</td>
<td>96</td>
<td>51</td>
<td>40</td>
<td>11</td>
</tr>
<tr>
<td>Other type of personnel</td>
<td>11</td>
<td>6</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>No auxiliary</td>
<td>27</td>
<td>14</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

1/ Includes 6 dentists who did not report on auxiliary utilization.

The use of auxiliaries varies with the age of the dentist and is less common among dentists in the older age groups. Ninety percent of the dentists under 55 years of age reported the employment of at least one auxiliary. The proportion utilizing auxiliaries decreases to 70 percent among dentists 55 to 64 years of age and to 60 percent among dentists 65 and over.

Some 18 percent of the dentists reported one or more openings for auxiliary personnel. Of these dentists, one-third indicated a need for full-time hygienists, and one-fifth reported vacancies for full-time assistants. Almost all of the dentists reporting vacancies already employ at least one auxiliary.
OTHER SURVEY FINDINGS

Of the 195 professionally active dentists in Delaware, 191, or 97 percent, are engaged in private practice. Ninety-three percent are self-employed and 4 percent are employed by other dentists. The remaining 3 percent are either employed by the State or local government or engaged in other dental activities, such as taking advanced training.

Ten percent of the active dentists reported at least one part-time dental activity in addition to their principal employment. Employment in State or local health departments was the most frequently reported secondary activity. Teaching at a dental school was the next most frequently reported part-time employment.

Dentists who reported on time spent in providing patient care during the year preceding the survey devoted an average of 47.8 weeks to this activity and worked an average of 37.7 hours per week.

About 14 percent of the dental practitioners reported that they limit their practices to a dental specialty, primarily orthodontics or oral surgery. Almost all of the dentists who reported limiting their practice are located in the Wilmington metropolitan area.

Only 8 percent of the dentists in Delaware have practiced as civilian dentists in another State immediately prior to assuming their present Delaware location. Most of these dentists came from Pennsylvania.

July 1968.
Of the 975 dentists who registered with the District of Columbia Board of Dental Examiners in 1965, 964 completed the survey questionnaire, resulting in a response rate of 99 percent (Table 1). Only 68 percent of these respondents are civilian dentists who reported their primary office location as Washington, D.C., while another 29 percent are civilians who reported their office location outside the District of Columbia. Two-thirds of this latter group maintain their dental offices in the adjacent states of Maryland and Virginia, the overwhelming majority in counties which constitute the Maryland and Virginia portions of the Washington, D.C., metropolitan area. The other civilian dentists outside the District are located in 24 more distant states, the largest numbers in California, Florida and New York. The remaining three percent of the dentists licensed in the District are on active duty with the armed forces.

Table 1.--Primary Office Location and Military Status of Dentists Licensed in the District of Columbia

<table>
<thead>
<tr>
<th>Location and military status</th>
<th>All dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>975</td>
<td>100</td>
</tr>
<tr>
<td>Respondents</td>
<td>964</td>
<td>99</td>
</tr>
<tr>
<td>Nonrespondents</td>
<td>11</td>
<td>1</td>
</tr>
<tr>
<td>Respondents</td>
<td>964</td>
<td>100</td>
</tr>
<tr>
<td>Civilians in the District of Columbia</td>
<td>655</td>
<td>68</td>
</tr>
<tr>
<td>Civilians located elsewhere</td>
<td>275</td>
<td>29</td>
</tr>
<tr>
<td>On active duty with armed forces</td>
<td>34</td>
<td>3</td>
</tr>
</tbody>
</table>

Almost 70 percent of the dentists who responded to the survey hold a license to practice dentistry in at least one state in addition to the District of Columbia. Fifty-five percent of the civilian dentists maintaining their dental office in Washington are also licensed in one or more states—37 percent in one state and only 18 percent in two or more states. By comparison, 38 percent of the civilian dentists who hold a license in the District of Columbia, but are currently maintaining their primary office elsewhere hold licenses in at least two states in addition to the District.

Respondents hold over 1900 licenses, an average of almost two per dentist. More than one-half of the licenses outside the District are held in the neighboring states of Maryland and Virginia, and an additional 22 percent are maintained in New York, New Jersey, Pennsylvania and Ohio. The remainder are held in 34 other states and Puerto Rico.
Civilian Dentists in the District of Columbia

Sources of Supply

Dental schools.--Dental schools located in the District of Columbia have trained four-fifths of the District's total dentist supply (Table 2). Georgetown University has made the largest contribution, accounting for more than one-half of the total dental force, while Howard University with a smaller contribution, has trained about one-fourth of the dentists. George Washington University graduated 4 percent of the dentists in Washington, D.C. even though its dental school closed in 1921. The remaining one-fifth of the District's dentists received their dental degrees from 27 schools in other parts of the Nation. Among these schools, the University of Maryland contributed the largest number of dentists, 4 percent of the total supply. The only other schools to contribute as much as 2 percent of Washington's dentists are Temple and Northwestern Universities and the University of Pennsylvania.

Table 2.--School Awarding Dental Degree, by Year Awarded

<table>
<thead>
<tr>
<th>Dental school attended</th>
<th>Number of dentists</th>
<th>Year of graduation</th>
<th>1941-1955</th>
<th>1955 or earlier</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>All years</td>
<td>After</td>
<td>1941-1955</td>
</tr>
<tr>
<td>Total number</td>
<td>655</td>
<td>-</td>
<td>131</td>
<td>220</td>
</tr>
<tr>
<td>(Percent distribution by school)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Georgetown</td>
<td>344</td>
<td>52</td>
<td>29</td>
<td>62</td>
</tr>
<tr>
<td>Howard</td>
<td>157</td>
<td>24</td>
<td>55</td>
<td>21</td>
</tr>
<tr>
<td>Maryland</td>
<td>27</td>
<td>4</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>George Washington (Extinct)</td>
<td>26</td>
<td>4</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Temple</td>
<td>12</td>
<td>2</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Northwestern</td>
<td>10</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>10</td>
<td>2</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>23 other schools</td>
<td>67</td>
<td>10</td>
<td>11</td>
<td>6</td>
</tr>
</tbody>
</table>

1/ Individual items in this and succeeding tables may not add to the totals shown due to the failure of some responding dentists to reply to all items on the questionnaire. For each item where percentages are shown, they are based on data supplied by dentists responding to the item. (See Appendix Table.)

One-fifth of the District of Columbia's dentists graduated from dental school within the last 10 years. By comparison 45 percent received their dental degrees in 1940 or earlier. In recent years, Howard University has replaced Georgetown University as the primary source of the District's dentist supply. The contribution of Howard University has increased from 12 percent of the graduates before World War II to 55 percent of those who completed their dental education since 1955.
Dentists relocating in the District of Columbia.--One in every seven responding dentists who currently maintain a dental office in the District of Columbia practiced elsewhere as a civilian dentist immediately prior to assuming his present location. Thirty-four of the 92 in-migrant dentists came from the neighboring states of Maryland and Virginia. Another 12 dentists moved their dental practice to Washington from the State of New York. The remainder came from 22 other states or Puerto Rico. More than one-third of the immigrants moved their offices to the District during the last 10 years.

Personal Characteristics

Age and sex.--The median age of dentists in Washington, D. C., is 49.7 years. Twenty-seven percent of all dentists are between 35 and 44 years of age, and a full one-fourth are between 45 and 54 (Table 3). The proportion of dentists 55 years of age or older, 37 percent, is more than three times as great as the proportion under 35. Seventeen percent of the total, or 111 dentists, are 55 years old or over, and 68 have reached the age of 70.

Fourteen of the 655 dentists in Washington are women. Because they are few in number, data are not presented separately for them.

<table>
<thead>
<tr>
<th>Age in 1965</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
<th>Cumulative percent distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>655</td>
<td>100</td>
<td>-</td>
</tr>
<tr>
<td>Under 30</td>
<td>23</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>30 - 34</td>
<td>51</td>
<td>8</td>
<td>11</td>
</tr>
<tr>
<td>35 - 39</td>
<td>69</td>
<td>11</td>
<td>22</td>
</tr>
<tr>
<td>40 - 44</td>
<td>102</td>
<td>16</td>
<td>38</td>
</tr>
<tr>
<td>45 - 49</td>
<td>86</td>
<td>13</td>
<td>51</td>
</tr>
<tr>
<td>50 - 54</td>
<td>81</td>
<td>12</td>
<td>63</td>
</tr>
<tr>
<td>55 - 59</td>
<td>63</td>
<td>10</td>
<td>73</td>
</tr>
<tr>
<td>60 - 64</td>
<td>66</td>
<td>10</td>
<td>83</td>
</tr>
<tr>
<td>65 - 69</td>
<td>43</td>
<td>7</td>
<td>90</td>
</tr>
<tr>
<td>70 - 74</td>
<td>44</td>
<td>7</td>
<td>97</td>
</tr>
<tr>
<td>75 &amp; over</td>
<td>24</td>
<td>3</td>
<td>100</td>
</tr>
</tbody>
</table>

Advanced training.--Almost two-fifths of the survey respondents, or 246 dentists, reported they had completed one year or more of advanced training beyond their dental degree (Table 4). Of the 188 dentists with advanced clinical training, 46 completed a residency and 142 an internship. Among the 107 dentists who reported advanced academic training, 55 earned a master's or other advanced degree and another 52 received no additional degrees but
completed one or more years of postgraduate study. These figures include 49 dentists who completed both clinical and academic training.

Table 4.--Advanced Training

<table>
<thead>
<tr>
<th>Highest level of training completed</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>655</td>
<td>100</td>
</tr>
<tr>
<td>With advanced training</td>
<td>246</td>
<td>36</td>
</tr>
<tr>
<td>Clinical training only</td>
<td>139</td>
<td>21</td>
</tr>
<tr>
<td>Academic training only</td>
<td>58</td>
<td>9</td>
</tr>
<tr>
<td>Both clinical and academic training</td>
<td>49</td>
<td>8</td>
</tr>
<tr>
<td>With no advanced training</td>
<td>409</td>
<td>62</td>
</tr>
</tbody>
</table>

Additional education beyond receipt of the dental degree is more common among dentists in the younger age groups. Even though many dentists under age 40 are still serving internships or residencies, or are taking graduate or postgraduate courses, 45 percent report that they have completed some form of advanced training. This percentage is only slightly greater than the 43 percent reporting advanced training among dentists 40 to 54 years old. It is considerably greater, however, than the 28 percent recorded for dentists 55 years of age and over. The most striking contrast is in the area of academic training. Twenty-two percent of the dentists under 40 have completed a year or more of graduate or postgraduate study, compared with 15 percent of the dentists in the older age groups.

Professional Activity

Current status and employment.--Of the 655 respondents in the District of Columbia, 639, or 98 percent reported that they were active in the dental profession. The other 16 dentists regard themselves as fully retired. Based on this count, there is one professionally active dentist for every 1,252 persons in Washington.

Eighty-four percent of the professionally active dentists are primarily engaged in private practice, with 82 percent self-employed and two percent employed by another dentist (Table 5). Another 8 percent of the District's dentists are on the staffs of the dental schools at Georgetown and Howard Universities. The remaining 8 percent are either employed by the local government or other agencies such as Group Health Association, or are engaged in other dental activities, including advanced clinical or academic training.
Table 5.--Current Employment of Professionally Active Dentists

<table>
<thead>
<tr>
<th>Type of employment</th>
<th>Principal employment</th>
<th>Secondary dental employment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number employed</td>
<td>Percent</td>
</tr>
<tr>
<td>Total</td>
<td>639</td>
<td>100</td>
</tr>
<tr>
<td>Self-employed</td>
<td>527</td>
<td>82</td>
</tr>
<tr>
<td>Employed by other dentist</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>Staff of dental school</td>
<td>51</td>
<td>8</td>
</tr>
<tr>
<td>Local government</td>
<td>26</td>
<td>4</td>
</tr>
<tr>
<td>Voluntary agency</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Other dental employment</td>
<td>25</td>
<td>4</td>
</tr>
</tbody>
</table>

1/ Individual items add to more than total because some dentists reported more than one type of secondary employment.

More than one in every five active dentists reported one or more secondary dental activities in addition to his principal professional employment. Of the 146 dentists reporting secondary employment, 51 said they had part-time faculty appointments at the local dental schools. Self-employment was reported by 42 dentists as their secondary dental activity, and 9 dentists reported part-time employment in the private practices of other dentists. A variety of other secondary activities were reported, including employment in government or voluntary agencies and providing dental services in clinics or hospitals.

Activity last year.--Of all dentists reporting their professional activity in the District last year, 93 percent said they provided care to patients. These dentists spent 86 percent of the total reported professional time in providing patient care. Sixteen percent of the dentists reported they spent some time in teaching and 3 percent reported some time in research but only 9 percent of the total professional time was spent in these activities. While 6 percent of the dentists spent time in some other dental activity, such as taking additional training, these activities account for only 3 percent of the total professional time.

Weeks and hours worked.--Dentists reporting on time spent last year in providing patient care devoted an average of 46.7 weeks to this activity and worked an average of 37.0 hours per week. About two-fifths of the dentists spent at least 40 hours per week at this activity for 48 weeks or more during the year.

The amount of time worked by dentists in private practice last year declined sharply with age. Almost one-half of the dentists under 40 years of age report working at least 48 weeks and at least 40 hours per week. The proportion working this amount of time declines to 30 percent for those between 55 and 64, and decreases to only 18 percent among those 65 years old or over.
Practice Characteristics

Limited practices.--Among dentists reporting type of practice, 74, or about one in every eight, limit their practices to a dental specialty. Over three-fifths of these dentists reported limiting their practices to one of two specialty areas--35 percent to orthodontics and 27 percent to oral surgery. The next most frequently reported areas of limited practice are periodontics and prosthodontics.

Use of auxiliaries.--About 71 percent of the dental practitioners in Washington (i.e., dentists who spend any time working at the chair) report that they employ auxiliary personnel (Table 6). The majority, 61 percent, of the practitioners employ at least one auxiliary full time, while only 10 percent employ part-time auxiliaries exclusively. Dental assistants are the most frequently employed auxiliary, usually on a full time basis. Approximately 62 percent of the practitioners employ an assistant including 53 percent who do so full time. Secretaries or receptionists are employed by 23 percent of the dentists, and a majority of these dentists employ at least one of them full time. Twenty-one percent of the dentists employ dental hygienists and 7 percent employ technicians. A majority of the dentists who employ hygienists or technicians do so only part time. About 17 percent of the dentists in the District reported one or more vacant positions for auxiliary personnel. Of these dentists, about 45 percent reported vacancies for full-time dental assistants, and 21 percent reported vacancies for full-time dental hygienists.

Table 6.--Dental Practitioners Employing Auxiliaries, By Type of Auxiliary

<table>
<thead>
<tr>
<th>Type of auxiliary</th>
<th>Dental practitioners</th>
<th>Percent of total practitioners with one or more auxiliaries</th>
<th>With one full-time employee</th>
<th>Part-time employee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>611</td>
<td>100</td>
<td>61</td>
<td>10</td>
</tr>
<tr>
<td>With one or more auxiliaries</td>
<td>426</td>
<td>71</td>
<td>61</td>
<td>10</td>
</tr>
<tr>
<td>With assistant</td>
<td>373</td>
<td>62</td>
<td>53</td>
<td>9</td>
</tr>
<tr>
<td>With hygienist</td>
<td>128</td>
<td>21</td>
<td>7</td>
<td>14</td>
</tr>
<tr>
<td>With laboratory technician</td>
<td>42</td>
<td>7</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>With secretary or receptionist</td>
<td>137</td>
<td>23</td>
<td>16</td>
<td>7</td>
</tr>
<tr>
<td>With other type personnel</td>
<td>25</td>
<td>4</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>With no auxiliary</td>
<td>174</td>
<td>29</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

The use of auxiliaries varies with the age of the dentist. Peak utilization--about 86 percent--occurs among practitioners between the ages of 45 and 54.
contrast, auxiliaries are utilized by only 46 percent of the practitioners 65 years old or over. Among the dentists under 35, many of whom are just starting their practices, 68 percent report the employment of one or more auxiliaries.
APPENDIX TABLE: Summary Statistics Used in Text

<table>
<thead>
<tr>
<th>Description</th>
<th>Number of Dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total dentists licensed in the District of Columbia</td>
<td>975</td>
</tr>
<tr>
<td>Respondents -- total dentists participating in survey</td>
<td>964</td>
</tr>
<tr>
<td>Civilian dentists in the District(^1) (designated simply as &quot;dentists&quot; in text tables)</td>
<td>655</td>
</tr>
<tr>
<td>(Number not reporting: age - 3, year of graduation - 9, dental school attended - 2)</td>
<td></td>
</tr>
<tr>
<td>Professionally active dentists(^2)</td>
<td>639</td>
</tr>
<tr>
<td>Dental practitioners(^3)</td>
<td>611</td>
</tr>
<tr>
<td>In limited practice(^4)</td>
<td>74</td>
</tr>
<tr>
<td>Located in the District last year:</td>
<td></td>
</tr>
<tr>
<td>Reported professional activity(^5)</td>
<td>603</td>
</tr>
<tr>
<td>Dentists providing patient care(^6)</td>
<td>560</td>
</tr>
<tr>
<td>Reported time spent in patient care(^7)</td>
<td>491</td>
</tr>
<tr>
<td>Dentists in private practice(^8)</td>
<td>493</td>
</tr>
<tr>
<td>Reported time spent in practice(^9)</td>
<td>426</td>
</tr>
<tr>
<td>Civilian respondents not located in the District</td>
<td>775</td>
</tr>
<tr>
<td>Dentists on active duty in armed forces</td>
<td>34</td>
</tr>
<tr>
<td>Nonrespondents -- licensed dentists not participating in survey</td>
<td>17</td>
</tr>
</tbody>
</table>

\(^1\) All responding dentists who currently work in the District (excluding those in the armed forces) or who are retired and currently live in the District.

\(^2\) All active civilian dentists currently in the District -- excludes 16 dentists who are fully retired.

\(^3\) All dentists practicing at the chair, that is, dentists who work as clinicians either as primary or secondary activity.

\(^4\) Dentists who reported they limited their practice to a dental specialty.

\(^5\) Dentists located in the District last year who indicated type(s) of activity in which they engaged.

\(^6\) All dentists who engaged in patient care last year, either as a primary or a secondary activity.

\(^7\) Dentists reporting both hours and weeks spent in patient care last year.

\(^8\) Dentists who reported they were primarily self-employed both currently and last year.

\(^9\) Dentists reporting both hours and weeks spent last year as a self-employed dentist.
DENTISTS LICENSED IN FLORIDA

During the 1965 registration period, 3,303 dentists registered with the Florida State Board of Dental Examiners (Table 1). All but 29 dentists—less than one percent of those registering—completed the survey questionnaire. However, among those responding, only 2,272 dentists, or

Table 1.—Location and Military Status of Dentists Licensed in Florida

<table>
<thead>
<tr>
<th>Location and military status</th>
<th>All dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>3,303</td>
<td>100</td>
</tr>
<tr>
<td>Respondents</td>
<td>3,274</td>
<td>99</td>
</tr>
<tr>
<td>Nonrespondents</td>
<td>29</td>
<td>1</td>
</tr>
<tr>
<td>Respondents</td>
<td>3,274</td>
<td>100</td>
</tr>
<tr>
<td>Civilians in Florida</td>
<td>2,272</td>
<td>69</td>
</tr>
<tr>
<td>Civilians in another state</td>
<td>770</td>
<td>23</td>
</tr>
<tr>
<td>On active duty with Armed Forces</td>
<td>214</td>
<td>7</td>
</tr>
<tr>
<td>Not reported</td>
<td>18</td>
<td>1</td>
</tr>
</tbody>
</table>

69 percent, are actually located in Florida. The remainder—about 1,000 dentists in all—are either out-of-state or serving in the armed services. Approximately 23 percent of the respondents are civilians located in another state or abroad, and another 7 percent are on active duty with the Armed Forces.

Of all the dentists responding, only 19 percent are licensed solely in Florida (Table 2). The majority—17 percent—are licensed in just one other state, but 16 percent hold licenses in two other states, and 3 percent are licensed in at least three additional states. Taken altogether, the licenses held by respondents number more than 6,600—an average of over two per dentist. All out-of-state dentists, simply by virtue of the fact that they are located in another state while still maintaining a Florida license, are multiple license holders. However, multiple licensure is almost as common among dentists located in Florida as it is among
Table 2.--Percent of Dentists Holding Licenses in Other States

<table>
<thead>
<tr>
<th>Licenses held</th>
<th>All respondents</th>
<th>Civilian dentists</th>
<th>Armed Forces</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Florida only</td>
<td>19</td>
<td>25</td>
<td>-</td>
</tr>
<tr>
<td>Licensed in 1 other state</td>
<td>62</td>
<td>60</td>
<td>64</td>
</tr>
<tr>
<td>Licensed in 2 other states</td>
<td>16</td>
<td>13</td>
<td>27</td>
</tr>
<tr>
<td>Licensed in 3 or more states</td>
<td>3</td>
<td>2</td>
<td>9</td>
</tr>
</tbody>
</table>

those outside the state. Three-fourths of all Florida dentists are licensed in at least one additional state. Sixty percent hold one other license, 13 percent hold two additional and 2 percent hold three or more other licenses.

Civilian Dentists in Florida

Sources of Supply

Dentists relocating in Florida.--One in every 4 dentists now in Florida was located in another state or abroad immediately prior to assuming his present Florida location (Table 3). Dentists have moved to Florida from 41 states and the District of Columbia as well as from Puerto Rico and several foreign countries. The largest number from any one state are from Georgia, but these ex-Georgians represent only about three percent of all dentists in Florida. New York, Ohio, and Illinois, the three next largest sources of in-migrants, have each contributed another two percent of the state's dentist supply.

Although no one state or area accounts for a particularly large proportion of the total, more dentists have come to Florida from other states in the South than from any other region. About 4 in-migrant dentists in every 10 were previously located in another Southern state. Three in 10 have come from states in the North Central region and another 2 were previously located in a Northeastern state. Dentists previously located in the West, together with the few who have come from Puerto Rico and foreign nations, account for about 1 in 10.
### Table 3.--In-migrant Dentists

<table>
<thead>
<tr>
<th>Previous location</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>2,272</td>
<td>100</td>
</tr>
<tr>
<td>Previously located elsewhere</td>
<td>570(^1)</td>
<td>25</td>
</tr>
<tr>
<td>South</td>
<td>240</td>
<td>11</td>
</tr>
<tr>
<td>Georgia</td>
<td>73</td>
<td>3</td>
</tr>
<tr>
<td>Tennessee</td>
<td>23</td>
<td>1</td>
</tr>
<tr>
<td>South Carolina</td>
<td>21</td>
<td>1</td>
</tr>
<tr>
<td>Texas</td>
<td>20</td>
<td>1</td>
</tr>
<tr>
<td>10 other states</td>
<td>103</td>
<td>5</td>
</tr>
<tr>
<td>North Central</td>
<td>179</td>
<td>8</td>
</tr>
<tr>
<td>Ohio</td>
<td>43</td>
<td>2</td>
</tr>
<tr>
<td>Illinois</td>
<td>40</td>
<td>2</td>
</tr>
<tr>
<td>Michigan</td>
<td>31</td>
<td>1</td>
</tr>
<tr>
<td>Indiana</td>
<td>23</td>
<td>1</td>
</tr>
<tr>
<td>10 other states</td>
<td>42</td>
<td>2</td>
</tr>
<tr>
<td>Northeast</td>
<td>115</td>
<td>5</td>
</tr>
<tr>
<td>New York</td>
<td>47</td>
<td>2</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>31</td>
<td>1</td>
</tr>
<tr>
<td>New Jersey</td>
<td>20</td>
<td>1</td>
</tr>
<tr>
<td>3 other states</td>
<td>17</td>
<td>1</td>
</tr>
<tr>
<td>West</td>
<td>22</td>
<td>1</td>
</tr>
<tr>
<td>Foreign</td>
<td>14</td>
<td>1</td>
</tr>
<tr>
<td>Never located elsewhere</td>
<td>1,702</td>
<td>75</td>
</tr>
</tbody>
</table>

\(^1\) Includes only dentists whose last previous location as a civilian was in another state or abroad. In-migrant dentists who have changed their location within Florida after once having established a practice in the state and non-Floridians whose initial location was Florida are excluded from this count.

**Dental schools.**--Florida's dentists are graduates of 54 schools, including each of the 46 dental schools in the Nation that graduated dentists in 1964. Seven schools which are now extinct and the University of Quebec in Canada also graduated dentists who are now in Florida.

However, over one-half of all dentists in the state are graduates of schools located in the South (Table 4). Emory has made the largest single contribution, having trained more than one-fourth of the state's dentists. Tennessee,
Table 4.--School Awarding Dental Degree, by Year Awarded

<table>
<thead>
<tr>
<th>Dental school attended</th>
<th>Number of dentists</th>
<th>Year of graduation</th>
<th>All</th>
<th>After 1955</th>
<th>Before 1955</th>
<th>1940 or earlier</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number</td>
<td>2,983</td>
<td></td>
<td></td>
<td>883</td>
<td>879</td>
<td>459</td>
</tr>
<tr>
<td>(Percent distribution by school)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dental school attended</th>
<th>Number of dentists</th>
<th>Year of graduation</th>
<th>All</th>
<th>After 1955</th>
<th>Before 1955</th>
<th>1940 or earlier</th>
</tr>
</thead>
<tbody>
<tr>
<td>South</td>
<td>1,280</td>
<td></td>
<td>57</td>
<td>54</td>
<td>61</td>
<td>55</td>
</tr>
<tr>
<td>Emory</td>
<td>587</td>
<td></td>
<td>26</td>
<td>18</td>
<td>32</td>
<td>35</td>
</tr>
<tr>
<td>Tennessee</td>
<td>121</td>
<td></td>
<td>6</td>
<td>8</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Maryland</td>
<td>116</td>
<td></td>
<td>5</td>
<td>6</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Louisville</td>
<td>87</td>
<td></td>
<td>4</td>
<td>3</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Virginia</td>
<td>69</td>
<td></td>
<td>3</td>
<td>5</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Loyola (New Orleans)</td>
<td>63</td>
<td></td>
<td>3</td>
<td>2</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Alabama</td>
<td>54</td>
<td></td>
<td>2</td>
<td>4</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Howard</td>
<td>48</td>
<td></td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>10 other schools</td>
<td>135</td>
<td></td>
<td>6</td>
<td>6</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>North Central</td>
<td>596</td>
<td></td>
<td>26</td>
<td>26</td>
<td>28</td>
<td>27</td>
</tr>
<tr>
<td>Northwestern</td>
<td>117</td>
<td></td>
<td>5</td>
<td>2</td>
<td>9</td>
<td>7</td>
</tr>
<tr>
<td>Ohio State</td>
<td>87</td>
<td></td>
<td>4</td>
<td>5</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Indiana</td>
<td>60</td>
<td></td>
<td>3</td>
<td>1</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Michigan</td>
<td>57</td>
<td></td>
<td>2</td>
<td>4</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Western Reserve</td>
<td>52</td>
<td></td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Illinois</td>
<td>36</td>
<td></td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Marquette</td>
<td>32</td>
<td></td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>10 other schools</td>
<td>155</td>
<td></td>
<td>7</td>
<td>8</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>Northeast</td>
<td>349</td>
<td></td>
<td>16</td>
<td>19</td>
<td>19</td>
<td>15</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>82</td>
<td></td>
<td>4</td>
<td>5</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>New York University</td>
<td>72</td>
<td></td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Temple</td>
<td>70</td>
<td></td>
<td>3</td>
<td>4</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Pittsburgh</td>
<td>66</td>
<td></td>
<td>3</td>
<td>7</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>6 other schools</td>
<td>59</td>
<td></td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>West</td>
<td>26</td>
<td></td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Canada</td>
<td>8</td>
<td></td>
<td></td>
<td>*</td>
<td>*</td>
<td>1</td>
</tr>
</tbody>
</table>

* Less than one-half of one percent.

1/ Individual items in this and succeeding tables may not add to the totals shown due to the failure of some responding dentists to reply to all items on the questionnaire. Where percentages are shown, they are based on data supplied by dentists responding to the item. (See Appendix Table A.)
Maryland and Louisville have also made significant contributions. Another one-fourth of the dentists received their education in schools in the North Central states and 16 percent attended schools in the Northeast. Dental schools in the Western states account for only one percent of the state's dentist supply.

Two-fifths of the state's dentists have been graduated from dental school within the last 10 years. In contrast, only one-fifth are graduates of the years prior to World War II. Within each graduating period, there have been slight changes in the proportion of dentists graduating from schools in each region. Probably the most noteworthy change is the declining role of Emory as a source of dentist supply. A third or more of all dentists in the state who were graduated 10 years ago or earlier received their dental education at Emory. But among graduates of the past 10 years now practicing in Florida, only one-sixth are Emory graduates. Nonetheless, the South as a whole accounts for about the same proportion of recent graduates as it does of those graduating earlier.

In-migrant dentists are less likely to have been educated in Southern dental schools than are nonmigrant dentists (Table 5). Six out of 10 of the

<table>
<thead>
<tr>
<th>Year of graduation</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>South</td>
</tr>
<tr>
<td>Nonmigrants</td>
<td>1,702</td>
<td>61</td>
</tr>
<tr>
<td>After 1955</td>
<td>889</td>
<td>54</td>
</tr>
<tr>
<td>1941 - 1955</td>
<td>459</td>
<td>71</td>
</tr>
<tr>
<td>1940 &amp; earlier</td>
<td>309</td>
<td>68</td>
</tr>
<tr>
<td>In-migrants</td>
<td>570</td>
<td>42</td>
</tr>
<tr>
<td>After 1955</td>
<td>202</td>
<td>15</td>
</tr>
<tr>
<td>1941 - 1955</td>
<td>210</td>
<td>40</td>
</tr>
<tr>
<td>1940 &amp; earlier</td>
<td>146</td>
<td>28</td>
</tr>
</tbody>
</table>

In-migrant dentists were graduated from Southern dental schools, whereas these same schools trained only 4 out of 10 of the in-migrant dentists. More than one-third of the in-migrants received their dental education in schools in the North Central states and most of the remainder (about one-fifth) attended schools in the Northeast. However, declining proportions of the in-migrant dentists have come from these two regions. The majority of all recently graduated dentists who have moved to Florida after having once been located in some other state are dentists who were graduated from schools in the South.
Personal Characteristics

Age and sex.--Florida's dentists, as a group, are very young. The median age of reporting dentists was only 40.2 years. Almost one-third were under the age of 35 and fully another third were between the ages of 35 and 44 (Table 6). Perhaps even more important than this very large proportion of young dentists are the small numbers of dentists at the other end of the age scale. Less than 10 percent of Florida's dentists are 60 years old or older including only 5 percent who have reached the age of 65.

Table 6.--Age and Sex

<table>
<thead>
<tr>
<th>Sex and age</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>2,272</td>
<td>100</td>
</tr>
<tr>
<td>Male</td>
<td>2,260</td>
<td>99</td>
</tr>
<tr>
<td>Female</td>
<td>12</td>
<td>1</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Under 30</td>
<td>207</td>
<td>9</td>
</tr>
<tr>
<td>30 - 34</td>
<td>518</td>
<td>23</td>
</tr>
<tr>
<td>35 - 39</td>
<td>377</td>
<td>17</td>
</tr>
<tr>
<td>40 - 44</td>
<td>392</td>
<td>18</td>
</tr>
<tr>
<td>45 - 49</td>
<td>242</td>
<td>11</td>
</tr>
<tr>
<td>50 - 54</td>
<td>162</td>
<td>7</td>
</tr>
<tr>
<td>55 - 59</td>
<td>128</td>
<td>6</td>
</tr>
<tr>
<td>60 - 64</td>
<td>83</td>
<td>4</td>
</tr>
<tr>
<td>65 - 69</td>
<td>60</td>
<td>3</td>
</tr>
<tr>
<td>70 - 74</td>
<td>33</td>
<td>1</td>
</tr>
<tr>
<td>75 &amp; over</td>
<td>24</td>
<td>1</td>
</tr>
</tbody>
</table>

There are only 12 women dentists included among the respondents. For this reason, data for women will not be shown separately in this report.

Advanced training.--About 28 percent of Florida's dentists have had some type of advanced training (Table 7). Although a larger number have had advanced clinical training than academic training, there are 7 dentists who reported they have earned a second doctorate, 121 who have earned a master's degree, and another 178 who have completed one or more years of postgraduate study.
Table 7.--Advanced Training

<table>
<thead>
<tr>
<th>Highest level of training completed</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>2,272</td>
<td>100</td>
</tr>
<tr>
<td>With advanced training</td>
<td>637</td>
<td>28</td>
</tr>
<tr>
<td>With no advanced training</td>
<td>1,635</td>
<td>72</td>
</tr>
</tbody>
</table>

Clinical training

<table>
<thead>
<tr>
<th></th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residency completed</td>
<td>111</td>
<td>5</td>
</tr>
<tr>
<td>Internship completed</td>
<td>336</td>
<td>15</td>
</tr>
</tbody>
</table>

Academic training

<table>
<thead>
<tr>
<th></th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ph.D., M.D., or other doctorate</td>
<td>7</td>
<td>*</td>
</tr>
<tr>
<td>M.A., M.S., or other master's degree</td>
<td>121</td>
<td>5</td>
</tr>
<tr>
<td>Postgraduate 1 year or more (no degree)</td>
<td>178</td>
<td>8</td>
</tr>
</tbody>
</table>

* Less than one-half of one percent.

The data in Table 8 reflect the growing tendency of dentists to seek additional training after receiving their dental degree. While many dentists under 40 are still serving internships and residencies, or are enrolled in school, 30 percent report that they have completed some form of advanced training. This percentage is equal to that recorded for dentists 40 to 54 years old and is considerably greater than the 17 percent recorded for dentists 55 and over. The most striking contrast is in the area of academic training. Sixteen percent of the dentists under 40 have completed a year or more of graduate or postgraduate study, compared with 13 percent of the dentists between 40 and 54, and only 7 percent of those 55 and over.

The trend is less obvious with respect to clinical training, but chiefly because relatively large numbers of dentists in the younger age groups have not yet completed their internships or residencies. Among dentists 40 to...
54 years of age, 6 percent have completed residencies and another 16 percent have completed internships. These percentages compare with 2 percent and 12 percent, respectively, for dentists 55 years old and over.

Distribution and Current Status

Distribution of dentists.--Nearly three-quarters of all dentists in Florida are located in the eleven counties which make up the metropolitan areas (Table 9). The Miami area alone has almost as many dentists as all 56 of the nonmetropolitan counties combined. The three southern metropolitan areas, Miami, Fort Lauderdale, and West Palm Beach, contain 40 percent of the state's dentists, while the Orlando and Tampa areas contain 22 percent and the three northern metropolitan areas of Pensacola, Tallahassee, and Jacksonville contain 12 percent.

Table 9.--Distribution by County Group

<table>
<thead>
<tr>
<th>County group</th>
<th>Number of counties</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>All counties</td>
<td>67</td>
<td>2,272</td>
<td>100</td>
</tr>
<tr>
<td>All metropolitan areas</td>
<td>11</td>
<td>1,658</td>
<td>74</td>
</tr>
<tr>
<td>Miami</td>
<td>1</td>
<td>550</td>
<td>25</td>
</tr>
<tr>
<td>Tampa-St. Petersburg</td>
<td>2</td>
<td>343</td>
<td>15</td>
</tr>
<tr>
<td>Fort Lauderdale - Hollywood</td>
<td>1</td>
<td>205</td>
<td>9</td>
</tr>
<tr>
<td>Jacksonville</td>
<td>1</td>
<td>160</td>
<td>7</td>
</tr>
<tr>
<td>Orlando</td>
<td>2</td>
<td>156</td>
<td>7</td>
</tr>
<tr>
<td>West Palm Beach</td>
<td>1</td>
<td>145</td>
<td>6</td>
</tr>
<tr>
<td>Pensacola</td>
<td>2</td>
<td>63</td>
<td>3</td>
</tr>
<tr>
<td>Tallahassee</td>
<td>1</td>
<td>36</td>
<td>2</td>
</tr>
<tr>
<td>Nonmetropolitan county groups</td>
<td>56</td>
<td>582</td>
<td>26</td>
</tr>
<tr>
<td>Central city 25,000 &amp; over</td>
<td>7</td>
<td>245</td>
<td>11</td>
</tr>
<tr>
<td>Central city 10,000-24,999</td>
<td>8</td>
<td>193</td>
<td>9</td>
</tr>
<tr>
<td>Central city 5,000-9,999</td>
<td>11</td>
<td>75</td>
<td>3</td>
</tr>
<tr>
<td>Central city 2,500-4,999</td>
<td>15</td>
<td>52</td>
<td>2</td>
</tr>
<tr>
<td>Central city under 2,500</td>
<td>15</td>
<td>17</td>
<td>1</td>
</tr>
</tbody>
</table>

In contrast, the nonmetropolitan areas are served by only 26 percent of the dentists, with 20 percent in the 5 counties with central cities of at least 10,000 persons and the remaining six percent in the 41 counties which have smaller central cities.

About the same proportion of in-migrant and nonmigrant dentists are located in the metropolitan areas. However, dentists who were previously located in the Northeastern states have shown a much stronger tendency than other
in-migrants to locate in the metropolitan areas, particularly the three southern areas of Miami, Fort Lauderdale, and West Palm Beach (Table 10). Ninety percent of all these Northeasterners are located in the metropolitan areas, with 75 percent concentrated in the three southernmost areas. While dentists from the North Central and Western regions have chosen their locations more or less in the same proportions as the average for all in-migrant dentists, the dentists who come from the Southern states are distributed differently. Southern in-migrants are more likely than other dentists to locate in the nonmetropolitan areas of Florida, and relatively fewer are attracted to the three metropolitan areas in the south of Florida. Where, on the average, 44 percent of all in-migrant dentists have located

Table 10.--Florida Location of In-migrant Dentists, by Previous Location

<table>
<thead>
<tr>
<th>County group</th>
<th>In-migrant dentists</th>
<th>Percent distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percent</td>
</tr>
<tr>
<td>All counties</td>
<td>570</td>
<td>100</td>
</tr>
<tr>
<td>All metropolitan areas</td>
<td>429</td>
<td>75</td>
</tr>
<tr>
<td>Miami</td>
<td>133</td>
<td>23</td>
</tr>
<tr>
<td>Tampa-St. Petersburg</td>
<td>102</td>
<td>16</td>
</tr>
<tr>
<td>Fort Lauderdale</td>
<td>77</td>
<td>13</td>
</tr>
<tr>
<td>West Palm Beach</td>
<td>45</td>
<td>8</td>
</tr>
<tr>
<td>Orlando</td>
<td>34</td>
<td>6</td>
</tr>
<tr>
<td>Jacksonville</td>
<td>28</td>
<td>5</td>
</tr>
<tr>
<td>Pensacola</td>
<td>9</td>
<td>2</td>
</tr>
<tr>
<td>Tallahassee</td>
<td>1</td>
<td>*</td>
</tr>
<tr>
<td>Nonmetropolitan county groups</td>
<td>141</td>
<td>25</td>
</tr>
<tr>
<td>Central city 25,000 &amp; over</td>
<td>58</td>
<td>10</td>
</tr>
<tr>
<td>Central city 10,000-24,999</td>
<td>47</td>
<td>8</td>
</tr>
<tr>
<td>Central city under 10,000</td>
<td>36</td>
<td>7</td>
</tr>
</tbody>
</table>

* Less than one-half of one percent.

their practices in Miami, Fort Lauderdale, and West Palm Beach, only 29 percent of the dentists from the South have done so, and 34 percent of the Southern in-migrants have elected to practice in a nonmetropolitan county, compared with the average of 25 percent for all in-migrants.

Dentists in the nonmetropolitan counties tend to be younger than those in the metropolitan areas (Table 11). The median age in 1965 of dentists located in counties with central cities of 2,500 - 4,999 population was only 35.0 years, as compared with a median age of 38.8 years among dentists in the Orlando area, the metropolitan area with the highest percentage of younger dentists. Fort Lauderdale - Hollywood, West Palm Beach and Pensacola are the
only other metropolitan areas where the median age of dentists is below the state average of 40.2 years. In every county group, except the Pensacola metropolitan area, the percent of dentists under 30 years exceeds the percent of dentists 64 years and over. Furthermore, the proportion of dentists under 35 is more than double the proportion 55 years and over in almost all county groups. The exceptions are the Tampa - St. Petersburg, Pensacola and Tallahassee metropolitan areas and the nonmetropolitan counties with less than 2,500 inhabitants in their central cities.

Table 11.--Median Age and Age Distribution, by County Group

<table>
<thead>
<tr>
<th>County group</th>
<th>Median age</th>
<th>Under 30</th>
<th>30-34</th>
<th>35-44</th>
<th>45-54</th>
<th>55-64</th>
<th>65 &amp; over</th>
</tr>
</thead>
<tbody>
<tr>
<td>All counties</td>
<td>40.2</td>
<td>9</td>
<td>24</td>
<td>35</td>
<td>18</td>
<td>9</td>
<td>5</td>
</tr>
<tr>
<td>All metropolitan areas</td>
<td>40.6</td>
<td>9</td>
<td>21</td>
<td>36</td>
<td>19</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>Orlando</td>
<td>38.8</td>
<td>9</td>
<td>12</td>
<td>30</td>
<td>16</td>
<td>10</td>
<td>3</td>
</tr>
<tr>
<td>Ft. Lauderdale-Hollywood</td>
<td>39.0</td>
<td>8</td>
<td>7</td>
<td>40</td>
<td>18</td>
<td>9</td>
<td>4</td>
</tr>
<tr>
<td>West Palm Beach</td>
<td>39.4</td>
<td>6</td>
<td>25</td>
<td>38</td>
<td>20</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>Pensacola</td>
<td>39.5</td>
<td>8</td>
<td>20</td>
<td>40</td>
<td>16</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Tallahassee</td>
<td>46.6</td>
<td>11</td>
<td>19</td>
<td>39</td>
<td>11</td>
<td>17</td>
<td>3</td>
</tr>
<tr>
<td>Miami</td>
<td>41.4</td>
<td>10</td>
<td>19</td>
<td>35</td>
<td>22</td>
<td>10</td>
<td>4</td>
</tr>
<tr>
<td>Miami-St. Petersburg</td>
<td>41.6</td>
<td>8</td>
<td>21</td>
<td>34</td>
<td>18</td>
<td>12</td>
<td>7</td>
</tr>
<tr>
<td>Jacksonville</td>
<td>41.6</td>
<td>7</td>
<td>19</td>
<td>38</td>
<td>23</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Nonmetropolitan county groups</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Central city 2,500-4,999</td>
<td>35.0</td>
<td>10</td>
<td>40</td>
<td>25</td>
<td>13</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>Central city 10,000-24,999</td>
<td>37.8</td>
<td>11</td>
<td>29</td>
<td>36</td>
<td>12</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Central city 5,000-9,999</td>
<td>37.9</td>
<td>16</td>
<td>29</td>
<td>26</td>
<td>11</td>
<td>14</td>
<td>4</td>
</tr>
<tr>
<td>Central city 25,000 &amp; over</td>
<td>39.2</td>
<td>11</td>
<td>26</td>
<td>32</td>
<td>17</td>
<td>10</td>
<td>4</td>
</tr>
<tr>
<td>Central city under 2,500</td>
<td>39.4</td>
<td>12</td>
<td>17</td>
<td>41</td>
<td>12</td>
<td>6</td>
<td>12</td>
</tr>
</tbody>
</table>

Professional status.--As might be expected from the state's unusually young dentist supply, very few dentists are retired (Table 12). Almost 99 percent of the responding dentists are active in the profession. Only 6 dentists

Table 12.--Professional Activity Status

<table>
<thead>
<tr>
<th>Activity status</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>2,272</td>
<td>100</td>
</tr>
<tr>
<td>Active in profession</td>
<td>2,242</td>
<td>99</td>
</tr>
<tr>
<td>Inactive in profession</td>
<td></td>
<td></td>
</tr>
<tr>
<td>In nondental employment</td>
<td>30</td>
<td>1</td>
</tr>
<tr>
<td>Retired</td>
<td>24</td>
<td>1</td>
</tr>
</tbody>
</table>

* Less than one-half of one percent.
reported their primary employment to be nondental and only 24 dentists considered themselves fully retired.

Although a majority of the retired dentists are in the older age groups, relatively few of the older dentists who responded to the survey consider themselves retired. Of the 117 dentists 65 and over, only 14 (12 percent) reported themselves as fully retired. The proportion who do retire, of course, is greater among the oldest age groups. Whereas only 5 percent of the 65-69 age group are retired, about 18 percent of the 70-74 age group, and 21 percent of those 75 and over are retired.

Active dentists in relation to population.--There was one professionally active respondent for every 2,619 persons in Florida in 1965 (Table 13). However, among the 63 counties with professionally active respondents, the number of persons per active dentist ranges from 1,450 for Gilchrist County to over ten times this number, 14,800, in Madison County. The remaining four counties, Glades, Gulf, Liberty, and Wakulla, had no active reporting dentist (see appendix Table b for individual county data).

Table 13.—Number of Persons per Dentist

<table>
<thead>
<tr>
<th>County group</th>
<th>Professionally active dentists</th>
<th>Civilian population</th>
<th>Persons per dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td>All counties</td>
<td>2,242</td>
<td>5,871,600</td>
<td>2,619</td>
</tr>
<tr>
<td>All metropolitan areas</td>
<td>1,642</td>
<td>3,951,700</td>
<td>2,407</td>
</tr>
<tr>
<td>West Palm Beach</td>
<td>145</td>
<td>282,300</td>
<td>1,947</td>
</tr>
<tr>
<td>Ft. Lauderdale-Hollywood</td>
<td>205</td>
<td>420,700</td>
<td>2,052</td>
</tr>
<tr>
<td>Miami</td>
<td>544</td>
<td>1,120,200</td>
<td>2,059</td>
</tr>
<tr>
<td>Tallahassee</td>
<td>36</td>
<td>86,500</td>
<td>2,403</td>
</tr>
<tr>
<td>Orlando</td>
<td>155</td>
<td>383,800</td>
<td>2,476</td>
</tr>
<tr>
<td>Tampa-St. Petersburg</td>
<td>237</td>
<td>905,400</td>
<td>2,687</td>
</tr>
<tr>
<td>Jacksonville</td>
<td>159</td>
<td>517,700</td>
<td>3,216</td>
</tr>
<tr>
<td>Pensacola</td>
<td>61</td>
<td>235,100</td>
<td>3,854</td>
</tr>
<tr>
<td>Nonmetropolitan, county groups</td>
<td>578</td>
<td>1,919,900</td>
<td>3,322</td>
</tr>
<tr>
<td>Central city 10,000-24,999</td>
<td>192</td>
<td>572,200</td>
<td>2,980</td>
</tr>
<tr>
<td>Central city 25,000 &amp; over</td>
<td>245</td>
<td>737,600</td>
<td>3,011</td>
</tr>
<tr>
<td>Central city 5,000-9,999</td>
<td>74</td>
<td>266,000</td>
<td>3,595</td>
</tr>
<tr>
<td>Central city 2,500-4,999</td>
<td>52</td>
<td>237,200</td>
<td>4,562</td>
</tr>
<tr>
<td>Central city under 2,500</td>
<td>15</td>
<td>106,900</td>
<td>7,127</td>
</tr>
</tbody>
</table>

The persons-per-dentist ratios for the eight metropolitan areas differ sharply. They range from 1,947 in the West Palm Beach area to a high 3,854 in Pensacola. Like West Palm Beach, the other two southern areas, Miami and Fort Lauderdale,
POPULATION PER DENTIST IN FLORIDA
BY COUNTY: 1965

persons per dentist:

- under 2,500
- 2,500 - 3,499
- 3,500 - 4,999
- 5,000 & over
- no dentists
have persons-per-dentist ratios which are considerably better than the state average of 2,619. But the ratios for the Tallahassee and Orlando areas are only slightly more favorable than this average and the ratios for the three remaining metropolitan areas are less favorable than the state average.

In the three metropolitan areas containing more than one county, there is the tendency for one of the two counties in each of the areas to have a considerably higher ratio than the other. In the Tampa-St. Petersburg area, Pinellas County has a ratio of 2,314, while Hillsborough County has a ratio of 3,192. Where Orange County of the Orlando metropolitan area has a ratio of 2,234, the other county, Seminole, has 4,914 persons for every dentist. In the Pensacola area the contrast is also quite sharp, with Escambia County, containing Pensacola, having a ratio of 3,579, and Santa Rosa County, a ratio of 6,940.

Similar contrasts exist among the nonmetropolitan counties. Of the 56 nonmetropolitan counties, 23 have ratios of over 5,000 persons per dentist, including the 4 counties which are assumed to have no active dentist, while only 7 have ratios better than the state average of 2,619. Both groups of counties whose central cities contain populations of over 10,000 have ratios of about 3,000 persons per dentist. These two groups of counties contain 4 of the 7 nonmetropolitan counties with ratios better than the state average but only 2 of the 23 counties with ratios over 5,000. Among the 3 groups of counties with central cities of less than 10,000 persons, the ratio of persons per dentist becomes markedly higher as the size of the central city declines, until for the group of counties without a town of 2,500 persons, there are over 7,000 persons for each dentist.

Professional Activity

Current employment.--Almost all of the professionally active dentists in Florida are engaged in private practice, 96 percent are self-employed and 2 percent are employed by another dentist (Table 14). Of the remaining

<table>
<thead>
<tr>
<th>Type of employment</th>
<th>Principal employment</th>
<th>Secondary dental employment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number employed</td>
<td>Number reporting</td>
</tr>
<tr>
<td></td>
<td>Percent</td>
<td>Percent of total</td>
</tr>
<tr>
<td>Total</td>
<td>2,242</td>
<td>121</td>
</tr>
<tr>
<td></td>
<td>100</td>
<td>5</td>
</tr>
<tr>
<td>Self-employed</td>
<td>2,136</td>
<td>111</td>
</tr>
<tr>
<td>Employed by other dentist</td>
<td>51</td>
<td>3</td>
</tr>
<tr>
<td>Employed by state or local government</td>
<td>25</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>*</td>
</tr>
<tr>
<td>Other dental employment</td>
<td>30</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>*</td>
</tr>
</tbody>
</table>

1/ Includes private practice, state or local government, voluntary agencies and other such employment.

* Less than one-half of one percent.
two percent, one percent are employed by the state or a local government
and one percent are engaged in other dental employment. Only 121 den-
tists, or 5 percent of those professionally active, reported a secondary
dental employment.

Activity last year.--About 98 percent of all dentists reporting on their
professional activity in Florida last year provided care for patients
(Table 15). Only 3 percent reported any research activity and only 2 per-
cent spent some time in teaching. About 5 percent spent time in some
other dental activity, in many cases taking additional training. In terms
of professional time, however, these latter activities accounted for only
very minor fractions of the total time spent in professional pursuits.
Barely one-half of one percent of all dentist time was spent in research

<table>
<thead>
<tr>
<th>Type of activity</th>
<th>Dentists reporting last year</th>
<th>Percent of total professional time reported</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>2,0831/</td>
<td>1001/</td>
</tr>
<tr>
<td>Patient care</td>
<td>2,051</td>
<td>98</td>
</tr>
<tr>
<td>Research</td>
<td>61</td>
<td>3</td>
</tr>
<tr>
<td>Teaching</td>
<td>43</td>
<td>2</td>
</tr>
<tr>
<td>Other</td>
<td>99</td>
<td>5</td>
</tr>
</tbody>
</table>

1/ Individual items add to more than total because some
dentists spent time in more than one activity.

* Less than one-half of one percent.

and teaching combined and less than two percent was spent in such other
activities as the receipt of training.

Of the dentists who provided patient care last year, the largest number,
one-fifth of the total, spent 40 hours a week at this activity for at least
50 weeks of the year (Table 16). Only 13 percent devoted under 35 hours per

<table>
<thead>
<tr>
<th>Weeks spent in patient care</th>
<th>Dentists providing patient care</th>
<th>Percent of reporting dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>100</td>
<td>15</td>
</tr>
<tr>
<td>50 weeks or more</td>
<td>45</td>
<td>8</td>
</tr>
<tr>
<td>48 - 49 weeks</td>
<td>35</td>
<td>5</td>
</tr>
<tr>
<td>40 - 47 weeks</td>
<td>17</td>
<td>2</td>
</tr>
<tr>
<td>Less than 40 weeks</td>
<td>3</td>
<td>*</td>
</tr>
</tbody>
</table>

* Less than one-half of one percent.
week or worked less than 40 weeks at this activity during the course of the year. An equal percentage of those reporting patient care, however, devoted exceptionally long hours to the treatment of patients. Thirteen percent spent the equivalent of 8 hours a day, six days a week at this activity for 48 weeks or more during the year.

Practice Characteristics

Limited practices.--Approximately 15 percent of all practicing dentists report they limit their practices to a dental specialty (Table 17). The metropolitan areas, of course, have a disproportionate share of these dentists. One in every 6 dentists practicing in a metropolitan area limits his practice, whereas in counties which are not part of metropolitan areas, only one in every 10 dentists does so. Among the metropolitan areas, West Palm Beach has the largest proportion of practitioners with limited practices, but the largest numbers of limited practitioners are in the Miami, Tampa-St. Petersburg, and Ft. Lauderdale-Hollywood areas. Pensacola and Tallahassee, on the other hand, have relatively few dentists who limit their practices to a specialty. The most frequent fields of specialization are orthodontics and oral surgery. They account for 5 percent and 4 percent, respectively, of the state's dental practitioners.

Table 17.--Limited Practices

<table>
<thead>
<tr>
<th>County group</th>
<th>Dentists with limited practices</th>
<th>Percent of dental practitioners</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All specialty areas</td>
<td>Orthodontics</td>
</tr>
<tr>
<td>All counties</td>
<td>334</td>
<td>15</td>
</tr>
<tr>
<td>All metropolitan areas</td>
<td>273</td>
<td>16</td>
</tr>
<tr>
<td>Miami</td>
<td>100</td>
<td>18</td>
</tr>
<tr>
<td>Tampa-St. Petersburg</td>
<td>58</td>
<td>18</td>
</tr>
<tr>
<td>Ft. Lauderdale-Hollywood</td>
<td>30</td>
<td>14</td>
</tr>
<tr>
<td>West Palm Beach</td>
<td>27</td>
<td>19</td>
</tr>
<tr>
<td>Jacksonville</td>
<td>24</td>
<td>15</td>
</tr>
<tr>
<td>Orlando</td>
<td>23</td>
<td>15</td>
</tr>
<tr>
<td>Pensacola</td>
<td>7</td>
<td>11</td>
</tr>
<tr>
<td>Tallahassee</td>
<td>4</td>
<td>11</td>
</tr>
<tr>
<td>Nonmetropolitan counties</td>
<td>59</td>
<td>10</td>
</tr>
</tbody>
</table>

Use of auxiliaries.--Over 90 percent of the dental practitioners in Florida (i.e., dentists who spend any time working at the chair) report that they employ auxiliary personnel (Table 18). Moreover, the vast majority, 84 percent, of these dentists employ at least one auxiliary full time, while only 7 percent employ part-time auxiliaries exclusively. The dental assistant, the most
frequently employed auxiliary, is employed by 87 percent of the dentists, mostly full-time. Secretaries and receptionists are employed by 44 percent of the dentists, again mostly full-time. The use of part-time employees is

Table 13.--Dental Practitioners Employing One or More Auxiliaries, by Type of Auxiliary

<table>
<thead>
<tr>
<th>Type of auxiliary</th>
<th>Dental practitioners Total</th>
<th>With only part-time personnel</th>
<th>With one full-time employee (or more)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>2,224</td>
<td>100</td>
<td>7</td>
</tr>
<tr>
<td>With no auxiliary</td>
<td>188</td>
<td>9</td>
<td>-</td>
</tr>
<tr>
<td>With one or more auxiliaries</td>
<td>2,016</td>
<td>91</td>
<td>7</td>
</tr>
<tr>
<td>With assistant</td>
<td>1,919</td>
<td>87</td>
<td>8</td>
</tr>
<tr>
<td>With hygienist</td>
<td>646</td>
<td>29</td>
<td>19</td>
</tr>
<tr>
<td>With laboratory technician</td>
<td>331</td>
<td>15</td>
<td>9</td>
</tr>
<tr>
<td>With secretary or receptionist</td>
<td>959</td>
<td>44</td>
<td>11</td>
</tr>
<tr>
<td>With other type of personnel</td>
<td>102</td>
<td>5</td>
<td>3</td>
</tr>
</tbody>
</table>

more common for other types of auxiliaries. While 29 percent of all dentists employ dental hygienists and 15 percent employ dental technicians, about one-third, and two-fifths, respectively, of the dentists employing these personnel do so on a full-time basis. If all reported personnel vacancies were filled, the numbers of full-time hygienists and technicians would be almost doubled.

The use of auxiliaries varies with the age of the dentist (Table 19). Over 90 percent of the dental practitioners between the ages of 30 and 54 employ some type of auxiliary. Among dentists 65 years and over, the proportion

Table 19.--Dental Practitioners Employing Auxiliaries, by Age

<table>
<thead>
<tr>
<th>Age</th>
<th>Percent of age group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>With auxiliaries</td>
</tr>
<tr>
<td>Under 30</td>
<td>84</td>
</tr>
<tr>
<td>30 - 34</td>
<td>93</td>
</tr>
<tr>
<td>35 - 44</td>
<td>94</td>
</tr>
<tr>
<td>45 - 54</td>
<td>94</td>
</tr>
<tr>
<td>55 - 64</td>
<td>86</td>
</tr>
<tr>
<td>65 &amp; over</td>
<td>64</td>
</tr>
</tbody>
</table>
using auxiliaries drops to 64 percent. Young dentists who are just starting their practices do not reach peak utilization of assistants until they are 30 years of age and of hygienists until age 35. Dentists in metropolitan areas and those in nonmetropolitan counties employ assistants with about the same frequency. However, hygienists and technicians are employed slightly more frequently by dentists in metropolitan areas.

Weeks and hours worked.—Although 89 percent of all dentists in private practice reported on the amount of time they had spent in their practices in the previous year, the percentage reporting is low for dentists 55 years old and over (Table 20). Since those not responding are likely to be those who are least active, the estimates on time worked by dentists in this age group are probably high. Even so, the percentage of dentists working 48 weeks or more and at least 40 hours per week drops precipitously among the older dentists. Whereas 67 percent of the dentists under 40 years of age and 58 percent of the dentists between 50 and 54 years old report working at least 48 weeks and at least 40 hours per week, only 37 percent of the dentists over 55 years old report working these hours.

Out-of-state Civilian Dentists

Florida licenses are maintained by at least 770 civilian dentists located in 40 states, the District of Columbia, and several foreign nations (Table 21). Over one-half of these out-of-state dentists are located in other Southern states, primarily in Georgia, Alabama, North Carolina and Tennessee. More than 35 dentists in New York, Illinois and Ohio also hold licenses in Florida.
Table 21.--Out-of-state Dentists, by State

<table>
<thead>
<tr>
<th>Present location</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>770</td>
<td>100</td>
</tr>
<tr>
<td>South</td>
<td>408</td>
<td>53</td>
</tr>
<tr>
<td>Georgia</td>
<td>136</td>
<td>16</td>
</tr>
<tr>
<td>Alabama</td>
<td>79</td>
<td>10</td>
</tr>
<tr>
<td>North Carolina</td>
<td>41</td>
<td>5</td>
</tr>
<tr>
<td>Tennessee</td>
<td>36</td>
<td>5</td>
</tr>
<tr>
<td>Virginia</td>
<td>22</td>
<td>3</td>
</tr>
<tr>
<td>Maryland</td>
<td>21</td>
<td>3</td>
</tr>
<tr>
<td>10 other states</td>
<td>73</td>
<td>9</td>
</tr>
<tr>
<td>North Central</td>
<td>174</td>
<td>23</td>
</tr>
<tr>
<td>Illinois</td>
<td>42</td>
<td>6</td>
</tr>
<tr>
<td>Ohio</td>
<td>36</td>
<td>5</td>
</tr>
<tr>
<td>Michigan</td>
<td>32</td>
<td>4</td>
</tr>
<tr>
<td>Indiana</td>
<td>23</td>
<td>3</td>
</tr>
<tr>
<td>7 other states</td>
<td>40</td>
<td>5</td>
</tr>
<tr>
<td>Northeast</td>
<td>137</td>
<td>17</td>
</tr>
<tr>
<td>New York</td>
<td>59</td>
<td>8</td>
</tr>
<tr>
<td>New Jersey</td>
<td>26</td>
<td>3</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>26</td>
<td>3</td>
</tr>
<tr>
<td>5 other states</td>
<td>26</td>
<td>3</td>
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<tr>
<td>West</td>
<td>41</td>
<td>5</td>
</tr>
<tr>
<td>California</td>
<td>30</td>
<td>4</td>
</tr>
<tr>
<td>5 other states</td>
<td>11</td>
<td>1</td>
</tr>
<tr>
<td>Foreign</td>
<td>10</td>
<td>1</td>
</tr>
</tbody>
</table>

Age and Professional Status

As a group, the out-of-state dentists are even younger than those presently in Florida. While 32 percent of the dentists located in Florida were under 35 in 1965, 40 percent of the out-of-state civilian dentists were in this young age group. Moreover, only 8 percent of the out-of-state dentists were 55 years old or over, as compared with 15 percent of the in-state dentists.

Less than one percent of the out-of-state dentists report they are retired. The majority, 85 percent, are in dental practice. About 5 percent are employed in governmental agencies, 4 percent are on the staffs of dental schools and the remaining 6 percent are engaged in other dental activities, primarily serving internships or residencies.
Out-Migrant Dentists

About one of every seven out-of-state respondents reported they had formerly been located in Florida. These 105 dentists are now located in 26 states, the District of Columbia, and several foreign countries. One-half of these out-migrants are now located in other Southern states—including 14 in Georgia, 10 in Alabama, 7 in North Carolina and 5 in Maryland. States in other regions which have attracted at least 5 dentists who once were located in Florida include New York, Indiana, California, Illinois and Michigan.

Almost two-thirds of the out-of-state respondents who were formerly located in Florida left the state after 1959 (Table 22). The low proportion of out-migrants prior to 1950, 15 percent, may be attributed to the fact that the longer a dentist remains out of state, the less likely he is to renew his license in the state he has left. However, the proportionately large numbers of out-migrants in the younger age groups reflect, at least in part, the relatively greater mobility of young dentists in relation to older practitioners. Three-fourths of the out-migrants were under 45 years of age in 1965, including over 40 percent who were under 35, while only 9 percent had reached 55 years of age.

Table 22.--Year Out-migrant Dentists Left State, by Age in 1965

<table>
<thead>
<tr>
<th>Year left</th>
<th>Percent of out-migrants</th>
<th>Age distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Under 35-44-54-55 &amp; over</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>42 34 15 9</td>
</tr>
<tr>
<td>1960 or later</td>
<td>64</td>
<td>40 20 3 1</td>
</tr>
<tr>
<td>1950 - 1953</td>
<td>21</td>
<td>2 13 5 1</td>
</tr>
<tr>
<td>Before 1950</td>
<td>15</td>
<td>- 1 7 7</td>
</tr>
</tbody>
</table>

September 1966
Appendix Table A.--Summary Statistics Used in Text

<table>
<thead>
<tr>
<th>Description</th>
<th>Number of Dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total dentists licensed in Florida</td>
<td>3,303</td>
</tr>
<tr>
<td>Respondents -- total dentists participating in survey</td>
<td>3,274</td>
</tr>
<tr>
<td>(number not reporting current location or military status - 18)</td>
<td></td>
</tr>
<tr>
<td>Civilian dentists in Florida&lt;sup&gt;1&lt;/sup&gt; (designated simply as &quot;dentists&quot; in next tables)</td>
<td>2,272</td>
</tr>
<tr>
<td>(number not reporting: age - 46, year of graduation - 51, county location - 32, dental school attended - 13)</td>
<td></td>
</tr>
<tr>
<td>Professionally active dentists&lt;sup&gt;2&lt;/sup&gt;</td>
<td>2,242</td>
</tr>
<tr>
<td>Dental practitioners&lt;sup&gt;3&lt;/sup&gt;</td>
<td>2,224</td>
</tr>
<tr>
<td>In limited practice&lt;sup&gt;4&lt;/sup&gt;</td>
<td>334</td>
</tr>
<tr>
<td>Located in Florida last year:</td>
<td></td>
</tr>
<tr>
<td>Reported professional activity&lt;sup&gt;5&lt;/sup&gt;</td>
<td>2,083</td>
</tr>
<tr>
<td>Dentists providing patient care&lt;sup&gt;5&lt;/sup&gt;</td>
<td>2,051</td>
</tr>
<tr>
<td>Reported time spent in patient care&lt;sup&gt;7&lt;/sup&gt;</td>
<td>1,838</td>
</tr>
<tr>
<td>Dentists in private practice&lt;sup&gt;8&lt;/sup&gt;</td>
<td>1,975</td>
</tr>
<tr>
<td>Reported time spent in practice&lt;sup&gt;9&lt;/sup&gt;</td>
<td>1,763</td>
</tr>
<tr>
<td>Cut-of-state dentists -- civilian respondents not located in Florida</td>
<td>770</td>
</tr>
</tbody>
</table>

<sup>1</sup> All responding dentists who currently work in Florida (excluding those in the armed forces) or who are retired and currently live in the state.

<sup>2</sup> All active civilian dentists currently in Florida -- excludes 24 dentists who are 55+ retired and 6 who are engaged principally in a nondental activity.

<sup>3</sup> All dentists practicing at the chair, that is, dentists who work as clinicians either as primary or secondary activity.

<sup>4</sup> Dentists who reported they limited their practice to a dental specialty.

<sup>5</sup> Dentists located in Florida last year who indicated type(s) of activity in which they engaged.

<sup>6</sup> All dentists who engaged in patient care last year, either as a primary or a secondary activity.

<sup>7</sup> Dentists reporting both hours and weeks spent in patient care last year.

<sup>8</sup> Dentists who reported they were primarily self-employed both currently and last year.

<sup>9</sup> Dentists reporting both hours and weeks spent last year as a self-employed dentist.
Appendix Table B.--County Data

<table>
<thead>
<tr>
<th>County</th>
<th>Civilian population (in 000's)</th>
<th>Professionally active dentists</th>
<th>Persons per dentist</th>
<th>Percent of active dentists under 35 yrs.</th>
<th>Percent of practitioners using auxiliaries</th>
</tr>
</thead>
<tbody>
<tr>
<td>All counties</td>
<td>5,871.6</td>
<td>2,242</td>
<td>2,619</td>
<td>32</td>
<td>14</td>
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<tr>
<td>Alachua</td>
<td>88.3</td>
<td>34</td>
<td>2,597</td>
<td>26</td>
<td>21</td>
</tr>
<tr>
<td>Baker</td>
<td>7.8</td>
<td>1</td>
<td>7,800</td>
<td>100</td>
<td>-</td>
</tr>
<tr>
<td>Bay</td>
<td>75.1</td>
<td>13</td>
<td>5,777</td>
<td>46</td>
<td>8</td>
</tr>
<tr>
<td>Bradford</td>
<td>13.1</td>
<td>4</td>
<td>3,275</td>
<td>50</td>
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<tr>
<td>Brevard</td>
<td>155.1</td>
<td>59</td>
<td>2,248</td>
<td>45</td>
<td>7</td>
</tr>
<tr>
<td>Broward</td>
<td>420.7</td>
<td>205</td>
<td>2,052</td>
<td>29</td>
<td>12</td>
</tr>
<tr>
<td>Calhoun</td>
<td>7.8</td>
<td>1</td>
<td>7,800</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Charlotte</td>
<td>19.3</td>
<td>4</td>
<td>4,825</td>
<td>50</td>
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<td>Citrus</td>
<td>11.4</td>
<td>2</td>
<td>5,700</td>
<td>100</td>
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<tr>
<td>Clay</td>
<td>20.5</td>
<td>5</td>
<td>4,100</td>
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<td>27.2</td>
<td>7</td>
<td>3,171</td>
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<tr>
<td>Columbia</td>
<td>22.2</td>
<td>7</td>
<td>3,171</td>
<td>57</td>
<td>14</td>
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<td>Dade</td>
<td>1,120.2</td>
<td>544</td>
<td>2,059</td>
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<td>Duval</td>
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<td>5,200</td>
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<td>-</td>
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<td>Hardee</td>
<td>13.6</td>
<td>3</td>
<td>4,533</td>
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<td>25</td>
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<td>13</td>
<td>1,954</td>
<td>46</td>
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<td>3,000</td>
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<td>7,000</td>
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<td>11,200</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>County</td>
<td>Civilian population (in 000's)</td>
<td>Professionally active dentists</td>
<td>Persons per dentist</td>
<td>Percent of active dentists under 35 yrs. or more</td>
<td>Percent of practitioners using auxiliaries</td>
</tr>
<tr>
<td>--------------</td>
<td>--------------------------------</td>
<td>--------------------------------</td>
<td>---------------------</td>
<td>-----------------------------------------------</td>
<td>------------------------------------------</td>
</tr>
<tr>
<td>Madison</td>
<td>14.8</td>
<td>1</td>
<td>14,800</td>
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<td>Manatee</td>
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<td>3,138</td>
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<td>Marion</td>
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<td>3,216</td>
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<td>11</td>
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<td>Martin</td>
<td>22.6</td>
<td>7</td>
<td>3,229</td>
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<td>Monroe</td>
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<td>27</td>
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<td>33</td>
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<td>Okaloosa</td>
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<td>14</td>
<td>5,063</td>
<td>64</td>
<td>100</td>
</tr>
<tr>
<td>Okeechobee</td>
<td>8.6</td>
<td>2</td>
<td>4,300</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>Orange</td>
<td>315.0</td>
<td>141</td>
<td>2,234</td>
<td>43</td>
<td>11</td>
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<tr>
<td>Cucuva</td>
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<td>6</td>
<td>5,500</td>
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<td>145</td>
<td>1,947</td>
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<td>Pasco</td>
<td>42.1</td>
<td>9</td>
<td>4,678</td>
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<td>33</td>
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<td>449.0</td>
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<td>2,314</td>
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<td>222.0</td>
<td>63</td>
<td>3,524</td>
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<tr>
<td>Putnam</td>
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<td>7</td>
<td>4,971</td>
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<td>14</td>
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<tr>
<td>St. Johns</td>
<td>32.7</td>
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<td>3,633</td>
<td>11</td>
<td>33</td>
</tr>
<tr>
<td>St. Lucie</td>
<td>48.8</td>
<td>12</td>
<td>4,067</td>
<td>42</td>
<td>-</td>
</tr>
<tr>
<td>Santa Rosa</td>
<td>34.7</td>
<td>5</td>
<td>6,940</td>
<td>60</td>
<td>20</td>
</tr>
<tr>
<td>Sarasota</td>
<td>94.8</td>
<td>51</td>
<td>1,859</td>
<td>41</td>
<td>12</td>
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<tr>
<td>Seminole</td>
<td>68.8</td>
<td>14</td>
<td>4,914</td>
<td>14</td>
<td>29</td>
</tr>
<tr>
<td>Sumter</td>
<td>13.3</td>
<td>1</td>
<td>13,300</td>
<td>-</td>
<td>160</td>
</tr>
<tr>
<td>Suwannee</td>
<td>17.1</td>
<td>5</td>
<td>3,420</td>
<td>40</td>
<td>-</td>
</tr>
<tr>
<td>Taylor</td>
<td>14.5</td>
<td>4</td>
<td>3,625</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>Union</td>
<td>6.4</td>
<td>1</td>
<td>6,400</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Volusia</td>
<td>150.2</td>
<td>57</td>
<td>2,635</td>
<td>37</td>
<td>18</td>
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<tr>
<td>Walton</td>
<td>16.1</td>
<td>4</td>
<td>4,025</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Washington</td>
<td>11.6</td>
<td>2</td>
<td>5,800</td>
<td>50</td>
<td>-</td>
</tr>
</tbody>
</table>

4 counties with no reporting dentists:

1/ The total includes 22 dentists who failed to indicate their county location.

2/ There are 3 counties with no professionally active dentists reporting: Glades, Gulf and Liberty. In addition, there was one county--Wakulla--in which the one responding dentist was reported as professionally inactive.
DENTISTS LICENSED IN GEORGIA

During the 1966 registration period, 2,362 dentists registered with the Board of Dental Examiners of Georgia. Only 52 percent of these dentists are civilians actually located in Georgia, while 43 percent are civilians located in other States, and 5 percent are on active duty with the Armed Forces.

Location and Military Status of Dentists Licensed in Georgia

<table>
<thead>
<tr>
<th>Location and military status</th>
<th>All dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total licensed</td>
<td>2,362</td>
<td>100</td>
</tr>
<tr>
<td>Respondents</td>
<td>2,199</td>
<td>93</td>
</tr>
<tr>
<td>Nonrespondents</td>
<td>163</td>
<td>7</td>
</tr>
<tr>
<td>Total licensed</td>
<td>2,362</td>
<td>100</td>
</tr>
<tr>
<td>Civilians in Georgia</td>
<td>1,240</td>
<td>52</td>
</tr>
<tr>
<td>Respondents</td>
<td>1,161</td>
<td>-</td>
</tr>
<tr>
<td>Nonrespondents</td>
<td>79</td>
<td>-</td>
</tr>
<tr>
<td>Civilians in another State</td>
<td>1,007</td>
<td>43</td>
</tr>
<tr>
<td>On active duty with Armed Forces</td>
<td>115</td>
<td>5</td>
</tr>
</tbody>
</table>

The survey questionnaire was completed by 2,199 dentists, 93 percent of all those registered. The data provided by the survey respondents has been supplemented, when possible, by information on location, age, dental school attended, and year of graduation for dentists not responding to the survey. Information on nonrespondents was obtained either from records maintained by the Board of Dental Examiners of Georgia or from the 1967 American Dental Directory published by the American Dental Association.

Among survey respondents, more than two-thirds (68 percent) hold a license to practice dentistry in one or more other States. Approximately 43 percent of the dentists located in Georgia hold more than one license, with 36 percent licensed in one other State and 7 percent licensed in two or more other States. The proportion of out-of-State dentists holding multiple licenses is considerably greater; 23 percent hold two or more licenses in addition to their Georgia license. Almost seventy percent of the licenses held outside of Georgia are held in adjacent States, including 32 percent in Florida, 12 percent in Alabama, 10 percent each in North and South Carolina, and 5 percent in Tennessee.
PROFESSIONAL TRAINING

More than three-fourths (77 percent) of Georgia's dentists graduated from Emory University School of Dentistry. The remainder (23 percent) of the State's dentists received their dental degrees from 41 other schools. Among these schools, the University of Tennessee is the largest contributor, having supplied 5 percent of the State's dentists, while the two next largest contributors, Howard University and Meharry Medical College, have together provided 4 percent of the dentists. Only four other schools--the Universities of Alabama, Maryland, and Louisville, and Northwestern University--have provided as much as 1 percent of Georgia's dentist supply.

<table>
<thead>
<tr>
<th>Dental School Attended and Year of Graduation for Dentists in Georgia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dental school attended</td>
</tr>
<tr>
<td>------------------------</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Total number</td>
</tr>
<tr>
<td>Emory University</td>
</tr>
<tr>
<td>University of Tennessee</td>
</tr>
<tr>
<td>Howard University</td>
</tr>
<tr>
<td>Meharry Medical College</td>
</tr>
<tr>
<td>38 other schools</td>
</tr>
<tr>
<td>(Percent distribution by school)</td>
</tr>
</tbody>
</table>

1/ Dental school attended not available for 5 dentists and year of graduation for 6 dentists. Percents based on total for whom data are known.
* Less than one-half of one percent.

The proportion of Emory University graduates in the State dentist supply has decreased somewhat in recent years. Approximately 68 percent of the dentists in the State who graduated since 1955 received their dental education at Emory, compared to 82 percent of those who graduated in earlier years. At the same time, the proportion of Georgia dentists from the University of Tennessee and from various other out-of-State schools has increased.

Approximately 18 percent of the survey respondents, 204 dentists, reported that they had completed one or more years of advanced training beyond the dental degree. Among the 143 dentists who reported advanced academic training, 56 had earned a master's or other advanced degree, and another 87 had received no additional degrees but had completed one or more years of postgraduate study. Of the 103 dentists with advanced clinical training, 46 had completed a residency, and 57, an internship. There were 42 dentists who had completed both academic and clinical training.
DISTRIBUTION OF DENTISTS

Two-thirds of the 1,240 dentists in Georgia are located in the seven metropolitan areas of the State. The 5-county Atlanta area alone has 563 dentists, 46 percent of the total dental force. Seven in every 10 of these dentists (393) are in Fulton County, where Atlanta is located. The vast majority of the remaining dentists in this area are in DeKalb County (102 dentists) and Cobb County (50 dentists). The Macon and Savannah metropolitan areas have the next largest dental forces, even though each accounts for only 5 percent of the dentist supply. The Georgia portion of the interstate Augusta and Columbus metropolitan areas have 4 percent and 3 percent of the State's dentists, respectively. The remaining two metropolitan areas—Albany and the Georgia portion of the interstate Chattanooga area (Walker County)—together account for 3 percent of the dentist supply.

Distribution of Georgia Dentists, by County Group

<table>
<thead>
<tr>
<th>County group</th>
<th>Number of counties</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>All counties</td>
<td>159</td>
<td>1,240</td>
<td>100</td>
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<tr>
<td>Metropolitan areas</td>
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<tr>
<td>Atlanta area</td>
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<td>563</td>
<td>46</td>
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<td>Macon area</td>
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<td>5</td>
</tr>
<tr>
<td>Savannah area</td>
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<td>58</td>
<td>5</td>
</tr>
<tr>
<td>Augusta area (Ga. part)</td>
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<td>54</td>
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<tr>
<td>Columbus area (Ga. part)</td>
<td>2</td>
<td>43</td>
<td>3</td>
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<td>Albany area</td>
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<td>2</td>
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<td>Chattanooga area (Ga. part)</td>
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<td>10</td>
<td>1</td>
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<tr>
<td>Nonmetropolitan counties</td>
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<tr>
<td>Central city 10,000-49,999</td>
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<td>204</td>
<td>16</td>
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<tr>
<td>Central city 5,000-9,999</td>
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<td>85</td>
<td>7</td>
</tr>
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<td>Central city 2,500-4,999</td>
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<td>89</td>
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<td>Central city under 2,500</td>
<td>65</td>
<td>47</td>
<td>4</td>
</tr>
</tbody>
</table>

* See Appendix Table for definition of interstate and other metropolitan areas and presentation of individual county data.

One-third of the State's dentists (425) are located in the 146 nonmetropolitan counties. The 18 counties with central cities of 10,000 persons have 204 dentists, 16 percent of the State's dental force. Nine of the nonmetropolitan counties have as many as 10 dentists, just one of these counties, Floyd, has as many as 20 dentists.

The 128 counties with fewer than 10,000 persons in their central cities have less than one-fifth of the State's dentist supply. There are dentists in the 63 counties having between 2,500 and 9,999 persons in their central cities, while 47 dentists are scattered among the 65 counties with central cities of less than 2,500 population. While only 2 of these 128 counties have as many as five dentists, 95 counties have fewer than three dentists, including 36 (one-fifth of all counties in the State) with no dentists according to available information.
AGE OF DENTISTS

The median age of dentists in Georgia is 42.7 years. Two-fifths of the State's dentists are under 40 years of age, including 28 percent who are under 35. Thirty-seven percent of the dentists are between 40 and 54 years of age, and 23 percent are 55 or over. About one out of eight, 149 dentists, are at least 65 years of age, including 92 who have reached the age of 70.

Age Distribution of Georgia Dentists

<table>
<thead>
<tr>
<th>Age</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
<th>Cumulative percent distribution</th>
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</thead>
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<td>Total</td>
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<td>100</td>
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<td>Under 30</td>
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<td>11</td>
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<tr>
<td>30 - 34</td>
<td>205</td>
<td>17</td>
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<tr>
<td>35 - 39</td>
<td>122</td>
<td>12</td>
<td>40</td>
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<tr>
<td>40 - 44</td>
<td>213</td>
<td>19</td>
<td>59</td>
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<td>45 - 49</td>
<td>124</td>
<td>10</td>
<td>69</td>
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<td>50 - 54</td>
<td>97</td>
<td>8</td>
<td>77</td>
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<tr>
<td>55 - 59</td>
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<td>83</td>
</tr>
<tr>
<td>60 - 64</td>
<td>62</td>
<td>5</td>
<td>88</td>
</tr>
<tr>
<td>65 - 69</td>
<td>57</td>
<td>5</td>
<td>93</td>
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<tr>
<td>70 - 74</td>
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<td>97</td>
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<tr>
<td>75 &amp; over</td>
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<td>3</td>
<td>100</td>
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</table>

1/ Age not available for 10 dentists. Percents based on total for whom age is known.

Dentists in the metropolitan areas, with a median age of 41.9 years, are more than two years younger, on the average, than dentists in the nonmetropolitan counties, where the median age is 44.2 years. Of the metropolitan areas, the Atlanta area, with a median age of 41.2 years, has the youngest group of dentists. However, the age differences among the counties in this area are quite pronounced, with the older dentists concentrated in Fulton County, the hub of the area. The median age of dentists in this county is 43.0 years, while dentists in the other four counties in the Atlanta area average about 7 years younger, with a median age of 36.3 years. Among the nonmetropolitan counties, those with central cities of less than 2,500 population have the oldest group of dentists, with a median age of 46.8 years—almost four years older than the median age for the State.
ACTIVE DENTISTS IN RELATION TO POPULATION

Approximately 97 percent (1,199) of the 1,240 dentists in Georgia are active in their profession, giving the State one professionally active dentist for every 3,506 persons. In the metropolitan areas, which have 66 percent of the active dentists and 49 percent of the population, the ratio is one dentist for every 2,588 persons. The remainder of the State, with 34 percent of the active dentists and 51 percent of the population, has a much less favorable ratio of one dentist for every 5,272 persons.

Number of Persons per Active Dentist in Georgia

<table>
<thead>
<tr>
<th>County group*</th>
<th>Professionally active dentists</th>
<th>Population</th>
<th>Persons per dentist</th>
</tr>
</thead>
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<tr>
<td>All counties</td>
<td>1,199</td>
<td>4,203,900</td>
<td>3,506</td>
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<tr>
<td>Metropolitan areas</td>
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<td>Atlanta area</td>
<td>544</td>
<td>1,163,500</td>
<td>2,139</td>
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<td>59</td>
<td>199,000</td>
<td>3,373</td>
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<td>Savannah area</td>
<td>58</td>
<td>201,400</td>
<td>3,422</td>
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<td>Columbus area (Ga. part)</td>
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<td>191,300</td>
<td>4,555</td>
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<td>53</td>
<td>148,600</td>
<td>2,804</td>
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<td>Albany area</td>
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<td>88,900</td>
<td>3,704</td>
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<td>Chattanooga area (Ga. part)</td>
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<td>49,600</td>
<td>5,511</td>
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<tr>
<td>Nonmetropolitan counties</td>
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<td></td>
</tr>
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<td>Central city 10,000-49,999</td>
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<td>722,200</td>
<td>3,666</td>
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<td>Central city 5,000-9,999</td>
<td>84</td>
<td>428,000</td>
<td>5,095</td>
</tr>
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<td>86</td>
<td>498,700</td>
<td>5,739</td>
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<tr>
<td>Central city under 2,500</td>
<td>43</td>
<td>512,700</td>
<td>11,923</td>
</tr>
</tbody>
</table>

* See Appendix Table for individual county data.

Among the metropolitan areas, the Atlanta area has the most favorable ratio, 2,139 persons per dentist. Within this area, Fulton County has an even more favorable ratio of 1,575, compared to a combined ratio of 3,433 in the other four counties. Three other areas—Macon, Savannah, and the Georgia portion of the interstate Augusta area—have ratios under 3,500. Of the three remaining areas, Albany has the best ratio with one dentist for every 3,700 persons, while the Georgia portions of the interstate Columbus and Chattanooga areas have more than 4,500 persons per dentist.

Of the 146 nonmetropolitan counties, only 19 have persons-per-dentist ratios below 3,500, while 48 counties have more than 6,000 persons per dentist, including 11 with ratios exceeding 10,000. Generally, the ratio of persons per dentist becomes much less favorable as the size of the central city decreases. The counties with 10,000 or more persons in their central cities have an average of 3,666 persons per dentist, while counties with central cities of less than 2,500 average almost 12,000 persons per dentist.
UTILIZATION OF AUXILIARIES

More than nine-tenths of the responding dental practitioners in Georgia (i.e., dentists who spend any time working at the chair) employ one or more auxiliaries. Dental assistants, the most frequently employed auxiliary, are utilized by 83 percent of all practitioners, including 78 percent who employ at least one on a full-time basis. Forty-seven percent of the dentists employ dental hygienists, with 29 percent utilizing such personnel full time. Secretaries and receptionists are employed by 45 percent of the practitioners, most often on a full-time basis.

Georgia Dentists Employing Auxiliaries, by Type of Auxiliary

<table>
<thead>
<tr>
<th>Type of auxiliary employed</th>
<th>Dental practitioners</th>
<th>Percent of dental practitioners</th>
<th>With one full-time employee (or more)</th>
<th>With only part-time employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>1,102²/</td>
<td>100</td>
<td>87</td>
<td>4</td>
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<tr>
<td>One or more auxiliaries</td>
<td>968</td>
<td>91</td>
<td>87</td>
<td>4</td>
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<tr>
<td>Assistant</td>
<td>886</td>
<td>83</td>
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<tr>
<td>Hygienist</td>
<td>499</td>
<td>47</td>
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<td>18</td>
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<td>Laboratory technician</td>
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<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Secretary or receptionist</td>
<td>480</td>
<td>45</td>
<td>33</td>
<td>12</td>
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<tr>
<td>Other type of personnel</td>
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<td>8</td>
<td>4</td>
<td>4</td>
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<tr>
<td>No auxiliary</td>
<td>99</td>
<td>9</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

²/ Includes 35 dentists who did not report on auxiliary utilization.

The use of auxiliaries varies with the age of the dentist, becoming less frequent among those in the older age groups. Approximately 95 percent of Georgia dentists under 55 years of age employ some type of auxiliary. The proportion utilizing auxiliaries decreases to 83 percent among dentists 55 to 64 years of age and to 68 percent among dentists 65 or over.

Most 13 percent of the responding practitioners in Georgia reported one or more vacancies for auxiliary personnel. Two-fifths of these dentists indicated a need for full-time dental hygienists, and one-fourth have vacant positions for full-time dental assistants.
OTHER SURVEY FINDINGS

Ninety-four percent of the responding professionally active dentists in Georgia are engaged in private practice, with 93 percent self-employed and one percent employed by another dentist. Two percent are on the staff of the dental school and another two percent are employed by governmental agencies. The remaining two percent are engaged in some other dental activity, such as taking advanced training.

Some 15 percent of the dentists reported at least one part-time dental activity in addition to their principal employment. Part-time teaching at a dental school was reported by six percent of the dentists, and employment by governmental agencies, by 4 percent. A variety of other secondary dental activities were reported, including service with a voluntary agency and employment by another dentist.

Dentists reporting time spent in patient care devoted an average of 40.4 hours a week to this activity for 48.2 weeks during the year preceding the survey. About one dentist in seven worked the equivalent of six days a week, 48 hours or more, for at least 48 weeks.

Fifteen percent of the dental practitioners reported that they limit their practice to a dental specialty, primarily to orthodontics. Twenty percent of the dentists in metropolitan areas limit their practice, compared to only 7 percent in nonmetropolitan counties.

Of the responding dentists who are licensed in Georgia but located in another state, four-fifths are in the adjacent states of Florida, Alabama, the Carolinas, or Tennessee. The remainder are scattered throughout 30 other states and the District of Columbia, with the largest numbers in California, Mississippi, and New York.

August 1968.
### APPENDIX TABLE

**Selected Data on Dentists in Georgia, by Location**

<table>
<thead>
<tr>
<th>Area and county</th>
<th>Civilian dentists</th>
<th></th>
<th></th>
<th>1/ Persons per active dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Respondents</td>
<td>Non-respondents</td>
<td>Age in 1965</td>
</tr>
<tr>
<td></td>
<td>Active</td>
<td>(in 000's)</td>
<td>Active</td>
<td>Professionally active</td>
</tr>
<tr>
<td>All counties</td>
<td>1,240</td>
<td>1,161</td>
<td>79</td>
<td>345</td>
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<tr>
<td>Metropolitan areas2/</td>
<td>815</td>
<td>759</td>
<td>56</td>
<td>253</td>
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<td><strong>Atlanta area</strong></td>
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<tr>
<td>Clayton</td>
<td>563</td>
<td>524</td>
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<td>188</td>
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<td>100</td>
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<td><strong>Columbus area (Ga. part)</strong></td>
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### APPENDIX TABLE (cont'd)

Selected Data on Dentists in Georgia, by Location

<table>
<thead>
<tr>
<th>Area and county</th>
<th>Civilian dentists</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Respondents</td>
<td>Non-respondents</td>
<td>Age in 1965</td>
<td>Professionally active</td>
<td>Population (in 000's)</td>
<td>Persons per active dentist</td>
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<td>Under 55 and over</td>
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<td>Metropolitan areas(^2)</td>
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<td>Nonmetropolitan counties²/ (cont'd.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Central city under 2,500 (cont'd.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lanier</td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>Lee</td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>Lincoln</td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>Long</td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>Mc Intosh</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Madison</td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>Marion</td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>Miller</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Montgomery</td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>Murray</td>
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</tr>
<tr>
<td>Oconee</td>
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<td>-</td>
</tr>
<tr>
<td>Oglethorpe</td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>Paulding</td>
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<tr>
<td>Pickens</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Pierce</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Pike</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Quitman</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Rabun</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Schley</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Stewart</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Talbot</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Taliaferro</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Taylor</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Towns</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Treutlen</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Georgia, by Location

<table>
<thead>
<tr>
<th>Area and county</th>
<th>Civilian dentists</th>
<th>Professional</th>
<th>Population (in 000's)</th>
<th>Persons per active dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total respondents</td>
<td>Non-respondents</td>
<td>Age in 1965</td>
<td>55 and over</td>
</tr>
<tr>
<td>Nonmetropolitan counties 2/ (cont'd.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Central city under 2,500 (cont'd.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Twiggs</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Union</td>
<td>-</td>
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<td>-</td>
</tr>
<tr>
<td>Warren</td>
<td>1</td>
<td>1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Webster</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Wheeler</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>White</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>Wilcox</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Wilkinson</td>
<td>1</td>
<td>1</td>
<td>-</td>
<td>1</td>
</tr>
</tbody>
</table>


2/ Georgia counties included in the latest 1967 definition of Standard Metropolitan Statistical Areas, as defined by the U.S. Bureau of the Budget, Office of Statistical Standards, have been grouped as metropolitan areas for presentation of the survey data. For interstate SMSAs--Columbus, Augusta, and Chattanooga--statistics are presented only for dentists located in the Georgia portions.

3/ Counties not included within an SMSA, as defined by the U.S. Bureau of the Budget, have been grouped according to the 1960 population of the largest (central) city within each county.
DENTISTS LICENSED IN HAWAII

During the 1965 registration period, 590 dentists registered with the Hawaii Board of Dental Examiners. A total of 561 dentists responded to the survey, 95 percent of all those registered. Over three-fourths are civilians located in Hawaii, 18 percent are civilians located in other States, and 5 percent are on active duty with the Armed Forces.

<table>
<thead>
<tr>
<th>Location and Military Status of Dentists Licensed in Hawaii</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location and military status</td>
</tr>
<tr>
<td>-------------------------------</td>
</tr>
<tr>
<td>Total licensed</td>
</tr>
<tr>
<td>Respondents</td>
</tr>
<tr>
<td>Nonrespondents</td>
</tr>
<tr>
<td>Respondents</td>
</tr>
<tr>
<td>Civilians in Hawaii</td>
</tr>
<tr>
<td>Civilians in another State</td>
</tr>
<tr>
<td>On active duty with Armed Forces</td>
</tr>
</tbody>
</table>

About 57 percent of the respondents hold a license to practice dentistry in one or more other States. Among the dentists located in Hawaii, 46 percent hold more than one license, with 39 percent licensed in one other State, and 7 percent licensed in two or more other States. Multiple licensure is considerably more common among responding dentists registering in Hawaii but located out-of-State; more than one-third hold two or more licenses in addition to their Hawaii license.

Approximately 35 percent of the licenses held outside of Hawaii are held in California. Another 30 percent are held in two North Central States, Illinois and Missouri. The remaining out-of-State licenses are held in 24 other States and the District of Columbia.
More than four-fifths (84 percent) of the 429 responding dentists in Hawaii are located in the Honolulu metropolitan area (Honolulu County). The remaining 16 percent of the dentists are located in the nonmetropolitan counties of the State. Of these counties, Hawaii County has the largest dental force, 8 percent of the State supply. Maui and Kauai Counties have 5 percent and 3 percent of the total supply, respectively.

### Distribution of Hawaii Dentists, by County

<table>
<thead>
<tr>
<th>County</th>
<th>Total civilian dentists</th>
<th>Professionally active dentists</th>
<th>Population (in 000's)</th>
<th>Persons per active dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td>All counties</td>
<td>429</td>
<td>417</td>
<td>730.7</td>
<td>1,752</td>
</tr>
<tr>
<td>Honolulu metropolitan area</td>
<td>360</td>
<td>350</td>
<td>597.5</td>
<td>1,707</td>
</tr>
<tr>
<td>Honolulu County</td>
<td>360</td>
<td>350</td>
<td>597.5</td>
<td>1,707</td>
</tr>
<tr>
<td>Nonmetropolitan counties</td>
<td>69</td>
<td>67</td>
<td>133.2</td>
<td>1,988</td>
</tr>
<tr>
<td>Hawaii County</td>
<td>33</td>
<td>31</td>
<td>61.1</td>
<td>1,971</td>
</tr>
<tr>
<td>Maui County</td>
<td>22</td>
<td>22</td>
<td>44.5</td>
<td>2,023</td>
</tr>
<tr>
<td>Kauai County</td>
<td>14</td>
<td>14</td>
<td>27.3</td>
<td>1,950</td>
</tr>
<tr>
<td>Kalawao County</td>
<td>-</td>
<td>-</td>
<td>0.3</td>
<td>-</td>
</tr>
</tbody>
</table>


Of the 429 dentists in Hawaii, 417 (97 percent) are active in their profession, giving Hawaii one professionally active dentist for every 1,752 persons. There is one dentist for every 1,707 persons in the Honolulu metropolitan area, while the remainder of the State has a less favorable ratio of one dentist for every 1,988 persons. Kauai, Hawaii, and Maui Counties have very similar ratios, between 1,950 and 2,025.
AGE DISTRIBUTION OF DENTISTS

The median age of dentists in Hawaii is 43.6 years. About one-fifth (21 percent) are under 35, yet more than one-fourth (28 percent) are 55 years of age or older, including 8 percent who have reached the age of 65. Approximately one-half of all dentists in the State are in the age group 35 through 54, with one-third between the ages of 35 and 44.

Age Distribution of Hawaii Dentists

<table>
<thead>
<tr>
<th>Age in 1965</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
<th>Cumulative percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>429¹/</td>
<td>100</td>
<td>-</td>
</tr>
<tr>
<td>Under 30</td>
<td>23</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>30-34</td>
<td>66</td>
<td>16</td>
<td>21</td>
</tr>
<tr>
<td>35-39</td>
<td>78</td>
<td>18</td>
<td>39</td>
</tr>
<tr>
<td>40-44</td>
<td>65</td>
<td>15</td>
<td>54</td>
</tr>
<tr>
<td>45-49</td>
<td>43</td>
<td>10</td>
<td>64</td>
</tr>
<tr>
<td>50-54</td>
<td>35</td>
<td>8</td>
<td>72</td>
</tr>
<tr>
<td>55-59</td>
<td>33</td>
<td>8</td>
<td>80</td>
</tr>
<tr>
<td>60-64</td>
<td>49</td>
<td>12</td>
<td>92</td>
</tr>
<tr>
<td>65-69</td>
<td>23</td>
<td>5</td>
<td>97</td>
</tr>
<tr>
<td>70-74</td>
<td>7</td>
<td>2</td>
<td>99</td>
</tr>
<tr>
<td>75 and over</td>
<td>5</td>
<td>1</td>
<td>100</td>
</tr>
</tbody>
</table>

¹/ Age not available for 2 dentists.

Dentists in the Honolulu metropolitan area, with a median age of 42.9 years, are almost seven years younger, on the average, than dentists in the nonmetropolitan counties, where the median age is 49.5 years. Approximately 22 percent of the dentists in Honolulu are under 35, and 25 percent are 55 years of age or older. By comparison, only 15 percent of the dentists in nonmetropolitan counties are under 35 years of age, while 39 percent have reached the age of 55.
DENTAL SCHOOL ATTENDED

Two-thirds of the 429 responding dentists located in Hawaii are graduates of 17 dental schools in the North Central States. Among these schools, the University of Missouri and Northwestern University are the major contributors, each having provided 14 percent of Hawaii's dentists. The only other schools in the North Central States to contribute more than 25 of the State's dentists are two Missouri schools, St. Louis and Washington Universities, which have together supplied 15 percent of the dental force.

School Awarding Dental Degree, by Year Awarded

<table>
<thead>
<tr>
<th>Dental school attended</th>
<th>Number of dentists</th>
<th>Year of graduation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All</td>
<td>1955</td>
</tr>
<tr>
<td>Total number</td>
<td>429</td>
<td>-</td>
</tr>
<tr>
<td>(Percent distribution by school)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>North Central States</td>
<td>284</td>
<td>14</td>
</tr>
<tr>
<td>Missouri</td>
<td>59</td>
<td>14</td>
</tr>
<tr>
<td>Northwestern</td>
<td>58</td>
<td>14</td>
</tr>
<tr>
<td>St. Louis</td>
<td>37</td>
<td>9</td>
</tr>
<tr>
<td>Washington (St. Louis)</td>
<td>26</td>
<td>6</td>
</tr>
<tr>
<td>13 other schools</td>
<td>104</td>
<td>24</td>
</tr>
<tr>
<td>Western States</td>
<td>87</td>
<td>20</td>
</tr>
<tr>
<td>Southern California</td>
<td>57</td>
<td>13</td>
</tr>
<tr>
<td>7 other schools</td>
<td>30</td>
<td>7</td>
</tr>
<tr>
<td>Other regions (16 schools)</td>
<td>54</td>
<td>13</td>
</tr>
</tbody>
</table>

1/ Dental school attended not reported by 4 dentists and year of graduation by 3 dentists. Percents are based on data supplied.

Another 20 percent of Hawaii's dentists graduated from eight schools located in Western States, primarily the University of Southern California, which has provided 13 percent of the State's dentists. The remaining 13 percent of Hawaii's responding dentists were trained in 16 dental schools located in other regions of the country.

A fairly substantial proportion of Hawaii's dentists are recent dental school graduates. One-third have completed their dental education since 1955, equaling the proportion who received their dental degrees prior to World War II. In recent years, Hawaii's dentists have tended to come increasingly from dental schools in the North Central States. The proportionate contribution of these schools has increased from 49 percent of all dentists currently located in the State who graduated before World War II to 78 percent of those who graduated after 1955. At the same time, there has been a considerable decrease in the contribution of schools located in the West.
Almost 70 percent of the responding dental practitioners in Hawaii (i.e., dentists who spend any time working at the chair) reported that they employ auxiliary personnel. Dental assistants, the most frequently employed auxiliary, are utilized by 63 percent of all practitioners, including 57 percent who employ at least one assistant on a full-time basis. Secretaries or receptionists are employed by 14 percent of the dentists, with about two-thirds of these dentists utilizing such personnel full time. Only 10 percent of the dentists employ dental hygienists and 5 percent employ dental technicians. A majority of the dentists who employ hygienists or technicians do so only part time.

Hawaii Dentists Employing Auxiliaries, by Type of Auxiliary

<table>
<thead>
<tr>
<th>Type of auxiliary employed</th>
<th>Percent of dental practitioners</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Dental practitioners</td>
</tr>
<tr>
<td>Total</td>
<td>412</td>
</tr>
<tr>
<td>One or more auxiliaries</td>
<td>272</td>
</tr>
<tr>
<td>Assistant</td>
<td>250</td>
</tr>
<tr>
<td>Hygienist</td>
<td>39</td>
</tr>
<tr>
<td>Laboratory technician</td>
<td>13</td>
</tr>
<tr>
<td>Secretary or receptionist</td>
<td>57</td>
</tr>
<tr>
<td>Other type personnel</td>
<td>16</td>
</tr>
<tr>
<td>No auxiliary</td>
<td>123</td>
</tr>
</tbody>
</table>

1/ Includes 17 dentists who did not report on auxiliary utilization.

The use of auxiliaries varies with the age of the dentist and is more frequent among the young dentists. Eighty-one percent of the dental practitioners between the ages of 30 and 44 employ some type of auxiliary. The proportion utilizing auxiliaries decreases to 57 percent among dentists 45 to 64 years old and to only 46 percent among dentists 65 and over.
OTHER SURVEY FINDINGS

One of every six survey respondents, 68 dentists, reported that they had completed one year or more of advanced training since receiving the dental degree. Thirty-nine dentists reported completion of advanced clinical training as residents or interns, and 48 dentists had completed academic training as graduate or postgraduate students. Nineteen dentists had completed at least a year of both academic and clinical training.

Ninety-six percent of the responding professionally active dentists in Hawaii are primarily engaged in private practice, with 95 percent self-employed and one percent employed by another dentist. The remaining four percent are either employed by governmental agencies or engaged in other dental activities, such as taking advanced training.

Dentists reporting time spent in patient care devoted an average of 41.3 hours per week to this activity for 47.7 weeks during the year preceding the survey. About one dentist in six worked the equivalent of six days a week, 48 hours or more, for at least 48 weeks.

About 11 percent of the dentists in Hawaii reported that they limit their practice to a dental specialty, primarily orthodontics. Almost all of the dentists who reported limiting their practices are located in the Honolulu metropolitan area.

Of the 102 dentists licensed in Hawaii but located out of State, two-thirds are located in California, and 11 percent are located in Oregon or Washington. The remaining out-of-State dentists are scattered throughout 15 other States across the Nation.

July 1968.
During the 1966 registration period, 573 dentists registered with the Idaho State Board of Dentistry. Fifty-four percent of these dentists were civilians located in Idaho, another 41 percent were civilians located in other states, primarily California, Oregon and Washington, and 5 percent were on active duty in the Armed Forces.

<table>
<thead>
<tr>
<th>Location and military status</th>
<th>All dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total licensed</td>
<td>573</td>
<td>100</td>
</tr>
<tr>
<td>Respondents</td>
<td>521</td>
<td>91</td>
</tr>
<tr>
<td>Nonrespondents</td>
<td>52</td>
<td>9</td>
</tr>
<tr>
<td>Total licensed</td>
<td>573</td>
<td>100</td>
</tr>
<tr>
<td>Civilians in Idaho</td>
<td>309</td>
<td>54</td>
</tr>
<tr>
<td>Respondents</td>
<td>278</td>
<td>-</td>
</tr>
<tr>
<td>Nonrespondents</td>
<td>31</td>
<td>-</td>
</tr>
<tr>
<td>Civilians in another state</td>
<td>233</td>
<td>41</td>
</tr>
<tr>
<td>On active duty with Armed Forces</td>
<td>30</td>
<td>5</td>
</tr>
<tr>
<td>Not reported</td>
<td>1</td>
<td>*</td>
</tr>
</tbody>
</table>

* Less than one-half of one percent.

The survey questionnaire was completed by 521 dentists, 91 percent of all those registered. The data provided by the survey respondents has been supplemented, when obtainable, by information on location, age, dental school attended and year of graduation for dentists not responding to the survey. Information on nonrespondents was obtained either from records maintained by the Idaho State Board of Dentistry or from the 1967 American Dental Directory, published by the American Dental Association.
DENTAL SCHOOL ATTENDED

The dental school at the University of Oregon has been the major contributor to the Idaho dental force, having trained almost one-fourth (23 percent) of the total supply. The University of Washington, the next largest contributor, has trained an additional 13 percent of the dentists. The University of Southern California is the only other dental school in the West to have supplied more than 5 percent of the State's dental force.

One-half of Idaho's dentists are graduates of 15 dental schools in the North Central States. Northwestern University is the largest contributor among these schools, having trained 10 percent of the dentists. Three other schools in the North Central States, Missouri (Kansas City), Washington (St. Louis) and Creighton have each contributed 6 percent. The Universities of Minnesota and Nebraska are the only other schools in the region to contribute as much as 5 percent of the State's dentists.

### Dental School Attended and Year of Graduation for Dentists in Idaho

<table>
<thead>
<tr>
<th>Dental school attended</th>
<th>Number of dentists</th>
<th>Year of graduation</th>
<th>1940 or earlier</th>
<th>1941-1955</th>
<th>1955 or after</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number</td>
<td>309</td>
<td>-</td>
<td>110</td>
<td>122</td>
<td>75</td>
</tr>
<tr>
<td>(Percent distribution by school)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>West</td>
<td>140</td>
<td>46</td>
<td>43</td>
<td>46</td>
<td>51</td>
</tr>
<tr>
<td>Oregon</td>
<td>69</td>
<td>23</td>
<td>13</td>
<td>24</td>
<td>35</td>
</tr>
<tr>
<td>Washington</td>
<td>40</td>
<td>13</td>
<td>25</td>
<td>11</td>
<td>-</td>
</tr>
<tr>
<td>Southern California</td>
<td>23</td>
<td>7</td>
<td>2</td>
<td>9</td>
<td>13</td>
</tr>
<tr>
<td>5 other schools</td>
<td>8</td>
<td>3</td>
<td>4</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>North Central</td>
<td>154</td>
<td>50</td>
<td>52</td>
<td>51</td>
<td>46</td>
</tr>
<tr>
<td>Northwestern</td>
<td>30</td>
<td>10</td>
<td>13</td>
<td>11</td>
<td>4</td>
</tr>
<tr>
<td>Missouri (Kansas City)</td>
<td>19</td>
<td>6</td>
<td>8</td>
<td>2</td>
<td>11</td>
</tr>
<tr>
<td>Washington (St. Louis)</td>
<td>19</td>
<td>6</td>
<td>8</td>
<td>8</td>
<td>-</td>
</tr>
<tr>
<td>Creighton</td>
<td>17</td>
<td>6</td>
<td>8</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>11 other schools</td>
<td>69</td>
<td>22</td>
<td>15</td>
<td>25</td>
<td>28</td>
</tr>
<tr>
<td>Other regions (7 schools)</td>
<td>11</td>
<td>4</td>
<td>5</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

1/ Dental school attended not available for 4 dentists and year of graduation for 2 dentists. Percents based on known totals.

A fairly substantial proportion of Idaho's dentists are recent dental school graduates. More than one-third have completed their dental education since 1955, as compared to less than one-fourth who received their dental degrees prior to World War II. The dental school at the University of Washington, which graduated its first class in 1950, has become the primary source of dentist supply in recent years, providing one-fourth of the State's dentists who graduated after 1955. At the same time the contribution of the University of Oregon has progressively decreased over the years.
DISTRIBUTION OF DENTISTS

Idaho's dentists are unevenly distributed geographically, with two-thirds of the licensed dentists located in only 8 of the State's 44 counties. The Boise City metropolitan area (Ada County), with 59 dentists, has 19 percent of the State's supply, and the 7 nonmetropolitan counties with at least 10,000 persons in their central cities have among them 150 dentists, or 48 percent of the total dental force. Three of these nonmetropolitan counties--Bonneville, Bannock and Canyon--have at least 25 dentists, and two other counties--Twin Falls and Nez Perce--have at least 20 dentists.

Distribution of Idaho Dentists, by County Group

<table>
<thead>
<tr>
<th>County group*</th>
<th>Number of counties</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>All counties</td>
<td>44</td>
<td>309</td>
<td>100</td>
</tr>
<tr>
<td>Boise City metropolitan area</td>
<td>1</td>
<td>59</td>
<td>19</td>
</tr>
<tr>
<td>Nonmetropolitan counties</td>
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<td>81</td>
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<td>48</td>
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<td>17</td>
<td>73</td>
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<td>Central city under 2,500</td>
<td>19</td>
<td>27</td>
<td>9</td>
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</tbody>
</table>

* See Appendix Table for definition of metropolitan area and presentation of individual county data.

The 36 nonmetropolitan counties comprising the two groups of counties with less than 10,000 persons in their central cities have one-third of the State's dentist supply. There are 73 dentists in the 17 counties having between 2,500 and 9,999 persons in their central cities, while only 27 dentists are scattered among the 19 counties with central cities of less than 2,500 population. Only seven of these 36 counties have as many as 5 dentists, and 12 have fewer than 2 dentists.
The median age of dentists in Idaho is 43.0 years. Almost one-fourth (70 dentists) are under 35, and more than a third (111 dentists) are between 35 and 44 years of age. On the other hand, a sizeable proportion, approximately one-fourth, are 55 or over. About 13 percent of the dentists are at least 65 years of age, including 5 percent who have reached the age of 70.

### Median Age and Age Distribution, by County Group

<table>
<thead>
<tr>
<th>County group</th>
<th>Median Age</th>
<th>Under 35</th>
<th>35-44</th>
<th>45-54</th>
<th>55 &amp; over</th>
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</thead>
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<td>36</td>
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<td>25</td>
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<td>Central city under 10,000</td>
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<td>38</td>
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<td>28</td>
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</table>

Dentists in the Boise City metropolitan area, with a median age of 39.8 years, are more than four years younger than dentists in the group of counties with central cities of 10,000 or more persons, where the median age is 44.2 years. Almost one-third of the dentists in Boise City are under 35, while only 15 percent are 55 years of age or older. By comparison, less than one-fifth of the dentists in counties having central cities of 10,000 or more population are under 35 years of age, while almost one-fourth have reached the age of 55.

Dentists in the group of counties with central cities of less than 10,000 inhabitants have a median age of 41.9 years, slightly under the State average. Even though one-fourth of these dentists are under the age of 35, a substantial proportion, almost three dentists in every 10, are at least 55 years of age.
Of the 309 licensed dentists in Idaho, 286, or 93 percent, are active in their profession, giving Idaho one professionally active dentist for every 2,439 persons. There is one professionally active dentist for every 1,827 persons in the Boise City metropolitan area, a ratio substantially better than the State average. The group of seven nonmetropolitan counties with 10,000 or more inhabitants in their central cities have one dentist for every 2,034 persons, a ratio slightly higher than that of the Boise City metropolitan area but still considerably below the State average. Among these counties three have persons-per-dentist ratios under 2,000—Nez Perce (1,460), Bonneville (1,886) and Bannock (1,967).

### Number of Persons per Active Dentist in Idaho

<table>
<thead>
<tr>
<th>County group*</th>
<th>Professionally active dentists</th>
<th>Population</th>
<th>Persons per dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>286</td>
<td>697,500</td>
<td>2,439</td>
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<td>Boise City metropolitan area</td>
<td>56</td>
<td>102,300</td>
<td>1,827</td>
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<td>Nonmetropolitan county groups</td>
<td>230</td>
<td>595,200</td>
<td>2,588</td>
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<td>Central city 10,000-49,999</td>
<td>143</td>
<td>290,900</td>
<td>2,034</td>
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<td>Central city 2,500-9,999</td>
<td>66</td>
<td>221,900</td>
<td>3,362</td>
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<tr>
<td>Central city under 2,500</td>
<td>21</td>
<td>82,400</td>
<td>3,924</td>
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</table>

* See Appendix Table for individual county data.

Persons-per-dentist ratios are much less favorable in the two groups of counties with less than 10,000 persons in their central cities. The 17 counties with central city populations between 2,500 and 9,999 have an average of 3,362 persons per dentist, while the 19 counties with central cities of less than 2,500 inhabitants have an even less favorable ratio of 3,924 persons for every active dentist. Among these 36 counties, 18 have ratios exceeding 3,000 persons per dentist, including five counties with ratios in excess of 5,000. Another six counties have no active dentists, according to available information.
UTILIZATION OF AUXILIARIES

More than nine out of every ten dental practitioners in Idaho (i.e., dentists who spend any time working at the chair) reported that they employ auxiliary personnel, including 86 percent who employ at least one auxiliary or a full-time basis. The most frequently employed auxiliary is the dental assistant. Eighty-seven percent of the practitioners reported the use of an assistant, including 82 percent who utilize at least one full time. About one-fourth of the dentists employ secretaries or receptionists, usually on a full-time basis. Dental hygienists and laboratory technicians are employed by fewer dentists, usually only part time.

<table>
<thead>
<tr>
<th>Type of auxiliary employed by dentists</th>
<th>Percent of dental practitioners</th>
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<tr>
<td></td>
<td>Dental practitioners</td>
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<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>257 (^{1/})</td>
</tr>
<tr>
<td>One or more auxiliaries</td>
<td>229</td>
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<tr>
<td>Assistant</td>
<td>217</td>
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<tr>
<td>Hygienist</td>
<td>29</td>
</tr>
<tr>
<td>Laboratory technician</td>
<td>14</td>
</tr>
<tr>
<td>Secretary or receptionist</td>
<td>60</td>
</tr>
<tr>
<td>Other type of personnel</td>
<td>6</td>
</tr>
<tr>
<td>No auxiliary</td>
<td>20</td>
</tr>
</tbody>
</table>

\(^{1/}\) Includes 8 dentists who did not report on auxiliary utilization.

The use of auxiliaries varies with the age of the dentist and is less frequent among the older dentists. Ninety-five percent of dental practitioners under the age of 55 reported employment of some type of auxiliary. The proportion utilizing auxiliaries decreases to 73 percent among dentists 55 to 64 years of age and to 50 percent among dentists 65 and over.

About one-fifth of the responding dental practitioners in Idaho reported one or more vacant positions for auxiliary personnel. Of these dentists, about 38 percent indicated vacancies for full-time hygienists and 19 percent for full-time dental assistants.
Multiple licensure is fairly common in Idaho, with three-fifths of the respondents located in the State holding more than one license. Forty-two percent indicated licensure in at least one additional state and 18 percent in two or more other states. Of those dentists registered in Idaho but located in another state, a relatively high proportion—50 percent—are licensed in two or more states other than Idaho.

More than one-half of the licenses held in states outside of Idaho are held in the nearby states of California, Oregon and Washington. An additional one-fourth are maintained in two other nearby states, Utah and Montana, and in the more distant states of Missouri, Nebraska and Minnesota.

One of every six survey respondents located in Idaho, 45 dentists, reported that they had completed one year or more of advanced training after receiving their dental degree. Sixteen dentists reported completion of advanced clinical training as residents or interns, and 34 dentists completed academic training as graduate or postgraduate students. Five dentists completed both academic and clinical training.

Dentists reporting on time spent in providing patient care devoted an average of 41.2 hours per week to this activity for 47.6 weeks during the year preceding the survey. About one dentist in seven worked the equivalent of six days a week, 48 hours or more, for at least 48 weeks.

About 9 percent of the practitioners reported they limit their practice to a dental specialty, primarily to orthodontics. Seventeen percent of the dentists in the Boise City metropolitan area and in Bannock and Bonneville Counties, the two non-metropolitan counties with central cities of 25,000-49,999 population, limit their practices, as compared to only 5 percent in the remainder of the State.

February 1963.
## APPENDIX TABLE

Selected Data on Dentists in Idaho, by Location

<table>
<thead>
<tr>
<th>Area and county</th>
<th>Total Respondents</th>
<th>Non-respondents</th>
<th>Persons Under 35 years</th>
<th>Persons 35 years or more</th>
<th>Professionally active dentists</th>
<th>Population (in 000's)</th>
<th>Persons per active dentist</th>
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</thead>
<tbody>
<tr>
<td>All counties</td>
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<td>278</td>
<td>31</td>
<td>70</td>
<td>72</td>
<td>286</td>
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<td>52</td>
<td>7</td>
<td>17</td>
<td>9</td>
<td>54</td>
<td>102.3</td>
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<tr>
<td>Ada</td>
<td>59</td>
<td>52</td>
<td>7</td>
<td>17</td>
<td>9</td>
<td>56</td>
<td>102.3</td>
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<td>53.1</td>
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APPENDIX TABLE (cont’d.)

Selected Data on Dentists in Idaho, by Location

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<th>Area and county</th>
<th>Civilian dentists</th>
<th>Age in 1965</th>
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<th>Population (in 000's)</th>
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### APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Idaho, by Location

<table>
<thead>
<tr>
<th>Area and county</th>
<th>Civilian dentists</th>
<th>Population per active dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total respondents</td>
<td>Non-respondents</td>
</tr>
<tr>
<td>Nonmetropolitan counties (cont'd.)</td>
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<td></td>
</tr>
<tr>
<td>Central city under 2,500 (cont'd.)</td>
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<td></td>
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<td>1</td>
</tr>
<tr>
<td>Teton</td>
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<td>-</td>
</tr>
<tr>
<td>Valley</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>


2/ The Boise City area, including all of Ada County, is defined as a Standard Metropolitan Statistical Area as established by the U.S. Bureau of the Budget, Office of Statistical Standards.

3/ Counties not included within a SMSA as defined by the U.S. Bureau of the Budget, have been grouped according to the 1960 population of the largest (central) city within each county.
During the 1966 registration period, 8,181 dentists registered with the State of Illinois Department of Registration and Education. Over three-fourths of the registered dentists were civilians located in Illinois, another 18 percent were civilians located in other states, and 5 percent were on active duty in the armed forces.

Location and Military Status of Dentists Licensed in Illinois

<table>
<thead>
<tr>
<th>Location and military status</th>
<th>All dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total licensed</td>
<td>8,181</td>
<td>100</td>
</tr>
<tr>
<td>Respondents</td>
<td>7,071</td>
<td>86</td>
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<tr>
<td>Nonrespondents</td>
<td>1,110</td>
<td>14</td>
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<tr>
<td>Total licensed</td>
<td>8,181</td>
<td>100</td>
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<tr>
<td>Civilians in Illinois</td>
<td>6,316</td>
<td>77</td>
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<tr>
<td>Respondents</td>
<td>5,472</td>
<td>-</td>
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<tr>
<td>Nonrespondents</td>
<td>844</td>
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<tr>
<td>Civilians in another state</td>
<td>1,450</td>
<td>18</td>
</tr>
<tr>
<td>On active duty with armed forces</td>
<td>391</td>
<td>5</td>
</tr>
<tr>
<td>Not reported</td>
<td>24</td>
<td>*</td>
</tr>
</tbody>
</table>

* Less than one-half of one percent.

The survey questionnaire was completed by 7,071 dentists, 86 percent of all those registered. The data provided by the survey respondents has been supplemented, when obtainable, by information on location, age, dental school attended and year of graduation for dentists not responding to the survey. Information on nonrespondents was obtained either from records maintained by the State of Illinois Department of Registration and Education or from the 1966 American Dental Directory published by the American Dental Association.
PROFESSIONAL TRAINING

Over four-fifths of Illinois' dentists graduated from dental schools located in Illinois, including 38 percent who received their dental education at Loyola University, 22 percent who are graduates of the University of Illinois and 21 percent who came from Northwestern University. Ten other dental schools in adjacent states have trained an additional 14 percent of Illinois' dentists, including two Missouri schools, St. Louis and Washington Universities, which have between them trained 10 percent of the dentists in the State.

School Awarding Dental Degree, by Year Awarded

<table>
<thead>
<tr>
<th>Dental school attended</th>
<th>Number of dentists</th>
<th>Year of graduation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>All</td>
</tr>
<tr>
<td>Total number</td>
<td>6,316-1/1</td>
<td>6,184</td>
</tr>
<tr>
<td></td>
<td>(Percent distribution by school)</td>
<td></td>
</tr>
<tr>
<td>Schools in Illinois</td>
<td>5,016</td>
<td>81</td>
</tr>
<tr>
<td>Loyola University</td>
<td>2,326</td>
<td>38</td>
</tr>
<tr>
<td>University of Illinois</td>
<td>1,352</td>
<td>22</td>
</tr>
<tr>
<td>Northwestern University</td>
<td>1,338</td>
<td>21</td>
</tr>
<tr>
<td>Schools in adjacent states</td>
<td>841</td>
<td>14</td>
</tr>
<tr>
<td>St. Louis University</td>
<td>364</td>
<td>6</td>
</tr>
<tr>
<td>Washington University</td>
<td>233</td>
<td>4</td>
</tr>
<tr>
<td>8 other schools</td>
<td>244</td>
<td>4</td>
</tr>
<tr>
<td>37 schools in other states</td>
<td>327</td>
<td>5</td>
</tr>
</tbody>
</table>

1/ Dental school attended not available for 132 dentists and year of graduation for 186 dentists. Percents based on totals for whom the data are known.

Only one-fifth of Illinois' dentists graduated from dental school within the last 10 years, while fully one-half graduated before World War II. Although the proportionate contribution of the three Illinois schools combined has remained relatively constant through the years, the University of Illinois has gradually replaced Loyola as the primary source of dentist supply, with its proportion increasing from 12 percent of the dentists who graduated before World War II to 37 percent of those who graduated within the last 10 years. Like Loyola, Northwestern has also shown a notable decrease over the years in its relative contribution of dentists to the State.
DISTRIBUTION OF DENTISTS

Eighty-five percent of the licensed dentists in Illinois are located in the nine metropolitan areas of the State. The 6-county Chicago area has more than seven-tenths of the dental force, 4,555 dentists, the vast majority of whom are located in Cook County. The areas of East St. Louis and Peoria have the next largest dental forces, even though each accounts for only about 3 percent of the State supply. Another 2 percent are located in the Rockford metropolitan area. The five remaining metropolitan areas, Rock Island-Moline, Springfield, Champaign-Urbana, Decatur and Bloomington-Normal, each have about one percent of Illinois' dentists.

Distribution of Dentists

<table>
<thead>
<tr>
<th>County group*</th>
<th>Number of counties</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>102</td>
<td>6,316</td>
<td>100</td>
</tr>
<tr>
<td>Chicago metropolitan area</td>
<td>6</td>
<td>4,555</td>
<td>72</td>
</tr>
<tr>
<td>Other metropolitan areas</td>
<td>13</td>
<td>815</td>
<td>13</td>
</tr>
<tr>
<td>East St. Louis area</td>
<td>2</td>
<td>180</td>
<td>3</td>
</tr>
<tr>
<td>Peoria area</td>
<td>3</td>
<td>156</td>
<td>3</td>
</tr>
<tr>
<td>Rockford area</td>
<td>2</td>
<td>128</td>
<td>2</td>
</tr>
<tr>
<td>Rock Island-Moline area</td>
<td>2</td>
<td>94</td>
<td>1</td>
</tr>
<tr>
<td>Springfield area</td>
<td>1</td>
<td>73</td>
<td>1</td>
</tr>
<tr>
<td>Champaign-Urbana area</td>
<td>1</td>
<td>73</td>
<td>1</td>
</tr>
<tr>
<td>Decatur area</td>
<td>1</td>
<td>57</td>
<td>1</td>
</tr>
<tr>
<td>Bloomington-Normal area</td>
<td>1</td>
<td>54</td>
<td>1</td>
</tr>
<tr>
<td>Nonmetropolitan counties</td>
<td>83</td>
<td>936</td>
<td>15</td>
</tr>
<tr>
<td>Central city 10,000-49,999</td>
<td>19</td>
<td>468</td>
<td>7</td>
</tr>
<tr>
<td>Central city 5,000-9,999</td>
<td>26</td>
<td>270</td>
<td>4</td>
</tr>
<tr>
<td>Central city 2,500-4,999</td>
<td>23</td>
<td>158</td>
<td>3</td>
</tr>
<tr>
<td>Central city under 2,500</td>
<td>15</td>
<td>40</td>
<td>1</td>
</tr>
</tbody>
</table>

* See Appendix Table for definition of metropolitan areas and presentation of individual county data.

1/ County location not available for 10 dentists.

Only 15 percent of the State's dentists are located in the 83 nonmetropolitan counties. These dentists tend to be concentrated in the counties which contain a relatively large city. One-half of the dentists in nonmetropolitan counties are located in the 19 counties with a central city of 10,000 or more population. The 64 counties which do not have a city this large account for only 8 percent of the dentists in the State.
The median age of the 5,127 dentists for whom age was obtainable is a rather high 51.0 years. Only 26 percent of Illinois' dentists, 1,598, are under 40 years of age, including just 16 percent who are under 35. On the other hand, more than two-fifths, or 2,592 dentists, are 55 years or over. Almost one in every five, or 1,180 dentists, are 65 years old or more, including 634 who have reached the age of 70.

<table>
<thead>
<tr>
<th>County group</th>
<th>Median age</th>
<th>Percent of dentists</th>
</tr>
</thead>
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<tr>
<td></td>
<td></td>
<td>Under 40</td>
</tr>
<tr>
<td>Total</td>
<td>51.0</td>
<td>26</td>
</tr>
<tr>
<td>Chicago metropolitan area</td>
<td>51.4</td>
<td>26</td>
</tr>
<tr>
<td>Other metropolitan areas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Champaign-Urbana area</td>
<td>47.3</td>
<td>30</td>
</tr>
<tr>
<td>Springfield area</td>
<td>46.1</td>
<td>28</td>
</tr>
<tr>
<td>Rockford area</td>
<td>46.4</td>
<td>38</td>
</tr>
<tr>
<td>Rock Island-Moline area</td>
<td>47.5</td>
<td>26</td>
</tr>
<tr>
<td>Peoria area</td>
<td>48.0</td>
<td>29</td>
</tr>
<tr>
<td>Bloomington-Normal area</td>
<td>48.1</td>
<td>27</td>
</tr>
<tr>
<td>East St. Louis area</td>
<td>49.3</td>
<td>29</td>
</tr>
<tr>
<td>Decatur area</td>
<td>50.5</td>
<td>20</td>
</tr>
<tr>
<td>Nonmetropolitan counties</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Central city 10,000-49,999</td>
<td>49.7</td>
<td>26</td>
</tr>
<tr>
<td>Central city 5,000-9,999</td>
<td>53.2</td>
<td>24</td>
</tr>
<tr>
<td>Central city 2,500-4,999</td>
<td>55.9</td>
<td>22</td>
</tr>
<tr>
<td>Central city under 2,500</td>
<td>61.4</td>
<td>21</td>
</tr>
</tbody>
</table>

The median age of dentists in metropolitan areas is 50.8 years, slightly lower than the 52.3 year median for dentists in the nonmetropolitan counties. Among the metropolitan areas, Champaign-Urbana has the youngest dentists, with a median age of 43.3 years. Almost 60 percent of the dentists in this area are under 40 years of age, and only 28 percent are 55 or over. In contrast, dentists in the Chicago area are the oldest as a group, with a median age of 51.4. Only one-fourth of these dentists are under 40, and more than two-fifths have reached the age of 55.

Dentist ages in nonmetropolitan counties tend to increase rapidly as the size of the central city decreases. The median age of dentists in counties with central cities of at least 10,000 population is 49.7 years, compared to a median age of 55.9 in counties containing a central city of 2,500-4,999 inhabitants and 61.4 years in counties with less than 2,500 persons in their central cities.
ACTIVE DENTISTS IN RELATION TO POPULATION

Of the 6,316 dentists in Illinois, 5,994, or 95 percent, are active in their profession, giving Illinois one professionally active dentist for every 1,777 persons. There is one dentist for every 1,536 persons in the Chicago metropolitan area, while the remainder of the State has a much less favorable ratio of one dentist for every 2,400 persons.

### Number of Persons per Active Dentist

<table>
<thead>
<tr>
<th>County group</th>
<th>Professionally active dentists</th>
<th>Population</th>
<th>Dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>5,994</td>
<td>10,649,400</td>
<td>1,777</td>
</tr>
<tr>
<td>Chicago metropolitan area</td>
<td>4,323</td>
<td>6,641,800</td>
<td>1,536</td>
</tr>
<tr>
<td>Other metropolitan areas</td>
<td>770</td>
<td>1,836,200</td>
<td>2,382</td>
</tr>
<tr>
<td>Bloomington-Normal area</td>
<td>48</td>
<td>88,800</td>
<td>1,850</td>
</tr>
<tr>
<td>Rockford area</td>
<td>122</td>
<td>251,100</td>
<td>2,038</td>
</tr>
<tr>
<td>Champaign-Urbana area</td>
<td>57</td>
<td>144,000</td>
<td>2,158</td>
</tr>
<tr>
<td>Springfield area</td>
<td>68</td>
<td>151,900</td>
<td>2,234</td>
</tr>
<tr>
<td>Peoria area</td>
<td>148</td>
<td>332,400</td>
<td>2,246</td>
</tr>
<tr>
<td>Decatur area</td>
<td>54</td>
<td>125,900</td>
<td>2,311</td>
</tr>
<tr>
<td>Rock Island-Moline area</td>
<td>88</td>
<td>209,800</td>
<td>2,384</td>
</tr>
<tr>
<td>East St. Louis area</td>
<td>175</td>
<td>529,700</td>
<td>3,027</td>
</tr>
<tr>
<td>Nonmetropolitan counties</td>
<td>896</td>
<td>2,173,400</td>
<td>2,476</td>
</tr>
<tr>
<td>Central city 10,000-49,999</td>
<td>450</td>
<td>1,036,600</td>
<td>2,299</td>
</tr>
<tr>
<td>Central city 5,000-9,999</td>
<td>260</td>
<td>629,800</td>
<td>2,422</td>
</tr>
<tr>
<td>Central city 2,500-4,999</td>
<td>150</td>
<td>401,600</td>
<td>2,676</td>
</tr>
<tr>
<td>Central city under 2,500</td>
<td>36</td>
<td>107,600</td>
<td>2,984</td>
</tr>
</tbody>
</table>

Cook County, the hub of the Chicago metropolitan area, has the best ratio in the State, 1,487 persons per active dentist, while the other five counties in this area have an average persons-per-dentist ratio of 1,788. Among the metropolitan areas, exclusive of Chicago, only Bloomington-Normal, with 1,850 persons per dentist, has a ratio under 2,000. In six of the metropolitan areas, the ratios range between 2,000 and 2,400, and in one area, East St. Louis, the number of persons per dentist exceeds 3,000.

Among the 83 nonmetropolitan counties of the State, there are 18 counties with persons-per-dentist ratios under 2,000, yet 23 counties have ratios exceeding 3,000 persons for every dentist. Generally, the ratio of persons per dentist becomes less favorable as the size of the central city declines. The group of counties with central cities of 10,000 or more population have an average persons-per-dentist ratio of approximately 2,300, while counties with central cities of less than 2,500 inhabitants average nearly 3,000 persons per dentist.
A little over three-fifths of the responding practitioners in Illinois (i.e., dentists who spend any time working at the chair) reported that they employ auxiliary personnel. Dental assistants, the most frequently employed auxiliary, are utilized by 54 percent of all practitioners, including 46 percent who employ at least one assistant on a full-time basis. Secretaries or receptionists are employed by 20 percent of the dentists with about two-thirds of these dentists utilizing such personnel full time. Only 8 percent of the dentists employ dental hygienists and 5 percent employ dental technicians. Dentists are more likely to employ hygienists and laboratory technicians on a part-time basis compared to other auxiliary personnel.

### Dental Practitioners Employing Auxiliaries, by Type of Auxiliary

<table>
<thead>
<tr>
<th>Type of auxiliary</th>
<th>Percent of dental practitioners</th>
<th>Dental practitioners</th>
<th>With one full-time employee (or more)</th>
<th>With only part-time personnel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>100</td>
<td>5,201 / 1</td>
<td>53</td>
<td>9</td>
</tr>
<tr>
<td>With one or more auxiliaries</td>
<td>62</td>
<td>3,102 / 0</td>
<td>53</td>
<td>9</td>
</tr>
<tr>
<td>With assistant</td>
<td>54</td>
<td>2,713 / 0</td>
<td>46</td>
<td>8</td>
</tr>
<tr>
<td>With hygienist</td>
<td>8</td>
<td>411 / 0</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>With laboratory technician</td>
<td>5</td>
<td>254 / 0</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>With secretary or receptionist</td>
<td>20</td>
<td>988 / 0</td>
<td>13</td>
<td>7</td>
</tr>
<tr>
<td>With other type of personnel</td>
<td>2</td>
<td>102 / 0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>With no auxiliary</td>
<td>38</td>
<td>1,917 / 0</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

1/ Includes 182 dentists who did not report on auxiliary utilization.

The use of auxiliaries varies with age of dentists and is more frequent among young dentists. Eighty percent of the dental practitioners between the ages of 30 and 44 employ some type of auxiliary. The proportion utilizing auxiliaries decreases to 57 percent among dentists 45 to 64 years old and to 33 percent among dentists 65 and over. Dentists in the early years of their practice generally do not reach peak utilization of assistants until they are 30 years of age and of hygienists until age 35.
OTHER SURVEY FINDINGS

***Ninety-four percent of the responding professionally active dentists in Illinois are primarily engaged in private practice. Two percent are on the staffs of dental schools, another two percent are employed by governmental agencies, and the remainder are engaged in other dental activities, such as taking advanced training.

***At least one part-time dental activity in addition to their principal employment was reported by 11 percent of the dentists. Part-time teaching in a dental school was the most frequently reported secondary employment. A variety of other secondary dental activities were reported, including employment by another dentist and serving in voluntary agencies.

***Dentists reporting time spent in providing patient care devoted an average of 40.3 hours per week to this activity for 47.0 weeks during the year preceding the survey. About one dentist in six worked the equivalent of six days a week, 48 hours or more, for at least 48 weeks.

***About 9 percent of the practitioners reported they limit their practices to a dental specialty, primarily orthodontics or oral surgery. Only 5 percent of the dentists in nonmetropolitan counties limit their practices, compared to 9 percent in the Chicago metropolitan area and 12 percent in the eight other metropolitan areas combined.

***One-fourth of the 1,193 responding civilian dentists who are licensed in Illinois but located in another state are in one of the five adjacent states, primarily Missouri and Wisconsin. Another 30 percent of the out-of-state dentists are located in California or Florida, and the remainder are scattered in 39 other states and the District of Columbia.

***About one out of every five out-of-state dentists reported that they had been professionally active in Illinois immediately prior to assuming their present location in another state. More than two-fifths of the 249 out-migrant dentists are now located in California or Florida, and the remaining three-fifths moved to 32 other states, primarily those adjacent to Illinois.

November 1967.
# APPENDIX TABLE

Selected Data on Dentists in Illinois, by Location

<table>
<thead>
<tr>
<th>Area and county</th>
<th>Civilian dentists</th>
<th></th>
<th></th>
<th>Professional</th>
<th>Population</th>
<th>Persons per active dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Respondents</td>
<td>Non-respondents</td>
<td>Age in 1965</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>In 000's</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Percent</td>
<td>Percent</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>under 40</td>
<td>55 or more</td>
<td></td>
</tr>
<tr>
<td>All counties</td>
<td>6,316</td>
<td>5,472</td>
<td>844</td>
<td>26</td>
<td>42</td>
<td>5,994</td>
</tr>
<tr>
<td>All metropolitan areas.FileReader:1</td>
<td>5,370</td>
<td>4,661</td>
<td>709</td>
<td>26</td>
<td>42</td>
<td>5,093</td>
</tr>
<tr>
<td>Chicago area</td>
<td>4,555</td>
<td>3,957</td>
<td>598</td>
<td>26</td>
<td>43</td>
<td>4,323</td>
</tr>
<tr>
<td>Cook</td>
<td>3,824</td>
<td>3,316</td>
<td>508</td>
<td>23</td>
<td>46</td>
<td>3,615</td>
</tr>
<tr>
<td>Du Page</td>
<td>235</td>
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<td>45</td>
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<td>227</td>
</tr>
<tr>
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<td>139</td>
<td>16</td>
<td>29</td>
<td>34</td>
<td>15</td>
</tr>
<tr>
<td>Lake</td>
<td>191</td>
<td>168</td>
<td>23</td>
<td>38</td>
<td>30</td>
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</tr>
<tr>
<td>McHenry</td>
<td>54</td>
<td>46</td>
<td>8</td>
<td>40</td>
<td>25</td>
<td>31</td>
</tr>
<tr>
<td>Will</td>
<td>96</td>
<td>84</td>
<td>12</td>
<td>40</td>
<td>29</td>
<td>95</td>
</tr>
<tr>
<td>East St. Louis area</td>
<td>180</td>
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<td>29</td>
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<td>175</td>
</tr>
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<td>Madison</td>
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<td>85</td>
<td>8</td>
<td>33</td>
<td>35</td>
<td>91</td>
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<tr>
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<td>76</td>
<td>11</td>
<td>24</td>
<td>42</td>
<td>84</td>
</tr>
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<td>Peoria area</td>
<td>156</td>
<td>135</td>
<td>2</td>
<td>29</td>
<td>37</td>
<td>148</td>
</tr>
<tr>
<td>Peoria</td>
<td>109</td>
<td>96</td>
<td>13</td>
<td>28</td>
<td>39</td>
<td>103</td>
</tr>
<tr>
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<td>30</td>
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<td>36</td>
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<td>9</td>
<td>9</td>
<td>-</td>
<td>33</td>
<td>33</td>
<td>9</td>
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<td>Rockford area</td>
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<td>111</td>
<td>17</td>
<td>35</td>
<td>33</td>
<td>122</td>
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<td>Winnebago</td>
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<td>102</td>
<td>13</td>
<td>38</td>
<td>32</td>
<td>109</td>
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<td>Boone</td>
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<td>9</td>
<td>4</td>
<td>8</td>
<td>46</td>
<td>13</td>
</tr>
<tr>
<td>Rock Island-Moline area</td>
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<td>85</td>
<td>9</td>
<td>28</td>
<td>41</td>
<td>88</td>
</tr>
<tr>
<td>Rock Island</td>
<td>68</td>
<td>53</td>
<td>5</td>
<td>26</td>
<td>40</td>
<td>64</td>
</tr>
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<td>Henry</td>
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<td>22</td>
<td>4</td>
<td>31</td>
<td>46</td>
<td>24</td>
</tr>
<tr>
<td>Area and county</td>
<td>Civilian dentists</td>
<td>Population1/ per active dentist</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------------</td>
<td>------------------</td>
<td>--------------------------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>Respondents</td>
<td>Non-respondents</td>
<td>Age in 1965</td>
<td>Professionally active</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Percent</td>
<td>Percent</td>
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</tr>
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### APPENDIX TABLE (cont'd.)

**Selected Data on Dentists in Illinois, by Location**

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## APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Illinois, by Location

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### APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Illinois, by Location

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2/ Illinois counties included in the latest 1967 definition of Standard Metropolitan Statistical Areas, as established by the U.S. Bureau of the Budget, Office of Statistical Standards, have been grouped as metropolitan areas for presentation of the survey data. For interstate SMSA's statistics are presented only for dentists located in the Illinois portion of the SMSA.

3/ Illinois part of the St. Louis SMSA.

4/ Illinois part of the Davenport-Rock Island-Moline SMSA.

5/ Counties not included within a SMSA, as defined by the U.S. Bureau of the Budget, have been grouped according to the 1960 population of the largest (central) city within each county.

NOTE: County location not available for 10 dentists.
DENTISTS LICENSED IN INDIANA

During the 1965 registration period, 2,823 dentists registered with the Indiana State Board of Dental Examiners. Of these dentists, 76 percent were civilians located in Indiana, another 20 percent were civilians located in other states, and 4 percent were on active duty with the Armed Forces.

The survey questionnaire was completed by 2,532 dentists, 90 percent of all those registered. The data provided by the survey respondents has been supplemented when obtainable, by information on location, age, dental school attended and year of graduation for dentists not responding to the survey. Information on nonrespondents was obtained either from records maintained by the Indiana State Board of Dental Examiners or from the 1966 American Dental Directory, published by the American Dental Association.

Location and Military Status of Dentists Licensed in Indiana

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<td>On active duty with Armed Forces</td>
<td>118</td>
<td>4</td>
</tr>
</tbody>
</table>

About one-third of all survey respondents hold a license to practice dentistry in one or more other states. Only 17 percent of the dentists located in Indiana hold more than one license, with 15 percent licensed in one other state and a mere 2 percent licensed in two or more other states. The proportion of out-of-state dentists holding multiple licenses is considerably greater; 23 percent hold two or more licenses in addition to their Indiana license.
PROFESSIONAL TRAINING

More than three-fourths of Indiana's 2,142 dentists graduated from Indiana University School of Dentistry. Another 15 percent of the dentists are graduates of 9 dental schools located in adjacent states. Among these schools, Loyola University of Chicago and Northwestern University are the largest contributors, each having trained approximately 5 percent of the State's dentist supply. The University of Louisville is the only other school to contribute as much as 3 percent of the dental force. The remaining 9 percent of the State's dentists are graduates of 29 other dental schools located in more distant states.

Dental School Attended and Year of Graduation for Dentists in Indiana

<table>
<thead>
<tr>
<th>Dental school attended</th>
<th>Number of dentists</th>
<th>Year of graduation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>All 1955</td>
</tr>
<tr>
<td>Total number</td>
<td>2,142</td>
<td>566</td>
</tr>
<tr>
<td>Indiana University</td>
<td>1,624</td>
<td>76</td>
</tr>
<tr>
<td>Schools in adjacent states</td>
<td>328</td>
<td>15</td>
</tr>
<tr>
<td>Loyola University of Chicago</td>
<td>109</td>
<td>5</td>
</tr>
<tr>
<td>Northwestern University</td>
<td>97</td>
<td>5</td>
</tr>
<tr>
<td>7 other schools</td>
<td>122</td>
<td>5</td>
</tr>
<tr>
<td>29 schools in other states</td>
<td>182</td>
<td>9</td>
</tr>
</tbody>
</table>

1/ Dental school attended and year of graduation not available for 8 dentists. Percent distribution is based on data supplied.

The proportionate contribution of Indiana University to the State dentist supply has increased somewhat in recent years. Approximately 84 percent of the dentists in the State who graduated since 1955 received their dental education at this school, compared to 74 percent of those who graduated in earlier years. At the same time, the contribution of schools in adjacent states has declined considerably.

Some 17 percent of the survey respondents, 340 dentists, indicated that they had taken some type of advanced training after receiving their dental degree. Of 174 dentists reporting advanced clinical training, 108 had completed an internship and 66 a residency. Among the 232 dentists who had advanced academic training, 126 reported having earned a master's or other advanced degree, and another 106 dentists received no additional degrees but completed one or more years of postgraduate study. A total of 66 dentists completed both academic and clinical training.
Almost seven in every ten of the 2,142 dentists in Indiana are located in the 11 metropolitan areas of the State. The 8-county Indianapolis area alone has 592 dentists, 27 percent of the total dental force. The vast majority of these dentists, more than four-fifths, are in Marion County, where Indianapolis is located. The Gary-Hammond area has the second largest dental force, with 249 dentists, or 12 percent of the total supply. The metropolitan areas of South Bend and Fort Wayne have the third and fourth largest dental forces in the State, with 7 and 6 percent, respectively. The Indiana portion of the interstate Evansville area and the Terre Haute area each have 4 percent of the State's dentist supply. The remaining five metropolitan areas—Lafayette, Anderson, Muncie, and the Indiana portions of the interstate Louisville and Cincinnati areas—have among them 185 dentists, 9 percent of the total supply.

Approximately one-third of Indiana's dentists are located in the 67 nonmetropolitan counties of the State. The 20 counties with central cities of 10,000 or more persons have 396 dentists, almost one-fifth of the State's dental force. Two of these counties—Elkhart and La Porte—have at least 50 dentists, and four—Grant, Howard, Monroe, and Wayne—have between 25 and 30 dentists. The 47 counties with less than 10,000 persons in their central cities have 13 percent of the dentist supply. Only 8 of these counties have as many as 10 dentists, while 18 have fewer than 5 dentists.
NUMBER OF PERSONS PER DENTIST IN INDIANA, BY COUNTY

Persons per dentist:

- Under 2,500
- 2,500 - 3,500
- 3,500 - 5,000
- Over 5,000

Metropolitan areas

Out-of-state portion of interstate metropolitan area
ACTIVE DENTISTS IN RELATION TO POPULATION

Of the 2,142 licensed dentists in Indiana, 2,013, or 94 percent, are active in their profession, giving Indiana one professionally active dentist for every 2,449 persons. There is one dentist for every 2,189 persons in the metropolitan areas, while the remainder of the State has a less favorable ratio of one dentist for every 3,033 persons.

### Number of Persons per Active Dentist in Indiana

<table>
<thead>
<tr>
<th>County group</th>
<th>Professionally active dentists</th>
<th>Population</th>
<th>Persons per dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td>All counties</td>
<td>2,013</td>
<td>4,929,800</td>
<td>2,449</td>
</tr>
<tr>
<td>Metropolitan areas</td>
<td>1,393</td>
<td>3,049,200</td>
<td>2,189</td>
</tr>
<tr>
<td>Indianapolis area</td>
<td>549</td>
<td>1,021,600</td>
<td>1,861</td>
</tr>
<tr>
<td>Gary-Hammond-E. Chicago area</td>
<td>240</td>
<td>627,800</td>
<td>2,616</td>
</tr>
<tr>
<td>South Bend area</td>
<td>144</td>
<td>283,600</td>
<td>1,969</td>
</tr>
<tr>
<td>Fort Wayne area</td>
<td>117</td>
<td>259,800</td>
<td>2,221</td>
</tr>
<tr>
<td>Evansville area (Ind. part)</td>
<td>93</td>
<td>189,900</td>
<td>2,042</td>
</tr>
<tr>
<td>Terre Haute area</td>
<td>73</td>
<td>169,200</td>
<td>2,318</td>
</tr>
<tr>
<td>5 other areas</td>
<td>177</td>
<td>497,300</td>
<td>2,810</td>
</tr>
<tr>
<td>Nonmetropolitan counties</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Central city 25,000-49,999</td>
<td>205</td>
<td>516,100</td>
<td>2,518</td>
</tr>
<tr>
<td>Central city 10,000-24,999</td>
<td>167</td>
<td>506,100</td>
<td>3,031</td>
</tr>
<tr>
<td>Central city 5,000-9,999</td>
<td>125</td>
<td>421,100</td>
<td>3,369</td>
</tr>
<tr>
<td>Central city under 5,000</td>
<td>123</td>
<td>437,300</td>
<td>3,555</td>
</tr>
</tbody>
</table>

* See Appendix Table for individual county data.

Among the metropolitan areas, the 8-county Indianapolis area has the most favorable ratio with 1,861 persons per active dentist. Marion County, the hub of the area, has the best ratio in the State, some 1,600 persons per active dentist, while the other seven counties in the area have considerably higher ratios averaging more than 3,000 persons per dentist. Among the other metropolitan areas, only South Bend, with 1,969 persons per dentist, has a ratio under 2,000. The ratios for the Evansville and Lafayette areas, however, are only slightly higher—2,042 and 2,036, respectively. In four areas—Fort Wayne, Terre Haute, Anderson and Gary-Hammond—the ratios range between 2,200 and 2,600. The remaining three areas—Muncie and the Indiana parts of the Louisville and Cincinnati areas—have ratios in excess of 3,300 persons per dentist.

Among the 67 nonmetropolitan counties, there are 11 with persons-per-dentist ratios under 2,500, yet 22 counties have ratios exceeding 4,000 persons per dentist, including one county with no active dentist. Generally, the ratio of persons per dentist becomes less favorable as the size of the central city declines. The group of counties with central cities of 25,000 or more population have an average persons-per-dentist ratio of approximately 2,500, while counties with central cities of less than 5,000 inhabitants average over 3,500 persons per dentist.
The median age of the 2,131 dentists for whom age was obtainable is 46.6 years. Approximately one-third of Indiana's dentists (689) are under 40 years of age, including 20 percent who are under 35. On the other hand, 36 percent (773) are 55 years or over. About one in every six, or 388 dentists, are 65 years old or more, including 211 who have reached the age of 70.

### Median Age and Age Distribution of Indiana Dentists, by County Group

<table>
<thead>
<tr>
<th>County group</th>
<th>Median age</th>
<th>Under 40</th>
<th>40-54</th>
<th>55 &amp; over</th>
</tr>
</thead>
<tbody>
<tr>
<td>All counties</td>
<td>46.6</td>
<td>32</td>
<td>32</td>
<td>36</td>
</tr>
<tr>
<td>Metropolitan areas</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indianapolis area</td>
<td>45.5</td>
<td>34</td>
<td>31</td>
<td>35</td>
</tr>
<tr>
<td>Gary-Hammond-E. Chicago area</td>
<td>46.1</td>
<td>36</td>
<td>29</td>
<td>35</td>
</tr>
<tr>
<td>South Bend area</td>
<td>47.5</td>
<td>27</td>
<td>37</td>
<td>36</td>
</tr>
<tr>
<td>Fort Wayne area</td>
<td>43.2</td>
<td>40</td>
<td>28</td>
<td>32</td>
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<tr>
<td>Evansville area (Ind. part)</td>
<td>44.3</td>
<td>31</td>
<td>40</td>
<td>29</td>
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<tr>
<td>Terre Haute area</td>
<td>52.1</td>
<td>18</td>
<td>37</td>
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<tr>
<td>5 other areas</td>
<td>46.9</td>
<td>30</td>
<td>34</td>
<td>36</td>
</tr>
<tr>
<td>Nonmetropolitan counties</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Central city 25,000-49,999</td>
<td>48.8</td>
<td>29</td>
<td>31</td>
<td>40</td>
</tr>
<tr>
<td>Central city 10,000-24,999</td>
<td>45.5</td>
<td>34</td>
<td>35</td>
<td>31</td>
</tr>
<tr>
<td>Central city 5,000-9,999</td>
<td>51.7</td>
<td>22</td>
<td>32</td>
<td>46</td>
</tr>
<tr>
<td>Central city under 5,000</td>
<td>51.0</td>
<td>24</td>
<td>33</td>
<td>43</td>
</tr>
</tbody>
</table>

The median age of dentists in metropolitan areas is 45.5 years, more than three years below the median of 48.8 years for dentists in nonmetropolitan counties. Among the metropolitan areas, Fort Wayne has the youngest dentists, with a median age of 43.2 years. Two-fifths of the dentists in this area are less than 40 years of age, including 28 percent who are under 35. The Indianapolis and Evansville areas have relatively young dentists, with median ages about two years below the average for the State. Dentists in the Terre Haute area are the oldest as a group, with a median age of 52.1 years. Only 18 percent of these dentists are under 40, while 45 percent have reached the age of 55.

Among the nonmetropolitan counties, younger dentists tend to be concentrated in counties with large central cities. The median age of dentists in counties with central cities of 25,000 or more population is 45.5 years, the same as the median for all metropolitan areas combined. Dentists in the nonmetropolitan counties with smaller central cities, however, are on the average about 5 years older, with a median age of over 50 years.
UTILIZATION OF AUXILIARIES

More than three-fourths of the responding denial practitioners in Indiana (i.e., dentists who spend any time working at the chair) report that they employ some type of auxiliary personnel. Dental assistants, the most frequently employed auxiliary, are utilized by 71 percent of the dentists, including 65 percent who employ at least one assistant on a full-time basis. Secretaries or receptionists are employed by 27 percent of the dentists, with two-thirds of these dentists utilizing such personnel full time. Only 14 percent of the dentists employ dental hygienists and 6 percent employ dental laboratory technicians. A majority of the practitioners who employ hygienists or technicians do so only part time.

Indiana Dentists Employing Auxiliaries, by Type of Auxiliary

<table>
<thead>
<tr>
<th>Type of auxiliary employed</th>
<th>Dental practitioners</th>
<th>Percent of dental practitioners</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Total</td>
</tr>
<tr>
<td></td>
<td></td>
<td>With one full-time employee (or more)</td>
</tr>
<tr>
<td>Total</td>
<td>1,845 / 100</td>
<td>71</td>
</tr>
<tr>
<td>One or more auxiliaries</td>
<td>1,372 / 77</td>
<td>71</td>
</tr>
<tr>
<td>Assistant</td>
<td>1,267 / 71</td>
<td>65</td>
</tr>
<tr>
<td>Hygienist</td>
<td>241 / 14</td>
<td>5</td>
</tr>
<tr>
<td>Laboratory technician</td>
<td>111 / 6</td>
<td>2</td>
</tr>
<tr>
<td>Secretary or receptionist</td>
<td>480 / 27</td>
<td>18</td>
</tr>
<tr>
<td>Other type of personnel</td>
<td>36 / 2</td>
<td>1</td>
</tr>
<tr>
<td>No auxiliary</td>
<td>403 / 23</td>
<td>...</td>
</tr>
</tbody>
</table>

Use of auxiliaries varies with the age of the dentist and tends to be more frequent among younger dentists. Ninety percent of Indiana dentists under the age of 45 employ some type of auxiliary. The proportion utilizing auxiliaries decreases to 73 percent among dentists 45 to 64 years old and to only 40 percent among dentists 65 and over. Young dentists just starting their practices do not reach peak utilization of assistants until they are at least 36 years of age and of hygienists until age 35.

About 15 percent of the dental practitioners in Indiana reported one or more vacant positions for auxiliary personnel. Of those reporting vacancies, 38 percent indicated a need for full-time hygienists and 27 percent reported vacancies for full-time dental assistants. More than nine of every 10 dentists reporting a vacancy already employ one or more auxiliaries.
OTHER SURVEY FINDINGS

☐ Ninety-four percent of the responding professionally active dentists in Indiana are primarily engaged in private practice. Two percent are on the staff of the dental school, another two percent are employed by government agencies, and the remaining two percent are engaged in other dental activities, such as taking advanced training.

☐ At least one part-time dental activity in addition to their principal employment was reported by 11 percent of the dentists. Part-time teaching in a dental school was the most frequently reported secondary employment. A variety of other activities were reported, including employment by another dentist and working in voluntary agencies.

☐ Dentists reporting time spent in patient care devoted an average of 40.0 hours per week to this activity for 47.3 weeks during the year preceding the survey. About one dentist in eight worked the equivalent of 6 days a week, 48 hours or more, for at least 48 weeks.

☐ About 13 percent of the dentists in Indiana reported that they limit their practice to a dental specialty, primarily orthodontics or oral surgery. Dental specialists are more likely to be located in a metropolitan area than in a non-metropolitan county. One in every 7 dentists practicing in a metropolitan area limits his practice, whereas in non-metropolitan counties only one in every 12 dentists does so.

☐ Of the 563 dentists licensed in Indiana but located out-of-state, more than one-third are located in the adjacent states of Illinois, Kentucky, Michigan, or Ohio. An additional 26 percent are in California or Florida. The remaining out-of-state dentists are scattered throughout 33 other states and the District of Columbia.

May 1968.
APPENDIX TABLE

Selected Data on Dentists in Indiana, by Location

<table>
<thead>
<tr>
<th>County group and county</th>
<th>Civilian dentists</th>
<th>Persons active</th>
<th>Population (in 000's)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Respondents</td>
<td>Non-respondents</td>
</tr>
<tr>
<td>All counties</td>
<td>2,142</td>
<td>1,976</td>
<td>166</td>
</tr>
<tr>
<td>Metropolitan areas</td>
<td>1,471</td>
<td>1,359</td>
<td>112</td>
</tr>
<tr>
<td>Indianapolis area</td>
<td>592</td>
<td>543</td>
<td>49</td>
</tr>
<tr>
<td>Boone</td>
<td>10</td>
<td>10</td>
<td>...</td>
</tr>
<tr>
<td>Hamilton</td>
<td>16</td>
<td>16</td>
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</tr>
<tr>
<td>Hancock</td>
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<td>10</td>
<td>1</td>
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<tr>
<td>Hendricks</td>
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<td>...</td>
</tr>
<tr>
<td>Johnson</td>
<td>9</td>
<td>18</td>
<td>...</td>
</tr>
<tr>
<td>Marion</td>
<td>503</td>
<td>457</td>
<td>46</td>
</tr>
<tr>
<td>Morgan</td>
<td>8</td>
<td>8</td>
<td>...</td>
</tr>
<tr>
<td>Shelby</td>
<td>10</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>Gary-Hammond-E. Chicago area</td>
<td>249</td>
<td>235</td>
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</tr>
<tr>
<td>Lake</td>
<td>225</td>
<td>211</td>
<td>14</td>
</tr>
<tr>
<td>Porter</td>
<td>24</td>
<td>24</td>
<td>...</td>
</tr>
<tr>
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<tr>
<td>Marshall</td>
<td>14</td>
<td>14</td>
<td>...</td>
</tr>
<tr>
<td>St. Joseph</td>
<td>134</td>
<td>121</td>
<td>13</td>
</tr>
<tr>
<td>Fort Wayne area</td>
<td>122</td>
<td>108</td>
<td>14</td>
</tr>
<tr>
<td>Allen</td>
<td>122</td>
<td>108</td>
<td>14</td>
</tr>
<tr>
<td>Evansville area (Ind. part)</td>
<td>96</td>
<td>93</td>
<td>3</td>
</tr>
<tr>
<td>Vanderburgh</td>
<td>88</td>
<td>86</td>
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<tr>
<td>Warrick</td>
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<td>7</td>
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</tr>
</tbody>
</table>
APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Indiana, by Location

<table>
<thead>
<tr>
<th>County group and county</th>
<th>Total</th>
<th>Respondents</th>
<th>Non-respondents</th>
<th>Age in 1965</th>
<th>Professionally active</th>
<th>Population (in 000's)</th>
<th>Persons per active dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Civilian dentists</td>
<td></td>
<td>Under 40</td>
<td>55 years or more</td>
<td></td>
<td></td>
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<tr>
<td>Metropolitan areas 2/</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Terre Haute area</td>
<td>79</td>
<td>73</td>
<td>6</td>
<td>14</td>
<td>36</td>
<td>73</td>
<td>169.2</td>
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<tr>
<td>Clay</td>
<td>7</td>
<td>4</td>
<td>3</td>
<td>---</td>
<td>3</td>
<td>7</td>
<td>24.0</td>
</tr>
<tr>
<td>Sullivan</td>
<td>8</td>
<td>8</td>
<td>---</td>
<td>3</td>
<td>3</td>
<td>7</td>
<td>21.0</td>
</tr>
<tr>
<td>Vermillion</td>
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<td>5</td>
<td>1</td>
<td>---</td>
<td>5</td>
<td>5</td>
<td>16.3</td>
</tr>
<tr>
<td>Vigo</td>
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<td>56</td>
<td>2</td>
<td>11</td>
<td>25</td>
<td>54</td>
<td>107.9</td>
</tr>
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<td>Anderson area</td>
<td>56</td>
<td>53</td>
<td>3</td>
<td>15</td>
<td>20</td>
<td>55</td>
<td>131.6</td>
</tr>
<tr>
<td>Madison</td>
<td>56</td>
<td>53</td>
<td>3</td>
<td>15</td>
<td>20</td>
<td>55</td>
<td>131.6</td>
</tr>
<tr>
<td>Louisville area (Ind. part)</td>
<td>36</td>
<td>36</td>
<td>---</td>
<td>9</td>
<td>12</td>
<td>34</td>
<td>121.0</td>
</tr>
<tr>
<td>Clark</td>
<td>17</td>
<td>17</td>
<td>---</td>
<td>5</td>
<td>7</td>
<td>16</td>
<td>67.1</td>
</tr>
<tr>
<td>Floyd</td>
<td>19</td>
<td>19</td>
<td>---</td>
<td>4</td>
<td>5</td>
<td>18</td>
<td>53.9</td>
</tr>
<tr>
<td>Muncie area</td>
<td>36</td>
<td>33</td>
<td>3</td>
<td>11</td>
<td>11</td>
<td>35</td>
<td>118.4</td>
</tr>
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<td>Delaware</td>
<td>36</td>
<td>33</td>
<td>3</td>
<td>11</td>
<td>11</td>
<td>35</td>
<td>118.4</td>
</tr>
<tr>
<td>Lafayette-West Lafayette area</td>
<td>50</td>
<td>43</td>
<td>7</td>
<td>19</td>
<td>18</td>
<td>47</td>
<td>95.7</td>
</tr>
<tr>
<td>Tippecanoe</td>
<td>50</td>
<td>43</td>
<td>7</td>
<td>19</td>
<td>18</td>
<td>47</td>
<td>95.7</td>
</tr>
<tr>
<td>Cincinnati area (Ind. part)</td>
<td>/</td>
<td>7</td>
<td>---</td>
<td>1</td>
<td>4</td>
<td>6</td>
<td>30.6</td>
</tr>
<tr>
<td>Dearborn</td>
<td>7</td>
<td>7</td>
<td>---</td>
<td>1</td>
<td>4</td>
<td>6</td>
<td>30.6</td>
</tr>
<tr>
<td>Non-metropolitan counties 2/</td>
<td>671</td>
<td>617</td>
<td>54</td>
<td>191</td>
<td>267</td>
<td>620</td>
<td>1,880.6</td>
</tr>
<tr>
<td>Central city 25,000-49,999</td>
<td>217</td>
<td>198</td>
<td>13</td>
<td>74</td>
<td>67</td>
<td>205</td>
<td>516.1</td>
</tr>
<tr>
<td>Elkhart</td>
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Note: The table continues with similar data for other locations and categories.
## APPENDIX TABLE (cont’d.)

Selected Data on Dentists in Indiana, by Location

<table>
<thead>
<tr>
<th>County group and county</th>
<th>Civilian dentists</th>
<th>Population (in 000's)</th>
<th>Persons per active dentist</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Total Respondents</td>
<td>Non-respondents</td>
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</tr>
<tr>
<td></td>
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</tr>
<tr>
<td>Wabash</td>
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<tr>
<td>De Kalb</td>
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### APPENDIX TABLE (Cont’d.)

Selected Data on Dentists in Indiana, by Location

<table>
<thead>
<tr>
<th>County group and county</th>
<th>Civilian dentists</th>
<th>Persons per active dentist</th>
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<tr>
<td></td>
<td>Total Respondents</td>
<td>Non-respondents</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nonmetropolitan counties</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Central city 5,000-9,999</td>
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<tr>
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## APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Indiana, by Location

<table>
<thead>
<tr>
<th>County group and county</th>
<th>Civilian dentists</th>
<th>Age in 1965</th>
<th></th>
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<th>Population (in 000's)</th>
<th>Persons per active dentist</th>
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<td>Non-respondents</td>
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<td>Professionally active</td>
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<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>8.3</td>
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</tr>
</tbody>
</table>


2/ Indiana counties in the latest 1967 definition of Standard Metropolitan Statistical Areas, as established by the U.S. Bureau of the Budget, Office of Statistical Standards, have been grouped as metropolitan areas for the presentation of survey data. For interstate SMSA's statistics are presented only for dentists located in the Indiana portion of the Evansville SMSA, Louisville SMSA, and Cincinattii SMSA.

2/ Counties not included within an SMSA, as defined by the U.S. Bureau of the Budget, have been grouped according to the 1960 population of the largest (central) city within each county.
DENTISTS LICENSED IN IOWA

During the 1965 registration period, 2,211 dentists registered with the Iowa State Board of Dental Examiners. A total of 2,030 dentists responded to the survey, 92 percent of all those registered. Sixty-six percent of the responding dentists are civilians located in Iowa, and 27 percent are civilians located in other States. Five percent of the responding dentists are on active duty with the Armed Forces, and the remaining 2 percent did not report their location or military status.

Location and Military Status of Dentists Licensed in Iowa

<table>
<thead>
<tr>
<th>Location and Military Status</th>
<th>All dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total licensed</td>
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</tr>
<tr>
<td>Respondents</td>
<td>2,030</td>
<td>92</td>
</tr>
<tr>
<td>Nonrespondents</td>
<td>181</td>
<td>8</td>
</tr>
<tr>
<td>Respondents</td>
<td>2,030</td>
<td>100</td>
</tr>
<tr>
<td>Civilians in Iowa</td>
<td>1,340</td>
<td>66</td>
</tr>
<tr>
<td>Civilians in another State</td>
<td>553</td>
<td>27</td>
</tr>
<tr>
<td>On active duty with Armed Forces</td>
<td>105</td>
<td>5</td>
</tr>
<tr>
<td>Not reported</td>
<td>32</td>
<td>2</td>
</tr>
</tbody>
</table>

About 42 percent of the respondents hold a license to practice dentistry in one or more other States. Almost one-fifth of the dentists located in Iowa hold more than one license, with 15 percent licensed in one other State and only 3 percent licensed in two or more other States. Multiple licensure is considerably more common among responding dentists located in other States, with more than one-fourth holding two or more licenses in addition to their Iowa license.
PROFESSIONAL TRAINING

Four-fifths of Iowa's dentists graduated from the University of Iowa College of Dentistry. Another 18 percent are graduates of 10 dental schools located in adjacent States. The principal contributor among these schools, Creighton University, has supplied 9 percent of the State's dental force. The next two largest contributors are Northwestern and St. Louis Universities, each having supplied 2 percent of the dentists. The only other schools to contribute as much as one percent of the dental force are Loyola University of Chicago and the Universities of Minnesota and Missouri.

Only one-fifth of Iowa's dentists graduated from dental school within the last 10 years. In contrast, a very large proportion—about one-half—graduated before World War II. The overall proportionate contributions of both the University of Iowa and the 10 schools in adjacent States have shown virtually no change over the years.

School Awarding Dental Degree, By Year Awarded

<table>
<thead>
<tr>
<th>Dental school attended</th>
<th>Number of dentists</th>
<th>Year of graduation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>All years</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1955</td>
</tr>
<tr>
<td>Total</td>
<td>1,360 1/</td>
<td>254</td>
</tr>
<tr>
<td>University of Iowa</td>
<td>1,071</td>
<td>80</td>
</tr>
<tr>
<td>(Percent distribution by school)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Schools in adjacent States</td>
<td>242</td>
<td>18</td>
</tr>
<tr>
<td>Creighton University</td>
<td>124</td>
<td>9</td>
</tr>
<tr>
<td>9 other schools</td>
<td>118</td>
<td>9</td>
</tr>
<tr>
<td>15 schools in other areas</td>
<td>21</td>
<td>2</td>
</tr>
</tbody>
</table>

1/ Dental school not reported by 6 dentists and year of graduation by 38 dentists. Percents based on data supplied.

Almost 16 percent of the survey respondents, or 217 dentists, reported they had completed one year or more of advanced training beyond receipt of the dental degree. Of these dentists 120 received advanced clinical training as interns or residents and 148 completed one year or more of advanced academic work as graduate or postgraduate students. These figures include 51 dentists who completed both academic and clinical training.
Almost 40 percent of the licensed dentists in Iowa are located in the seven metropolitan areas of the State. The Des Moines metropolitan area has the largest number of dentists, 163, or 12 percent of the State supply. The Cedar Rapids metropolitan area has the second largest dental force, 6 percent of the total, and the areas of Davenport and Waterloo each have 5 percent. Of the three remaining metropolitan areas, Sioux City and Dubuque each have 4 percent of the dentists and the Council Bluffs area has 3 percent.

### Distribution by County Group

<table>
<thead>
<tr>
<th>County group</th>
<th>Number of counties</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>All counties</td>
<td>98</td>
<td>1,340</td>
<td>100</td>
</tr>
<tr>
<td>All metropolitan areas*</td>
<td>7</td>
<td>521</td>
<td>39</td>
</tr>
<tr>
<td>Des Moines area</td>
<td>1</td>
<td>163</td>
<td>12</td>
</tr>
<tr>
<td>Cedar Rapids area</td>
<td>1</td>
<td>82</td>
<td>6</td>
</tr>
<tr>
<td>Davenport area</td>
<td>1</td>
<td>66</td>
<td>5</td>
</tr>
<tr>
<td>Waterloo area</td>
<td>1</td>
<td>63</td>
<td>5</td>
</tr>
<tr>
<td>Sioux City area</td>
<td>1</td>
<td>57</td>
<td>4</td>
</tr>
<tr>
<td>Dubuque area</td>
<td>1</td>
<td>55</td>
<td>4</td>
</tr>
<tr>
<td>Council Bluffs area</td>
<td>1</td>
<td>35</td>
<td>3</td>
</tr>
<tr>
<td>Nonmetropolitan county groups*</td>
<td>91</td>
<td>819</td>
<td>61</td>
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<tr>
<td>Central city 10,000-49,999</td>
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<td>314</td>
<td>24</td>
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<tr>
<td>Central city 5,000-9,999</td>
<td>28</td>
<td>240</td>
<td>16</td>
</tr>
<tr>
<td>Central city 2,500-4,999</td>
<td>31</td>
<td>179</td>
<td>13</td>
</tr>
<tr>
<td>Central city under 2,500</td>
<td>19</td>
<td>86</td>
<td>6</td>
</tr>
</tbody>
</table>

* See Appendix Table for definition of metropolitan areas and presentation of individual county data.

The 91 nonmetropolitan counties of the State have a substantial share, over three-fifths, of Iowa's dentist supply. Almost one-fourth of the State's dentists are located in the 13 counties that have 10,000 or more persons in their central cities. Johnson County, where the University of Iowa College of Dentistry is located, has the largest number of dentists of any nonmetropolitan county. Other counties in this group with substantial numbers of dentists are Des Moines, Cerro Gordo, Clinton, Story, and Webster. The 28 counties with central cities of 5,000-9,999 inhabitants have among them 240 dentists, almost one-fifth of the State supply. Another one-fifth of Iowa's dentists are located in the 50 counties with less than 5,000 persons in their central cities.
AGE OF DENTISTS AND DIFFERENCES IN AGE BY AREA

With slightly more than one-half of the dentists in Iowa over 50 years of age, the median age of Iowa dentists reporting in the survey was 50.2 years. About one-sixth of the State's dentists are under 35, yet more than two-fifths are 55 years of age or older. Almost one in every four, or 298 dentists, are 65 years of age or older and 166 dentists have reached the age of 70.

Age Distribution

<table>
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<tr>
<th>Age in 1965</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
<th>Cumulative percent distribution</th>
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</thead>
<tbody>
<tr>
<td>Total</td>
<td>1,340</td>
<td>100</td>
<td>-</td>
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<tr>
<td>Under 30</td>
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<td>4</td>
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<tr>
<td>30 - 34</td>
<td>151</td>
<td>12</td>
<td>16</td>
</tr>
<tr>
<td>35 - 39</td>
<td>146</td>
<td>11</td>
<td>27</td>
</tr>
<tr>
<td>40 - 44</td>
<td>170</td>
<td>13</td>
<td>40</td>
</tr>
<tr>
<td>45 - 49</td>
<td>126</td>
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<td>50</td>
</tr>
<tr>
<td>50 - 54</td>
<td>100</td>
<td>8</td>
<td>58</td>
</tr>
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<td>55 - 59</td>
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<tr>
<td>75 and over</td>
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1/ Age not available for 56 dentists. Percents based on total for whom age was reported.

The median age of dentists in metropolitan areas is 48.4 years, about three years younger than the median of 51.3 years for dentists in the nonmetropolitan counties. Among the metropolitan areas, Des Moines has the youngest dentists, with a median age of 44.7 years. One-third of the dentists in this area are under 40 years of age, and only one-fifth are 65 or over. In contrast, dentists in the Sioux City area are the oldest as a group, with a median age of 56.9. Less than one-fifth of these dentists are under 40, while fully one-third have reached the age of 65.

Median dentist ages in nonmetropolitan counties tend to increase as the size of the central city decreases. The median age of dentists in the counties with central cities of at least 10,000 population is 48.6 years, compared to a median age of 55.6 years in counties with less than 5,000 persons in their central cities. Considering the nonmetropolitan counties individually, Johnson County is notable because of its young dentists; their median age is 42.5 years, almost nine years below the median age for all nonmetropolitan counties combined.
ACTIVE DENTISTS IN RELATION TO POPULATION

Of the 1,340 responding dentists in Iowa, 1,257, or 94 percent, are active in their profession, giving Iowa one professionally active dentist for every 2,242 persons. In the seven metropolitan areas combined there is one professionally active dentist for every 2,000 persons, a ratio somewhat better than the 2,396 persons per dentist in the nonmetropolitan counties.

Number of Persons Per Active Dentist

<table>
<thead>
<tr>
<th>County group</th>
<th>Professionally active dentists</th>
<th>Population</th>
<th>Persons per dentist</th>
</tr>
</thead>
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<tr>
<td>All counties</td>
<td>1,257</td>
<td>2,818,300</td>
<td>2,242</td>
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<tr>
<td>Dubuque area</td>
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<td>977,900</td>
<td>2,000</td>
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<td>286,300</td>
<td>1,871</td>
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<td>Cedar Rapids area</td>
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<td>1,904</td>
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<td>131,100</td>
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<tr>
<td>Davenport area</td>
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<td>Council Bluffs area</td>
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<td>88,900</td>
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<td>243,900</td>
<td>3,127</td>
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</table>

Among the metropolitan areas, Dubuque has the best ratio, with one dentist for every 1,647 persons. The persons-per-dentist ratios for the Des Moines, Cedar Rapids and Sioux City areas, all under 2,000, are only slightly less favorable. The ratios for the Waterloo and Davenport areas are very close to the average for the State, while the Council Bluffs area has 2,615 persons per dentist, the least favorable ratio among the metropolitan areas.

Among the 91 nonmetropolitan counties of the State, there are 18 counties with persons-per-dentist ratios under 2,000, yet 36 counties have ratios exceeding 3,000 persons for every dentist. Generally, the ratio of persons per dentist becomes less favorable as the size of the central city declines. The group of counties with central cities of 10,000 or more population have an average of 1,906 persons per dentist, a ratio more favorable than in four of the seven metropolitan areas. In contrast, the counties with central cities of less than 2,500 inhabitants average 3,127 persons for every active dentist.
Almost three out of every four dental practitioners in Iowa (i.e., dentists who spend any time working at the chair) reported they employ auxiliary personnel. Dental assistants, the most frequently employed auxiliary, are utilized by 69 percent of all practitioners, including 61 percent who employ at least one assistant on a full-time basis. Secretaries or receptionists are employed by 24 percent of the dentists, with over half of these dentists utilizing such personnel full time. Only 10 percent of the dentists employ dental hygienists and four percent employ dental technicians. About half of the dentists who employ hygienists or technicians do so only part time.

<table>
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<th>Dental Practitioners Employing Auxiliaries, by Type of Auxiliary</th>
<th>Percent of dental practitioners</th>
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<td>With assistant</td>
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<td>With hygienist</td>
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<td>With technician</td>
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<tr>
<td>With secretary or receptionian</td>
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<td>With other type of personnel</td>
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<tr>
<td>With no auxiliary</td>
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</table>
OTHER SURVEY FINDINGS

***Ninety-five percent of the professionally active dentists in Iowa are primarily engaged in private practice. Another three percent are on the staff of the dental school and the remaining two percent are either employed by State or local government agencies or are engaged in other dental activities, such as taking advanced training.

***Dentists providing patient care in the year prior to the survey devoted an average of 41.3 hours per week to this activity for 47.3 weeks during the year. About one dentist in eight worked the equivalent of six days a week, 48 hours or more, for at least 48 weeks.

***About 12 percent of the responding practitioners reported they limited their practice to a dental specialty, primarily to orthodontics, followed by oral surgery and pedodontics. Eighteen percent of the dentists in metropolitan areas limit their practice, compared to 9 percent in the nonmetropolitan areas.

***Thirty percent of the 553 civilian dentists licensed in Iowa but located in another State are in one of the six adjacent States, primarily Nebraska and Illinois. Another 28 percent of the out-of-State dentists are located in California or Colorado, and the remainder are scattered in 34 other States and the District of Columbia.

***About one out of every five out-of-State dentists reported that they had been professionally active in Iowa immediately prior to assuming their present location in another State. More than one-third of the 124 out-migrant dentists are now located in California or Arizona, and the remaining two-thirds are in 26 other States, primarily those States adjacent to Iowa.

November 1967.
### APPENDIX TABLE

Selected Data on Dentists in Iowa, by Location

<table>
<thead>
<tr>
<th>County group and county</th>
<th>Civilian dentists</th>
<th>Population (in 000's)</th>
<th>Persons active per dentist</th>
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<td></td>
<td>Age in 1965</td>
<td>Under 55 years</td>
<td>Professionally active</td>
</tr>
<tr>
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### APPENDIX TABLE (cont'd.)

**Selected Data on Dentists in Iowa, by Location**

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<th>County group and county</th>
<th>Civilian dentists</th>
<th>Population (in 000's)</th>
<th>Persons per active dentist</th>
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<td></td>
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**APPENDIX TABLE** (cont’d.)

Selected Data on Dentists in Iowa, by Location

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<th>County group and county</th>
<th>Civilian dentists</th>
<th>Age in 1965</th>
<th>Professionally active</th>
<th>Population 1/ (in 000's)</th>
<th>Persons per active dentist</th>
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<td>Total</td>
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<td>55 years or over</td>
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<tr>
<td>Central city under 2,500</td>
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<td>Butler</td>
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<td>1</td>
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<tr>
<td>Fremont</td>
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<td>-</td>
<td>-</td>
<td>2</td>
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<td>3</td>
<td>-</td>
<td>5</td>
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<td>4</td>
<td>4</td>
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<td>2</td>
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<td>14.5</td>
</tr>
<tr>
<td>Ida</td>
<td>4</td>
<td>-</td>
<td>2</td>
<td>4</td>
<td>9.9</td>
</tr>
<tr>
<td>Iowa</td>
<td>11</td>
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<td>8</td>
<td>10</td>
<td>16.6</td>
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<td>2</td>
<td>7.3</td>
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<td>1</td>
<td>2</td>
<td>9.5</td>
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</tbody>
</table>
APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Iowa, by Location

<table>
<thead>
<tr>
<th>County group and county</th>
<th>Total civilian dentists</th>
<th>Population (in 000's)</th>
<th>Persons per active dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Age in 1965</td>
<td>Professionally active</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Under 40</td>
<td>55 years or over</td>
</tr>
<tr>
<td>Nonmetropolitan counties</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Central city under 2,500 (cont'd.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Van Buren</td>
<td>3</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Wayne</td>
<td>3</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Worth</td>
<td>3</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

1/ Copyright 1965. Sales Management Survey of Buying Power; further reproduction is forbidden.

2/ Iowa counties included in the latest 1967 definition of Standard Metropolitan Statistical areas, as established by the U.S. Bureau of the Budget, Office of Statistical Standards, have been grouped as metropolitan areas for presentation of the survey data. For interstate SMSA's, statistics are presented only for dentists reporting their location in the Iowa portion of the SMSA.

3/ Iowa part of the Davenport-Rock Island-Moline SMSA.

4/ Iowa part of the Sioux City SMSA.

5/ Iowa part of the Omaha SMSA.

6/ Counties not included within a SMSA, as defined by the U.S. Bureau of the Budget, have been grouped according to the 1960 population of the largest (central) city within each county.
DENTISTS LICENSED IN KANSAS

During the 1965 registration period, 1,827 dentists registered with the Kansas Board of Dental Examiners. Fifty-five percent of these dentists were civilians located in Kansas, another 40 percent were civilian dentists located in other States, and five percent were on active duty with the Armed Forces.

<table>
<thead>
<tr>
<th>Location and military status</th>
<th>All dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total licensed</td>
<td>1,827</td>
<td>100</td>
</tr>
<tr>
<td>Respondents</td>
<td>1,455</td>
<td>80</td>
</tr>
<tr>
<td>Nonrespondents</td>
<td>372</td>
<td>20</td>
</tr>
<tr>
<td>Total licensed</td>
<td>1,827</td>
<td>100</td>
</tr>
<tr>
<td>Civilians in Kansas</td>
<td>1,003</td>
<td>55</td>
</tr>
<tr>
<td>Respondents</td>
<td>884</td>
<td>-</td>
</tr>
<tr>
<td>Nonrespondents</td>
<td>119</td>
<td>-</td>
</tr>
<tr>
<td>Civilians in another State</td>
<td>738</td>
<td>40</td>
</tr>
<tr>
<td>On active duty with Armed Forces</td>
<td>86</td>
<td>5</td>
</tr>
</tbody>
</table>

The survey questionnaire was completed by a total of 1,455 dentists, for an overall response rate of 80 percent. However, the response rate of dentists actually located in Kansas was somewhat higher, 88 percent, since nonresponse was more common among dentists located outside the State or on active duty with the Armed Forces.

The data provided by the survey respondents has been supplemented, when possible, by information on location, age, dental school attended, and year of graduation for dentists not responding to the survey. Information on nonrespondents was obtained from records maintained by the Kansas Board of Dental Examiners and from the 1966 American Dental Directory published by the American Dental Association.
More than four-fifths (82 percent) of Kansas' 1,003 dentists graduated from the University of Missouri at Kansas City. Another 10 percent are graduates of six other dental schools located in adjacent States, including 3 percent each from The Creighton University and St. Louis University, and 2 percent from the University of Nebraska. Three other schools in adjacent States (two of them now extinct) have together provided 23 dentists, 2 percent of the State supply. The remaining 8 percent of Kansas' dentists obtained their dental degrees from 23 other schools located in more distant States.

### Dental School Attended and Year of Graduation for Dentists in Kansas

<table>
<thead>
<tr>
<th>Dental school attended</th>
<th>Number of dentists</th>
<th>Year of graduation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>All</td>
</tr>
<tr>
<td>Total number</td>
<td>1,003*</td>
<td>279</td>
</tr>
<tr>
<td>(Percent distribution by school)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Schools in adjacent States</td>
<td>919</td>
<td>92</td>
</tr>
<tr>
<td>Missouri (Kansas City)</td>
<td>817</td>
<td>82</td>
</tr>
<tr>
<td>Creighton University</td>
<td>33</td>
<td>3</td>
</tr>
<tr>
<td>St. Louis University</td>
<td>29</td>
<td>3</td>
</tr>
<tr>
<td>University of Nebraska</td>
<td>17</td>
<td>2</td>
</tr>
<tr>
<td>3 other schools</td>
<td>23</td>
<td>2</td>
</tr>
<tr>
<td>23 schools in other States</td>
<td>75</td>
<td>8</td>
</tr>
</tbody>
</table>

* Dental school attended not available for 9 dentists and year of graduation for 11 dentists. Percents based on known totals.

Only about one-fourth (28 percent) of the State's dentists have graduated from dental school since 1955, as compared to a full two-fifths (40 percent) who received their dental degree prior to World War II. There has been virtually no change over the years in the overall proportion of dentists graduating from the schools in adjacent States.

Approximately 13 percent of the survey respondents, 112 dentists, reported that they had completed one or more years of advanced training after receiving the dental degree. Of 83 dentists with advanced academic training, 56 received a master's or other advanced degree, while another 27 received no additional degree but reported the completion of one or more years of advanced work at the postgraduate level. Of the 62 dentists with advanced clinical training, 35 had completed an internship, and 27, a residency. There are 33 dentists who had taken both academic and clinical training.
DISTRIBUTION OF DENTISTS

Slightly more than two-fifths of the 1,003 dentists in Kansas are located in the three metropolitan areas of the State. Two metropolitan areas—the Kansas portion of the interstate Kansas City area and the Wichita area—each have about one-sixth (17 percent) of the State's dentists. The remaining metropolitan area, Topeka, contains 8 percent of the State supply.

### Distribution of Kansas Dentists, by County Group

<table>
<thead>
<tr>
<th>County group*</th>
<th>Number of counties</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>All counties</td>
<td>105</td>
<td>1,003</td>
<td>100</td>
</tr>
<tr>
<td>Metropolitan areas</td>
<td>5</td>
<td>422</td>
<td>42</td>
</tr>
<tr>
<td>Kansas City area (Kansas part)</td>
<td>2</td>
<td>174</td>
<td>17</td>
</tr>
<tr>
<td>Wichita area</td>
<td>2</td>
<td>171</td>
<td>17</td>
</tr>
<tr>
<td>Topeka area</td>
<td>1</td>
<td>77</td>
<td>8</td>
</tr>
<tr>
<td>Nonmetropolitan counties</td>
<td>100</td>
<td>581</td>
<td>58</td>
</tr>
<tr>
<td>Central city 10,000-49,999</td>
<td>20</td>
<td>288</td>
<td>29</td>
</tr>
<tr>
<td>Central city 2,500-9,999</td>
<td>34</td>
<td>193</td>
<td>19</td>
</tr>
<tr>
<td>Central city under 2,500</td>
<td>46</td>
<td>100</td>
<td>10</td>
</tr>
</tbody>
</table>

* See Appendix Table for definition of interstate and other metropolitan areas and presentation of individual county data.

Almost three-fifths of the State's dentists (581) are located in the nonmetropolitan counties. One-half of these dentists are located in 20 counties with 10,000 or more persons in their central cities. One of these counties—Douglas, Reno, and Saline—have between 20 and 30 dentists each, and another 12 have at least 10 dentists each.

The remaining one-half of the State's nonmetropolitan dentists are located among the 80 counties with central cities of less than 10,000 persons. The 34 counties with central city populations between 2,500 and 9,999 have 193 dentists, almost one-fifth of the total supply. The remaining 46 counties, with less than 2,500 persons in their central cities, have among them 100 dentists, about one-tenth of all dentists in the State. While only 17 of these 80 counties have more than five dentists, including 13 with one dentists each, six counties with no dentist, according to available information.
The median age of the 1,003 responding dentists in Kansas is 45.3 years. Although about one-third (318) of the dentists are under 40 years of age, a sizeable proportion, some two-fifths, are 55 years or over. Almost one in every four, or 230 dentists, are 65 years old or more, including 161 who have reached the age of 70.

<table>
<thead>
<tr>
<th>County group</th>
<th>Median age</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Under 40</td>
</tr>
<tr>
<td>All counties</td>
<td>45.3</td>
<td>32</td>
</tr>
<tr>
<td>Metropolitan areas</td>
<td>42.8</td>
<td>37</td>
</tr>
<tr>
<td>Kansas City area (Kansas part)</td>
<td>40.7</td>
<td>47</td>
</tr>
<tr>
<td>Wichita area</td>
<td>43.6</td>
<td>32</td>
</tr>
<tr>
<td>Topeka area</td>
<td>46.0</td>
<td>26</td>
</tr>
<tr>
<td>Nonmetropolitan counties</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Central city 10,000-49,999</td>
<td>51.2</td>
<td>28</td>
</tr>
<tr>
<td>Central city 2,500-9,999</td>
<td>46.7</td>
<td>32</td>
</tr>
<tr>
<td>Central city under 2,500</td>
<td>57.8</td>
<td>24</td>
</tr>
</tbody>
</table>

The median age of dentists in metropolitan areas is 42.8 years, more than eight years below the median of 51.2 years for dentists in nonmetropolitan counties. The youngest group of dentists is found in the Kansas City area, where the median age is 40.7 years. Almost half (47 percent) of the dentists in this area are under 40 years of age, while one in every five is 55 or over. The Topeka area has the oldest group of dentists, with a median age of 46.0 years. About one-fourth of these dentists are under 40, while almost two-fifths are 55 or older.

Among nonmetropolitan counties, older dentists tend to be concentrated in those counties with less than 10,000 persons in their central cities. The median age of dentists in counties with central cities of 10,000 or more is 46.7 years, almost 10 years less than the median of 56.5 for dentists in counties with smaller central cities.
ACTIVE DENTISTS IN RELATION TO POPULATION

Of the 1,003 licensed dentists in Kansas, 937, or 93 percent, are active in their profession, giving the State one professionally active dentist for every 2,421 persons. There is one dentist for every 2,290 persons in the metropolitan areas, while the remainder of the State has a slightly less favorable ratio of one dentist for every 2,519 persons.

Number of Persons Per Active Dentist in Kansas

<table>
<thead>
<tr>
<th>County group*</th>
<th>Professionally active dentists</th>
<th>Population</th>
<th>Persons per dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td>All counties</td>
<td>937</td>
<td>2,268,700</td>
<td>2,421</td>
</tr>
<tr>
<td>Metropolitan areas</td>
<td>399</td>
<td>913,600</td>
<td>2,290</td>
</tr>
<tr>
<td>Kansas City area (Kansas part)</td>
<td>166</td>
<td>378,700</td>
<td>2,281</td>
</tr>
<tr>
<td>Wichita area</td>
<td>160</td>
<td>383,400</td>
<td>2,396</td>
</tr>
<tr>
<td>Topeka area</td>
<td>73</td>
<td>151,500</td>
<td>2,075</td>
</tr>
<tr>
<td>Nonmetropolitan counties</td>
<td>538</td>
<td>1,355,100</td>
<td>2,519</td>
</tr>
<tr>
<td>Central city 10,000-49,999</td>
<td>272</td>
<td>663,400</td>
<td>2,439</td>
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<td>Central city 2,500-9,999</td>
<td>173</td>
<td>412,100</td>
<td>2,382</td>
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<tr>
<td>Central city under 2,500</td>
<td>93</td>
<td>279,600</td>
<td>3,006</td>
</tr>
</tbody>
</table>

* See Appendix Table for individual county data.

Among the metropolitan areas, the Topeka area has the best ratio, with one dentist for every 2,075 persons. The Kansas City and Wichita metropolitan areas have slightly less favorable ratios of 2,281 and 2,396 persons per dentist, respectively.

Among the 100 nonmetropolitan counties of the State, 14 have persons-per-dentist ratios under 2,000, yet there are 37 counties with ratios of more than 3,000, including 21 with ratios in excess of 4,000 persons per dentist. The least favorable ratio of persons per dentist is found in those counties with less than 2,500 persons in their central cities. The groups of counties with central cities of 2,500 or more inhabitants average about 2,400 persons per dentist, while counties with central cities of less than 2,500 have a ratio of about 3,000.
Four of every five dental practitioners in Kansas (i.e., dentists who spend any time working at the chair) reported the employment of one or more auxiliary personnel. Dental assistants, the most frequently employed auxiliary, are utilized by 76 percent of the practitioners, including 70 percent who employ at least one assistant on a full-time basis. Secretaries or receptionists are employed by approximately 30 percent of the dentists, with about two-thirds of these dentists utilizing such personnel full time. Only 15 percent of the dentists employ dental hygienists, and 7 percent employ dental technicians.

<table>
<thead>
<tr>
<th>Type of auxiliary employed</th>
<th>Dental practitioners</th>
<th>Percent of dental practitioners with one full-time employee</th>
<th>Percent of dental practitioners with only part-time (or more) employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>856</td>
<td>100</td>
<td>76</td>
</tr>
<tr>
<td>One or more auxiliaries</td>
<td>677</td>
<td>80</td>
<td>76</td>
</tr>
<tr>
<td>Assistant</td>
<td>636</td>
<td>76</td>
<td>70</td>
</tr>
<tr>
<td>Hygienist</td>
<td>125</td>
<td>15</td>
<td>8</td>
</tr>
<tr>
<td>Laboratory technician</td>
<td>63</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>Secretary or receptionist</td>
<td>247</td>
<td>29</td>
<td>21</td>
</tr>
<tr>
<td>Other type of personnel</td>
<td>24</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>No auxiliary</td>
<td>165</td>
<td>20</td>
<td>-</td>
</tr>
</tbody>
</table>

1/ Includes 14 dentists who did not report on auxiliary utilization.

The use of auxiliaries varies with the age of the dentist and is less frequent among older dentists. Ninety-one percent of dental practitioners under the age of 55 reported employment of some type of auxiliary. The proportion utilizing auxiliaries decreases to 76 percent among dentists 55 to 64 years of age and to 48 percent among dentists 65 and over.

Some 14 percent of the responding dentists in Kansas reported one or more vacancies for auxiliary personnel. Of those reporting vacancies, slightly more than one-third indicated a need for full-time dental assistants, and almost one-third reported vacancies for full-time dental hygienists. Nine of every 10 dentists reporting a vacancy already employ one or more auxiliaries.
OTHER SURVEY FINDINGS

Multiple licensure is fairly common in Kansas, with one-half of the respondents located in the State holding more than one license. Forty-three percent indicated licensure in at least one additional State and 7 percent in two or more other States. The proportion of out-of-State dentists holding multiple licenses is considerably greater; 35 percent hold two or more licenses in addition to their Kansas license. About 70 percent of the licenses held outside the State were issued by adjacent States, including 45 percent in Missouri, 12 percent in Oklahoma, 10 percent in Colorado, and 2 percent in Nebraska.

Ninety-seven percent of the responding professionally active dentists located in Kansas are primarily engaged in private practice, with 96 percent self-employed and 1 percent employed by other dentists. The remaining three percent are either employed by governmental agencies or are engaged in other dental activity, such as taking advanced training.

Dentists reporting on time spent in providing patient care devoted an average of 40.5 hours per week to this activity for 47.5 weeks during the year preceding the survey. About one in every six dentists worked the equivalent of six days a week, 48 hours or more, for at least 48 weeks.

About 8 percent of the responding practitioners reported that they limit their practice to a dental specialty, primarily orthodontics or oral surgery. Almost 12 percent of the dentists in metropolitan areas limit their practices, compared to only 5 percent of the dentists in nonmetropolitan counties.

About seven of every ten responding dentists who are licensed in Kansas but located elsewhere are in adjacent States, mostly in Missouri, Oklahoma, and Colorado. Another 7 percent are located in California, while the remainder are scattered throughout 30 other States, the District of Columbia, and foreign countries.
APPENDIX TABLE

Selected Data on Dentists in Kansas, By Location

<table>
<thead>
<tr>
<th>Area and county</th>
<th>Civilian dentists</th>
<th>Persons per active dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total Respondents</td>
<td>Non-respondents</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>Respondees</td>
</tr>
<tr>
<td>All counties</td>
<td>1,003</td>
<td>884</td>
</tr>
<tr>
<td>Metropolitan areas 2/</td>
<td>422</td>
<td>363</td>
</tr>
<tr>
<td>Wichita area</td>
<td>171</td>
<td>149</td>
</tr>
<tr>
<td>Sedgwick</td>
<td>157</td>
<td>135</td>
</tr>
<tr>
<td>Butler</td>
<td>14</td>
<td>14</td>
</tr>
<tr>
<td>Kansas City area (Kansas part)</td>
<td>174</td>
<td>148</td>
</tr>
<tr>
<td>Johnson</td>
<td>96</td>
<td>81</td>
</tr>
<tr>
<td>Wyandotte</td>
<td>78</td>
<td>67</td>
</tr>
<tr>
<td>Topeka area</td>
<td>77</td>
<td>66</td>
</tr>
<tr>
<td>Shawnee</td>
<td>77</td>
<td>66</td>
</tr>
<tr>
<td>Nonmetropolitan counties 3/</td>
<td>521</td>
<td>521</td>
</tr>
<tr>
<td>Central city 25,000-49,999</td>
<td>78</td>
<td>74</td>
</tr>
<tr>
<td>Douglas</td>
<td>23</td>
<td>22</td>
</tr>
<tr>
<td>Reno</td>
<td>29</td>
<td>27</td>
</tr>
<tr>
<td>Saline</td>
<td>26</td>
<td>25</td>
</tr>
</tbody>
</table>
## APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Kansas, By Location

<table>
<thead>
<tr>
<th>Area and county</th>
<th>Civilian dentists</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Respondents</td>
<td>Non-respondents</td>
<td>Age in 1965</td>
<td>Professionally active</td>
<td>Population per active dentist</td>
</tr>
<tr>
<td>Nonmetropolitan counties (cont'd.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Central city 10,000-24,999</td>
<td>210</td>
<td>186</td>
<td>24</td>
<td>62</td>
<td>91</td>
<td>198</td>
</tr>
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<td>3</td>
<td>-</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Stanton</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Wabaunsee</td>
<td>1</td>
<td>1</td>
<td>-</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Wallace</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Washington</td>
<td>4</td>
<td>4</td>
<td>1</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Wichita</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Woodson</td>
<td>2</td>
<td>2</td>
<td>-</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>


2/ Kansas counties included in the latest 1968 definition of Standard Metropolitan Statistical Areas, as established by the U.S. Bureau of the Budget, Office of Statistical Standards, have been grouped as metropolitan areas for presentation of the survey data. For the interstate Kansas City SMSA, statistics are presented only for dentists located in the Kansas portion.

3/ Counties not included within an SMSA, as defined by the U.S. Bureau of the Budget, have been grouped according to the 1960 population of the largest (central) city within each county.
DENTISTS LICENSED IN KENTUCKY

During the 1965 registration period, 1,494 dentists registered with the Kentucky State Board of Dental Examiners. A total of 1,366 dentists responded to the survey, 91 percent of all those registered. Three-fourths of the responding dentists are civilians located in Kentucky, 19 percent are civilians located in other states, and 6 percent are on active duty with the Armed Forces.

Location and Military Status of Dentists Licensed in Kentucky

<table>
<thead>
<tr>
<th>Location and military status</th>
<th>All dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>1,494</td>
<td>100</td>
</tr>
<tr>
<td>Respondents</td>
<td>1,366</td>
<td>91</td>
</tr>
<tr>
<td>Nonrespondents</td>
<td>128</td>
<td>9</td>
</tr>
<tr>
<td>Respondents</td>
<td>1,366</td>
<td>100</td>
</tr>
<tr>
<td>Civilians in Kentucky</td>
<td>1,024</td>
<td>75</td>
</tr>
<tr>
<td>Civilians in another state</td>
<td>254</td>
<td>19</td>
</tr>
<tr>
<td>On active duty with Armed Forces</td>
<td>81</td>
<td>6</td>
</tr>
<tr>
<td>Not reported</td>
<td>1</td>
<td>*</td>
</tr>
</tbody>
</table>

* Less than one-half of one percent.

Approximately one-third of the survey respondents hold a license to practice dentistry in one or more other states. About one-fifth of the dentists located in Kentucky hold more than one license, with 15 percent licensed in one other state and 4 percent licensed in two or more other states. Multiple licensure is much more common among out-of-state dentists; 21 percent hold two or more licenses in addition to their Kentucky license.

More than half of the licenses held outside of Kentucky are held in one of the seven adjacent states, primarily Indiana, Ohio, Tennessee and West Virginia. Of more distant states, the most frequently reported were Florida and New York.
PROFESSIONAL TRAINING

The dental school at the University of Louisville has through the years supplied the vast majority of Kentucky's dentists, having trained more than four-fifths of the 1,024 responding dentists located in the State. Furthermore, the relative contribution of this school has increased in recent years, accounting for 9 out of every ten dentists in the State who graduated after 1955, compared to 78 percent of those graduating prior to World War II. The new College of Dentistry at the University of Kentucky, which opened in 1962, had not graduated its first class at the time of the survey.

Dental School Attended and Year of Graduation for Dentists in Kentucky

<table>
<thead>
<tr>
<th>Dental school attended</th>
<th>Number of dentists</th>
<th>Year of graduation</th>
<th>All</th>
<th>After 1955</th>
<th>1961-1940 or earlier</th>
<th>1955 earlier</th>
</tr>
</thead>
<tbody>
<tr>
<td>University of Louisville</td>
<td>839</td>
<td></td>
<td>82</td>
<td></td>
<td>89</td>
<td>81</td>
</tr>
<tr>
<td>Schools in adjacent states</td>
<td>135</td>
<td></td>
<td>13</td>
<td></td>
<td>6</td>
<td>13</td>
</tr>
<tr>
<td>The Ohio State University</td>
<td>24</td>
<td></td>
<td>2</td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>St. Louis University</td>
<td>22</td>
<td></td>
<td>2</td>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>12 other schools</td>
<td>89</td>
<td></td>
<td>9</td>
<td></td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>24 more distant schools</td>
<td>50</td>
<td></td>
<td>5</td>
<td></td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

Fourteen schools in adjacent states have provided another 13 percent of Kentucky's dentists, even though the relative contribution of these schools has declined substantially through the years. While none of these schools has supplied a large number of dentists, Ohio State and St. Louis Universities have together trained 4 percent of the total dental force.

Some 16 percent of the survey respondents, 167 dentists, reported that they have completed one year or more of advanced training since receiving their dental degree. Of the 116 dentists who reported advanced academic training, 58 earned a master's or other advanced degree and an equal number received no additional degree but completed one or more years of postgraduate study. Among the 105 dentists with advanced clinical training, 43 completed a residency and 62, an internship. There are 43 dentists who completed both clinical and academic training.
DISTRIBUTION OF DENTISTS

More than one-half (54 percent) of the licensed dentists in Kentucky are located in the five metropolitan areas of the State. Approximately one-third of the total supply is concentrated in Jefferson County, which constitutes the Kentucky portion of the interstate metropolitan area of Louisville. The Lexington area has the second largest dental force, 11 percent of the State's supply. Another 7 percent of the dentists are located in the Kentucky portion of the interstate Cincinnati area, which contains the city of Covington. The Kentucky parts of two other interstate areas, Huntington-Ashland and Evansville, have 3 percent and 1 percent of the dentist supply, respectively.

Distribution of Kentucky Dentists, by County Group

<table>
<thead>
<tr>
<th>County group*</th>
<th>Number of counties</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>All counties</td>
<td>120</td>
<td>1,024</td>
<td>100</td>
</tr>
<tr>
<td>Metropolitan areas</td>
<td>7</td>
<td>548</td>
<td>54</td>
</tr>
<tr>
<td>Louisville area (Ky. part)</td>
<td>1</td>
<td>326</td>
<td>32</td>
</tr>
<tr>
<td>Lexington area</td>
<td>1</td>
<td>108</td>
<td>11</td>
</tr>
<tr>
<td>3 other areas</td>
<td>5</td>
<td>114</td>
<td>11</td>
</tr>
<tr>
<td>Nonmetropolitan counties</td>
<td>113</td>
<td>476</td>
<td>46</td>
</tr>
<tr>
<td>Central city 10,000-49,999</td>
<td>11</td>
<td>166</td>
<td>17</td>
</tr>
<tr>
<td>Central city 2,500-9,999</td>
<td>43</td>
<td>200</td>
<td>19</td>
</tr>
<tr>
<td>Central city under 2,500</td>
<td>59</td>
<td>110</td>
<td>10</td>
</tr>
</tbody>
</table>

* See Appendix Table for definition of interstate and other metropolitan areas and presentation of individual county data.

More than 45 percent of Kentucky's dentists are located in the 113 non-metropolitan counties of the State. The 11 counties with central cities of 10,000 or more persons have 166 dentists, 17 percent of the State's dental force. Four of these counties--Daviess, McCracken, Christian and Warren--have 20 or more dentists.

The 102 counties with less than 10,000 persons in their central cities have almost 30 percent of the State's dentist supply. None of these counties, however, have large numbers of dentists. There are 200 dentists distributed throughout the 43 counties having between 2,500 and 9,999 persons in their central cities, and 110 dentists scattered among the 59 counties with central cities of less than 2,500 population. Only 22 of these 102 counties have as many as 5 dentists, while 64 have no more than 3 dentists, including 21 with only one dentist, and 7 counties that have no dentists, according to available information.
ACTIVE DENTISTS IN RELATION TO POPULATION

Of the 1,024 responding dentists in Kentucky, 990, or 97 percent, are active in their profession, giving Kentucky one professionally active dentist for every 3,141 persons. In the metropolitan areas—which have 54 percent of the State's active dentists and only 37 percent of its population—the ratio is one dentist for every 2,150 persons. The remainder of the State—with 46 percent of the active dentists and 63 percent of the population—has a considerably less favorable ratio of one dentist for every 4,288 persons.

Number of Persons per Active Dentist in Kentucky

<table>
<thead>
<tr>
<th>County group*</th>
<th>Professionally active dentists</th>
<th>Population</th>
<th>Persons per dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>990</td>
<td>3,109,800</td>
<td>3,141</td>
</tr>
<tr>
<td>Metropolitan areas</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Louisville area (Ky. part)</td>
<td>531</td>
<td>1,141,500</td>
<td>2,150</td>
</tr>
<tr>
<td>Lexington area</td>
<td>107</td>
<td>146,100</td>
<td>1,365</td>
</tr>
<tr>
<td>3 other areas</td>
<td>108</td>
<td>329,700</td>
<td>3,053</td>
</tr>
<tr>
<td>Nonmetropolitan counties</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Central city 10,000-49,999</td>
<td>459</td>
<td>1,968,300</td>
<td>4,288</td>
</tr>
<tr>
<td>Central city 2,500-9,999</td>
<td>159</td>
<td>470,100</td>
<td>2,957</td>
</tr>
<tr>
<td>Central city under 2,500</td>
<td>107</td>
<td>590,800</td>
<td>5,521</td>
</tr>
</tbody>
</table>

* See Appendix Table for data pertaining to individual metropolitan areas and counties.

Among the metropolitan areas, Lexington, where the University of Kentucky College of Dentistry is located, has the best ratio with 1,365 persons per active dentist. Jefferson County, the hub of the interstate Louisville area, has a somewhat less favorable ratio of 2,107 persons for every dentist. Of the remaining three areas, each of which constitutes the Kentucky portion of a larger interstate metropolitan area, Huntington-Ashland (Boyd County) has the best ratio, one dentist for 1,597 persons, while Cincinnati (Boone, Campbell and Kenton Counties) and Evansville (Henderson County) have far less favorable ratios of 3,624 and 4,275, respectively.

Among the nonmetropolitan counties, there are 16 with persons-per-dentist ratios under 3,000, yet 64 counties have ratios exceeding 4,000 persons-per-dentist, including 27 counties with ratios over 6,000. Generally, the ratio of persons per dentist becomes much less favorable as the size of the central city decreases. The group of counties with central cities of 10,000 or more inhabitants have an average persons-per-dentist ratio of approximately 3,000, while counties with central cities of less than 2,500 average over 5,500 persons per dentist.
The median age of dentists in Kentucky is 44.7 years. Almost one-fifth of the responding dentists are under 35, and another third are between 35 and 44 years of age. On the other hand, a substantial proportion, more than one-fourth are 55 or over. About 11 percent of the dentists (119) are at least 65 years of age, including 72 who have reached the age of 70.

### Age Distribution of Kentucky Dentists

<table>
<thead>
<tr>
<th>Age in 1965</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
<th>Cumulative percent distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>1,024</td>
<td>100</td>
<td>-</td>
</tr>
<tr>
<td>Under 30</td>
<td>62</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>30-34</td>
<td>130</td>
<td>13</td>
<td>19</td>
</tr>
<tr>
<td>35-39</td>
<td>152</td>
<td>15</td>
<td>34</td>
</tr>
<tr>
<td>40-44</td>
<td>177</td>
<td>17</td>
<td>51</td>
</tr>
<tr>
<td>45-49</td>
<td>141</td>
<td>14</td>
<td>65</td>
</tr>
<tr>
<td>50-54</td>
<td>91</td>
<td>9</td>
<td>74</td>
</tr>
<tr>
<td>55-59</td>
<td>77</td>
<td>8</td>
<td>82</td>
</tr>
<tr>
<td>60-64</td>
<td>74</td>
<td>7</td>
<td>89</td>
</tr>
<tr>
<td>65-69</td>
<td>47</td>
<td>4</td>
<td>93</td>
</tr>
<tr>
<td>70-74</td>
<td>29</td>
<td>3</td>
<td>96</td>
</tr>
<tr>
<td>75 and over</td>
<td>43</td>
<td>4</td>
<td>100</td>
</tr>
</tbody>
</table>

1/ One dentist did not report age.

The median age of dentists in metropolitan areas is 44.4 years, only slightly below the median of 45.1 years in nonmetropolitan counties. Among individual metropolitan areas, however, age differences are rather pronounced. The median age of dentists in the Louisville area is 45.0 years, about the same as the median for the State as a whole. Only 17 percent of these dentists are under 35, while 28 percent have reached the age of 55. On the other hand, dentists in the Lexington area average about 5 years younger, with a median age of 40.0 years. More than one-fourth of the dentists in this area are under 35 years of age, and only 20 percent are 55 or older.
More than four-fifths of the dental practitioners in Kentucky (i.e., dentists who spend any time working at the chair) reported that they employ auxiliary personnel. Dental assistants, the most frequently employed auxiliary, are utilized by 74 percent of all practitioners, including 67 percent who employ at least one assistant on a full-time basis. Secretaries or receptionists are employed by 26 percent of all practitioners, with about two-thirds of these dentists utilizing such personnel full time. Eleven percent of the practitioners employ dental hygienists and 7 percent employ laboratory technicians. Slightly more than one-half of the dentists who employ hygienists or technicians do so only part time.

Some 16 percent of the responding dental practitioners in Kentucky reported one or more vacant positions for auxiliary personnel. Vacancies for dental hygienists were the most frequently reported.

Kentucky Dentists Employing Auxiliaries, by Type of Auxiliary

<table>
<thead>
<tr>
<th>Type of auxiliary employed</th>
<th>Dental practitioners</th>
<th>Percent of Dental Practitioners With one full-time employee (or more) employees</th>
<th>Total</th>
<th>74</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>954</td>
<td>100</td>
<td>74</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>One or more auxiliaries</td>
<td>762</td>
<td>82</td>
<td>74</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Assistant</td>
<td>687</td>
<td>74</td>
<td>67</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Hygienist</td>
<td>106</td>
<td>11</td>
<td>5</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Laboratory technician</td>
<td>64</td>
<td>7</td>
<td>3</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Secretary or receptionist</td>
<td>245</td>
<td>26</td>
<td>17</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Other type of personnel</td>
<td>33</td>
<td>4</td>
<td>1</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>No auxiliary</td>
<td>170</td>
<td>18</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

1/ Includes 22 dentists who did not report on auxiliary utilization.

The use of auxiliaries varies with the age of the dentist and is less common among the older dentists. Eighty-eight percent of dental practitioners under the age of 55 reported employment of some type of auxiliary. The proportion utilizing auxiliaries decreases to 72 percent among dentists 55 to 64 years of age and to 48 percent among dentists 65 and over.

Although dentists in metropolitan areas are no more likely to employ auxiliary personnel than are those located in nonmetropolitan counties, the use of hygienists is much more common in metropolitan areas than in the remainder of the State. About 15 percent of the dentists in metropolitan areas report the employment of hygienists, compared to only 7 percent of those in nonmetropolitan counties.
OTHER SURVEY FINDINGS

 Ninety-two percent of the professionally active dentists in Kentucky are primarily engaged in private practice, with 91 percent self-employed and one percent employed by another dentist. Five percent are on the staff of a dental school, another two percent are employed by governmental agencies, and the remaining one percent are engaged in other dental activities, such as taking advanced training.

 At least one part-time dental activity in addition to their principal employment was reported by 13 percent of the dentists. Employment in State or local health departments was the most frequently reported secondary activity. Teaching at a dental school was the next most frequently reported part-time employment.

 Dentists reporting time spent in providing patient care devoted an average of 39.7 hours per week to this activity for 47.9 weeks during the year preceding the survey. About one dentist in seven worked the equivalent of six days a week, 48 hours or more, for at least 48 weeks.

 About 11 percent of the practitioners reported they limit their practices to a dental specialty, primarily orthodontics or oral surgery. The metropolitan areas have a large share—about four-fifths—of the dentists who limit their practices. While one in every 6 dentists practicing in a metropolitan area limits his practice, in nonmetropolitan counties only one in every 25 dentists does so.

 Of the 254 responding dentists licensed in Kentucky but located out of the State, approximately one-half are in adjacent states, primarily Indiana and Ohio. Another one-fourth of the out-of-state dentists are located in Florida, California or New York, and the remainder are scattered among 25 other states and the District of Columbia.

 May 1968.
### APPENDIX TABLE

Selected Data on Dentists in Kentucky, by Location

<table>
<thead>
<tr>
<th>County group and county</th>
<th>Civilian dentists</th>
<th>Population 1/ (in 000's)</th>
<th>Persons per active dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Age in 1965</td>
<td>Professionally active</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Under 35</td>
<td>55 years or more</td>
</tr>
<tr>
<td>All counties</td>
<td>1,024</td>
<td>192</td>
<td>270</td>
</tr>
<tr>
<td>Metropolitan areas 2/</td>
<td>548</td>
<td>102</td>
<td>149</td>
</tr>
<tr>
<td>Louisville area (Ky. part)</td>
<td>326</td>
<td>56</td>
<td>92</td>
</tr>
<tr>
<td>Jefferson</td>
<td>326</td>
<td>56</td>
<td>92</td>
</tr>
<tr>
<td>Cincinnati area (Ky. part)</td>
<td>73</td>
<td>12</td>
<td>23</td>
</tr>
<tr>
<td>Boone</td>
<td>7</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Campbell</td>
<td>21</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>Kenton</td>
<td>45</td>
<td>9</td>
<td>14</td>
</tr>
<tr>
<td>Lexington area</td>
<td>108</td>
<td>28</td>
<td>21</td>
</tr>
<tr>
<td>Fayette</td>
<td>108</td>
<td>28</td>
<td>21</td>
</tr>
<tr>
<td>Huntington-Ashland area (Ky. part)</td>
<td>33</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>Boyd</td>
<td>33</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>Evansville area (Ky. part)</td>
<td>8</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Henderson</td>
<td>8</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Nonmetropolitan counties 3/</td>
<td>476</td>
<td>90</td>
<td>121</td>
</tr>
<tr>
<td>Central city 25,000-49,999</td>
<td>77</td>
<td>14</td>
<td>19</td>
</tr>
<tr>
<td>Daviess</td>
<td>30</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>McCracken</td>
<td>26</td>
<td>5</td>
<td>9</td>
</tr>
<tr>
<td>Warren</td>
<td>21</td>
<td>6</td>
<td>5</td>
</tr>
</tbody>
</table>
### APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Kentucky, by Location

<table>
<thead>
<tr>
<th>County group and county</th>
<th>Civilian dentists</th>
<th>Population 1/ (in 000's)</th>
<th>Persons active per dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Under 35</td>
<td>55 years or more</td>
</tr>
<tr>
<td>Nonmetropolitan counties</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Central city 10,000-24,999</td>
<td>89</td>
<td>15</td>
<td>18</td>
</tr>
<tr>
<td>Barren</td>
<td>7</td>
<td>-</td>
<td>3</td>
</tr>
<tr>
<td>Bell</td>
<td>9</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Christian</td>
<td>22</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Clark</td>
<td>6</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Franklin</td>
<td>14</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Graves</td>
<td>8</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Hopkins</td>
<td>10</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Madison</td>
<td>13</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Central city 5,000-9,999</td>
<td>91</td>
<td>17</td>
<td>23</td>
</tr>
<tr>
<td>Bourbon</td>
<td>4</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Boyle</td>
<td>7</td>
<td>-</td>
<td>4</td>
</tr>
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### APPENDIX TABLE (cont’d.)

Selected Data on Dentists in Kentucky, by Location

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### APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Kentucky, by Location

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## APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Kentucky, by Location

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### APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Kentucky, by Location

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#### Nonmetropolitan counties 3/ (cont'd.)

**Central city under 2,500 (cont'd.)**

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<th>Population</th>
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2/ Kentucky counties in the latest 1967 definition of Standard Metropolitan Statistical Areas, as established by the U.S. Bureau of the Budget, Office of Statistical Standards, have been grouped as metropolitan areas for the presentation of survey data. For interstate SMSA's--Louisville, Cincinnati, Huntington-Ashland, and Evansville--statistics are presented only for dentists located in the Kentucky portions.

3/ Counties not included within an SMSA, as defined by the U.S. Bureau of the Budget, have been grouped according to the 1960 population of the largest (central) city within each county.
DENTISTS LICENSED IN LOUISIANA

During the 1965 registration period, 1,726 dentists registered with the Louisiana State Board of Dentistry. Over three-fourths of the registered dentists were civilians located in Louisiana, another 18 percent were civilians located in other States, and 6 percent were on active duty in the Armed Forces.

Location and Military Status of Dentists Licensed in Louisiana

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<th>All dentists</th>
<th>Percent of dentists</th>
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<td>6</td>
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<tr>
<td>Not reported</td>
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* Less than one-half of one percent.

The data provided by the survey respondents has been supplemented, when obtainable, by information on location, age, dental school attended and year of graduation for dentists not responding to the survey. Information on nonrespondents was obtained either from records maintained by the Louisiana State Board of Dentistry or from the 1966 American Dental Directory published by the American Dental Association.
PROFESSIONAL TRAINING

Almost four-fifths of Louisiana's dentists graduated from dental schools located in Louisiana, including over 70 percent who received their dental degrees from Loyola University. Loyola has consistently graduated the largest number of dentists in Louisiana with the proportion increasing from 54 percent of the dentists who graduated before World War II to 80 percent of those who graduated within the last 10 years. Fourteen other dental schools in the South have trained an additional 16 percent of Louisiana's dentists. Principal contributors among these schools have been Emory and Baylor Universities, Meharry Medical College and the University of Tennessee.

### School Awarding Dental Degree, by Year Awarded

<table>
<thead>
<tr>
<th>Dental school attended</th>
<th>Number of dentists</th>
<th>Year of graduation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>All 1955</td>
</tr>
<tr>
<td></td>
<td></td>
<td>After 1941-1955</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1940 or earlier</td>
</tr>
<tr>
<td>Total number</td>
<td>1,309</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>388</td>
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<tr>
<td></td>
<td></td>
<td>422</td>
</tr>
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<td></td>
<td></td>
<td>447</td>
</tr>
</tbody>
</table>

(Percent distribution by school)

<table>
<thead>
<tr>
<th>Dental school attended</th>
<th>Number of dentists</th>
<th>Year of graduation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
<td></td>
<td>After 1941-1955</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1940 or earlier</td>
</tr>
<tr>
<td>Loyola (New Orleans)</td>
<td>911</td>
<td>71</td>
</tr>
<tr>
<td></td>
<td></td>
<td>80</td>
</tr>
<tr>
<td></td>
<td></td>
<td>81</td>
</tr>
<tr>
<td></td>
<td></td>
<td>54</td>
</tr>
<tr>
<td>Tulane (extinct)</td>
<td>94</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>21</td>
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<tr>
<td>Emory</td>
<td>52</td>
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<tr>
<td></td>
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<td>2</td>
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<td>Meharry</td>
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<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Baylor</td>
<td>28</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
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<td></td>
<td>1</td>
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<tr>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>10 other schools</td>
<td>61</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>8</td>
</tr>
</tbody>
</table>

26 schools in other regions 86 6 7 6

1/ Dental school attended not available for 22 dentists and year of graduation for 52 dentists. Percents based on totals for whom the data are known.

* Less than one-half of one percent.

About eighteen percent of the survey respondents, or 171 dentists, reported they had completed one year or more of advanced training beyond receipt of the dental degree. One hundred and ten dentists have received advanced clinical training as interns or residents and 91 have completed at least one year of advanced academic work as graduate or postgraduate students. These figures include 30 dentists who completed both academic and clinical training.
Almost 70 percent of the licensed dentists in Louisiana are located in the six metropolitan areas of the State. The New Orleans area alone has 500 dentists, about 38 percent of all the dentists in the State. The Shreveport metropolitan area is the location of another 150 dentists, 12 percent of the State's supply. The four remaining metropolitan areas, Baton Rouge, Lake Charles, Monroe and Lafayette, have among them 19 percent of Louisiana's dentists.

<table>
<thead>
<tr>
<th>Parish group</th>
<th>Number of parishes</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>All parishes</td>
<td>64</td>
<td>1,309</td>
<td>100</td>
</tr>
<tr>
<td>All metropolitan areas</td>
<td>10</td>
<td>903</td>
<td>69</td>
</tr>
<tr>
<td>New Orleans</td>
<td>4</td>
<td>501</td>
<td>38</td>
</tr>
<tr>
<td>Shreveport</td>
<td>2</td>
<td>151</td>
<td>12</td>
</tr>
<tr>
<td>Baton Rouge</td>
<td>1</td>
<td>121</td>
<td>9</td>
</tr>
<tr>
<td>Lake Charles</td>
<td>1</td>
<td>58</td>
<td>4</td>
</tr>
<tr>
<td>Monroe</td>
<td>1</td>
<td>40</td>
<td>3</td>
</tr>
<tr>
<td>Lafayette</td>
<td>1</td>
<td>32</td>
<td>3</td>
</tr>
<tr>
<td>Nonmetropolitan parishes</td>
<td>54</td>
<td>406</td>
<td>31</td>
</tr>
<tr>
<td>Central city 10,000-49,999</td>
<td>15</td>
<td>242</td>
<td>18</td>
</tr>
<tr>
<td>Central city 5,000-9,999</td>
<td>14</td>
<td>76</td>
<td>6</td>
</tr>
<tr>
<td>Central city 2,500-4,999</td>
<td>14</td>
<td>62</td>
<td>5</td>
</tr>
<tr>
<td>Central city under 2,500</td>
<td>11</td>
<td>26</td>
<td>2</td>
</tr>
</tbody>
</table>

Less than one-third of the State's dentists are located in the 54 nonmetropolitan parishes. These dentists tend to be concentrated in the parishes which contain a relatively large city. Three-fifths of the dentists in nonmetropolitan parishes are located in the 15 parishes with a central city of 10,000 or more population. The 39 parishes which do not have a city this large account for only 13 percent of the dentists in the State. (see Appendix Table for presentation of individual parish data.)
With slightly more than one-half of the dentists under 45 years of age, the median age of dentists in Louisiana is 44.4 years. One-fourth of the State's dentists are under 35 and more than one-fourth are 55 years of age or older. About one in every eight, or 152 dentists, are 65 years old or over, and 88 have reached the age of 70.

<table>
<thead>
<tr>
<th>Age in 1965</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
<th>Cumulative percent distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 30</td>
<td>126</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>30 - 34</td>
<td>194</td>
<td>15</td>
<td>25</td>
</tr>
<tr>
<td>35 - 39</td>
<td>155</td>
<td>12</td>
<td>37</td>
</tr>
<tr>
<td>40 - 44</td>
<td>172</td>
<td>14</td>
<td>51</td>
</tr>
<tr>
<td>45 - 49</td>
<td>159</td>
<td>13</td>
<td>64</td>
</tr>
<tr>
<td>50 - 54</td>
<td>110</td>
<td>9</td>
<td>73</td>
</tr>
<tr>
<td>55 - 59</td>
<td>107</td>
<td>9</td>
<td>82</td>
</tr>
<tr>
<td>60 - 64</td>
<td>81</td>
<td>6</td>
<td>88</td>
</tr>
<tr>
<td>65 - 69</td>
<td>64</td>
<td>5</td>
<td>93</td>
</tr>
<tr>
<td>70 - 74</td>
<td>45</td>
<td>4</td>
<td>97</td>
</tr>
<tr>
<td>75 &amp; over</td>
<td>43</td>
<td>3</td>
<td>100</td>
</tr>
</tbody>
</table>

There are marked differences in the median ages of dentists in the metropolitan areas and in the nonmetropolitan parish groups. The median age of dentists in both the New Orleans and Shreveport metropolitan areas is about 45 years, compared to slightly over 40 years for dentists in the Lake Charles and Lafayette areas. Among the nonmetropolitan parishes, those with central cities of less than 2,500 inhabitants have the oldest group of dentists, with a median age of approximately 52 years--almost eight years higher than the median age of all dentists in the State.
ACTIVE DENTISTS IN RELATION TO POPULATION

Of the 1,309 dentists in Louisiana, 1,249, or 95 percent, are active in their profession, giving Louisiana one professionally active dentist for every 2,815 persons. The six metropolitan areas have proportionately more of the State's dentists than of its population -- 69 percent of the active dentists compared with only 55 percent of the population. As a result of this uneven distribution of dentists in relation to population, there is one dentist for every 2,234 persons in the metropolitan areas, while the remainder of the State has a less favorable ratio of one dentist for every 4,149 persons.

<table>
<thead>
<tr>
<th>Parish group</th>
<th>Professionally active dentists</th>
<th>Population</th>
<th>Persons per dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td>All parishes</td>
<td>1,249</td>
<td>3,515,800</td>
<td>2,815</td>
</tr>
<tr>
<td>All metropolitan areas</td>
<td>870</td>
<td>1,943,500</td>
<td>2,234</td>
</tr>
<tr>
<td>New Orleans</td>
<td>480</td>
<td>997,400</td>
<td>2,078</td>
</tr>
<tr>
<td>Shreveport</td>
<td>142</td>
<td>306,500</td>
<td>2,158</td>
</tr>
<tr>
<td>Baton Rouge</td>
<td>119</td>
<td>261,900</td>
<td>2,201</td>
</tr>
<tr>
<td>Lake Charles</td>
<td>58</td>
<td>169,200</td>
<td>2,917</td>
</tr>
<tr>
<td>Monroe</td>
<td>39</td>
<td>115,000</td>
<td>2,949</td>
</tr>
<tr>
<td>Lafayette</td>
<td>32</td>
<td>93,500</td>
<td>2,922</td>
</tr>
<tr>
<td>Central city 10,000-49,999</td>
<td>379</td>
<td>1,572,300</td>
<td>4,149</td>
</tr>
<tr>
<td>Central city 5,000-9,999</td>
<td>228</td>
<td>822,000</td>
<td>3,605</td>
</tr>
<tr>
<td>Central city 2,500-4,999</td>
<td>71</td>
<td>337,400</td>
<td>4,752</td>
</tr>
<tr>
<td>Central city under 2,500</td>
<td>56</td>
<td>272,600</td>
<td>4,868</td>
</tr>
<tr>
<td>Central city under 2,500</td>
<td>24</td>
<td>140,300</td>
<td>5,846</td>
</tr>
</tbody>
</table>

Among the metropolitan areas, New Orleans has the best ratio, with one dentist for every 2,078 persons. The persons-per-dentist ratios for Shreveport and Baton Rouge, both approximately 2,200, are only slightly less favorable. The remaining three metropolitan areas, Lake Charles, Monroe and Lafayette, have ratios of about 2,900 persons per dentist, a little above the State average.

In the nonmetropolitan parishes of the State, the ratio of persons per dentist generally becomes less favorable as the size of the central city declines. The group of parishes with central cities of 10,000 or more population have an average persons-per-dentist ratio of 3,605, the most favorable ratio among the parish groups, but still considerably exceeding the ratio for the State as a whole. In contrast, the parishes with central cities of less than 2,500 inhabitants average 5,846 persons for every active dentist.
Almost eight of every 10 dental practitioners in Louisiana (i.e., dentists who spend any time working at the chair) reported that they employ auxiliary personnel. Dental assistants, the most frequently employed auxiliary, are utilized by 71 percent of all practitioners, including 65 percent who employ at least one assistant on a full-time basis. Secretaries or receptionists are employed by 29 percent of the dentists with about two-thirds of these dentists utilizing such personnel full time. Only 12 percent of the dentists employ dental hygienists and 7 percent employ dental technicians. A majority of the dentists who employ hygienists or technicians do so only part time.

Dental Practitioners Employing Auxiliaries, by Type of Auxiliary

<table>
<thead>
<tr>
<th>Type of auxiliary</th>
<th>Dental practitioners</th>
<th>Percent of dental practitioners</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total respondents</td>
<td>With one full-time employee (or more)</td>
</tr>
<tr>
<td>Total respondents</td>
<td>929 1/</td>
<td>100</td>
</tr>
<tr>
<td>With one or more auxiliaries</td>
<td>733</td>
<td>79</td>
</tr>
<tr>
<td>With assistant</td>
<td>654</td>
<td>71</td>
</tr>
<tr>
<td>With hygienist</td>
<td>108</td>
<td>12</td>
</tr>
<tr>
<td>With technician</td>
<td>67</td>
<td>7</td>
</tr>
<tr>
<td>With secretary or receptionist</td>
<td>271</td>
<td>29</td>
</tr>
<tr>
<td>With other type of personnel</td>
<td>35</td>
<td>4</td>
</tr>
<tr>
<td>With no auxiliary</td>
<td>191</td>
<td>21</td>
</tr>
</tbody>
</table>

1/ Includes 5 dentists who did not report on auxiliary utilization.

The use of auxiliaries varies with the age of the dentist and is more frequent among the young dentists. Ninety percent of the dental practitioners between the ages of 30 and 44 employ some type of auxiliary. The proportion utilizing auxiliaries decreases to 76 percent among dentists 45 to 64 years old and drops to 44 percent among dentists 65 and over.

Although dentists in the metropolitan areas are no more likely to employ auxiliary personnel than are those located in nonmetropolitan parishes, the use of hygienists is much more common in the metropolitan areas than in the remainder of the State. About 15 percent of the dentists in the metropolitan areas report the employment of a hygienist, compared to only 5 percent of the dentists located elsewhere.
HIGHLIGHTS OF OTHER SURVEY FINDINGS

***Ninety-six percent of the 1,249 professionally active dentists in Louisiana are primarily engaged in private practice. Another two percent are on the staff of the dental school, and the remaining two percent are either employed by State or local government agencies or are engaged in other dental activities, such as taking advanced training.

***Dentists providing patient care devoted an average of 40.5 hours per week to this activity for 48.5 weeks during the year preceding the survey. About one dentist in six worked the equivalent of six days a week, 48 hours or more, for at least 48 weeks.

***About 12 percent of the practitioners reported they limit their practices to a dental specialty, primarily to orthodontics or oral surgery. Nine-tenths of the dentists who reported limiting their practices are located in the State's metropolitan areas. The New Orleans area alone has over three times as many dentists with limited practices as all 54 nonmetropolitan parishes combined.

***Six percent of the respondents, 59 dentists, practice as a civilian dentist in one of 22 other States or the District of Columbia immediately prior to assuming their present Louisiana location. Three in every 10 of these dentists came from the adjacent States of Texas, Mississippi, and Arkansas.

***Almost one-half of the 307 civilian dentists licensed in Louisiana but located in another State were in the nearby States of Texas, Mississippi, or Florida. The remaining out-of-State dentists were scattered among 33 other States, the District of Columbia or foreign countries.

September 1967.
### APPENDIX TABLE

Selected Data on Dentists in Louisiana, By Location

<table>
<thead>
<tr>
<th>Parish group and parish</th>
<th>Total</th>
<th>Respondents</th>
<th>Non-respondents</th>
<th>Age in 1965</th>
<th>Professionally active</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Under 35</td>
<td>55 years or more</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All parishes</td>
<td>1,309</td>
<td>970</td>
<td>339</td>
<td>320</td>
<td>340</td>
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<tr>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>All metropolitan areas</td>
<td>903</td>
<td>665</td>
<td>238</td>
<td>224</td>
<td>277</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Orleans area</td>
<td>501</td>
<td>355</td>
<td>146</td>
<td>120</td>
<td>132</td>
</tr>
<tr>
<td>Jefferson</td>
<td>82</td>
<td>63</td>
<td>19</td>
<td>34</td>
<td>8</td>
</tr>
<tr>
<td>Orleans</td>
<td>399</td>
<td>275</td>
<td>124</td>
<td>77</td>
<td>123</td>
</tr>
<tr>
<td>St. Bernard</td>
<td>3</td>
<td>3</td>
<td>-</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>St. Tammany</td>
<td>17</td>
<td>14</td>
<td>3</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shreveport area</td>
<td>153</td>
<td>108</td>
<td>43</td>
<td>34</td>
<td>47</td>
</tr>
<tr>
<td>Bossier</td>
<td>7</td>
<td>4</td>
<td>3</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Caddo</td>
<td>144</td>
<td>104</td>
<td>40</td>
<td>34</td>
<td>46</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baton Rouge area</td>
<td>121</td>
<td>92</td>
<td>29</td>
<td>35</td>
<td>25</td>
</tr>
<tr>
<td>East Baton Rouge</td>
<td>121</td>
<td>92</td>
<td>29</td>
<td>35</td>
<td>25</td>
</tr>
<tr>
<td>Lake Charles area</td>
<td>58</td>
<td>48</td>
<td>10</td>
<td>20</td>
<td>7</td>
</tr>
<tr>
<td>Calcasieu</td>
<td>58</td>
<td>48</td>
<td>10</td>
<td>20</td>
<td>7</td>
</tr>
<tr>
<td>Monroe area</td>
<td>40</td>
<td>33</td>
<td>7</td>
<td>7</td>
<td>13</td>
</tr>
<tr>
<td>Ouachita</td>
<td>40</td>
<td>33</td>
<td>7</td>
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<td>13</td>
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<tr>
<td>Lafayette area</td>
<td>32</td>
<td>29</td>
<td>3</td>
<td>8</td>
<td>3</td>
</tr>
<tr>
<td>Lafayette</td>
<td>32</td>
<td>29</td>
<td>3</td>
<td>8</td>
<td>3</td>
</tr>
<tr>
<td>All nonmetropolitan parishes</td>
<td>406</td>
<td>305</td>
<td>101</td>
<td>96</td>
<td>113</td>
</tr>
<tr>
<td>Central city 25,000-49,999</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iberia</td>
<td>19</td>
<td>15</td>
<td>4</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>Rapides</td>
<td>47</td>
<td>33</td>
<td>14</td>
<td>10</td>
<td>12</td>
</tr>
</tbody>
</table>

1/ Population in 000's

2/ Persons per active dentist

3/
## Selected Data on Dentists in Louisiana, By Location (cont'd.)

<table>
<thead>
<tr>
<th>Parish group and parish</th>
<th>Total Respondents</th>
<th>Non-respondents</th>
<th>Total Age in 1965</th>
<th>Professionally active</th>
<th>Population (in 000's)</th>
<th>Persons per active dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central city 10,000-24,999</td>
<td>176</td>
<td>138</td>
<td>38</td>
<td>42</td>
<td>43</td>
<td>166</td>
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<tr>
<td>Acadia</td>
<td>14</td>
<td>11</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>14</td>
</tr>
<tr>
<td>Jefferson Davis</td>
<td>10</td>
<td>8</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>Lafourche</td>
<td>21</td>
<td>18</td>
<td>3</td>
<td>7</td>
<td>3</td>
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<td>62</td>
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<td>Parish group and parish</td>
<td>Civilian dentists</td>
<td></td>
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<tr>
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<td>-------</td>
<td>-------</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>Respondents</td>
<td>Non-respondents</td>
<td>Age in 1965</td>
<td>Professionally active</td>
<td>Population 1/1000's</td>
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<tr>
<td></td>
<td></td>
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<td>Under 35 yrs</td>
<td>35 yrs or more</td>
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<td>Ail nonmetropolitan parishes (cont'd.)</td>
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<td>Central city 2,500-4,999 (cont'd.)</td>
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<td>Concordia</td>
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<td>5</td>
<td>1</td>
<td>4</td>
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<td>23.3</td>
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<td>Franklin</td>
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<td>1</td>
<td>-</td>
<td>26.6</td>
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<td>Jackson</td>
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<td>2</td>
<td>-</td>
<td>1</td>
<td>16.0</td>
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<td>Plaquemines</td>
<td>3</td>
<td>3</td>
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<td>-</td>
<td>-</td>
<td>26.4</td>
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<td>Pointe Coupee</td>
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<td>4</td>
<td>-</td>
<td>1</td>
<td>3</td>
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<td>Richland</td>
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<td>5</td>
<td>1</td>
<td>-</td>
<td>3</td>
<td>22.6</td>
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<td>Sabine</td>
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<td>1</td>
<td>3</td>
<td>6</td>
<td>17.4</td>
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<td>St. Charles</td>
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<td>1</td>
<td>3</td>
<td>24.9</td>
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<tr>
<td>St. James</td>
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<td>4</td>
<td>-</td>
<td>2</td>
<td>2</td>
<td>19.8</td>
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<tr>
<td>Union</td>
<td>4</td>
<td>3</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>17.0</td>
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<td>2</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>19.9</td>
</tr>
</tbody>
</table>

Central city under 2,500

| Assumption                   | 7                | 2       | 1               | 3             | 2                 | 16.3                | 2,604               |
| Caldwell                     | 2                | 2       | -               | -             | -                 | 8.5                 | 4,200               |
| Catahoula                    | 3                | 2       | 1               | 2             | -                 | 11.7                | 5,600               |
| East Feliciana               | 2                | 1       | 1               | -             | 1                 | 20.7                | 20,700              |
| Grant                        | 2                | 1       | -               | 1             | 2                 | 12.9                | 6,450               |
| La Salle                     | 6                | 6       | -               | -             | 2                 | 13.1                | 2,183               |
| Red River                    | 1                | 1       | -               | -             | 1                 | 8.9                 | 8,800               |
| St. Helena                   | -                | -       | -               | -             | -                 | 9.2                 | -                   |
| Tensas                       | -                | -       | -               | -             | -                 | 11.2                | -                   |
| West Carroll                 | 1                | 1       | -               | -             | -                 | 13.0                | 13,000              |
| West Feliciana               | 2                | 2       | -               | 1             | -                 | 13.4                | 6,700               |

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2/ Louisiana parishes included in the latest 1966 definition of Standard Metropolitan Statistical Areas, as established by the U.S. Bureau of the Budget, Office of Statistical Standards, have been grouped as metropolitan areas for the presentation of the survey data.

3/ Parishes not included within a SMSA, as defined by the U.S. Bureau of the Budget, have been grouped according to the 1960 population of the largest (central) city within each parish.
A total of 435 dentists registered with the Board of Dental Examiners of the State of Maine during the 1965 registration period (Table 1). The survey questionnaire was completed by 405 dentists, or 93 percent of all those registering. A large proportion of the responding dentists--89 percent--are civilians located in Maine. Civilian dentists located in other States account for another 9 percent of the respondents. Nearly one-half of these out-of-State dentists reside in Massachusetts, slightly more than one-fifth are located in New Hampshire or New York, and the remainder are scattered among 8 other States.

Table 1.--Location and Military Status of Dentists Licensed in Maine

<table>
<thead>
<tr>
<th>Location and military status</th>
<th>All dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total licensed</td>
<td>435</td>
<td>100</td>
</tr>
<tr>
<td>Respondents</td>
<td>405</td>
<td>93</td>
</tr>
<tr>
<td>Nonrespondents</td>
<td>30</td>
<td>7</td>
</tr>
<tr>
<td>Respondents</td>
<td>405</td>
<td>100</td>
</tr>
<tr>
<td>Civilians in Maine</td>
<td>360</td>
<td>89</td>
</tr>
<tr>
<td>Civilians in another State</td>
<td>36</td>
<td>9</td>
</tr>
<tr>
<td>On active duty with Armed Forces</td>
<td>9</td>
<td>2</td>
</tr>
</tbody>
</table>

Civilian Dentists in Maine

Sources of Supply

Dental schools.--More than one-half of Maine's dentists are graduates of the two New England Schools of Dental Medicine at Tufts University and Harvard University (Table 2). Through the years Tufts University has been the primary source of Maine's dentist supply and its contribution has increased slightly since 1955 as compared with the years prior to World War II. Harvard's relative contribution to the Maine supply, on the other hand, has declined greatly during the post-war years.

Graduates of 10 other eastern dental schools in Pennsylvania, Maryland, New York, the District of Columbia and New Jersey account for another 30 percent of the dentists in Maine. The University of Maryland has been the primary contributor among these eastern schools to the Maine supply. However, proportionately fewer of Maine's dentists who have graduated from dental school in recent years attended Maryland than did those graduates in 1940 or earlier.
Table 2.--School Awarding Dental Degree, by Year Awarded

<table>
<thead>
<tr>
<th>Dental school attended</th>
<th>Number of dentists</th>
<th>Year of graduation</th>
<th>Year of graduation</th>
<th>Year of graduation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>All 1955</td>
<td>1941-1940 or earlier</td>
<td></td>
</tr>
<tr>
<td>Total number</td>
<td>360 1/</td>
<td>360</td>
<td>80</td>
<td>140</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>133</td>
</tr>
<tr>
<td>(Percent distribution by school)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tufts</td>
<td>164</td>
<td>46</td>
<td>48</td>
<td>50</td>
</tr>
<tr>
<td>Harvard</td>
<td>41</td>
<td>11</td>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td>Maryland</td>
<td>32</td>
<td>9</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>22</td>
<td>6</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>Georgetown</td>
<td>14</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Temple</td>
<td>14</td>
<td>4</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>Montreal</td>
<td>12</td>
<td>3</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>20 other schools</td>
<td>61</td>
<td>17</td>
<td>24</td>
<td>21</td>
</tr>
</tbody>
</table>

1/ Individual items in this and succeeding tables may not add to the totals shown due to the failure of some responding dentists to reply to all items on the questionnaire. Where percentages are shown they are based on data supplied by dentists responding to the item (see Appendix Table A).

Another 4 percent of the State's dentists are graduates of 3 Canadian dental schools, primarily the Universite de Montreal. The remainder of Maine's dentists--about a twelfth of the total--received their dental education in 17 schools located in 8 other States.

Dentists relocating in Maine.--One in every eight dentists now located in Maine reported previous professional locations as civilians in other States. Almost one-half of the 42 dentists relocating in Maine moved from Massachusetts or New York. The remainder came from 16 other States and the District of Columbia.

Personal Characteristics

Age.--The median age in 1965 of Maine's reporting dentists was a relatively high 47.1 years. More than one-half of the State's dentists are between the ages of 35 and 54, including 3 in every 10 who are in the 35 to 44 age group (Table 3). Dentists who are 55 or over number twice as many as those who are under 35 years of age. Included in this older age group are 67 reporting dentists who are 65 or older.
Table 3. -- Age Distribution in 1965

<table>
<thead>
<tr>
<th>Age</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>360</td>
<td>100</td>
</tr>
<tr>
<td>Under 30</td>
<td>12</td>
<td>3</td>
</tr>
<tr>
<td>30 - 34</td>
<td>42</td>
<td>12</td>
</tr>
<tr>
<td>35 - 39</td>
<td>39</td>
<td>11</td>
</tr>
<tr>
<td>40 - 44</td>
<td>69</td>
<td>19</td>
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<tr>
<td>45 - 49</td>
<td>41</td>
<td>11</td>
</tr>
<tr>
<td>50 - 54</td>
<td>42</td>
<td>12</td>
</tr>
<tr>
<td>55 - 59</td>
<td>22</td>
<td>6</td>
</tr>
<tr>
<td>60 - 64</td>
<td>24</td>
<td>7</td>
</tr>
<tr>
<td>65 - 69</td>
<td>25</td>
<td>7</td>
</tr>
<tr>
<td>70 - 74</td>
<td>29</td>
<td>8</td>
</tr>
<tr>
<td>75 &amp; over</td>
<td>13</td>
<td>4</td>
</tr>
</tbody>
</table>

Advanced training. -- One or more years of advanced training has been completed by at least 62 dentists in Maine (Table 4). Twelve percent have received advanced clinical training as interns and residents, and 7 percent have completed at least one year of advanced academic work as graduate or postgraduate students.

Table 4. -- Advanced Training

<table>
<thead>
<tr>
<th>Highest level of training completed</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>With advanced training</td>
<td>62</td>
<td>17</td>
</tr>
<tr>
<td>Clinical training only</td>
<td>36</td>
<td>10</td>
</tr>
<tr>
<td>Academic training only</td>
<td>19</td>
<td>5</td>
</tr>
<tr>
<td>Both clinical and academic</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>Clinical training</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residency completed</td>
<td>14</td>
<td>4</td>
</tr>
<tr>
<td>Internship completed</td>
<td>29</td>
<td>8</td>
</tr>
<tr>
<td>Academic training</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M.A., M.S., or other advanced degree</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>Postgraduate 1 year or more (no degree)</td>
<td>18</td>
<td>5</td>
</tr>
</tbody>
</table>
There is a growing tendency for younger dentists to seek additional training beyond the dental degree, particularly advanced academic work. About 13 percent of the dentists under 40 years of age have had a year or more of graduate or postgraduate study as compared with only 7 percent of those 40 to 54 years old and 4 percent of those 55 and over.

Multiple licensure.--About one-third of the dentists located in Maine are also licensed to practice dentistry in other States. However, only 16 of the State's 121 dentists who reported multiple licensure are registered to practice in more than one other State in addition to Maine. Two-thirds of all dentists holding out-of-State licenses are licensed to practice in Massachusetts. Maine dentists are also registered in 18 other States, primarily New York and New Hampshire.

Distribution and Current Status

**Distribution of dentists.**--Slightly more than three-fourths of the 360 reporting dentists are located in only 6 of the State's 16 counties (Table 5). Cumberland County, a portion of which makes up the Portland metropolitan area, has the largest number of dentists, almost 30 percent of the State's supply. Three other counties--Kennebec, Androscoggin and York--in the southern coastal area of the State also contain sizeable numbers of dentists, each about 10 percent of the total in the State. The State's other metropolitan area, the Lewiston-Auburn area, makes up a part of Androscoggin County. Penobscot County in the Maine Woods area has the second largest number of dentists of any county. Aroostook County, the northernmost county in the State, is the only other county with at least 20 dentists. Of the other 10 counties, Oxford and Somerset Counties in the Maine Woods area and Hancock and Knox Counties on the northeast coast have 10 or more dentists (see Appendix Table B for individual county data).

<table>
<thead>
<tr>
<th>County</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cumberland</td>
<td>103</td>
<td>29</td>
</tr>
<tr>
<td>Penobscot</td>
<td>41</td>
<td>11</td>
</tr>
<tr>
<td>Kennebec</td>
<td>38</td>
<td>11</td>
</tr>
<tr>
<td>Androscoggin</td>
<td>36</td>
<td>10</td>
</tr>
<tr>
<td>York</td>
<td>33</td>
<td>9</td>
</tr>
<tr>
<td>Aroostook</td>
<td>21</td>
<td>6</td>
</tr>
<tr>
<td>10 other counties</td>
<td>88</td>
<td>24</td>
</tr>
</tbody>
</table>

Table 5.--Distribution by County
Active dentists in relation to population—Of the 360 respondents in Maine, 356 reported that they were active in the dental profession. The other four dentists, who are all 65 years old or over, regarded themselves as fully retired. Based on this count, there was one professionally active dentist for every 2,790 persons in Maine in 1965.

Cumberland County has the most favorable county ratio, only 1,844 persons per active dentist (Table 6). Kennebec County and Androscoggin County have the next most favorable ratios—2,403 and 2,442 persons per dentist, respectively. The other 3 most populous counties—Aroostook, Penobscot and York Counties—each have persons-per-active-dentist ratios less favorable than the State, which averages 2,790 persons per dentist.

Table 6.—Number of Persons Per Dentist

<table>
<thead>
<tr>
<th>County</th>
<th>Professionally active dentists</th>
<th>Population</th>
<th>Persons per dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td>All counties</td>
<td>356</td>
<td>993,700</td>
<td>2,790</td>
</tr>
<tr>
<td>Cumberland</td>
<td>103</td>
<td>189,900</td>
<td>1,844</td>
</tr>
<tr>
<td>Penobscot</td>
<td>40</td>
<td>134,100</td>
<td>3,333</td>
</tr>
<tr>
<td>Kennebec</td>
<td>38</td>
<td>91,300</td>
<td>2,403</td>
</tr>
<tr>
<td>Androscoggin</td>
<td>36</td>
<td>87,900</td>
<td>2,442</td>
</tr>
<tr>
<td>York</td>
<td>33</td>
<td>102,700</td>
<td>3,112</td>
</tr>
<tr>
<td>Aroostook</td>
<td>20</td>
<td>108,700</td>
<td>5,435</td>
</tr>
<tr>
<td>10 other counties</td>
<td>86</td>
<td>278,600</td>
<td>3,240</td>
</tr>
</tbody>
</table>

The other 10 counties in Maine each have smaller populations and fewer dentists. The extremes in persons-per-dentist ratios in these counties occur in two adjoining counties on the northeast coast. Knox County has the most favorable ratio with 2,618 persons per dentist and Waldo County has the least favorable ratio of 5,750 (see Appendix Table C for individual county data). In addition to Knox County, another northeast coast county, Hancock, as well as Piscataquis County in the Maine Woods area also have fewer persons per dentist than the State on the average. Each of the other 6 counties in Maine have fewer than 4,000 persons per active dentist.

Professional Activity

Current employment—Nearly all the professionally active dentists in Maine are primarily engaged in private practice; 97 percent are self-employed and one percent are employed by another dentist. The other 2 percent are employed by governmental agencies, or are engaged in other dental employment. One in every ten dentists who are professionally active also report that they are engaged in a part-time dental activity in addition to their primary professional employment.
Activity last year.—All dentists, except two, who reported on their professional activity last year, stated that they provided care for patients. Dentists reporting time spent in patient care devoted an average of 46.8 weeks during the year to this activity and worked an average of 39.8 hours per week.

A few dentists reported more than one type of professional activity. About 5 percent of the active dentists reported they were engaged in teaching or research, or they were taking advanced training. However, less than one percent of the total professional time was spent in all activities other than patient care.

Of the dentists who provided patient care last year, the largest proportion, 57 percent, spent 40 hours or more per week at this activity for at least 48 weeks of the year (Table 7). Dentists who spent the least amount of time in patient care, less than 48 weeks a year and less than 40 hours per week, accounted for only 14 percent of all dentists engaged in this activity.

Table 7.—Time Spent in Patient Care Last Year

<table>
<thead>
<tr>
<th>Weeks spent in patient care</th>
<th>Percent of dentists providing patient care</th>
<th>Percent distribution by work week</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>48 hours</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>18</td>
</tr>
<tr>
<td>50 weeks or more</td>
<td>41</td>
<td>9</td>
</tr>
<tr>
<td>48 - 49 weeks</td>
<td>34</td>
<td>6</td>
</tr>
<tr>
<td>Less than 48 weeks</td>
<td>25</td>
<td>3</td>
</tr>
</tbody>
</table>

The amount of time worked by dentists in private practice last year declined sharply with increasing age. Slightly less than 8 in 10 dentists under 35 years of age report working at least 48 weeks and at least 40 hours per week. The proportion working this amount of time declines to 6 in 10 dentists for those between 45 and 54 years old and then decreases sharply to less than 3 in 10 dentists among those 65 years old or over.
Practice Characteristics

Limited practices.--A total of 28 dentists, or one in every 12 dentists in Maine, report limiting their practice to a dental specialty. Practices limited to orthodontia or oral surgery are reported by almost all of these dentists. Two-thirds of the dentists in limited practice are located in either Cumberland or Penobscot Counties.

Use of auxiliaries.--Dental auxiliaries are employed by more than four-fifths of the dental practitioners, including approximately 75 percent who employ at least one auxiliary full time (Table 8). Almost three-fourths of the practitioners employ dental assistants, mostly on a full-time basis. Dental hygienists are employed by 17 percent of the practitioners, including 8 percent who employ one full time. About one in 11 practitioners employ laboratory technicians in their practices, and slightly more than half of these dentists employ full-time technicians.

Table 8.--Dental Practitioners Employing One or More Auxiliaries, by Type of Auxiliary

<table>
<thead>
<tr>
<th>Type of auxiliary</th>
<th>Percent of dental practitioners</th>
<th>With one full-time employee (or more)</th>
<th>With only part-time personnel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>354</td>
<td>100</td>
<td>75</td>
</tr>
<tr>
<td>With one or more auxiliaries</td>
<td>283&lt;sup&gt;1&lt;/sup&gt;</td>
<td>82</td>
<td>75</td>
</tr>
<tr>
<td>With assistant</td>
<td>253</td>
<td>73</td>
<td>65</td>
</tr>
<tr>
<td>With hygienist</td>
<td>60</td>
<td>17</td>
<td>8</td>
</tr>
<tr>
<td>With laboratory technician</td>
<td>32</td>
<td>9</td>
<td>5</td>
</tr>
<tr>
<td>With secretary or receptionist</td>
<td>69</td>
<td>20</td>
<td>16</td>
</tr>
<tr>
<td>With other type of personnel</td>
<td>10</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>With no auxiliary</td>
<td>64</td>
<td>18</td>
<td>-</td>
</tr>
</tbody>
</table>

<sup>1</sup> Individual items add to more than the total because some dentists employ more than one type of auxiliary.

Young dentists are considerably more likely to employ auxiliary personnel than are their older colleagues. Over 90 percent of the dental practitioners under 40 years of age employ one or more auxiliaries. But among dentists 55 years or older, the proportion using auxiliaries drops to approximately 62 percent.
A large proportion of the dentists in each of the 16 counties utilize auxiliary personnel in their practices. In 11 of the counties four-fifths or more of the practitioners employ auxiliaries. In the 6 counties which have the largest numbers of dentists the proportion of practitioners with auxiliary personnel ranges from a low 77 percent in Penobscot and Androscoggin Counties to a high 85 percent in Cumberland County.
Appendix Table A.--Summary Statistics for Maine

<table>
<thead>
<tr>
<th>Description</th>
<th>Number of Dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>All licensed dentists</td>
<td>435</td>
</tr>
<tr>
<td>Respondents -- total dentists participating in survey</td>
<td>405</td>
</tr>
<tr>
<td>Civilian dentists in Maine(^1) -- civilian respondents</td>
<td>360</td>
</tr>
<tr>
<td>(number not reporting: age - 1, year of graduation - 7)</td>
<td></td>
</tr>
<tr>
<td>Professionally active dentists(^2)</td>
<td>356</td>
</tr>
<tr>
<td>Dental practitioners(^3)</td>
<td>354</td>
</tr>
<tr>
<td>In limited practice(^4)</td>
<td>28</td>
</tr>
<tr>
<td>Located in Maine last year:</td>
<td></td>
</tr>
<tr>
<td>Reported professional activity(^5)</td>
<td>332</td>
</tr>
<tr>
<td>Dentists providing patient care(^6)</td>
<td>330</td>
</tr>
<tr>
<td>Reported time spent in patient care(^7)</td>
<td>281</td>
</tr>
<tr>
<td>Dentists in private practice(^8)</td>
<td>329</td>
</tr>
<tr>
<td>Reported time spent in practice(^9)</td>
<td>280</td>
</tr>
<tr>
<td>Out-of-State dentists -- civilian respondents not located in Maine</td>
<td>36</td>
</tr>
<tr>
<td>Dentists on active duty with Armed Forces</td>
<td>9</td>
</tr>
<tr>
<td>Nonrespondents -- licensed dentists not participating in survey</td>
<td>30</td>
</tr>
</tbody>
</table>

\(^1\) All responding dentists who currently work in Maine (excluding those in the Armed Forces) or who are retired and currently live in the State.

\(^2\) All active civilian dentists currently in Maine--excludes four dentists who are fully retired.

\(^3\) All dentists practicing at the chair, that is, dentists who work as clinicians either as primary or secondary activity.

\(^4\) Dentists who reported they limited their practice to a dental specialty.

\(^5\) Dentists located in Maine last year who indicated type(s) of activity in which they engaged.

\(^6\) All dentists who engaged in patient care last year, either as a primary or a secondary activity.

\(^7\) Dentists reporting both hours and weeks spent in patient care last year.

\(^8\) Dentists who reported they were primarily self-employed both currently and last year.

\(^9\) Dentists reporting both hours and weeks spent last year as a self-employed dentist.
Appendix Table B.—Maine Counties, by Geographical Area

<table>
<thead>
<tr>
<th>County</th>
<th>Central city</th>
<th>Number of responding civilian dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Southern Coastal area</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cumberland</td>
<td>Portland</td>
<td>103</td>
</tr>
<tr>
<td>Kennebec</td>
<td>Augusta</td>
<td>38</td>
</tr>
<tr>
<td>Androscoggin</td>
<td>Lewiston</td>
<td>36</td>
</tr>
<tr>
<td>York</td>
<td>Biddeford</td>
<td>33</td>
</tr>
<tr>
<td>Sagadahoc</td>
<td>Bath</td>
<td>7</td>
</tr>
<tr>
<td><strong>Maine Woods area</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Penobscot</td>
<td>Bangor</td>
<td>41</td>
</tr>
<tr>
<td>Oxford</td>
<td>Rumford</td>
<td>15</td>
</tr>
<tr>
<td>Somerset</td>
<td>Skowhegan</td>
<td>10</td>
</tr>
<tr>
<td>Franklin</td>
<td>Farmington</td>
<td>8</td>
</tr>
<tr>
<td>Piscataquis</td>
<td>Dover-Foxcroft</td>
<td>6</td>
</tr>
<tr>
<td><strong>Northeast Coast area</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hancock</td>
<td>Ellsworth</td>
<td>12</td>
</tr>
<tr>
<td>Knox</td>
<td>Rockland</td>
<td>11</td>
</tr>
<tr>
<td>Washington</td>
<td>Calais</td>
<td>8</td>
</tr>
<tr>
<td>Lincoln</td>
<td>Boothbay Harbor</td>
<td>6</td>
</tr>
<tr>
<td>Waldo</td>
<td>Belfast</td>
<td>5</td>
</tr>
<tr>
<td><strong>Aroostook area</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aroostook</td>
<td>Presque Isle</td>
<td>21</td>
</tr>
</tbody>
</table>

1/ The geographical areas in Maine have been adapted from the State Economic Areas designated in the publication: Donald J. Bogue and Calvin L. Beale, "Economic Areas of the United States." New York, The Free Press of Glencoe, Inc., 1961.

2/ The largest (central) city in each county according to the 1960 population.
## Appendix Table T—County Data

<table>
<thead>
<tr>
<th>Counties with responding active dentists</th>
<th>Professionally active dentists</th>
<th>Population per active dentists (in 000's)</th>
<th>Percent of active dentists in 5 years or more</th>
<th>Percent of practitioners using auxiliaries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>356</td>
<td>993.2</td>
<td>27</td>
<td>31</td>
</tr>
<tr>
<td>Androscoggin</td>
<td>36</td>
<td>87.9</td>
<td>2.342</td>
<td>25</td>
</tr>
<tr>
<td>Aroostock</td>
<td>20</td>
<td>108.7</td>
<td>5.435</td>
<td>15</td>
</tr>
<tr>
<td>Cumberland</td>
<td>103</td>
<td>189.9</td>
<td>1.643</td>
<td>28</td>
</tr>
<tr>
<td>Franklin</td>
<td>7</td>
<td>19.7</td>
<td>2.814</td>
<td>39</td>
</tr>
<tr>
<td>Hancock</td>
<td>12</td>
<td>32.3</td>
<td>2.692</td>
<td>25</td>
</tr>
<tr>
<td>Kennebec</td>
<td>38</td>
<td>91.3</td>
<td>2.405</td>
<td>11</td>
</tr>
<tr>
<td>Knox</td>
<td>11</td>
<td>28.8</td>
<td>2.618</td>
<td>27</td>
</tr>
<tr>
<td>Lincoln</td>
<td>6</td>
<td>18.6</td>
<td>3.100</td>
<td>50</td>
</tr>
<tr>
<td>Oxford</td>
<td>15</td>
<td>44.4</td>
<td>2.960</td>
<td>20</td>
</tr>
<tr>
<td>Penobscot</td>
<td>40</td>
<td>134.1</td>
<td>3.353</td>
<td>25</td>
</tr>
<tr>
<td>Piscataquis</td>
<td>6</td>
<td>16.7</td>
<td>2.783</td>
<td>33</td>
</tr>
<tr>
<td>Sagadahoc</td>
<td>7</td>
<td>23.7</td>
<td>3.386</td>
<td>43</td>
</tr>
<tr>
<td>Somerset</td>
<td>10</td>
<td>39.6</td>
<td>3.960</td>
<td>40</td>
</tr>
<tr>
<td>Waldo</td>
<td>4</td>
<td>23.0</td>
<td>5.750</td>
<td>50</td>
</tr>
<tr>
<td>Washington</td>
<td>8</td>
<td>31.8</td>
<td>5.975</td>
<td>12</td>
</tr>
<tr>
<td>York</td>
<td>33</td>
<td>102.7</td>
<td>2.112</td>
<td>26</td>
</tr>
</tbody>
</table>

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DENTISTS LICENSED IN MARYLAND

A total of 2,130 dentists registered with the Maryland State Board of Dental Examiners in January 1965 (Table 1). Of this total, 1,982 completed the questionnaire, for an overall response rate of 93 percent. The response rate for dentists actually located in Maryland was somewhat higher, since nonresponse was more frequent for those who were outside the State or on active duty with the Armed Forces. As it was, an extremely large number of those responding are located outside Maryland. More than 500 are in another State or abroad and another 150 are on active duty with the Armed Forces. Together, these two groups of dentists represent about a third of all licensed respondents.

Table 1.--Location and Military Status of Dentists Licensed in Maryland

<table>
<thead>
<tr>
<th>Location and military status</th>
<th>All dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>2,130</td>
<td>100</td>
</tr>
<tr>
<td>Respondents</td>
<td>1,982</td>
<td>93</td>
</tr>
<tr>
<td>Nonrespondents</td>
<td>148</td>
<td>7</td>
</tr>
<tr>
<td>Respondents</td>
<td>1,982</td>
<td>100</td>
</tr>
<tr>
<td>Civilians in Maryland</td>
<td>1,312</td>
<td>66</td>
</tr>
<tr>
<td>Civilians in another State</td>
<td>513</td>
<td>26</td>
</tr>
<tr>
<td>On active duty with Armed Forces</td>
<td>149</td>
<td>8</td>
</tr>
<tr>
<td>Not reported</td>
<td>8</td>
<td>*</td>
</tr>
</tbody>
</table>

* Less than one-half of one percent.

Table 2.--Percent Holding Licenses in Other States

<table>
<thead>
<tr>
<th>Licenses held</th>
<th>All respondents</th>
<th>Civilian dentists</th>
<th>Armed Forces</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>In Maryland</td>
<td>Out-of-State</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Maryland only</td>
<td>49</td>
<td>66</td>
<td>-</td>
</tr>
<tr>
<td>Licensed in 1 other State</td>
<td>37</td>
<td>25</td>
<td>68</td>
</tr>
<tr>
<td>Licensed in 2 other States</td>
<td>11</td>
<td>6</td>
<td>24</td>
</tr>
<tr>
<td>Licensed in 3 or more States</td>
<td>3</td>
<td>1</td>
<td>8</td>
</tr>
</tbody>
</table>
Of all dentists responding, about half hold a license in one or more additional States. About 11 percent are licensed in two other States and 3 percent are licensed in three or more States. As a result, the total number of State licenses held by the respondents exceeds 3,300. Although the majority of those holding multiple licenses are currently located outside the State, multiple licensure is also common among Maryland's dentists. Nearly a third of all dentists located in Maryland are licensed in one other State, 6 percent in two others, and 1 percent in three or more other States.

Civilian Dentists in Maryland

Sources of Supply

Dental schools.--Graduates of 40 dental schools are represented among Maryland's dentists, including graduates of two Canadian schools and of one dental school, George Washington, which is no longer in existence. However, the great majority of Maryland's dentists--68 percent--are graduates of the School of Dentistry of the University of Maryland. Of the

Table 3.--School Awarding Dental Degree, by Year Awarded

<table>
<thead>
<tr>
<th>Dental school attended</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Year of graduation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>After 1955</td>
</tr>
<tr>
<td>Total</td>
<td>1,312 1/</td>
<td>-</td>
</tr>
<tr>
<td>Maryland</td>
<td>892</td>
<td>68</td>
</tr>
<tr>
<td>Georgetown</td>
<td>152</td>
<td>12</td>
</tr>
<tr>
<td>Howard</td>
<td>81</td>
<td>6</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>28</td>
<td>2</td>
</tr>
<tr>
<td>Trinity</td>
<td>18</td>
<td>1</td>
</tr>
<tr>
<td>Pittsburgh</td>
<td>17</td>
<td>1</td>
</tr>
<tr>
<td>Temple</td>
<td>16</td>
<td>1</td>
</tr>
<tr>
<td>Meharry</td>
<td>10</td>
<td>1</td>
</tr>
<tr>
<td>Other schools</td>
<td>98</td>
<td>8</td>
</tr>
</tbody>
</table>

1/ Individual items in this and succeeding tables may not add to the totals shown due to the failure of some responding dentists to reply to all items on the questionnaire. Where percentages are shown, they are based on data supplied by dentists responding to the item. (See Appendix Table A).

The remainder, 24 percent are accounted for by the seven out-of-State schools which have produced 10 or more of Maryland's dentists. Those in the District of Columbia, notably Georgetown, and in Pennsylvania have long
been the principal out-of-State sources of supply, and in recent years have accounted for an increasing percent. About 32 percent of those graduating within the last 10 years are from these schools, as compared with 12 percent for those who were graduated prior to World War II.

Dentists relocating in Maryland.--Maryland has relatively few in-migrant dentists. Only 14 percent of all dentists currently located in Maryland report that they had previously been located elsewhere (Table 4). The largest number had moved from the District of Columbia and nearby Pennsylvania and Virginia. Among the 31 more distant States whose dentists migrated to Maryland, New York contributed the largest number. Among other States accounting for five or more were North Carolina and New Jersey (eight each), Kentucky and Florida (seven), Massachusetts (six), and Michigan and Illinois (five each). Ten dentists reported that they had previously been located in a foreign country.

Table 4.--In-Migrant Dentists

<table>
<thead>
<tr>
<th>Last previous location</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>1,312</td>
<td>100</td>
</tr>
<tr>
<td>Previously located elsewhere</td>
<td>187</td>
<td>14</td>
</tr>
<tr>
<td>District of Columbia</td>
<td>40</td>
<td>3</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>19</td>
<td>1</td>
</tr>
<tr>
<td>New York</td>
<td>12</td>
<td>1</td>
</tr>
<tr>
<td>Virginia</td>
<td>11</td>
<td>1</td>
</tr>
<tr>
<td>Other</td>
<td>105</td>
<td>8</td>
</tr>
<tr>
<td>Never located elsewhere</td>
<td>1,125</td>
<td>86</td>
</tr>
</tbody>
</table>

Personal Characteristics

Age and sex.--Only 5 of the 1,312 civilian dentists responding in the survey are women. Since they are so few, data will not be shown separately for them. Ages from 26 to 88 were reported by dentists responding in the survey. Overall, however, Maryland's dentists are a relatively young group. The median reported age was 43.7. Twenty percent were under 35 years old and 17 percent were between 35 and 39 years of age. Nonetheless, there was also a substantial representation of dentists who were well along in years. Thirteen percent--168 dentists--were 65 years old or over, and in this group were 96 who were 70 years old or over, including 44 who had reached 75 years of age.
Table 5.--Sex and Age

<table>
<thead>
<tr>
<th>Sex and age</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>1,312</td>
<td>100</td>
</tr>
<tr>
<td>Male</td>
<td>1,307</td>
<td>100</td>
</tr>
<tr>
<td>Female</td>
<td>5</td>
<td>*</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 30</td>
<td>64</td>
<td>5</td>
</tr>
<tr>
<td>30 - 34</td>
<td>199</td>
<td>15</td>
</tr>
<tr>
<td>35 - 39</td>
<td>226</td>
<td>17</td>
</tr>
<tr>
<td>40 - 44</td>
<td>226</td>
<td>17</td>
</tr>
<tr>
<td>45 - 49</td>
<td>149</td>
<td>12</td>
</tr>
<tr>
<td>50 - 54</td>
<td>126</td>
<td>10</td>
</tr>
<tr>
<td>55 - 59</td>
<td>80</td>
<td>6</td>
</tr>
<tr>
<td>60 - 64</td>
<td>70</td>
<td>5</td>
</tr>
<tr>
<td>65 - 69</td>
<td>72</td>
<td>6</td>
</tr>
<tr>
<td>70 - 74</td>
<td>52</td>
<td>4</td>
</tr>
<tr>
<td>75 &amp; over</td>
<td>44</td>
<td>3</td>
</tr>
</tbody>
</table>

* Less than one-half of one percent.

Advanced training.--Approximately 28 percent of Maryland's dentists have had some kind of advanced training. Although the number completing advanced academic work is less than the number who have served internships or residencies, Maryland's dental force numbers among its members 14 dentists who have earned an additional doctorate. In addition, 47 dentists

Table 6.--Advanced Training

<table>
<thead>
<tr>
<th>Highest level of training completed</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>1,312</td>
<td>100</td>
</tr>
<tr>
<td>With advanced training</td>
<td>309</td>
<td>28</td>
</tr>
<tr>
<td>With no advanced training</td>
<td>943</td>
<td>72</td>
</tr>
</tbody>
</table>

Clinical training

| Residency completed                | 75                 | 6                   |
| Internship completed               | 215                | 16                  |

Academic training

| Ph.D., M.D., or other doctors     | 14                 | 1                   |
| M.A., M.S., or other masters     | 47                 | 4                   |
| Postgraduate 1 year or more (no degree) | 104              | 8                   |
have earned a master's degree since leaving dental school, and another 104, although they hold no advanced degree, have completed one year or more of academic work at the postgraduate level.

The data in Table 7 reflect the growing tendency for dentists to seek training beyond receipt of their dental degree. The percentage of dentists reporting advanced academic training amounts to 17 percent for those under 40 years old, and declines to 12 percent for those 40 to 54 years of age and to only 7 percent for those 55 and over. Residencies show the same pattern by age. This explains, in part, the relatively low figure for those under 40 completing only an internship. However, most of the explanation lies in the fact that a relatively larger percentage of the younger members of this group are on active duty with the Armed Forces. In addition, many civilian dentists in this age group are still in the process of training.

Distribution and Current Status

Distribution of dentists. Most of Maryland's dentists are located in the State's two major metropolitan centers. The Baltimore area, consisting of Baltimore City and four suburban counties, accounts for 54 percent of the State's total dental force (Table 8). The two suburban counties of

<table>
<thead>
<tr>
<th>Table 7.--Advanced Training, by Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age of dentist</td>
</tr>
<tr>
<td>----------------</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Total</td>
</tr>
<tr>
<td>Under 40</td>
</tr>
<tr>
<td>40 - 54</td>
</tr>
<tr>
<td>55 &amp; over</td>
</tr>
</tbody>
</table>

Distribution by County Group

<table>
<thead>
<tr>
<th>County group</th>
<th>Number of counties</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>All counties</td>
<td>24</td>
<td>1,312</td>
<td>100</td>
</tr>
<tr>
<td>Baltimore metropolitan areas</td>
<td>5</td>
<td>711</td>
<td>54</td>
</tr>
<tr>
<td>Washington, D.C. suburbs</td>
<td>2</td>
<td>392</td>
<td>30</td>
</tr>
<tr>
<td>Nonmetropolitan county groups</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Central city 25,000-49,999</td>
<td>2</td>
<td>59</td>
<td>5</td>
</tr>
<tr>
<td>Central city 10,000-24,999</td>
<td>3</td>
<td>56</td>
<td>4</td>
</tr>
<tr>
<td>Central city 5,000-9,999</td>
<td>4</td>
<td>52</td>
<td>4</td>
</tr>
<tr>
<td>Central city 2,500-4,999</td>
<td>3</td>
<td>15</td>
<td>1</td>
</tr>
<tr>
<td>Central city under 2,500</td>
<td>5</td>
<td>20</td>
<td>2</td>
</tr>
</tbody>
</table>

Note: Seven dentists failed to indicate their county location.
the Washington, D.C. metropolitan area--Montgomery and Prince Georges--account for another 30 percent. Dentists in the remainder of the State tend to be concentrated in the counties which contain a relatively large city. More than half of the 16 percent who are located in the 17 counties which are not part of a metropolitan area are in the 4 counties of the State with a central city of 10,000 or more population. The 12 counties which do not have a city this large account for only 7 percent of the dentists although more than 11 percent of the population reside there.

There are marked differences in the age distribution of dentists in the various county groups. A relatively large concentration of older dentists exists, for example, in the Baltimore area, but there are practically none in the two suburban Washington, D.C. counties (Table 9). The median age of Baltimore area dentists is 46.5, compared with 39.9 for those in the Washington area. Long-established dentists, of course, tend to be located

Table 9.--Median Age and Age Distribution, by County Group

<table>
<thead>
<tr>
<th>County group</th>
<th>Median age</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Under 40</td>
</tr>
<tr>
<td>All counties</td>
<td>43.7</td>
<td>37</td>
</tr>
<tr>
<td>Baltimore metropolitan areas</td>
<td>46.5</td>
<td>31</td>
</tr>
<tr>
<td>Washington, D.C. suburbs</td>
<td>39.9</td>
<td>51</td>
</tr>
</tbody>
</table>

Nonmetropolitan county groups

| Central city 25,000-49,999    | 44.4       | 32       | 39    | 17    | 7     | 5           |
| Central city 10,000-24,999    | 47.2       | 28       | 43    | 9     | 18    | 2           |
| Central city 5,000-9,999      | 43.1       | 40       | 33    | 10    | 10    | 7           |
| Central city 2,500-4,999      | 42.5       | 40       | 46    | 7     | 7     | -           |
| Central city under 2,500      | 51.3       | 37       | 21    | 16    | 21    | 5           |

* Less than one-half of one percent.

in the central sections of metropolitan areas and Baltimore is no exception. Most of the older dentists are to be found in Baltimore City. However, there are relatively few young dentists in the suburban Baltimore counties as compared with the Washington suburbs. Only 46 percent of the dentists in the four outlying counties of the Baltimore area are under 40 years old, compared with better than half of those in Montgomery and Prince Georges Counties.

Among the counties which lie outside the metropolitan areas, those in the smallest size class--counties with no city of more than 500 residents--have relatively the largest number of older dentists. Twenty-six percent are 65 years old or over and about 42 percent are 55 or more. However,
dentists under 40 constitute the same percent of dentists in these counties as they do in the State as a whole. By contrast, the 5 nonmetropolitan counties with the largest central cities—those with a town of at least 10,000—have relatively few dentists under 40 as compared with the State average.

About 10 percent of the dentists in Maryland maintain a second office location. Of these dentists, slightly less than half reported their second office in a county different from the one in which their primary office is located. By far, the majority of second offices are located in the two metropolitan areas of the State.

Professional status.—Nearly all dentists reported that they are active in the profession (Table 10). Only 3 percent reported themselves wholly retired or as engaged primarily in some type of nondental employment. Although most of the retired dentists were in the older groups, relatively few older dentists responding in the survey regarded themselves as fully retired (Table 11). Three in every 4 of these 75 years old and over, for example, reported that they are still in practice. A larger share of these dentists are located in the nonmetropolitan counties.

Table 10.—Professional Activity Status

<table>
<thead>
<tr>
<th>Activity status</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>1,312</td>
<td>100</td>
</tr>
<tr>
<td>Active in profession</td>
<td>1,271</td>
<td>97</td>
</tr>
<tr>
<td>Inactive in profession</td>
<td></td>
<td></td>
</tr>
<tr>
<td>In nondental employment</td>
<td>35</td>
<td>3</td>
</tr>
<tr>
<td>Retired</td>
<td>28</td>
<td>2</td>
</tr>
<tr>
<td>Status not reported</td>
<td>6</td>
<td>*</td>
</tr>
</tbody>
</table>

* Less than one-half of one percent.

Table 11.—Status Reported by Dentists 65 Years and Over

<table>
<thead>
<tr>
<th>Age</th>
<th>Number of dentists</th>
<th>Fully retired</th>
<th>Still active</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>168</td>
<td>19</td>
<td>149</td>
</tr>
<tr>
<td>65 - 69</td>
<td>72</td>
<td>-</td>
<td>72</td>
</tr>
<tr>
<td>70 - 74</td>
<td>52</td>
<td>8</td>
<td>44</td>
</tr>
<tr>
<td>75 &amp; over</td>
<td>44</td>
<td>11</td>
<td>33</td>
</tr>
</tbody>
</table>
Active dentists in relation to population.--There was one professionally active respondent for every 2,710 persons in Maryland in 1965 (Table 12). The number of persons per active dentist ranged from 1,656 in Montgomery County to more than 9,000 in Charles and Somerset Counties (see Appendix Table B for individual county data). Including Montgomery County, only 5 counties within the State had dentist-population ratios as favorable as

<table>
<thead>
<tr>
<th>Type of area</th>
<th>Professionally active dentists</th>
<th>Civilian population</th>
<th>Persons per dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td>All areas</td>
<td>1,271</td>
<td>3,444,300</td>
<td>2,710</td>
</tr>
<tr>
<td>Baltimore metropolitan area</td>
<td>678</td>
<td>1,823,900</td>
<td>2,690</td>
</tr>
<tr>
<td>Washington, D.C. suburbs</td>
<td>388</td>
<td>878,500</td>
<td>2,264</td>
</tr>
<tr>
<td>Nonmetropolitan county groups</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Central city 25,000-49,999</td>
<td>58</td>
<td>187,000</td>
<td>3,224</td>
</tr>
<tr>
<td>Central city 10,000-24,999</td>
<td>55</td>
<td>163,400</td>
<td>2,971</td>
</tr>
<tr>
<td>Central city 5,000-9,999</td>
<td>51</td>
<td>215,000</td>
<td>4,216</td>
</tr>
<tr>
<td>Central city 2,500-4,999</td>
<td>14</td>
<td>62,400</td>
<td>4,457</td>
</tr>
<tr>
<td>Central city under 2,500</td>
<td>20</td>
<td>114,100</td>
<td>5,705</td>
</tr>
</tbody>
</table>

the State average. These were Baltimore City (1,919), Allegany (2,669), Talbot (2,550) and Wicomico (2,705). By contrast, there were 11 counties with ratios well in excess of one dentist to 4,000 persons. As the data in Table 12 reveal, the ratio varied with the size of the population center, the metropolitan areas having the most favorable ratios and the smaller counties having progressively fewer dentists in relation to population. The one exception is the group of counties with a central city of 10,000 to 25,000 residents. However, since a relatively large number of the dentists in this group of counties are in the older age groups, the dentist-population ratio probably tends to overstate the amount of dental service available.

Professional Activity

Current employment.--As might be expected, self-employment predominates among dentists who are active in the profession--about 91 percent are engaged primarily in private practice, and another 2 percent maintain a private practice as a secondary activity (Table 13). In addition, 3 percent are employed in the private practices of other dentists as their principal employment and another 3 percent hold a position of this type as a supplement to their primary employment. Most of the latter group are dentists in practice for themselves who work for another dentist on a part-time basis.
Table 13.--Current Employment of Professionally Active Dentists

<table>
<thead>
<tr>
<th>Type of employment</th>
<th>Principal employment</th>
<th>Percent employed</th>
<th>Percent with other dental employment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number employed</td>
<td></td>
<td>Total 1/</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1,271</td>
<td>100</td>
<td>18</td>
</tr>
<tr>
<td>Self-employed</td>
<td>1,160</td>
<td>91</td>
<td>14</td>
</tr>
<tr>
<td>Employed by other</td>
<td>36</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>dentists</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>On staff of dental</td>
<td>26</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>schools</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employed by State or</td>
<td>23</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>local government</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employed by Federal</td>
<td>8</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Government</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other dental employment</td>
<td>18</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

1/ Columns add to more than total because some dentists reported more than one other dental employment.

2/ Includes 2 percent who maintain own practices and 3 percent who are employed in practices of other dentists.

* Less than one-half of one percent.

Only 6 percent of all professionally active dentists are primarily engaged in some other type of activity. Two percent are teaching either at the School of Dentistry in Baltimore or in one of the Washington dental schools, 2 percent are State or local government employees, one percent work for the Federal Government, and the remaining one percent are engaged in some other kind of dental employment.

Activity last year.--About 97 percent of all dentists reporting on their professional activity in Maryland last year indicated that they had provided care for patients (Table 14). When measured in terms of professional time, patient care accounted for nearly 95 percent of the total time devoted to dental activities in Maryland in that year. Although there were 98 dentists--8 percent of the total--who had engaged in teaching either on a full or part-time basis during the year, teaching accounted for less than 3 percent of the professional time, and research, while claiming the attention of about 3 percent of the dentists, accounted for only 1 percent of all professional time. The time spent in all other dental activities, principally in the receipt of training, accounted for less than 2 percent of the total, though nearly 5 percent of the dentists reported that they had devoted at least some time to some other type of professional activity.
Table 14.--Distribution of Professional Activity Last Year

<table>
<thead>
<tr>
<th>Type of activity reported</th>
<th>Located in Maryland last year</th>
<th>Percent of total professional time reported</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percent</td>
</tr>
<tr>
<td>Total</td>
<td>1,171</td>
<td>100%</td>
</tr>
<tr>
<td>Patient care</td>
<td>1,141</td>
<td>97%</td>
</tr>
<tr>
<td>Teaching</td>
<td>98</td>
<td>8%</td>
</tr>
<tr>
<td>Research</td>
<td>36</td>
<td>3%</td>
</tr>
<tr>
<td>Other</td>
<td>53</td>
<td>5%</td>
</tr>
</tbody>
</table>

1/ Individual items add to more than total because some dentists spent time in more than one type of activity.

Dentists reporting on time spent last year in providing patient care devoted an average of 47.5 weeks to this activity and worked an average of 40.4 hours per week. The figures in Table 15 on weeks and hours per week show that large numbers of reporting dentists devoted exceptionally long hours to this activity. About one in every 6 reporting dentists spent the equivalent of 8 hours or more per day six days per week, for 48 or more weeks during the year.

Table 15.--Time Spent in Patient Care Last Year

<table>
<thead>
<tr>
<th>Weeks of activity reported</th>
<th>Dentists providing patient care</th>
<th>Percent of total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total reporting time spent</td>
<td>100</td>
<td>19</td>
</tr>
<tr>
<td>50 weeks or more</td>
<td>44</td>
<td>9</td>
</tr>
<tr>
<td>48-49 weeks</td>
<td>34</td>
<td>7</td>
</tr>
<tr>
<td>40-47 Weeks</td>
<td>16</td>
<td>2</td>
</tr>
<tr>
<td>Less than 40 weeks</td>
<td>6</td>
<td>1</td>
</tr>
</tbody>
</table>

Dentists under 30 years of age, many of whom were just establishing their practices, put in the longest work week--45.7 hours on the average--and devoted the fewest weeks of the year to this activity of any group. By contrast, dentists 65 years old or over, worked the shortest number of hours--32.9 on the average--and devoted almost as many weeks to this activity as most younger dentists. In general, average hours per week dropped off fairly consistently with advancing age but weeks worked tended to hover around 48 weeks for most of the age groups.
Practico Characteristics

Limited practices.--Approximately 12 percent of the dental practitioners--156 dentists--reported that they limit their practices to a dental specialty (Table 16). Specialization is almost as common in the counties outside the metropolitan areas as it is within, with 9 percent of those located in the nonmetropolitan counties reporting that they limit their practices as compared with 13 percent of those in the Baltimore and Washington areas. These totals may represent an overcount of those who practice one specialty exclusively. The question which appeared on the questionnaire referred specifically to a single area of practice, but many dentists who limit their practices to combinations of two specialty areas (for example, prosthodontics and oral surgery or orthodontics and pedodontics) checked both items, and there is some evidence that not all cases of this type were identified in editing. However, there is no doubt that orthodontics and oral surgery are the principal areas of specialization.

Table 16.--Limited Practices

<table>
<thead>
<tr>
<th>Location</th>
<th>Limited practice</th>
<th>All specialty areas</th>
<th>Orthodontics</th>
<th>Oral surgery</th>
<th>Pedodontics</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>All areas</td>
<td>156</td>
<td>12</td>
<td>5</td>
<td>4</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Baltimore metropolitan area</td>
<td>87</td>
<td>13</td>
<td>5</td>
<td>4</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Washington, D.C. suburbs</td>
<td>52</td>
<td>13</td>
<td>7</td>
<td>4</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Nonmetropolitan counties</td>
<td>15</td>
<td>9</td>
<td>2</td>
<td>4</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

Use of auxiliaries.--Less than 3 in 4 dental practitioners (i.e., dentists working any time at the chair) reported that they employ auxiliary personnel (Table 17). Nearly all who do so, however, report that they employ at least one auxiliary on a full-time basis. Only 8 percent report that they employ part-time personnel exclusively. Of the various types of personnel, dental

Table 17.--Dentists Employing 1 or More Auxiliaries, by Type of Auxiliary

<table>
<thead>
<tr>
<th>Type of auxiliary</th>
<th>Dental practitioners Total</th>
<th>With only part-time personnel</th>
<th>With one full-time employee (or more)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>1,253</td>
<td>100</td>
<td>8</td>
</tr>
<tr>
<td>With no auxiliary</td>
<td>360</td>
<td>29</td>
<td>-</td>
</tr>
<tr>
<td>With one or more auxiliaries</td>
<td>893</td>
<td>71</td>
<td>8</td>
</tr>
<tr>
<td>With assistant</td>
<td>773</td>
<td>62</td>
<td>7</td>
</tr>
<tr>
<td>With hygienist</td>
<td>120</td>
<td>10</td>
<td>7</td>
</tr>
<tr>
<td>With laboratory technician</td>
<td>63</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>With laboratory or receptionist</td>
<td>323</td>
<td>26</td>
<td>7</td>
</tr>
<tr>
<td>With other type of personnel</td>
<td>56</td>
<td>4</td>
<td>2</td>
</tr>
</tbody>
</table>
assistants are those most frequently employed. About 62 percent of all practitioners employ an assistant, including 55 percent who use one full time. A fourth of all practitioners employ secretaries and receptionists, and by far the majority employ at least one on a full-time basis. By contrast, dental hygienists and laboratory technicians are only infrequently employed, and most dentists employ them only on a part-time basis. One dentist in 10 uses a hygienist in his dental practice and one in 20 employs a laboratory technician.

Dental practitioners in the Baltimore area are less likely to use auxiliaries than are other dentists in the State (Table 18). Only 66 percent report the employment of an auxiliary, compared with 77 percent for dentists located elsewhere. Only the use of dental laboratory technicians is more common in Baltimore than in the remainder of the State. Dental hygienists are much more frequently employed in suburban Washington, D.C., and dental assistants are more widely employed both in suburban Washington and in the nonmetropolitan counties. Dentists in the latter group of counties more frequently employ a full-time assistant than do those in either of the metropolitan areas.

Table 18.--Dentists Employing Auxiliaries, by Location of Dentist

<table>
<thead>
<tr>
<th>Type of auxiliary</th>
<th>Baltimore metro area</th>
<th>Washington, D.C.</th>
<th>Other counties</th>
</tr>
</thead>
<tbody>
<tr>
<td>With one or more auxiliary employees</td>
<td>66</td>
<td>77</td>
<td>77</td>
</tr>
<tr>
<td>With assistant</td>
<td>56</td>
<td>69</td>
<td>69</td>
</tr>
<tr>
<td>With hygienist</td>
<td>6</td>
<td>19</td>
<td>4</td>
</tr>
<tr>
<td>With technician</td>
<td>6</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>With one full-time employee or more</td>
<td>59</td>
<td>66</td>
<td>72</td>
</tr>
<tr>
<td>With full-time assistant</td>
<td>51</td>
<td>58</td>
<td>65</td>
</tr>
<tr>
<td>With full-time hygienist</td>
<td>2</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>With full-time technician</td>
<td>2</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 19 presents the overall rate of auxiliary utilization for dentists of various ages in these three major areas of the State, and for the State as a whole. In all areas, peak utilization occurs among dentists 40 to 54 years of age, and it is highest for dentists of this age who are located in the nonmetropolitan counties of the State. The rate for dentists in this age group is 87 percent. The rate for dentists in other age groups is significantly lower, ranging from 46 to 71 percent.

Table 19.--Dentists Employing Auxiliaries, by Location and Age of Dentist

<table>
<thead>
<tr>
<th>Age of dentist</th>
<th>All areas</th>
<th>Baltimore metro area</th>
<th>Washington, D.C.</th>
<th>Other counties</th>
</tr>
</thead>
<tbody>
<tr>
<td>With one or more auxiliaries</td>
<td>71</td>
<td>66</td>
<td>77</td>
<td>77</td>
</tr>
<tr>
<td>Under 40</td>
<td>75</td>
<td>71</td>
<td>77</td>
<td>87</td>
</tr>
<tr>
<td>40-54</td>
<td>81</td>
<td>78</td>
<td>83</td>
<td>86</td>
</tr>
<tr>
<td>r over</td>
<td>47</td>
<td>46</td>
<td>50</td>
<td>52</td>
</tr>
</tbody>
</table>
group ranges from Baltimore's 78 percent to 83 percent for the Washington suburbs and 86 percent in the remainder of the State. Rates for dentists under 40 are only slightly lower, but for dentists 55 and over they fall to around the 50 percent level. Again, however, they are lowest in the Baltimore area and highest for dentists in the nonmetropolitan counties.

Almost 12 percent of the dentists in Maryland reported one or more vacant positions for auxiliary personnel. Approximately two-thirds of the vacancies were for hygienists and assistants. Most dentists reporting a hygienist vacancy did not currently employ a hygienist whereas most dentists desiring to employ an assistant were already utilizing at least one assistant.

Weeks and hours worked.—Although approximately 86 percent of all dentists who were in private practice in Maryland in the previous year reported on both the number of weeks and hours they had worked during that year, the percent reporting was a low 65 percent for those 65 years old and over. Since those not responding were likely to be those who are least active, the estimates on time worked by dentists in this age group are probably high. Even so, the figures presented in Table 20 show how activity tapers off among older dentists. Only a third of those 65 years old and over reported that they worked an average of 40 hours or more for 48 weeks or more out of the year.

Table 20.—Time Spent in Practice Last Year, by Age

<table>
<thead>
<tr>
<th>Age group</th>
<th>Dentists reporting time spent in private practice</th>
<th>Percent working</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percent of total</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>906</td>
<td>86</td>
</tr>
<tr>
<td>Under 35</td>
<td>161</td>
<td>94</td>
</tr>
<tr>
<td>35 - 44</td>
<td>355</td>
<td>89</td>
</tr>
<tr>
<td>45 - 54</td>
<td>220</td>
<td>86</td>
</tr>
<tr>
<td>55 - 64</td>
<td>94</td>
<td>81</td>
</tr>
<tr>
<td>65 &amp; over</td>
<td>73</td>
<td>65</td>
</tr>
</tbody>
</table>

However, if reporting older dentists are representative of all those in practice, then these older dentists who practice in small communities are much more likely to devote this amount of time to their dental practices than are older dentists who practice elsewhere. Table 21 presents data for several county groups on the weeks and hours spent in dental practice by dentists in three broad age groupings. Among dentists 60 years old or over who reported from counties where every town had a population of less than 10,000, approximately 55 percent had devoted 48 weeks to their dental practices for an average of 40 hours or more each week. This was a considerably larger percentage than in any other group of counties.
Table 21.--Time Spent in Practice, by County Group and Age

<table>
<thead>
<tr>
<th>County group</th>
<th>Percent working 40 hrs/wk or more for 48 weeks or more</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All ages</td>
</tr>
<tr>
<td>All areas</td>
<td>53</td>
</tr>
<tr>
<td>Baltimore metropolitan area</td>
<td>53</td>
</tr>
<tr>
<td>Washington, D.C. suburbs</td>
<td>53</td>
</tr>
<tr>
<td>Nonmetropolitan counties</td>
<td></td>
</tr>
<tr>
<td>Central city 10,000-49,999</td>
<td>51</td>
</tr>
<tr>
<td>Central city under 10,000</td>
<td>54</td>
</tr>
</tbody>
</table>

Out-of-State Dentists

State Location

There are dentists in 33 States, the District of Columbia, and Puerto Rico who maintain an active license in Maryland. Most of these out-of-State dentists are in nearby States--28 percent are in the District of Columbia and another 21 percent are in States adjacent to Maryland (Table 22).

Table 22.--Out-of-State Dentists, by State

<table>
<thead>
<tr>
<th>State location</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>District of Columbia</td>
<td>143</td>
<td>28</td>
</tr>
<tr>
<td>Florida</td>
<td>47</td>
<td>10</td>
</tr>
<tr>
<td>New Jersey</td>
<td>45</td>
<td>9</td>
</tr>
<tr>
<td>New York</td>
<td>35</td>
<td>7</td>
</tr>
<tr>
<td>Virginia</td>
<td>35</td>
<td>7</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>29</td>
<td>6</td>
</tr>
<tr>
<td>West Virginia</td>
<td>23</td>
<td>5</td>
</tr>
<tr>
<td>California</td>
<td>17</td>
<td>4</td>
</tr>
<tr>
<td>Connecticut</td>
<td>17</td>
<td>3</td>
</tr>
<tr>
<td>Delaware</td>
<td>14</td>
<td>3</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>14</td>
<td>3</td>
</tr>
<tr>
<td>North Carolina</td>
<td>11</td>
<td>2</td>
</tr>
<tr>
<td>23 other States and</td>
<td>62</td>
<td>13</td>
</tr>
<tr>
<td>Puerto Rico</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Only 2 percent report that they are retired. By far the majority (77 percent) are in dental practice. Some 8 percent of the dentists are engaged in other dental activity which consists primarily of individuals serving internships or residencies while about 5 percent are on the faculties of out-of-State dental schools.

Out-migrant Dentists

About 1 in every 10 out-of-State respondents reported they had formerly been located in Maryland. Over one-half of these dentists are now located in the District of Columbia and adjacent States—16 dentists in the District, 6 in West Virginia and 5 each in Pennsylvania and Virginia. Florida has also attracted 6 dentists once located in Maryland. The remaining 24 out-migrant dentists are in 13 other States.

The greatest out-migration among reporting dentists has occurred in recent years, in 1960 or later (Table 23). About two-thirds of this group were under 40 years of age in 1965, reflecting at least in part the relatively greater mobility of young dentists in relation to older practitioners. The low proportion of out-migrants prior to 1950, 19 percent, can be attributed to the fact that the longer a dentist remains out of State, the less likely he is to renew his license in the State he has left.

Table 23.—Year Out-migrant Dentists Left State, by Age in 1965

<table>
<thead>
<tr>
<th>Year left</th>
<th>Percent of out-migrants</th>
<th>Age distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>100</td>
<td>Under 40 40</td>
</tr>
<tr>
<td>1960 or later</td>
<td>44</td>
<td>30 11 3</td>
</tr>
<tr>
<td>1950 - 1959</td>
<td>37</td>
<td>8 12 10</td>
</tr>
<tr>
<td>Before 1950</td>
<td>19</td>
<td>2 3 14</td>
</tr>
</tbody>
</table>

April 1966
Appendix Table A.--Summary Statistics Used in Text

<table>
<thead>
<tr>
<th>Description</th>
<th>Number of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total dentists licensed in Maryland, January, 1965</td>
<td>2,130</td>
</tr>
<tr>
<td>Respondents -- total dentists participating in survey</td>
<td>1,982</td>
</tr>
<tr>
<td>(number not reporting current location or military status - 8)</td>
<td></td>
</tr>
<tr>
<td>Civilian dentists in Maryland(^1) (designated simply as &quot;dentists&quot; in text tables)</td>
<td>1,312</td>
</tr>
<tr>
<td>(number not reporting: age - 4, county location - 7, principal current employment - 6)</td>
<td></td>
</tr>
<tr>
<td>Professionally active dentists(^2)</td>
<td>1,271</td>
</tr>
<tr>
<td>In limited practice(^3)</td>
<td>156</td>
</tr>
<tr>
<td>Dental practitioners(^4)</td>
<td>1,253</td>
</tr>
<tr>
<td>Located in Maryland last year:</td>
<td></td>
</tr>
<tr>
<td>Dentists providing patient care(^5)</td>
<td>1,171</td>
</tr>
<tr>
<td>Reported professional activity(^5)</td>
<td></td>
</tr>
<tr>
<td>Dentists in private practice(^6)</td>
<td>1,059</td>
</tr>
<tr>
<td>Reported time spent in patient care(^7)</td>
<td>974</td>
</tr>
<tr>
<td>Reported time spent in practice(^8)</td>
<td>906</td>
</tr>
<tr>
<td>Out-of-State dentists -- civilian respondents not located in Maryland</td>
<td>513</td>
</tr>
</tbody>
</table>

\(^1\) All responding dentists who currently work in Maryland (excluding those in the Armed Forces) or who are retired and currently live in the State.

\(^2\) All active civilian dentists currently in Maryland -- excludes 28 dentists who are fully retired, 7 who are engaged principally in a nondental activity, and 6 who did not report their principal current activity.

\(^3\) Dentists who reported they limited their practice to a dental specialty.

\(^4\) All dentists practicing at the chair, that is, dentists who work as clinicians either as primary or secondary activity.

\(^5\) Dentists located in Maryland last year who indicated type(s) of activity in which they engaged.

\(^6\) All dentists who engaged in patient care last year, either as a primary or secondary activity.

\(^7\) Dentists reporting both hours and weeks spent in patient care last year.

\(^8\) Dentists who reported they were primarily self-employed both currently and last year.

\(^9\) Dentists reporting both hours and weeks spent last year as a self-employed dentist.
Appendix Table B.--County Data

<table>
<thead>
<tr>
<th>County</th>
<th>Civilian population (in 000's)</th>
<th>Civilian persons</th>
<th>Persons per dentist</th>
<th>Percent of active dentists</th>
<th>Under 55 years</th>
<th>Using 40 or more auxiliaries</th>
</tr>
</thead>
<tbody>
<tr>
<td>All counties</td>
<td>3,444.3</td>
<td>1,271</td>
<td>2,710</td>
<td>38</td>
<td>23</td>
<td>71</td>
</tr>
<tr>
<td>Allegany</td>
<td>85.5</td>
<td>32</td>
<td>2,669</td>
<td>31</td>
<td>28</td>
<td>81</td>
</tr>
<tr>
<td>Anne Arundel</td>
<td>247.3</td>
<td>55</td>
<td>4,496</td>
<td>25</td>
<td>22</td>
<td>69</td>
</tr>
<tr>
<td>Baltimore</td>
<td>549.0</td>
<td>109</td>
<td>5,037</td>
<td>44</td>
<td>15</td>
<td>65</td>
</tr>
<tr>
<td>Baltimore City</td>
<td>925.1</td>
<td>485</td>
<td>1,912</td>
<td>25</td>
<td>75</td>
<td>66</td>
</tr>
<tr>
<td>Carroll</td>
<td>18.7</td>
<td>6</td>
<td>4,615</td>
<td>25</td>
<td>75</td>
<td>63</td>
</tr>
<tr>
<td>Caroline</td>
<td>19.2</td>
<td>2</td>
<td>3,200</td>
<td>25</td>
<td>50</td>
<td>63</td>
</tr>
<tr>
<td>Carroll</td>
<td>57.6</td>
<td>4</td>
<td>2,743</td>
<td>48</td>
<td>19</td>
<td>67</td>
</tr>
<tr>
<td>Cecil</td>
<td>55.8</td>
<td>8</td>
<td>6,975</td>
<td>25</td>
<td>50</td>
<td>63</td>
</tr>
<tr>
<td>Charles</td>
<td>36.7</td>
<td>4</td>
<td>9,175</td>
<td>50</td>
<td>25</td>
<td>100</td>
</tr>
<tr>
<td>Dorchester</td>
<td>31.0</td>
<td>7</td>
<td>4,429</td>
<td>44</td>
<td>43</td>
<td>71</td>
</tr>
<tr>
<td>Frederick</td>
<td>78.3</td>
<td>28</td>
<td>2,796</td>
<td>43</td>
<td>25</td>
<td>78</td>
</tr>
<tr>
<td>Garrett</td>
<td>22.0</td>
<td>4</td>
<td>5,500</td>
<td>75</td>
<td>0</td>
<td>50</td>
</tr>
<tr>
<td>Harford</td>
<td>89.5</td>
<td>25</td>
<td>3,580</td>
<td>44</td>
<td>16</td>
<td>69</td>
</tr>
<tr>
<td>Howard</td>
<td>44.9</td>
<td>8</td>
<td>5,613</td>
<td>75</td>
<td>12</td>
<td>43</td>
</tr>
<tr>
<td>Kent</td>
<td>18.1</td>
<td>5</td>
<td>3,620</td>
<td>40</td>
<td>20</td>
<td>100</td>
</tr>
<tr>
<td>Montgomery</td>
<td>412.3</td>
<td>249</td>
<td>1,656</td>
<td>48</td>
<td>9</td>
<td>78</td>
</tr>
<tr>
<td>Prince Georges</td>
<td>466.2</td>
<td>139</td>
<td>2,354</td>
<td>55</td>
<td>6</td>
<td>77</td>
</tr>
<tr>
<td>Queen Annes</td>
<td>17.5</td>
<td>2</td>
<td>8,750</td>
<td>0</td>
<td>50</td>
<td>100</td>
</tr>
<tr>
<td>St. K'ry's</td>
<td>45.2</td>
<td>8</td>
<td>5,525</td>
<td>50</td>
<td>25</td>
<td>100</td>
</tr>
<tr>
<td>Somerset</td>
<td>19.6</td>
<td>2</td>
<td>9,800</td>
<td>100</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>Talbot</td>
<td>25.5</td>
<td>10</td>
<td>2,550</td>
<td>40</td>
<td>30</td>
<td>80</td>
</tr>
<tr>
<td>Washington</td>
<td>101.6</td>
<td>25</td>
<td>3,908</td>
<td>35</td>
<td>27</td>
<td>77</td>
</tr>
<tr>
<td>Wicomico</td>
<td>54.1</td>
<td>7</td>
<td>2,705</td>
<td>14</td>
<td>29</td>
<td>72</td>
</tr>
<tr>
<td>Worcester</td>
<td>24.7</td>
<td>7</td>
<td>3,529</td>
<td>29</td>
<td>0</td>
<td>86</td>
</tr>
</tbody>
</table>

1/ Excludes dentists reporting themselves wholly retired or engaged exclusively in nondental employment (and those who failed to indicate the nature of their current activity). The total includes seven dentists who failed to indicate their county location.
Of the 3,953 dentists who registered with the Board in January 1965, a
total of 3,620, or 92 percent, completed the questionnaire (Table 1).
About 87 percent of the responding dentists were civilians located in
Massachusetts at the time of the survey. Civilians located in other
States accounted for 9 percent of the respondents, and 4 percent were
dentists on active duty with the Armed Forces. Only 33 of the respond-
ing dentists were women, and all but 5 were located within the State.

Table 1.--Location and Military Status of Dentists
Licensed in Massachusetts

<table>
<thead>
<tr>
<th>Location and military status</th>
<th>All dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respondents</td>
<td>3,620</td>
<td>92</td>
</tr>
<tr>
<td>Nonrespondents</td>
<td>333</td>
<td>8</td>
</tr>
<tr>
<td>Respondents</td>
<td>3,620</td>
<td>100</td>
</tr>
<tr>
<td>Civilians in Massachusetts</td>
<td>3,159</td>
<td>87</td>
</tr>
<tr>
<td>Civilians in another State</td>
<td>327</td>
<td>9</td>
</tr>
<tr>
<td>On active duty with Armed Forces</td>
<td>13?</td>
<td>4</td>
</tr>
<tr>
<td>Not reported</td>
<td>2</td>
<td>*</td>
</tr>
</tbody>
</table>

* Less than one-half of one percent.

For the 333 dentists not responding to the survey, location and military
status, as well as certain other items of information, were obtained from
the 1966 American Dental Directory, published by the American Dental
Association, and from records maintained by the Commonwealth of Massachu-
setts Board of Registration of Dental Examiners. Because the survey
response rate was high, the data presented in this report are limited to
responding dentists with the exception of the discussion of age of the
dentists where the nonrespondent data are known to differ from the
respondent data.

Almost three-fourths (73 percent) of the responding dentists are licensed
only in Massachusetts. Twenty-one percent are licensed in just one other
State, and 6 percent are licensed in two or more additional States. In
total, the number of licenses held by Massachusetts respondents exceeds
4,800. For civilian dentists actually located in the State, the percent-
age licensed only in Massachusetts is a high 81 percent. Multiple
licensure is more common among civilian dentists who are located in other
States. While licenses are held in two or more other States by only 3 percent of the in-State dentists, over one-third of all out-of-State dentists are licensed in at least two other States in addition to Massachusetts.

Civilian Dentists in Massachusetts

Sources of Supply

Dental schools.--The two dental schools in Massachusetts have trained two-thirds of the State's total dentist supply (Table 2). Tufts University has made the largest contribution, accounting for more than half of the total dental force, while Harvard University, with a considerably smaller contribution, has trained about one-sixth of the dentists. Another one-fifth of the dental force are graduates of 9 dental schools located in 3 Eastern States--New York, Pennsylvania, Maryland--and the District of Columbia. Among these schools, the University of Maryland and Georgetown University are the major contributors, having between them trained one of every 10 dentists in the State. Other dental schools in these States which have made important contributions to the Massachusetts dentist supply include the University of Pennsylvania, followed by

Table 2.--School Awarding Dental Degree, by Year Awarded

<table>
<thead>
<tr>
<th>Dental school attended</th>
<th>Number of dentists</th>
<th>Year of graduation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>All</td>
</tr>
<tr>
<td>Total number</td>
<td>3,159 (1/2)</td>
<td>785</td>
</tr>
<tr>
<td>Tufts</td>
<td>1,641</td>
<td>52</td>
</tr>
<tr>
<td>Harvard</td>
<td>496</td>
<td>16</td>
</tr>
<tr>
<td>Maryland</td>
<td>186</td>
<td>6</td>
</tr>
<tr>
<td>Georgetown</td>
<td>143</td>
<td>4</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>118</td>
<td>4</td>
</tr>
<tr>
<td>New York University</td>
<td>62</td>
<td>2</td>
</tr>
<tr>
<td>Temple</td>
<td>61</td>
<td>2</td>
</tr>
<tr>
<td>44 other schools</td>
<td>437</td>
<td>14</td>
</tr>
</tbody>
</table>

* Less than one-half of one percent.

1/ Individual items in this and succeeding tables may not add to the totals shown due to the failure of some responding dentists to reply to all items on the questionnaire. For each item where percentages are shown, they are based on data supplied by dentists responding to the item. (See Appendix Table A.)
New York and Temple Universities. The remaining one-eighth of Massachusetts dentists are graduates of 40 other dental schools, including 6 Canadian schools, and 2 schools (Barnes and Ohio Colleges) which are no longer in existence. Schools in the North Central States have contributed a large proportion of these dentists, led by Loyola University of Chicago, St. Louis University, and Northwestern, which account for about 43 dentists each. The only other school to contribute as many as 35 of the State's dentists is McGill University in Montreal.

One-fourth of the State's dentists have graduated from dental school within the last 10 years. By comparison, a full 40 percent were graduates during the years prior to World War II. The proportionate contribution of the various schools to the Massachusetts dentist supply has changed over the years. The two dental schools in Massachusetts trained four-fifths of the graduates prior to 1941, but only 55 percent of the dentists who are graduates of the past 10 years. The sharpest decline has occurred in the role of Harvard University as a source of dentist supply. Over one-fourth of all dentists in the State who were graduated prior to World War II completed their dental education at Harvard University; but among graduates of the past 10 years now located in Massachusetts, only one of every 14 are Harvard graduates. The contribution of Tufts University has decreased slightly from 54 percent of the dentists graduating prior to 1955 to 48 percent of those who graduated in later years. The reduced contribution of the Massachusetts schools has been partially compensated for by increases from other eastern schools in New York, Pennsylvania, Maryland and the District of Columbia. About 29 percent of those dentists graduating in the past 10 years are from these schools in contrast to 12 percent of those who graduated prior to World War II. A small increase has also taken place in the proportion of graduates from dental schools located in the North Central States. These schools have supplied 10 percent of the State's dentists since 1955, compared to 4 percent of the graduates prior to 1941.

Dentists relocating in Massachusetts.--Only 127, or 4 percent, of the dentists in Massachusetts reported practicing as a civilian in another State immediately prior to assuming their present location in Massachusetts. The nearby States of New York, Pennsylvania, Rhode Island, and Connecticut have together contributed almost one-half (46 percent) of these dentists. The remaining in-migrants were formerly located in 24 other States, the District of Columbia or abroad. More than 30 percent of the in-migrant dentists came to Massachusetts in 1960 or later, and another 35 percent moved to the State during the 1950's.

Personal Characteristics

Age.--The median age of reporting dentists was 47.1 years. The proportion of dentists 55 years of age or older was almost twice as great as the proportion under 35 (Table 3). One-fifth of the total supply--654 dentists--were 65 years old or over, and in this group were 370 who were at least 70 years old, including 163 who had reached the age of 75.
Dentists not responding to the survey were older than the respondents, with a median age more than 7 years higher--54.9 years. Moreover, better than one-third of the nonrespondents were 65 or over, a proportion considerably greater than among respondents. Presumably, a substantial number of retired dentists elected not to return the survey questionnaire.

**Advanced training.**--Almost 30 percent of Massachusetts' dentists have taken one or more years of advanced clinical or academic training (Table 4). By far the greatest proportion, 15 percent, have taken clinical training as an intern or resident, while 7 percent reported academic training as a graduate or postgraduate student. Another 7 percent reported completion of both clinical and academic training.

<table>
<thead>
<tr>
<th>Highest level of training completed</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>With advanced training</td>
<td>927</td>
<td>29</td>
</tr>
<tr>
<td>Clinical training only</td>
<td>473</td>
<td>15</td>
</tr>
<tr>
<td>Academic training only</td>
<td>226</td>
<td>7</td>
</tr>
<tr>
<td>Both clinical and academic</td>
<td>228</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clinical training</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residency completed</td>
<td>166</td>
<td>5</td>
</tr>
<tr>
<td>Internship completed</td>
<td>535</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Academic training</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ph.D., M.D., or other doctor's degree</td>
<td>29</td>
<td>1</td>
</tr>
<tr>
<td>M.A., M.S., or other master's degree</td>
<td>102</td>
<td>3</td>
</tr>
<tr>
<td>Postgraduate 1 year or more (no degree)</td>
<td>323</td>
<td>10</td>
</tr>
</tbody>
</table>
The State's young dentists are more likely than their older colleagues to seek additional training after receiving their dental degrees. Differences by age groups are particularly striking when academic training is considered. Almost one in every four dentists under 40 has had a year or more of graduate or postgraduate study, compared with one of every 7 dentists between 40 and 54, and only one in every 16 of those 55 and over.

Distribution and Current Status

Distribution of dentists.--Massachusetts has been divided into five regions for the presentation of data on the geographical distribution of dentists. The regional division is based on health service areas as previously developed by the Public Health Service for analyzing the distribution of health services. These boundaries coincide with Rand McNally trading areas, determined by consideration of such factors as physiography, population, economic activities, and transportation. The five regions have been named Boston, Springfield, Worcester, New Bedford, and Pittsfield, based on the largest city contained in each region.

Over 70 percent of the 3,159 reporting dentists in Massachusetts are concentrated in the 5-county Boston region (Table 5). Two counties in this region, Middlesex and Suffolk, together have 43 percent of the State's dentists. Another 23 percent are located in Essex and Norfolk Counties, while only 5 percent are located in Plymouth County. The Springfield region, composed of Hampden, Hampshire and Franklin Counties, has 10 percent of the dentist supply. Another 10 percent of the State's dentists are located in the one-county Worcester region. The New Bedford region, formed by Bristol, Barnstable, Dukes and Nantucket Counties, has only 7 percent of the dentist supply. The remaining 2 percent of Massachusetts' dentists are located in the Pittsfield region, which consists of Berkshire County.

Table 5.--Distribution of Dentists by Region and County

<table>
<thead>
<tr>
<th>Region and County</th>
<th>Number of dentists</th>
<th>Region and County</th>
<th>Number of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boston region</td>
<td>2,228</td>
<td>Worcester region</td>
<td>310</td>
</tr>
<tr>
<td>Middlesex</td>
<td>710</td>
<td>Worcester</td>
<td>310</td>
</tr>
<tr>
<td>Suffolk</td>
<td>636</td>
<td>New Bedford region</td>
<td>226</td>
</tr>
<tr>
<td>Norfolk</td>
<td>373</td>
<td>Bristol</td>
<td>165</td>
</tr>
<tr>
<td>Essex</td>
<td>351</td>
<td>Barnstable</td>
<td>57</td>
</tr>
<tr>
<td>Plymouth</td>
<td>158</td>
<td>Dukes</td>
<td>2</td>
</tr>
<tr>
<td>Springfield region</td>
<td>317</td>
<td>Nantucket</td>
<td>2</td>
</tr>
<tr>
<td>Hampden</td>
<td>240</td>
<td>Pittsfield region</td>
<td>78</td>
</tr>
<tr>
<td>Hampshire</td>
<td>43</td>
<td>Berkshire</td>
<td>78</td>
</tr>
<tr>
<td>Franklin</td>
<td>34</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Geographical differences in age.—The median age of dentists by region varies slightly, ranging from 45.6 in Springfield to 48.7 in Worcester (Table 6). Age differences among individual counties within the regions, however, are much more pronounced. For example, the median age of dentists in Suffolk County is 52.6 years. Moreover, only 16 percent of the county's dentists are under age 35, and 47 percent are 55 years old or over, including 30 percent who are at least 65. As the central section of the Boston metropolitan area, Suffolk County represents the location of long-established dentists who tend to be concentrated in the hub of large metropolitan areas. By contrast, the median age of dentists in Plymouth County, in the same region, is 43.0 years; 29 percent of its dentists are under 35 years of age, and only 30 percent have reached the age of 55. Similarly, dentists in the remaining three counties of the Boston region are considerably younger than those located in the city of Boston. In the Springfield region, Franklin County has the youngest dentists, with a median age of 44.3 years. By comparison, dentists in Hampshire County are, on the average, more than six years older—50.8 years. An even sharper contrast in age distribution is presented by counties in the New Bedford region. The median age of dentists in Bristol County is 45.5 years and only 26 percent have reached the age of 55. In Barnstable County, however, the median age is 60.0 years and 54 percent of the dentists are 55 or older.

Table 6.—Median Age by Region and County

<table>
<thead>
<tr>
<th>Region and county</th>
<th>Median age</th>
<th>Region and county</th>
<th>Median age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boston region</td>
<td>47.0</td>
<td>Worcester region</td>
<td>48.7</td>
</tr>
<tr>
<td>Plymouth</td>
<td>43.0</td>
<td>Worcester</td>
<td>48.7</td>
</tr>
<tr>
<td>Middlesex</td>
<td>44.4</td>
<td>New Bedford</td>
<td>47.0</td>
</tr>
<tr>
<td>Norfolk</td>
<td>45.6</td>
<td>Bristol</td>
<td>45.5</td>
</tr>
<tr>
<td>Essex</td>
<td>47.2</td>
<td>Barnstable</td>
<td>60.0</td>
</tr>
<tr>
<td>Suffolk</td>
<td>52.6</td>
<td>Dukes</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nantucket</td>
<td>*</td>
</tr>
<tr>
<td>Springfield region</td>
<td>45.6</td>
<td>Pittsfield region</td>
<td>48.2</td>
</tr>
<tr>
<td>Franklin</td>
<td>44.3</td>
<td>Berkshire</td>
<td>48.2</td>
</tr>
<tr>
<td>Hampden</td>
<td>45.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hampshire</td>
<td>50.8</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Median not shown because of small number of dentists.

Professional status.—Nearly all dentists in Massachusetts are active in the profession. Only 3 percent reported themselves either fully retired or engaged primarily in some type of nonden tal employment. As would be expected, a majority of the retired dentists are in the older age groups, but most of the older dentists who responded to the survey are at least partially active. Even among dentists 75 years old and over, only one-fifth reported that they are fully retired.
Active dentists in relation to population.--Based on the activity status of responding dentists, there was one professionally active dentist for every 1,766 persons in Massachusetts in 1965. The Boston region, with 1,629 persons per dentist, has the most favorable ratio in the State. At the other extreme, the New Bedford region has the least favorable ratio, with 2,388 persons for every active dentist (Table 7).

There is much greater variation in the ratios among the individual counties. Suffolk County, with 1,219 persons per dentist, has the most favorable ratio in the Boston region as well as in the State. However, since a relatively large number of the dentists in this county are in the older age groups, the ratio probably tends to overstate the amount of dentist manpower available. The number of persons per dentist increases to 1,567 in Norfolk County and 1,735 in Essex County. The two remaining counties in this region, Plymouth and Middlesex, have still higher ratios of 1,897 and 1,916 which exceed the average for the State. In the Springfield region the number of persons per dentist varies from a relatively favorable ratio of 1,635 in Franklin County to ratios of 1,989 and 2,607 in Hampden and Hampshire Counties which exceed the State average. The dentist manpower available for Hampshire County is actually less favorable than suggested by its ratio since the dentists in this county are older as a group than the dentists in all but two counties in the State. In the 4-county New Bedford region, only Barnstable County has a persons-per-dentist ratio more favorable than the State average. However, the dental service available in this county, as expressed by the ratio of 1,632 persons per dentist, tends to be overstated since a very large proportion of the dentists are in the older age groups. Although the 1,800 persons per dentist in Nantucket County only slightly exceeds the average for the State, the ratios of 2,631 and 2,900 in Bristol and Dukes Counties are the highest persons-per-dentist ratios in the State. The 1-county

Table 7.--Persons Per Dentist by Region and County

<table>
<thead>
<tr>
<th>Region and county</th>
<th>Persons per dentist</th>
<th>Region and county</th>
<th>Persons per dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boston region</td>
<td>1,629</td>
<td>Worcester region</td>
<td>2,001</td>
</tr>
<tr>
<td>Suffolk</td>
<td>1,219</td>
<td>Worcester</td>
<td>2,001</td>
</tr>
<tr>
<td>Norfolk</td>
<td>1,567</td>
<td>New Bedford region</td>
<td>2,388</td>
</tr>
<tr>
<td>Essex</td>
<td>1,735</td>
<td>Barnstable</td>
<td>1,632</td>
</tr>
<tr>
<td>Plymouth</td>
<td>1,897</td>
<td>Nantucket</td>
<td>1,800</td>
</tr>
<tr>
<td>Middlesex</td>
<td>1,916</td>
<td>Bristol</td>
<td>2,631</td>
</tr>
<tr>
<td>Springfield region</td>
<td>2,035</td>
<td>Dukes</td>
<td>2,900</td>
</tr>
<tr>
<td>Franklin</td>
<td>1,635</td>
<td>Pittsfield region</td>
<td>1,921</td>
</tr>
<tr>
<td>Hampden</td>
<td>1,989</td>
<td>Berkshire</td>
<td>1,921</td>
</tr>
<tr>
<td>Hampshire</td>
<td>2,607</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Worcester region has 2,001 persons per dentist and the Pittsfield region, consisting of Berkshire County, has 1,921, both of which are less favorable than the average for the State.

Professional Characteristics

Current employment.--Of the 3,047 responding dentists who reported that they were professionally active at the time of the survey, 93 percent are primarily engaged in private practice, including 91 percent who are self-employed and 2 percent who are employed by another dentist. Another 2 percent of the State's dentists are on the staffs of the dental schools at Harvard and Tufts Universities. The remaining 5 percent are either employed by Federal, State or local government agencies, or are engaged in other dental activities, including advanced clinical or academic training.

Almost one in every five active dentists reported one or more secondary dental activities in addition to his principal professional employment. Part-time teaching in a dental school was the most frequently reported secondary employment. A variety of other secondary dental activities were reported, such as part-time employment in the practices of other dentists, providing dental care in hospitals, clinics, or schools, and serving as consultants to the Veterans Administration.

Activity last year.--About 97 percent of the dentists in Massachusetts who reported on their professional activity last year indicated they had provided care for patients. This activity accounts for 95 percent of the total reported professional time. About 11 percent of the dentists reported they spent some time in teaching and 3 percent reported some time in research, but only 2 percent of professional time was spent in these activities. Approximately 7 percent devoted some time to other dental activities, such as taking advanced training, but only 3 percent of professional time was spent in these activities.

Weeks and hours worked.--More than half of the dentists reporting on time spent last year in providing patient care spent at least 40 hours per week at this activity for 48 weeks or more during the year. Furthermore, almost one dentist in seven worked the equivalent of six days a week (48 hours or more) for at least 48 weeks.

The amount of time worked by dentists in private practice last year declined sharply with increasing age. Two-thirds of the dentists under 35 years of age report working at least 48 weeks and at least 40 hours per week. The proportion working this amount of time declines to 56 percent for those between 45 and 54 years old and decreases sharply to 27 percent among those 65 years old or over. Probably an even smaller proportion of all dentists 65 and over actually work this amount of time since almost one-third of these dentists, including those who are likely to be least active, did not report on time spent in their practices.
Limited practice.--About one dentist in every eight reported that his practice is limited to a dental specialty, primarily orthodontia and oral surgery. Of the 356 specialists in the State, 265, or three-fourths, are located in the Boston region. Among individual counties in the State, Norfolk and Suffolk in the Boston region have the highest proportion of dentists who are specialists, 16 percent in each county. Specialization occurs least frequently in Hampshire and Barnstable Counties, where only 8 and 9 percent, respectively, of the dentists reported limiting their practices.

Use of auxiliaries.--Sixty-three percent of the dentists in Massachusetts employ one or more auxiliaries. Almost all who do so, however, employ at least one on a full-time basis. Only 7 percent reported that they employ part-time personnel exclusively. Dental assistants are more frequently employed than any other type of auxiliary, being utilized by 54 percent of all dental practitioners. Dental hygienists are employed by 22 percent of the dentists. By far the majority of the dentists employing assistants do so on a full-time basis, while more than half of those who employ hygienists utilize these auxiliaries only part time. One practitioner in 5 employs a secretary or receptionist, but only one in 25 employs a laboratory technician in his office.

By region, the proportion of dentists employing auxiliaries varies only from 62 percent in the Boston region to 66 percent in the Pittsfield and Springfield regions. Individual county differences are more pronounced, however (see Appendix Table B). Hampden County in the Springfield region has the highest proportion of dentists using auxiliaries—71 percent. Bristol County in the New Bedford region has an almost equal proportion, with 70 percent. The same region contains the county with the lowest proportion in the State—Barnstable, where only 45 percent of the dentists employ auxiliaries.

Auxiliary utilization also varies with the age of the dentist. The peak utilization occurs among practitioners between the ages of 35 and 44. About 78 percent of the dentists in this age group employ auxiliaries. In contrast, auxiliaries are utilized by only 36 percent of the practitioners 65 years old or over. Similarly, among the dentists under the age of 30 who are just starting their practices, only 41 percent report the employment of one or more auxiliaries.

About 9 percent of the responding dentists in Massachusetts reported one or more vacant positions for auxiliary personnel. Of these dentists, about 32 percent reported vacancies for full-time hygienists and 24 percent reported vacancies for full-time dental assistants. Nine of every 10 dentists reporting a vacancy already employ at least one auxiliary.
Out-of-State Dentists

Massachusetts licenses are maintained by at least 327 civilian dentists located in 33 States, the District of Columbia and Puerto Rico. Fifty-one percent of these out-of-State dentists are located in the five adjacent States of New York, Connecticut, Rhode Island, New Hampshire, and Vermont (Table 8). Maine, New Jersey, Pennsylvania, Florida, and California are the only nonadjacent States in which more than 10 of the out-of-State dentists are currently located. One half of all out-of-State dentists graduated from dental schools located in Massachusetts--39 percent from Tufts University and 11 percent from Harvard University.

Table 8.--Out-of-State Civilian Dentists, by Present Location

<table>
<thead>
<tr>
<th>Present Location</th>
<th>Number of Dentists</th>
<th>Percent of Dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>327</td>
<td>100</td>
</tr>
<tr>
<td>Adjacent States</td>
<td>167</td>
<td>51</td>
</tr>
<tr>
<td>New York</td>
<td>53</td>
<td>16</td>
</tr>
<tr>
<td>Connecticut</td>
<td>42</td>
<td>13</td>
</tr>
<tr>
<td>Rhode Island</td>
<td>34</td>
<td>11</td>
</tr>
<tr>
<td>New Hampshire &amp; Vermont</td>
<td>38</td>
<td>11</td>
</tr>
<tr>
<td>Nonadjacent States</td>
<td>160</td>
<td>49</td>
</tr>
</tbody>
</table>

Out-of-State dentists are younger than those presently in Massachusetts. While as many as one-half of the out-of-State dentists are under 35 years of age, less than one-fifth of the dentists in Massachusetts are in this young age group. Furthermore, only 13 percent of the out-of-State dentists are 55 years old or over, compared with 35 percent of the in-State dentists.

Only 47 dentists, or 14 percent of the out-of-State respondents, reported that they had formerly been professionally active in Massachusetts. Of these dentists, about one-half are now located in adjacent States, and the other half are in 10 more distant States and the District of Columbia. Among the 47 out-migrant dentists who still maintain a license in Massachusetts, approximately three out of every five reported leaving the State after 1960. Although this proportion appears high, it is probably overstated because dentists who moved from the State in recent years are more likely to renew their license than dentists who have been out of Massachusetts for a longer period of time.

June 1967.
Appendix Table A.--Summary Statistics for Massachusetts

<table>
<thead>
<tr>
<th>Category</th>
<th>Number of Dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>All licensed dentists</td>
<td>3,953</td>
</tr>
<tr>
<td>Respondents -- total dentists participating in survey</td>
<td>3,620</td>
</tr>
<tr>
<td>(number not reporting current location or military status - 2)</td>
<td></td>
</tr>
<tr>
<td>Civilian dentists in Massachusetts[^1^] -- civilian respondents designated simply as &quot;dentists&quot; in text tables</td>
<td>3,159</td>
</tr>
<tr>
<td>(number not reporting: age - 26, principal current employment - 6)</td>
<td></td>
</tr>
<tr>
<td>Professionally active dentists[^2^]</td>
<td>3,047</td>
</tr>
<tr>
<td>Dental practitioners[^3^]</td>
<td>2,959</td>
</tr>
<tr>
<td>In limited practice[^4^]</td>
<td>354</td>
</tr>
<tr>
<td>Located in Massachusetts last year:</td>
<td></td>
</tr>
<tr>
<td>Reported professional activity[^5^]</td>
<td>2,689</td>
</tr>
<tr>
<td>Dentists providing patient care[^6^]</td>
<td>2,605</td>
</tr>
<tr>
<td>Reported time spent in patient care[^7^]</td>
<td>2,101</td>
</tr>
<tr>
<td>Dentists in private practice[^8^]</td>
<td>2,485</td>
</tr>
<tr>
<td>Reported time spent in practice[^9^]</td>
<td>1,978</td>
</tr>
<tr>
<td>Out-of-State dentists -- civilian respondents not located in Massachusetts</td>
<td>327</td>
</tr>
<tr>
<td>Dentists on active duty in Armed Forces</td>
<td>132</td>
</tr>
<tr>
<td>Nonrespondents -- licensed dentists not participating in survey</td>
<td>333</td>
</tr>
</tbody>
</table>

[^1^] All responding dentists who currently work in Massachusetts (excluding those in the Armed Forces) or who are retired and currently live in the State.

[^2^] All active civilian dentists currently in Massachusetts -- excludes 92 dentists who are fully retired, 14 who are engaged principally in a non-dental activity, and 6 who did not report their principal current activity.

[^3^] All dentists practicing at the chair, that is, dentists who work as clinicians either as primary or secondary activity.

[^4^] Dentists who reported they limited their practice to a dental specialty.

[^5^] Dentists located in Massachusetts last year who indicated type(s) of activity in which they engaged.

[^6^] All dentists who engaged in patient care last year, either as a primary or secondary activity.

[^7^] Dentists reporting both hours and weeks spent in patient care last year.

[^8^] Dentists who reported they were primarily self-employed both currently and last year.

[^9^] Dentists reporting both hours and weeks spent last year as a self-employed dentist.
Appendix Table B.--Selected Data for Massachusetts Counties

| County     | Professionally active dentists | Population (000)1/ | Persons per active dentist | Percent of active dentists by age | Using auxiliaries
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Under 40 years</td>
<td>55 years and over</td>
</tr>
<tr>
<td>Total</td>
<td>3,047</td>
<td>5,380.6</td>
<td>1,766</td>
<td>32</td>
<td>32</td>
</tr>
<tr>
<td>Barnstable</td>
<td>50</td>
<td>81.6</td>
<td>1,632</td>
<td>24</td>
<td>47</td>
</tr>
<tr>
<td>Berkshire</td>
<td>76</td>
<td>146.0</td>
<td>1,921</td>
<td>14</td>
<td>28</td>
</tr>
<tr>
<td>Bristol</td>
<td>156</td>
<td>410.4</td>
<td>2,631</td>
<td>23</td>
<td>22</td>
</tr>
<tr>
<td>Dukes</td>
<td>2</td>
<td>5.8</td>
<td>2,900</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Essex</td>
<td>344</td>
<td>596.7</td>
<td>1,735</td>
<td>34</td>
<td>33</td>
</tr>
<tr>
<td>Franklin</td>
<td>34</td>
<td>55.6</td>
<td>1,635</td>
<td>32</td>
<td>21</td>
</tr>
<tr>
<td>Hampden</td>
<td>230</td>
<td>457.5</td>
<td>1,989</td>
<td>32</td>
<td>25</td>
</tr>
<tr>
<td>Hampshire</td>
<td>42</td>
<td>109.5</td>
<td>2,607</td>
<td>29</td>
<td>43</td>
</tr>
<tr>
<td>Middlesex</td>
<td>689</td>
<td>1,319.8</td>
<td>1,916</td>
<td>38</td>
<td>28</td>
</tr>
<tr>
<td>Nantucket</td>
<td>2</td>
<td>3.6</td>
<td>1,800</td>
<td>-</td>
<td>50</td>
</tr>
<tr>
<td>Norfolk</td>
<td>362</td>
<td>567.2</td>
<td>1,567</td>
<td>37</td>
<td>24</td>
</tr>
<tr>
<td>Plymouth</td>
<td>147</td>
<td>278.8</td>
<td>1,897</td>
<td>47</td>
<td>27</td>
</tr>
<tr>
<td>Suffolk</td>
<td>612</td>
<td>745.8</td>
<td>1,219</td>
<td>24</td>
<td>46</td>
</tr>
<tr>
<td>Worcester</td>
<td>301</td>
<td>602.3</td>
<td>2,001</td>
<td>28</td>
<td>38</td>
</tr>
</tbody>
</table>

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DENTISTS LICENSED IN MICHIGAN

During the 1965 registration period, 5,010 dentists registered with the Michigan State Board of Dentistry. Eighty-one percent of these dentists are civilians located in Michigan, another 14 percent are civilians located in other states, and 5 percent are on active duty with the Armed Forces.

Survey questionnaires were completed by 4,860 dentists, 97 percent of all those registered. For nonrespondents, data as to location, age, dental school attended, and year of graduation has been obtained, where possible, from records of the Michigan State Board of Dentistry or from the 1966 American Dental Directory, published by the American Dental Association.

### Location and Military Status of Dentists Licensed in Michigan

<table>
<thead>
<tr>
<th>Location and military status</th>
<th>All dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total licensed</td>
<td>5,010</td>
<td>100</td>
</tr>
<tr>
<td>Respondents</td>
<td>4,860</td>
<td>97</td>
</tr>
<tr>
<td>Nonrespondents</td>
<td>150</td>
<td>3</td>
</tr>
<tr>
<td>Total licensed</td>
<td>5,010</td>
<td>100</td>
</tr>
<tr>
<td>Civilians in Michigan</td>
<td>4,039</td>
<td>81</td>
</tr>
<tr>
<td>Respondents</td>
<td>3,938</td>
<td>-</td>
</tr>
<tr>
<td>Nonrespondents</td>
<td>101</td>
<td>-</td>
</tr>
<tr>
<td>Civilians in another state</td>
<td>712</td>
<td>14</td>
</tr>
<tr>
<td>On active duty with Armed Forces</td>
<td>257</td>
<td>5</td>
</tr>
<tr>
<td>Not reported</td>
<td>2</td>
<td>*</td>
</tr>
</tbody>
</table>

* Less than one-half of one percent.

About one-fourth of all survey respondents hold a license to practice dentistry in one or more other states. Only 13 percent of the dentists located in Michigan hold more than one license, with 11 percent licensed in one other state and a mere 2 percent licensed in two or more other states. Multiple licensure is much more common among dentists registering in Michigan but located out of State; 21 percent hold two or more licenses in addition to their Michigan license.
DENTAL SCHOOL ATTENDED

The great majority of Michigan's dentists--8 of every 10--have graduated from one of the two in-state dental schools. The University of Michigan, the major contributor, has supplied almost 2,100 dentists, or more than half the total dental force. The University of Detroit, even though its contribution is considerably smaller, has nevertheless trained more than one-fourth of the dentists. In addition, 15 schools in other North Central States have together trained 14 percent of Michigan's dentists. Among these schools, Marquette, Northwestern, and Loyola Universities have been the largest contributors, providing a total of about 400 dentists, or 10 percent of the Michigan dental force.

### Dental School Attended and Year of Graduation for Dentists in Michigan

<table>
<thead>
<tr>
<th>Dental school attended</th>
<th>Number of dentists</th>
<th>Year of graduation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All</td>
<td>1955</td>
</tr>
<tr>
<td>Total number</td>
<td>4,039</td>
<td>1,097</td>
</tr>
<tr>
<td>(Percent distribution by school)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Schools in Michigan</td>
<td></td>
<td></td>
</tr>
<tr>
<td>University of Michigan</td>
<td>2,084</td>
<td>52</td>
</tr>
<tr>
<td>University of Detroit</td>
<td>1,132</td>
<td>28</td>
</tr>
<tr>
<td>Schools in other North Central States</td>
<td>573</td>
<td>14</td>
</tr>
<tr>
<td>Marquette University</td>
<td>163</td>
<td>4</td>
</tr>
<tr>
<td>Northwestern University</td>
<td>124</td>
<td>3</td>
</tr>
<tr>
<td>Loyola University of Chicago</td>
<td>111</td>
<td>3</td>
</tr>
<tr>
<td>12 other schools</td>
<td>175</td>
<td>4</td>
</tr>
<tr>
<td>28 schools located elsewhere</td>
<td>215</td>
<td>6</td>
</tr>
</tbody>
</table>

\[1/\] Dental school attended not available for 35 dentists and year of graduation for 93 dentists.

The proportionate contribution of in-state dental schools to the Michigan dentist supply has increased somewhat in recent years. These two schools have provided almost 90 percent of the dentists in the State who graduated since 1955, compared to 74 percent of those who completed their dental education prior to World War II. At the same time, the contribution of other schools in the North Central States has declined considerably.

The University of Detroit has contributed substantially to the Michigan dentist supply since its establishment in the mid-1930's. Since that time there has been some decrease in the relative contribution of the University of Michigan. As a result, the contributions of the two schools have become approximately equal in recent years--43 percent and 45 percent, respectively, among dentists who graduated after 1955.

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28'1
More than eight in ten of the 4,039 dentists in Michigan are located in the 11 metropolitan areas of the State. The 3-county Detroit area alone has 2,125 dentists, over half of the total dental force. While a substantial majority of these dentists (1,511) are in Wayne County, where Detroit is located, the other two counties in the area (Oakland and Macomb) also have a sizable number of dentists, 419 and 195, respectively. The Grand Rapids metropolitan area has the second largest dental force, but comprises only 7 percent of the State supply. The next largest dental forces are found in the Flint area, which has 5 percent of the dentists, and in the Ann Arbor and Lansing areas, which have 4 percent each. The areas of Kalamazoo, Saginaw, Muskegon, and Jackson each account for approximately 2 percent of the State's dentists. The remaining two metropolitan areas--Bay City and the Michigan portion of the interstate Toledo area (Monroe County)--each have about one percent of the total supply.

Distribution of Michigan Dentists, by County Group

<table>
<thead>
<tr>
<th>County group*</th>
<th>Number of counties</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>All counties</td>
<td>83</td>
<td>4,039</td>
<td>100</td>
</tr>
<tr>
<td>Metropolitan areas</td>
<td>17</td>
<td>3,287</td>
<td>81</td>
</tr>
<tr>
<td>Detroit area</td>
<td>3</td>
<td>2,125</td>
<td>52</td>
</tr>
<tr>
<td>Grand Rapids area</td>
<td>2</td>
<td>267</td>
<td>7</td>
</tr>
<tr>
<td>Flint area</td>
<td>2</td>
<td>185</td>
<td>5</td>
</tr>
<tr>
<td>Ann Arbor area</td>
<td>1</td>
<td>177</td>
<td>4</td>
</tr>
<tr>
<td>Lansing area</td>
<td>3</td>
<td>160</td>
<td>4</td>
</tr>
<tr>
<td>6 other areas</td>
<td>6</td>
<td>373</td>
<td>9</td>
</tr>
<tr>
<td>Nonmetropolitan counties</td>
<td>66</td>
<td>752</td>
<td>19</td>
</tr>
<tr>
<td>Central city 10,000-49,999</td>
<td>15</td>
<td>380</td>
<td>10</td>
</tr>
<tr>
<td>Central city 5,000 - 9,999</td>
<td>16</td>
<td>195</td>
<td>5</td>
</tr>
<tr>
<td>Central city - under 5,000</td>
<td>35</td>
<td>177</td>
<td>4</td>
</tr>
</tbody>
</table>

* See Appendix for complete listing and definition of metropolitan areas and presentation of individual county data.

Only 19 percent of Michigan's dentists are located in the 66 nonmetropolitan counties of the State. One-half of these dentists are located in the 15 counties with central cities of 10,000 or more persons. Two of these counties--Calhoun and Berrien--have more than 60 dentists, and three--St. Clair, Midland, and Lenawee--have at least 30 dentists. Only three of the counties in this group have fewer than 10 dentists. The 51 counties with less than 10,000 persons in their central cities have 9 percent of the dentist supply. Only 12 of these counties have more than 10 dentists, while 18 have fewer than 5 dentists.
AGE OF DENTISTS AND DIFFERENCES IN AGE BY AREA

With slightly more than one-half of the dentists under 45 years of age, the median age of dentists in Michigan is 44.3 years. Over one-third of the State's dentists are under 40 years of age, including 20 percent who are under 35. On the other hand, 30 percent are 55 years of age or older. Over 500 dentists, 13 percent of the total, are 65 or over, including 224 who have reached the age of 70.

Age Distribution of Michigan Dentists

<table>
<thead>
<tr>
<th>Age in 1965</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
<th>Cumulative percent distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>4,039 †</td>
<td>100</td>
<td>-</td>
</tr>
<tr>
<td>Under 30</td>
<td>238</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>30 - 34</td>
<td>568</td>
<td>14</td>
<td>20</td>
</tr>
<tr>
<td>35 - 39</td>
<td>606</td>
<td>15</td>
<td>35</td>
</tr>
<tr>
<td>40 - 44</td>
<td>647</td>
<td>16</td>
<td>51</td>
</tr>
<tr>
<td>45 - 49</td>
<td>389</td>
<td>10</td>
<td>61</td>
</tr>
<tr>
<td>50 - 54</td>
<td>301</td>
<td>8</td>
<td>69</td>
</tr>
<tr>
<td>55 - 59</td>
<td>351</td>
<td>9</td>
<td>78</td>
</tr>
<tr>
<td>60 - 64</td>
<td>336</td>
<td>9</td>
<td>87</td>
</tr>
<tr>
<td>65 - 69</td>
<td>282</td>
<td>7</td>
<td>94</td>
</tr>
<tr>
<td>70 &amp; over</td>
<td>224</td>
<td>6</td>
<td>100</td>
</tr>
</tbody>
</table>

† Age not available for 57 dentists. Percents based on total for whom age is known.

The median age of dentists in metropolitan areas is 44.0 years, more than two years younger than the median of 46.3 years for dentists in the non-metropolitan counties. Median ages vary considerably among the metropolitan areas. The areas of Lansing and Ann Arbor have the youngest dentists, with median ages of 42.2 and 42.7 years, respectively, while the oldest dentists are found in the Bay City area, where the median age is 46.3 years. The Kalamazoo and Grand Rapids areas have the next oldest dentists, with median ages of approximately 45 years. In the Detroit area, the median age is 44.2 years, approximately equal to the State average.

Age differences among the counties in the Detroit area are quite pronounced, with older dentists concentrated in Wayne County, the hub of the area. The median age of dentists in this county is 46.4 years, while dentists in Oakland County average about 4 years younger, with a median age of 42.2 years, and those located in Macomb County have a still lower median age of 38.4 years.
ACTIVE DENTISTS IN RELATION TO POPULATION

Of the 4,039 licensed dentists in Michigan, 3,897, or 96 percent, are active in their profession, giving Michigan one professionally active dentist for every 2,120 persons. There is one dentist for every 1,992 persons in the metropolitan areas, while the remainder of the State has a less favorable ratio of one dentist for every 2,681 persons.

Number of Persons per Active Dentist in Michigan

<table>
<thead>
<tr>
<th>County group*</th>
<th>Professionally active dentists</th>
<th>Population</th>
<th>Persons per dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td>All counties</td>
<td>3,897</td>
<td>8,259,700</td>
<td>2,120</td>
</tr>
<tr>
<td>Metropolitan areas</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Detroit area</td>
<td>3,178</td>
<td>6,332,100</td>
<td>1,992</td>
</tr>
<tr>
<td>Grand Rapids area</td>
<td>2,054</td>
<td>3,969,900</td>
<td>1,933</td>
</tr>
<tr>
<td>Flint area</td>
<td>259</td>
<td>493,400</td>
<td>1,905</td>
</tr>
<tr>
<td>Ann Arbor area</td>
<td>181</td>
<td>456,100</td>
<td>2,520</td>
</tr>
<tr>
<td>Lansing area</td>
<td>155</td>
<td>190,000</td>
<td>1,124</td>
</tr>
<tr>
<td>6 other areas</td>
<td>360</td>
<td>899,000</td>
<td>2,497</td>
</tr>
<tr>
<td>Nonmetropolitan counties</td>
<td>719</td>
<td>1,927,600</td>
<td>2,681</td>
</tr>
<tr>
<td>Central city 10,000-49,999</td>
<td>370</td>
<td>969,700</td>
<td>2,459</td>
</tr>
<tr>
<td>Central city 5,000-9,999</td>
<td>182</td>
<td>505,500</td>
<td>2,777</td>
</tr>
<tr>
<td>Central city - under 5,600</td>
<td>17</td>
<td>512,400</td>
<td>3,068</td>
</tr>
</tbody>
</table>

* See Appendix Table for data pertaining to individual metropolitan areas and counties.

The 3-county Detroit metropolitan area has a persons-per-dentist ratio of 1,933. Both Wayne County, the hub of the area, and Oakland County have ratios of approximately 1,860, while Macomb County has a somewhat less favorable ratio of 2,600. The best ratio in the State, 1,124 persons per dentist, is found in the Ann Arbor area, where the University of Michigan School of Dentistry is located. Among the other metropolitan areas, three have ratios more favorable than the State average—Grand Rapids, Kalamazoo, and Lansing. Two metropolitan areas—Jackson and Saginaw—have persons-per-dentist ratios between 2,200 and 2,500, and three areas—Flint, Muskegon, and Bay City—have ratios between 2,500 and 2,900. The remaining area, Monroe County, an outlying county in the Toledo metropolitan area, has a persons-per-dentist ratio exceeding 4,500.

Of the 66 nonmetropolitan counties of the State, 15 have persons-per-dentist ratios under 2,000. Yet there are 30 counties with ratios of more than 3,000, including 15 with ratios in excess of 4,000 persons per dentist, and 3 counties that have no dentists, according to available information. Generally, the ratio of persons per dentist becomes less favorable as the size of the central city declines. The group of counties with central cities of 10,000 or more inhabitants have an average ratio of 2,459, while counties with central cities of less than 5,000 population average over 3,000 persons per dentist.
More than eight out of ten dental practitioners in Michigan (i.e., dentists who spend any time working at the chair) reported that they employ auxiliary personnel, including 71 percent who employ at least one auxiliary on a full-time basis. The most frequently employed auxiliary is the dental assistant. Three-fourths of the practitioners reported the use of an assistant, including 64 percent who utilize at least one full-time. About one-fourth of the dentists employ secretaries or receptionists, usually on a full-time basis. Only 19 percent employ dental hygienists, and 7 percent employ dental laboratory technicians, usually only part-time.

<table>
<thead>
<tr>
<th>Type of auxiliary employed</th>
<th>Dental practitioners</th>
<th>Percent of dental practitioners</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>With one full-time employee (or more)</td>
<td>With only part-time employees</td>
</tr>
<tr>
<td>Total</td>
<td>3,743</td>
<td>100</td>
</tr>
<tr>
<td>One or more auxiliaries</td>
<td>3,016</td>
<td>82</td>
</tr>
<tr>
<td>Assistant</td>
<td>2,729</td>
<td>75</td>
</tr>
<tr>
<td>Hygienist</td>
<td>701</td>
<td>19</td>
</tr>
<tr>
<td>Laboratory technician</td>
<td>245</td>
<td>7</td>
</tr>
<tr>
<td>Secretary or receptionist</td>
<td>879</td>
<td>24</td>
</tr>
<tr>
<td>Other type of personnel</td>
<td>85</td>
<td>2</td>
</tr>
<tr>
<td>No auxiliary</td>
<td>643</td>
<td>18</td>
</tr>
</tbody>
</table>

1/ Includes 84 dentists who did not report on auxiliary utilization.

Use of auxiliaries varies with the age of the dentist and tends to be more common among younger dentists. Ninety percent of Michigan dentists between the ages of 30 and 44 employ some type of auxiliary. The proportion using auxiliaries decreases to 80 percent among dentists 45 to 64 years old and to only 52 percent among dentists 65 and over. Young dentists who are just starting their practices do not reach peak utilization of assistants until they are at least 30 years of age, and of hygienists, until age 35.

Some 18 percent of the dental practitioners in Michigan reported one or more vacant positions for auxiliary personnel. Of those reporting vacancies, 36 percent indicated a need for full-time hygienists, and 24 percent report 1 vacancies for full-time dental assistants.
OTHER SURVEY FINDINGS

One of every six survey respondents, 632 dentists, reported that they had completed one year or more of advanced training since receiving the dental degree. Of 499 dentists with advanced academic training, 329 reported having a master's or other advanced degree, and another 170 dentists received no additional degrees but completed one or more years of postgraduate study. Among the 246 dentists reporting advanced clinical training, 130 had completed an internship and 116 a residency. There were 113 dentists who had completed at least one year of both academic and clinical training.

Ninety-five percent of the responding professionally active dentists in Michigan are primarily engaged in private practice, with 94 percent self-employed and one percent employed by another dentist. Two percent are on the staffs of dental schools, another one percent are employed by governmental agencies, and the remaining two percent are engaged in other dental activities, such as taking advanced training.

At least one part-time dental activity in addition to their principal employment was reported by 9 percent of the dentists. Part-time teaching in a dental school was the most frequently reported secondary employment. A variety of other secondary activities were reported, such as part-time employment by a governmental agency, employment in the private practice of another dentist, and assistance to a voluntary agency.

Dentists reporting time spent in patient care devoted an average of 39.6 hours per week to this activity for 47.2 weeks during the year preceding the survey. About one dentist in eight worked the equivalent of 6 days a week, 48 hours or more, for at least 48 weeks.

About 11 percent of the dentists in Michigan reported that they limit their practice to a dental specialty, primarily orthodontics or oral surgery. Dental specialists are more likely to be located in a metropolitan area than in a nonmetropolitan county. While one in every nine dentists practicing in a metropolitan area limits his practice, in nonmetropolitan counties only one in every 17 dentists does so.

Of the 712 dentists licensed in Michigan but located out of State, approximately 22 percent are located in the neighboring states of Ohio, Illinois, Wisconsin, and Indiana. The remaining out-of-state dentists are scattered throughout 43 other states, with the largest numbers in California and Florida.
## APPENDIX TABLE

Selected Data on Dentists in Michigan, by Location

<table>
<thead>
<tr>
<th>County group and county</th>
<th>Total respondents</th>
<th>Non-respondents</th>
<th>Age in 1965</th>
<th>Professionally active</th>
<th>Population (in 000's)</th>
<th>Persons per active dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td>All counties</td>
<td>4,039</td>
<td>3,938</td>
<td>101</td>
<td>20</td>
<td>3,897</td>
<td>8,259.7</td>
</tr>
<tr>
<td>Metropolitan areas</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Detroit area</td>
<td>3,287</td>
<td>3,199</td>
<td>88</td>
<td>20</td>
<td>3,178</td>
<td>6,332.1</td>
</tr>
<tr>
<td>Macomb</td>
<td>191</td>
<td>191</td>
<td>4</td>
<td>34</td>
<td>182</td>
<td>502.7</td>
</tr>
<tr>
<td>Oakland</td>
<td>419</td>
<td>407</td>
<td>12</td>
<td>23</td>
<td>407</td>
<td>758.7</td>
</tr>
<tr>
<td>Wayne</td>
<td>1,511</td>
<td>1,464</td>
<td>47</td>
<td>18</td>
<td>1,455</td>
<td>2,708.5</td>
</tr>
<tr>
<td>Grand Rapids area</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kent</td>
<td>267</td>
<td>260</td>
<td>7</td>
<td>19</td>
<td>259</td>
<td>493.4</td>
</tr>
<tr>
<td>Ottawa</td>
<td>45</td>
<td>44</td>
<td>1</td>
<td>26</td>
<td>45</td>
<td>106.4</td>
</tr>
<tr>
<td>Flint area</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Genesee</td>
<td>184</td>
<td>184</td>
<td>1</td>
<td>24</td>
<td>181</td>
<td>456.1</td>
</tr>
<tr>
<td>Lapeer</td>
<td>171</td>
<td>171</td>
<td>-</td>
<td>25</td>
<td>167</td>
<td>412.0</td>
</tr>
<tr>
<td>Saginaw area</td>
<td>160</td>
<td>157</td>
<td>3</td>
<td>23</td>
<td>155</td>
<td>223.7</td>
</tr>
<tr>
<td>Saginaw</td>
<td>9</td>
<td>9</td>
<td>-</td>
<td>22</td>
<td>9</td>
<td>43.2</td>
</tr>
<tr>
<td>Ingham</td>
<td>22</td>
<td>22</td>
<td>-</td>
<td>32</td>
<td>20</td>
<td>53.2</td>
</tr>
<tr>
<td>Lansing area</td>
<td>160</td>
<td>157</td>
<td>3</td>
<td>23</td>
<td>155</td>
<td>223.7</td>
</tr>
<tr>
<td>Clinton</td>
<td>9</td>
<td>9</td>
<td>-</td>
<td>22</td>
<td>9</td>
<td>43.2</td>
</tr>
<tr>
<td>Eaton</td>
<td>22</td>
<td>22</td>
<td>-</td>
<td>32</td>
<td>20</td>
<td>53.2</td>
</tr>
<tr>
<td>Saginaw</td>
<td>87</td>
<td>84</td>
<td>3</td>
<td>18</td>
<td>83</td>
<td>200.3</td>
</tr>
<tr>
<td>Saginaw</td>
<td>87</td>
<td>84</td>
<td>3</td>
<td>18</td>
<td>83</td>
<td>200.3</td>
</tr>
<tr>
<td>Ann Arbor area</td>
<td>177</td>
<td>172</td>
<td>5</td>
<td>25</td>
<td>169</td>
<td>190.0</td>
</tr>
<tr>
<td>Washtenaw</td>
<td>177</td>
<td>172</td>
<td>5</td>
<td>25</td>
<td>169</td>
<td>190.0</td>
</tr>
</tbody>
</table>
APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Michigan, by Location

<table>
<thead>
<tr>
<th>County group and county</th>
<th>Civilian dentists</th>
<th>Metropolitan areas 2/ (cont'd.)</th>
<th>Nonmetropolitan counties 2/</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Respondents</td>
<td>Non-respondents</td>
<td>Age in 1965</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>1965</td>
<td>1965</td>
<td>under 35</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Metropolitan areas 2/ (cont'd.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kalamazoo area</td>
<td>97</td>
<td>94</td>
<td>3</td>
<td>20</td>
</tr>
<tr>
<td>Kalamazoo</td>
<td>97</td>
<td>94</td>
<td>3</td>
<td>20</td>
</tr>
<tr>
<td>Muskegon-Muskegon Heights area</td>
<td>64</td>
<td>64</td>
<td>-</td>
<td>15</td>
</tr>
<tr>
<td>Muskegon</td>
<td>64</td>
<td>64</td>
<td>-</td>
<td>15</td>
</tr>
<tr>
<td>Jackson area</td>
<td>61</td>
<td>60</td>
<td>1</td>
<td>20</td>
</tr>
<tr>
<td>Jackson</td>
<td>61</td>
<td>60</td>
<td>1</td>
<td>20</td>
</tr>
<tr>
<td>Bay City area</td>
<td>40</td>
<td>38</td>
<td>2</td>
<td>21</td>
</tr>
<tr>
<td>Bay</td>
<td>40</td>
<td>38</td>
<td>2</td>
<td>21</td>
</tr>
<tr>
<td>Toledo area (Mich. part)</td>
<td>24</td>
<td>24</td>
<td>-</td>
<td>13</td>
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### APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Michigan, by Location

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<td>Non-respondents</td>
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<td>Professionally active</td>
<td>Population (in 000's)</td>
<td>Persons per active dentist</td>
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<td>Percent under 35</td>
<td>Percent 55 &amp; over</td>
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| Central city 5,000-9,999 |                  |                  |                  |                      |          |                |
| Barry         | 8                | 8                | 50              | 25                   | 8          | 30.0          | 3,750 |
| Branch        | 15               | 14               | 13              | 40                   | 12         | 25.3          | 2,942 |
| Cass          | 8                | 8                | 43              | 43                   | 7          | 24.3          | 5,457 |
| Cheboygan     | 6                | 6                | 67              | 5                    | 14.2       | 2,860         |
| Dickinson     | 12               | 12               | 50              | 12                   | 38.0       | 2,070         |
| Emmet         | 10               | 10               | 40              | 9                    | 16.1       | 1,789         |
| Gratiot       | 11               | 11               | 18              | 9                    | 38.0       | 3,800         |
| Hillsdale     | 8                | 8                | 25              | 63                   | 8          | 34.6          | 4,275 |
| Houghton      | 10               | 9                | 13              | 50                   | 10         | 34.6          | 3,460 |
| Ionia         | 19               | 19               | 6               | 33                   | 17         | 44.6          | 2,624 |
| Manistee      | 13               | 13               | 38              | 23                   | 13         | 19.5          | 1,500 |
| Mason         | 12               | 12               | 27              | 36                   | 12         | 22.0          | 1,633 |
### Selected Data on Dentists in Michigan, by Location

<table>
<thead>
<tr>
<th>Location</th>
<th>Total Respondents</th>
<th>Non-respondents</th>
<th>Percent Under 35</th>
<th>Percent 55 &amp; Over</th>
<th>Professionally Active</th>
<th>Population (in 000's)</th>
<th>Persons per active dentist</th>
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**APPENDIX TABLE (cont'd.)**

Selected Data on Dentists in Michigan, by Location

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<th>Non-respondents</th>
<th>Age in 1965</th>
<th>Professionally active</th>
<th>Population (in 000's)</th>
<th>Persons per active dentist</th>
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</table>


2/ Michigan counties in the latest 1967 definition of Standard Metropolitan Statistical Areas, as established by the U.S. Bureau of the Budget, Office of Statistical Standards, have been grouped as metropolitan areas for the presentation of survey data. For the interstate Toledo SMSA, statistics are presented only for dentists located in the Michigan portion.

3/ Counties not included within an SMSA, as defined by the U.S. Bureau of the Budget, have been grouped according to the 1960 population of the largest (central) city within each county.
DENTISTS LICENSED IN MINNESOTA

During the 1966 registration period, 3,594 dentists registered with the Minnesota Board of Dental Examiners. A total of 3,243 dentists responded to the survey, 90 percent of all those registered. Slightly more than two-thirds of the responding dentists are civilians located in Minnesota, 25 percent are civilians located in other States, and 6 percent are on active duty with the Armed Forces. There were 36 women dentists included among the respondents, 23 of them located within the State.

Location and Military Status of Dentists Licensed in Minnesota

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<th>All dentists</th>
<th>Percent of dentists</th>
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<td>Total licensed</td>
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</tr>
<tr>
<td>Respondents</td>
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<td>Nonrespondents</td>
<td>351</td>
<td>10</td>
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<tr>
<td>Respondents</td>
<td>3,243</td>
<td>100</td>
</tr>
<tr>
<td>Civilians in Minnesota</td>
<td>2,221</td>
<td>69</td>
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<tr>
<td>Civilians in another State</td>
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<td>25</td>
</tr>
<tr>
<td>On active duty with Armed Forces</td>
<td>113</td>
<td>6</td>
</tr>
<tr>
<td>Not reported</td>
<td>11</td>
<td>*</td>
</tr>
</tbody>
</table>

* Less than one-half of one percent.

About 37 percent of the respondents hold licenses to practice dentistry in one or more other States. Only 15 percent of the dentists located in Minnesota have more than one license, with 13 percent licensed in one other State and a mere 2 percent licensed in two or more other States. The proportion of responding out-of-State dentists holding multiple licenses is considerably greater; approximately 23 percent hold two or more licenses in addition to their Minnesota license.

Over one-third (36 percent) of the licenses held outside of Minnesota were issued by adjacent States, including 12 percent in Wisconsin, 10 percent in North Dakota, 8 percent in South Dakota, and 6 percent in Iowa. Another 14 percent of the out-of-State licenses are maintained in California, and the remainder are held in 43 other States and the District of Columbia.
Almost nine in every ten of Minnesota's 2,221 responding dentists graduated from the University of Minnesota School of Dentistry. Nearly all of the remainder graduated from 14 schools in other North Central States, including 3 percent from Marquette University, 2 percent each from Northwestern and Creighton Universities, and 1 percent from Loyola University of Chicago. Only 19 dentists are graduates of schools located in more distant States.

### Dental School Attended and Year of Graduation for Dentists in Minnesota

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<th>Dental school attended</th>
<th>Number of dentists</th>
<th>Year of graduation</th>
<th>All</th>
<th>After 1941-1940</th>
<th>After 1955</th>
<th>After 1955 or earlier</th>
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<td>88</td>
<td>87</td>
<td>92</td>
<td>86</td>
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<tr>
<td>1/ Dental school attended not available for 1 dentist and year of graduation for 3 dentists. Percents based on known totals.</td>
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</table>

* Less than one-half of one percent.

About one-fourth (24 percent) of the State's dentists have graduated from dental school since 1955. In contrast, almost half (49 percent) received their dental degrees prior to World War II. Over the years, Minnesota's own dental school has consistently contributed the vast majority of the State's dentists.

Approximately 14 percent of the survey respondents, 306 dentists, reported that they had completed one or more years of advanced training after receiving the dental degree. Of 230 dentists with advanced academic training, 143 received a master's or other advanced degree, while another 87 received no additional degrees but completed one or more years of advanced work at the postgraduate level. Of the 133 dentists with advanced clinical training, 89 had completed an internship, and 44, a residency. There are 57 dentists who have taken both academic and clinical training.
DISTRIBUTION OF DENTISTS

Three-fifths of the 2,221 responding dentists in Minnesota are located in the three metropolitan areas of the State. The 5-county Minneapolis-St. Paul area alone has 1,176 dentists, 53 percent of the State supply. More than nine-tenths of these dentists are concentrated in Hennepin and Ramsey Counties, where the twin cities of Minneapolis and St. Paul are located. Another 6 percent of the State's dental force, 127 dentists, are located in the Duluth area (St. Louis County), while the remaining 1 percent are found in the Moorhead area (Clay County).

### Distribution of Minnesota Dentists, by County Group

<table>
<thead>
<tr>
<th>County group*</th>
<th>Number of counties</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>All counties</td>
<td>87</td>
<td>2,221</td>
<td>100</td>
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<tr>
<td>Metropolitan areas</td>
<td>7</td>
<td>1,324</td>
<td>60</td>
</tr>
<tr>
<td>Minneapolis-St. Paul area</td>
<td>5</td>
<td>1,176</td>
<td>53</td>
</tr>
<tr>
<td>Duluth area</td>
<td>1</td>
<td>127</td>
<td>6</td>
</tr>
<tr>
<td>Moorhead area</td>
<td>1</td>
<td>21</td>
<td>1</td>
</tr>
<tr>
<td>Nonmetropolitan counties</td>
<td>80</td>
<td>897</td>
<td>40</td>
</tr>
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<td>Central city 10,000-49,999</td>
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<td>369</td>
<td>16</td>
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<tr>
<td>Central city 5,000-9,999</td>
<td>19</td>
<td>220</td>
<td>10</td>
</tr>
<tr>
<td>Central city 2,500-4,999</td>
<td>23</td>
<td>169</td>
<td>8</td>
</tr>
<tr>
<td>Central city under 2,500</td>
<td>25</td>
<td>139</td>
<td>6</td>
</tr>
</tbody>
</table>

* See Appendix Table for definition of metropolitan areas and presentation of individual county data.

Forty percent (897) of the responding dentists are located in the 80 non-metropolitan counties of the State. The 13 counties with central cities of 10,000 or more persons have 369 dentists, about one-sixth of the total dental force. Two of these counties--Olmsted and Stearns--have more than 40 dentists each, while nine other counties have at least 20 dentists each. The 67 counties with central city populations under 10,000 have one-fourth (528) of the State's supply of dentists. Among these 67 counties, 19 have 10 or more dentists each, yet 15 have fewer than five dentists.
AGE OF DENTISTS

The median age of dentists in Minnesota is 49.4 years. Three of every ten dentists (673) are under 40 years of age, and an almost equal proportion, 29 percent, are between 40 and 54 years of age. On the other hand, a substantial portion, more than two-fifths, are 55 or over. About one-fourth of the dentists (522) are at least 65 years of age, including 280 who have reached the age of 70.

Age Distribution of Minnesota Dentists

<table>
<thead>
<tr>
<th>Age in 1965</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
<th>Cumulative percent</th>
</tr>
</thead>
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<tr>
<td>Under 30</td>
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<td>7</td>
<td>7</td>
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<td>30 - 34</td>
<td>307</td>
<td>14</td>
<td>21</td>
</tr>
<tr>
<td>35 - 39</td>
<td>204</td>
<td>9</td>
<td>30</td>
</tr>
<tr>
<td>40 - 44</td>
<td>278</td>
<td>13</td>
<td>43</td>
</tr>
<tr>
<td>45 - 49</td>
<td>175</td>
<td>8</td>
<td>51</td>
</tr>
<tr>
<td>50 - 54</td>
<td>180</td>
<td>8</td>
<td>59</td>
</tr>
<tr>
<td>55 - 59</td>
<td>178</td>
<td>8</td>
<td>67</td>
</tr>
<tr>
<td>60 - 64</td>
<td>206</td>
<td>9</td>
<td>76</td>
</tr>
<tr>
<td>65 - 69</td>
<td>242</td>
<td>11</td>
<td>87</td>
</tr>
<tr>
<td>70 - 74</td>
<td>172</td>
<td>8</td>
<td>95</td>
</tr>
<tr>
<td>75 &amp; over</td>
<td>108</td>
<td>5</td>
<td>100</td>
</tr>
</tbody>
</table>

1/ Age not available for 9 dentists. Percents based on total for whom age is known.

Dentists in the metropolitan areas, with a median age of 49.0 years, are only slightly younger than dentists in the nonmetropolitan counties, where the median age is 50.2 years. Median ages of dentists in the Minneapolis-St. Paul and Duluth metropolitan areas are quite similar, about 49 years, while the youngest group, with a median age of 40 years, is found in the Moorhead area.

Median ages of dentists in nonmetropolitan counties tend to increase as the size of the central city decreases. The median age of dentists in counties with central cities of at least 10,000 population is 48.8 years, compared to 51.9 years in counties with central cities of less than 2,500 inhabitants.
Of the 2,221 responding dentists in Minnesota, 93 percent (2,068 dentists) are active in their profession, giving the State one professionally active dentist for every 1,741 persons. In the metropolitan areas, there are 1,532 persons per dentist, while the nonmetropolitan counties have a somewhat higher ratio of 2,051.

### Number of Persons per Active Dentist in Minnesota

<table>
<thead>
<tr>
<th>County group*</th>
<th>Professionally active dentists</th>
<th>Population</th>
<th>Persons per dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td>All counties</td>
<td>2,068</td>
<td>2,600,500</td>
<td>1,741</td>
</tr>
<tr>
<td>Metropolitan areas</td>
<td>1,234</td>
<td>1,890,000</td>
<td>1,532</td>
</tr>
<tr>
<td>Minneapolis-St. Paul area</td>
<td>1,090</td>
<td>1,609,600</td>
<td>1,477</td>
</tr>
<tr>
<td>Duluth area</td>
<td>123</td>
<td>238,300</td>
<td>1,937</td>
</tr>
<tr>
<td>Moorhead area</td>
<td>21</td>
<td>42,100</td>
<td>2,005</td>
</tr>
<tr>
<td>Nonmetropolitan counties</td>
<td>834</td>
<td>1,710,500</td>
<td>2,051</td>
</tr>
<tr>
<td>Central city 10,000-49,999</td>
<td>341</td>
<td>579,200</td>
<td>1,698</td>
</tr>
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<td>Central city 5,000-9,999</td>
<td>212</td>
<td>447,300</td>
<td>2,110</td>
</tr>
<tr>
<td>Central city 2,500-4,999</td>
<td>158</td>
<td>369,900</td>
<td>2,341</td>
</tr>
<tr>
<td>Central city under 2,500</td>
<td>123</td>
<td>314,100</td>
<td>2,554</td>
</tr>
</tbody>
</table>

* See Appendix Table for individual county data.

Among the metropolitan areas, the 5-county Minneapolis-St. Paul area has the best ratio with 1,477 persons per dentist. Hennepin County itself, where Minneapolis is located, has an even more favorable ratio of 1,287, compared to 1,491 persons per dentist for Ramsey County (St. Paul) and to a combined ratio of 2,755 in the other three counties in the area. The Duluth area has a ratio of 1,937, slightly higher than the State average, while the Moorhead area has the least favorable of the metropolitan ratios.

Of the 80 nonmetropolitan counties, 24 have persons-per-dentist ratios under 2,000, yet 12 counties have ratios of 3,000 or more persons for every dentist. Generally, persons-per-dentist ratios become less favorable as the size of the central city decreases. Counties with 10,000 or more inhabitants in their central cities have an average of 1,698 persons per dentist, while counties with central cities under 2,500 average one active dentist for every 2,554 persons.
UTILIZATION OF AUXILIARIES

Almost 8 of every 10 practitioners in Minnesota (i.e., dentists who spend any time working at the chair) reported that they employ some type of auxiliary personnel. Dental assistants, the most frequently employed auxiliary, are utilized by 71 percent of the dentists, including 62 percent who employ at least one assistant on a full-time basis. Secretaries or receptionists are employed by 25 percent of the dentists, half of whom employ at least one full-time. Dental hygienists are employed by 17 percent of the practitioners, and laboratory technicians by 3 percent. The majority of dentists who employ hygienists or technicians do so only part-time.

<table>
<thead>
<tr>
<th>Type of auxiliary</th>
<th>Dental practitioners</th>
<th>Percent of dental practitioners</th>
<th>With one full-time employee</th>
<th>With only part-time employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>2,033</td>
<td>100</td>
<td>68</td>
<td>10</td>
</tr>
<tr>
<td>One or more auxiliaries</td>
<td>1,522</td>
<td>78</td>
<td>68</td>
<td>10</td>
</tr>
<tr>
<td>Assistant</td>
<td>1,394</td>
<td>71</td>
<td>62</td>
<td>9</td>
</tr>
<tr>
<td>Hygienist</td>
<td>324</td>
<td>17</td>
<td>6</td>
<td>11</td>
</tr>
<tr>
<td>Laboratory technician</td>
<td>68</td>
<td>3</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Secretary or receptionist</td>
<td>497</td>
<td>25</td>
<td>12</td>
<td>13</td>
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<tr>
<td>Other type of personnel</td>
<td>64</td>
<td>3</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>No auxiliary</td>
<td>435</td>
<td>22</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

1/ Includes 76 dentists who did not report on auxiliary utilization.

Utilization of auxiliaries varies with the age of the dentist and tends to be more common among younger dentists. Approximately 90 percent of the practitioners between the ages of 30 and 44 employ some type of auxiliary. The proportion utilizing auxiliaries decreases to 77 percent among dentists 45 to 64 years of age and to 49 percent among dentists 65 or over.

Although dentists in metropolitan areas are no more likely to employ auxiliary personnel than those in nonmetropolitan counties, the utilization of hygienists is much more common in metropolitan areas than in the remainder of the State. About 21 percent of the dentists in metropolitan areas report the employment of a hygienist, compared to only 9 percent of the dentists located elsewhere.
Ninety-six percent of the professionally active dentists in Minnesota are primarily engaged in private practice, with 93 percent self-employed and 3 percent employed by another dentist. The remaining 4 percent are either on the staff of the dental school, employed by a governmental agency, or engaged in other dental activities, such as taking advanced training.

At least one part-time dental activity in addition to their principal employment was reported by 10 percent of the dentists. Part-time teaching in a dental school was the most frequently reported secondary employment. A variety of other dental activities were reported, such as part-time employment by State or local government, employment in the private practice of another dentist, and assistance to voluntary agencies.

Dentists providing patient care in the year prior to the survey devoted an average of 39.7 hours per week to this activity for 47.1 weeks during the year. About one dentist in eight worked the equivalent of six days a week, 48 hours or more, for at least 48 weeks.

About 8 percent of the respondents reported that they limit their practice to a dental specialty, primarily to orthodontics, followed by oral surgery, and pedodontics. About one in every ten dentists in metropolitan areas limits his practice as compared to one in every 25 in nonmetropolitan counties.

Twenty-nine percent of the 815 responding dentists licensed in Minnesota but located in another State are in the four adjacent States, primarily North Dakota and Wisconsin. Another 19 percent of the out-of-State dentists are located in California, while the remainder are scattered throughout 38 other States, the District of Columbia, Puerto Rico, and foreign countries.

December 1968.
## APPENDIX TABLE

**Selected Data on Dentists in Minnesota, by Location**

<table>
<thead>
<tr>
<th>County group and county</th>
<th>Civilian dentists</th>
<th>Age in 1965</th>
<th>Professionally active</th>
<th>Population (in 000's)</th>
<th>Persons per active dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Under 40</td>
<td>55 years or more</td>
<td></td>
<td></td>
</tr>
<tr>
<td>All counties</td>
<td>2,221</td>
<td>673</td>
<td>906</td>
<td>2,068</td>
<td>3,600.5</td>
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<td>Metropolitan areas</td>
<td>1,324</td>
<td>399</td>
<td>526</td>
<td>1,234</td>
<td>1,850.0</td>
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<tr>
<td>Minneapolis-St. Paul area</td>
<td>1,176</td>
<td>348</td>
<td>468</td>
<td>1,090</td>
<td>1,609.6</td>
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<tr>
<td>Anoka</td>
<td>42</td>
<td>25</td>
<td>4</td>
<td>42</td>
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<tr>
<td>Dakota</td>
<td>38</td>
<td>18</td>
<td>6</td>
<td>38</td>
<td>98.8</td>
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<tr>
<td>Hennepin</td>
<td>753</td>
<td>211</td>
<td>309</td>
<td>694</td>
<td>892.9</td>
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<tr>
<td>Ramsey</td>
<td>322</td>
<td>88</td>
<td>144</td>
<td>296</td>
<td>441.2</td>
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<td>6</td>
<td>5</td>
<td>20</td>
<td>66.1</td>
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<td>Duluth area</td>
<td>127</td>
<td>41</td>
<td>54</td>
<td>123</td>
<td>238.3</td>
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<td>41</td>
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<td>Clay</td>
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<td>4</td>
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<td>51</td>
<td>53</td>
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<td>21</td>
<td>64</td>
<td>70.0</td>
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<td>14</td>
<td>21</td>
<td>43</td>
<td>87.1</td>
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## APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Minnesota, By Location

<table>
<thead>
<tr>
<th>County group and county</th>
<th>Civilian dentists</th>
<th>Professionally active</th>
<th>Population (in 000's)</th>
<th>Persons per active dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Under 40</td>
<td>55 years or more</td>
<td></td>
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<tr>
<td>Nonmetropolitan counties</td>
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<td></td>
<td></td>
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<td>Central city 10,000-24,999</td>
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<td></td>
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<td>Blue Earth</td>
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<td>6</td>
<td>16</td>
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<td>Central city 5,000-9,999</td>
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<td>Morrison</td>
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### APPENDIX TABLE (cont’d.)

Selected Data on Dentists in Minnesota, By Location

<table>
<thead>
<tr>
<th>County group and county</th>
<th>Civilian dentists</th>
<th>Age in 1965</th>
<th>Professionally active</th>
<th>Population (in 000's)</th>
<th>Persons per active dentist</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Under 40</td>
<td>55 years or more</td>
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<td></td>
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<tr>
<td>Nonmetropolitan counties</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Central city 5,000-9,999 (cont’d.)</td>
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<td></td>
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<td>Nicollet 5,000-9,999 (cont’d.)</td>
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<td>6</td>
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<td>-</td>
<td>4</td>
<td>9</td>
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<td>4</td>
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<td>3</td>
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<td>13.7</td>
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<td>3</td>
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<td>16.7</td>
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<td>2</td>
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<td>5</td>
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### Selected Data on Dentists in Minnesota, By Location

<table>
<thead>
<tr>
<th>County group and county</th>
<th>Civilian dentists</th>
<th>Population 1/ (in 000's)</th>
<th>Persons per active dentist</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Under 55 years or more</td>
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<td>Swift</td>
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<td>14.8</td>
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<td>Todd</td>
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<td>23.4</td>
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<td>Wadena</td>
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<td></td>
<td>Wilkin</td>
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<td>10.8</td>
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<td>Central city 2,500-4,999</td>
<td></td>
<td></td>
<td></td>
</tr>
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<td></td>
<td>Central city under 2,500</td>
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<td>Aitkin</td>
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<td>Cass</td>
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<td>Clearwater</td>
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<td>Grant</td>
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<td>8.9</td>
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<td></td>
<td>Kittson</td>
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<td>8.1</td>
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<td></td>
<td>Lac Qui Parle</td>
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<td>13.6</td>
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<td></td>
<td>Lake of the Woods</td>
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<td></td>
<td>Lincoln</td>
<td>4</td>
<td>9.6</td>
</tr>
<tr>
<td></td>
<td>Mahnomen</td>
<td>1</td>
<td>6.6</td>
</tr>
<tr>
<td></td>
<td>Marshall</td>
<td>5</td>
<td>14.2</td>
</tr>
<tr>
<td></td>
<td>Mille Lacs</td>
<td>9</td>
<td>15.0</td>
</tr>
<tr>
<td></td>
<td>Murray</td>
<td>4</td>
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</table>
### APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Minnesota, By Location

<table>
<thead>
<tr>
<th>County group</th>
<th>Civilian dentists</th>
<th>Population 1/</th>
<th>Persons per active dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Age in 1965</td>
<td>Professionally active</td>
<td>(in 000's)</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>Under 55 years</td>
<td>40 or more</td>
</tr>
<tr>
<td>Nonmetropolitan counties 2/ (cont'd.)</td>
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<td></td>
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<tr>
<td>Central city under 2,500 (cont'd.)</td>
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<td>Norman</td>
<td>6</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Pine</td>
<td>2</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Red Lake</td>
<td>10</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Roseau</td>
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<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Sibley</td>
<td>7</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Traverse</td>
<td>3</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Wright</td>
<td>18</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>Yellow Medicine</td>
<td>13</td>
<td>5</td>
<td>7</td>
</tr>
</tbody>
</table>


2/ Minnesota counties included in the latest 1968 definition of Standard Metropolitan Statistical Areas, as established by the U.S. Bureau of the Budget, Office of Statistical Standards, have been grouped as metropolitan areas for presentation of the survey data. For interstate SMSA's, statistics are presented only for dentists located in the Minnesota portion of the SMSA.

3/ Minnesota part of the Duluth-Superior SMSA.

4/ Minnesota part of the Fargo-Moorhead SMSA.

5/ Counties not included within an SMSA, as defined by the U.S. Bureau of the Budget, have been grouped according to the 1950 population of the largest (central) city within each county.
During the 1967 registration period, 886 dentists registered with the Mississippi State Board of Dental Examiners. Sixty-two percent of the registered dentists were civilians located in Mississippi, 32 percent were civilians located in other States, and 6 percent were on active duty with the Armed Forces.

The survey questionnaire was completed by 846 dentists, 95 percent of the total registered. Data provided by survey respondents has been supplemented, when possible, by information on location, age, dental school attended, and year of graduation for dentists not responding to the survey. Information on nonrespondents was obtained from records maintained by the Mississippi State Board of Dental Examiners and from the 1968 American Dental Directory published by the American Dental Association.

Two-thirds (66 percent) of the survey respondents hold licenses to practice dentistry in one or more other States. Forty-two percent of the dentists located in Mississippi have one other license, while only 6 percent have two or more other licenses. The proportion of out-of-State dentists holding multiple licenses is considerably greater; slightly over one-fourth hold two or more other licenses. Almost three-fifths of the licenses held outside the State were issued by adjacent States, including some 20 percent in Alabama and Tennessee, 18 percent in Louisiana, and 2 percent in Arkansas.
More than nine in every 10 of Mississippi's 551 dentists are graduates of 12 dental schools located in the South. The largest contributor is the University of Tennessee, which has supplied slightly over two-fifths of the State's dental force. Loyola University (New Orleans) and Emory University have also made important contributions, having provided 21 percent and 17 percent, respectively, of the total supply. Only two other schools in this part of the country, Meharry Medical College and the University of Alabama, have contributed as much as 2 percent of Mississippi's dentists. Fifteen schools located in other regions have provided the remaining 8 percent of the dentists. Of these schools, Northwestern University is the largest contributor, having graduated 4 percent of the State's supply.

The overall proportionate contribution of the University of Tennessee to Mississippi's dentist supply has increased substantially over the years, from one-fifth of the dentists in the State who graduated prior to World War II to three-fifths of those receiving their dental education since 1955. At the same time, the contribution of Emory University has shown a notable decrease.

<table>
<thead>
<tr>
<th>Dental School Attended and Year of Graduation for Dentists in Mississippi</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dental school attended</strong></td>
</tr>
<tr>
<td>Total number</td>
</tr>
<tr>
<td>(Percent distribution by school)</td>
</tr>
<tr>
<td>Schools in the South</td>
</tr>
<tr>
<td>Tennessee</td>
</tr>
<tr>
<td>Loyola (New Orleans)</td>
</tr>
<tr>
<td>Emory</td>
</tr>
<tr>
<td>5 other schools</td>
</tr>
<tr>
<td>Schools in other regions</td>
</tr>
<tr>
<td>Northwestern</td>
</tr>
<tr>
<td>14 other schools</td>
</tr>
</tbody>
</table>

Approximately 12 percent of the survey respondents, 63 dentists, reported that they had completed one year or more of advanced training after receiving their dental degree. Of the 44 dentists who reported advanced academic training, 17 had earned a master's or other advanced degree, while 27 had received no additional degrees but had completed one or more years of postgraduate study. Of the 31 dentists with advanced clinical training, 20 had completed an internship, and 11, a residency. Twelve dentists had completed both academic and clinical training.
DISTRIBUTION OF DENTISTS

Slightly over one-fourth of the 551 dentists in Mississippi are located in the two metropolitan areas of the State. The two-county Jackson area has 105 dentists, approximately 20 percent of the total dental force, while the Biloxi-Gulfport area contains 8 percent.

<table>
<thead>
<tr>
<th>County group*</th>
<th>Number of counties</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>All counties</td>
<td>82</td>
<td>551</td>
<td>100</td>
</tr>
<tr>
<td>Metropolitan areas</td>
<td>3</td>
<td>150</td>
<td>27</td>
</tr>
<tr>
<td>Jackson area</td>
<td>2</td>
<td>105</td>
<td>19</td>
</tr>
<tr>
<td>Biloxi-Gulfport area</td>
<td>1</td>
<td>45</td>
<td>8</td>
</tr>
<tr>
<td>Nonmetropolitan counties</td>
<td>79</td>
<td>401</td>
<td>73</td>
</tr>
<tr>
<td>Central city 25,000-49,999</td>
<td>5</td>
<td>93</td>
<td>17</td>
</tr>
<tr>
<td>Central city 10,000-24,999</td>
<td>10</td>
<td>121</td>
<td>22</td>
</tr>
<tr>
<td>Central city 5,000-9,999</td>
<td>16</td>
<td>80</td>
<td>15</td>
</tr>
<tr>
<td>Central city 2,500-4,999</td>
<td>16</td>
<td>51</td>
<td>9</td>
</tr>
<tr>
<td>Central city under 2,500</td>
<td>32</td>
<td>56</td>
<td>10</td>
</tr>
</tbody>
</table>

* See Appendix Table for definition of metropolitan areas and presentation of individual county data.

Almost three-fourths (401) of the State's dentists are located in the 79 nonmetropolitan counties. The 15 counties with central cities of 10,000 or more persons have 214 dentists, some two-fifths of the State's dental force. Two of these counties--Forrest and Lauderdale--have more than 20 dentists each, while seven other counties have at least 15 dentists each.

The 64 counties with fewer than 10,000 persons in their central cities have one-third of the State's dentist supply. There are 131 dentists in the 32 counties having between 2,500 and 9,999 persons in their central cities, while 56 dentists are scattered among the 32 counties with central cities of less than 2,500 population. While only 12 of these 64 counties have as many as five dentists, 29 counties have fewer than three dentists.
The median age of dentists in Mississippi is 41.9 years. Almost three in every 10 (28 percent) of the dentists are under 35 years of age, while only 16 percent are 55 years of age or older. Well over half of all dentists in the State are between 35 and 54, with about one-third between 35 and 44 years of age.

<table>
<thead>
<tr>
<th>Age in 1965</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
<th>Cumulative percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>551 (\frac{1}{2})</td>
<td>100</td>
<td>-</td>
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<tr>
<td>Under 30</td>
<td>62</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>30 - 34</td>
<td>85</td>
<td>16</td>
<td>28</td>
</tr>
<tr>
<td>35 - 39</td>
<td>93</td>
<td>17</td>
<td>45</td>
</tr>
<tr>
<td>40 - 44</td>
<td>86</td>
<td>16</td>
<td>61</td>
</tr>
<tr>
<td>45 - 49</td>
<td>81</td>
<td>15</td>
<td>76</td>
</tr>
<tr>
<td>50 - 54</td>
<td>45</td>
<td>8</td>
<td>84</td>
</tr>
<tr>
<td>55 - 59</td>
<td>41</td>
<td>7</td>
<td>91</td>
</tr>
<tr>
<td>60 - 64</td>
<td>24</td>
<td>4</td>
<td>95</td>
</tr>
<tr>
<td>65 &amp; over</td>
<td>30</td>
<td>5</td>
<td>100</td>
</tr>
</tbody>
</table>

1/ Includes 4 dentists for whom age is not available. Percents are based on total for whom age is known.

* Age computed to 1965 to enable comparison among all States surveyed.

The age distribution of dentists is similar throughout the State. Dentists located in the two metropolitan areas, with a median age of 41.4 years, are about a year younger, on the average, than dentists located in nonmetropolitan counties, where the median age is 42.3 years.
ACTIVE DENTISTS IN RELATION TO POPULATION

Of the 551 dentists in Mississippi, 541, or 98 percent, are active in their profession, giving the State one professionally active dentist for every 4,096 persons. In the metropolitan areas, there are 2,574 persons per dentist, with the Jackson area having the better ratio of 2,358, while the Biloxi-Gulfport area has only one dentist for every 3,089 persons.

<table>
<thead>
<tr>
<th>County group*</th>
<th>Professionally active dentists</th>
<th>Population</th>
<th>Persons per dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td>All counties</td>
<td>541</td>
<td>2,216,100</td>
<td>4,096</td>
</tr>
<tr>
<td>Metropolitan areas</td>
<td>149</td>
<td>383,500</td>
<td>2,574</td>
</tr>
<tr>
<td>Jackson area</td>
<td>105</td>
<td>247,600</td>
<td>2,358</td>
</tr>
<tr>
<td>Biloxi-Gulfport area</td>
<td>44</td>
<td>135,900</td>
<td>3,089</td>
</tr>
<tr>
<td>Nonmetropolitan counties</td>
<td>392</td>
<td>1,832,600</td>
<td>4,675</td>
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<td>Central city 25,000-49,999</td>
<td>91</td>
<td>310,100</td>
<td>3,608</td>
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<td>Central city 10,000-24,999</td>
<td>116</td>
<td>438,200</td>
<td>3,714</td>
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<td>Central city 5,000-9,999</td>
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<td>Central city 2,500-4,999</td>
<td>50</td>
<td>297,100</td>
<td>5,942</td>
</tr>
<tr>
<td>Central city under 2,500</td>
<td>55</td>
<td>402,200</td>
<td>7,313</td>
</tr>
</tbody>
</table>

* See Appendix Table for individual county data.

The 79 normetropolitan counties average a less favorable ratio of 4,675 persons per dentist. Fifteen of these counties have ratios under 4,000, while an equal number have ratios of 8,000 or more, including 7 counties with over 10,000 persons per dentist. In addition, there are six counties which have no active dentists, according to available information.

In nonmetropolitan counties, the ratios of persons per dentist generally become much less favorable as the size of the central city decreases.

Counties with central city populations of 25,000 to 49,999 persons average some 3,400 persons per dentist, while counties with 5,000 to 9,999 inhabitants in their central cities have only one dentist for every 4,900 persons. The group of counties with central city populations of less than 2,500 has the least favorable ratio--7,300 persons per dentist.
Utilization of Auxiliaries

Eighty-six percent of Mississippi's responding practitioners (i.e., dentists who spend any time working at the chair) reported that they employ some type of auxiliary personnel. Dental assistants, the most frequently employed auxiliary, are utilized by 81 percent of the dentists, including 75 percent who employ at least one assistant on a full-time basis. Secretaries or receptionists are employed by 28 percent of the dentists, more than two-thirds of whom employ at least one full-time. Dental hygienists are employed by 8 percent of the practitioners, and laboratory technicians by 7 percent. Hygienists and laboratory technicians are more likely to be employed on a part-time basis than are other auxiliary personnel.

Mississippi Dentists Employing Auxiliaries, by Type of Auxiliary

<table>
<thead>
<tr>
<th>Type of auxiliary employed</th>
<th>Percent of dental practitioners</th>
<th>Dental practitioners</th>
<th>With one full-time employee (or more)</th>
<th>With only part-time employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>488 1/</td>
<td>100</td>
<td>81</td>
<td>5</td>
</tr>
<tr>
<td>One or more auxiliaries</td>
<td></td>
<td>422</td>
<td>86</td>
<td>81</td>
</tr>
<tr>
<td>Assistant</td>
<td></td>
<td>394</td>
<td>81</td>
<td>75</td>
</tr>
<tr>
<td>Hygienist</td>
<td></td>
<td>41</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>Laboratory technician</td>
<td></td>
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<td>3</td>
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<tr>
<td>Secretary or receptionist</td>
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<td>5</td>
<td>28</td>
<td>20</td>
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<tr>
<td>Other type of personnel</td>
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<td>2</td>
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<tr>
<td>No auxiliary</td>
<td></td>
<td>66</td>
<td>14</td>
<td>-</td>
</tr>
</tbody>
</table>

1/ Includes 12 dentists who did not report on auxiliary utilization.

Employment of auxiliaries varies with the age of the dentist and is more common among younger dentists. Almost 95 percent of the practitioners between the ages of 30 and 44 employ some type of auxiliary. The proportion utilizing auxiliaries decreases to 82 percent among dentists 45 to 64 years of age and to 48 percent among dentists 65 or over.

About one-fifth of all Mississippi practitioners reported one or more vacant positions for auxiliary personnel. Forty percent of these dentists indicated vacancies for full-time dental hygienists and 34 percent for full-time dental assistants.
OTHER SURVEY FINDINGS

Ninety-six percent of the responding professionally active dentists in Mississippi are primarily engaged in private practice, with 94 percent self-employed and 2 percent employed by another dentist. The remaining 4 percent are either employed by a governmental agency, or are engaged in other dental activities, such as taking advanced training.

Dentists reporting on time spent in providing patient care devoted an average of 40.7 hours per week to this activity for 48.3 weeks during the year prior to the survey. About one dentist in seven worked the equivalent of six days a week, 48 hours or more, for at least 48 weeks.

Eight percent of the respondents reported that they limit their practice to a dental specialty, primarily to orthodontics, followed by oral surgery, and pedodontics. About one in every six dentists in metropolitan areas limits his practice as compared to one in every 20 in nonmetropolitan counties.

Seven percent of the responding dentists had practiced as civilian dentists in one of 14 other States prior to assuming their present Mississippi location. More than half of these dentists came from other Southern States, primarily Louisiana and Tennessee.

Of the 281 dentists who are licensed in Mississippi but located in another State, more than three of every five are located in adjacent States, principally in Alabama, Louisiana, and Tennessee. Another 16 percent are in the nearby States of Georgia, Florida, and Texas, while the remainder are scattered among 18 other States and the District of Columbia.

March 1969.
## APPENDIX TABLE

Selected Data on Dentists in Mississippi, by Location

<table>
<thead>
<tr>
<th>County group and county</th>
<th>Civilian dentists</th>
<th>Population per active dentist</th>
<th>Persons per active dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Respondents</td>
<td>Non-respondents</td>
</tr>
<tr>
<td>All counties</td>
<td>551</td>
<td>513</td>
<td>38</td>
</tr>
<tr>
<td>Metropolitan areas</td>
<td>150</td>
<td>138</td>
<td>12</td>
</tr>
<tr>
<td>Jackson area</td>
<td>105</td>
<td>100</td>
<td>5</td>
</tr>
<tr>
<td>Hinds</td>
<td>101</td>
<td>96</td>
<td>5</td>
</tr>
<tr>
<td>Rankin</td>
<td>4</td>
<td>4</td>
<td>-</td>
</tr>
<tr>
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### APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Mississippi, by Location

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## APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Mississippi, by Location

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|-------------------------|------------------|---|---|---|---|---|---|</p>
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APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Mississippi, by Location

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### Selected Data on Dentists in Mississippi, by Location

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2/ Mississippi counties included in the latest 1968 definition of Standard Metropolitan Statistical Areas, as established by the U.S. Bureau of the Budget, Office of Statistical Standards, have been grouped as metropolitan areas for presentation of the survey data.

3/ Counties not included within an SMSA, as defined by the U.S. Bureau of the Budget, have been grouped according to the 1960 population of the largest (central) city within each county.
During the 1965 registration period, 4,127 dentists registered with the Missouri Dental Board. Of these dentists, only 52 percent were civilians actually located in Missouri, while 42 percent were civilians located in other states, and 6 percent were on active duty with the Armed Forces.

### Location and Military Status of Dentists Licensed in Missouri

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<th>All dentists</th>
<th>Percent of dentists</th>
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<td>Not reported</td>
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* Less than one-half of one percent.

The survey questionnaire was completed by 3,693 dentists, 89 percent of all those registered. The data provided by the survey respondents has been supplemented, when obtainable, by information on location, age, dental school attended, and year of graduation for dentists not responding to the survey. Information on nonrespondents was obtained either from records maintained by the Missouri Dental Board or from the 1966 American Dental Directory, published by the American Dental Association.

Among the survey respondents, approximately three of every five (58 percent) hold a license to practice dentistry in one or more other states. About 28 percent of the dentists located in Missouri hold more than one license, with 23 percent licensed in one other state and 5 percent licensed in two or more other states. The proportion of out-of-state dentists holding multiple licenses is considerably greater; 27 percent hold two or more licenses in addition to their Missouri license. Approximately three-fifths of the licenses held outside of Missouri are held in adjacent states, including 27 percent in Kansas, 16 percent in Illinois, 8 percent in Oklahoma, and 5 percent in Arkansas.
PROFESSIONAL TRAINING

The great majority of Missouri's dentists--more than 9 of every 10--have graduated from one of the three in-state dental schools. The University of Missouri at Kansas City and St. Louis University each have provided approximately one-third of the State's dental force, while Washington University has contributed another 21 percent. In addition, ten schools in adjacent states have together supplied five percent of Missouri's dentists. Among these schools, Meharry Medical College (Nashville) and the University of Tennessee have been the largest contributors, although each has provided only one percent. The remaining 3 percent were trained in schools scattered throughout 15 other states.

Relatively few of Missouri's dentists are recent dental school graduates. Only 20 percent of the dental force graduated from dental school after 1955, while more than 50 percent of the State's dentists graduated during the years prior to World War II. The overall proportionate contribution of the University of Missouri to the State's dental supply has increased substantially over the years, while the contributions of St. Louis University and Washington University have shown notable decreases. Approximately one-half of the dentists in the State who graduated since 1955 received their dental education at the University of Missouri.

<table>
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<th>Dental School Attended and Year of Graduation for Dentists in Missouri</th>
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</tr>
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<tr>
<td>Schools in Missouri</td>
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<td>Univ. of Missouri at Kansas City</td>
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<td>St. Louis University</td>
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<tr>
<td>Washington University</td>
</tr>
<tr>
<td>31 other schools</td>
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</table>

Some 14 percent of the survey respondents (281 dentists) reported that they had completed one year or more of advanced training after receiving the dental degree. About 200 dentists reported completion of advanced academic training as graduate or postgraduate students, and 128 dentists completed advanced clinical training as residents or interns. There are 47 dentists who completed both academic and clinical training. Advanced training, particularly advanced academic work, is more common among younger dentists. Some 26 percent of survey respondents under 40 years of age reported a year or more of graduate or postgraduate study, as compared with 17 percent of those 40 to 54 years, and only 6 percent of those 55 and over.


**DISTRIBUTION OF DENTISTS**

Approximately three-fourths of the licensed dentists in Missouri are located in the 4 metropolitan areas of the State. The St. Louis area alone has 962 dentists, 45 percent of all dentists in the State. The city of St. Louis together with St. Louis County has 903 of these dentists, while the three other counties in the area have only 59 dentists. The 4-county Kansas City area has the second largest dental force, some 500 dentists, accounting for 23 percent of the State supply. About nine-tenths of these dentists are concentrated in Jackson County, where Kansas City is located. The two remaining metropolitan areas, Springfield and St. Joseph, have 4 percent and 2 percent of Missouri's dentists, respectively.

<table>
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<th>County group*</th>
<th>Number of counties</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
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<td>St. Joseph area</td>
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<td>39</td>
<td>2</td>
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<tr>
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<td>563</td>
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<tr>
<td>Central city under 2,500</td>
<td>49</td>
<td>122</td>
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</table>

* See Appendix Table for definition of interstate and other metropolitan areas and presentation of individual county data.

Slightly more than one-fourth (563) of Missouri's dentists are located in the 104 nonmetropolitan counties of the State. The 13 counties with central cities of 10,000 or more persons have 190 dentists, almost 10 percent of the State's dental force. Jasper County, with approximately 40 dentists, has the largest dental force of any nonmetropolitan county. The only other nonmetropolitan counties with as many as 20 dentists are Boone and Cole.

The 91 counties with less than 10,000 persons in their central cities have one-sixth of the State's dentist supply. There are 251 dentists in the 42 counties having between 2,500 and 9,999 persons in their central cities, while 122 dentists are scattered among the 49 counties with central cities of less than 2,500 population. While only seven of these 91 counties have as many as 10 dentists, more than half (48) have no more than 3 dentists, including 12 with only one dentist, and four counties that apparently have no dentists.
AGE DISTRIBUTION OF DENTISTS BY AREA

The median age of the 2,128 dentists for whom age was obtainable is a rather high 51.5 years. Only 25 percent of Missouri's dentists (536) are under 40 years of age, including just 16 percent who are under 35. On the other hand, more than two-fifths, or 925 dentists, are 55 years or over. Almost one in every four, or 510 dentists, are 65 years old or more, including 307 who have reached the age of 70.

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<th>County group</th>
<th>Median age</th>
<th>Percent of dentists</th>
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<td>61.1</td>
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<td>18</td>
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<tr>
<td>Central city under 2,500</td>
<td>63.2</td>
<td>23</td>
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</table>

The median age of dentists in metropolitan areas is 50.9 years, somewhat lower than the median of 53.5 years for dentists in nonmetropolitan counties. Median ages of dentists in the St. Louis and Kansas City areas are quite similar, about 52 years. Dentists in the Springfield area are the youngest as a group, with a median age of 43.9. More than 35 percent of the dentists in this area are under 40 years of age, and less than one-third are 55 or older. Dentists in the St. Joseph area are the oldest as a group, with a median age of 61.1 years. Only one-fifth of these dentists are under 40, while well over half have reached the age of 55.

Dentist ages in nonmetropolitan counties tend to increase rapidly as the size of the central city declines. The median age of dentists in counties with central cities of at least 10,000 population is 48.6 years, compared to a median age of 55.5 in counties containing a central city of 2,500-9,999 inhabitants, and 63.2 years (almost 12 years above the State average) in counties with less than 2,500 persons in their central cities.
ACTIVE DENTISTS IN RELATION TO POPULATION

Of the 2,146 dentists in Missouri, 1,975, or 92 percent, are active in their profession, giving Missouri one professionally active dentist for every 2,271 persons. In the metropolitan areas—which have 74 percent of all active dentists and 62 percent of the population—the ratio is one dentist for every 1,889 persons. The remainder of the State—which has 26 percent of the active dentists and 38 percent of the population—has a less favorable ratio of one dentist for every 3,381 persons.

### Number of Persons per Active Dentist in Missouri

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<tr>
<th>County group*</th>
<th>Professionally active dentist</th>
<th>Population</th>
<th>Persons per dentist</th>
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<td>4,484,800</td>
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<td>Metropolitan areas</td>
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<td>2,777,200</td>
<td>1,889</td>
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<td>St. Louis area (Mo. part)</td>
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<td>1,728,600</td>
<td>1,951</td>
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<td>824,100</td>
<td>1,753</td>
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<td>Springfield area</td>
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<td>136,300</td>
<td>1,770</td>
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<td>St. Joseph area</td>
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<td>4,357</td>
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</table>

* See Appendix Table for individual county data.

Among the metropolitan areas, the 4-county Kansas City area has the best ratio with 1,951 persons per active dentist. Jackson County, the hub of the area, has the best ratio in the State, 1,584 persons per active dentist, while the other three counties in the area have a considerably higher average persons-per-dentist ratio of 3,035. The 4-county St. Louis area has a ratio of 1,951 persons per dentist, slightly less favorable than that of the Kansas City area. St. Louis County together with the city of St. Louis has the best ratio in the area, with one dentist for every 1,848 persons, while the remaining three counties have a much higher average ratio of 3,509 persons per dentist. The Springfield area has a ratio comparable to that of the Kansas City area, 1,770 persons per dentist. The ratio of one dentist for every 2,384 persons in the St. Joseph area is the least favorable among the metropolitan areas.

Among the nonmetropolitan counties there are 16 with persons-per-dentist ratios under 2,500, yet 37 counties have ratios exceeding 4,000 persons per dentist, including 19 counties with ratios over 6,000. Generally, the ratio of persons per dentist becomes less favorable as the size of the central city decreases. The group of counties with central cities of 10,000 or more population have an average persons-per-dentist ratio of approximately 2,700, while counties with central cities of less than 2,500 inhabitants average over 4,300 persons per dentist.
Almost three-fourths of the responding practitioners in Missouri (i.e., dentists who spend any time working at the chair) reported that they employ some type of auxiliary personnel. Dental assistants, the most frequently employed auxiliary, are utilized by 65 percent of all practitioners, including 59 percent who employ at least one assistant on a full-time basis. Secretaries or receptionists are employed by 25 percent of the dentists, with slightly over two-thirds of these dentists utilizing such personnel full time. Dental hygienists and laboratory technicians are utilized with considerably less frequency, each of these auxiliaries being employed by only 8 percent of the dentists. Hygienists and technicians are more likely to be employed on a part-time basis than are other auxiliary personnel.

<table>
<thead>
<tr>
<th>Missouri Dentists Employing Auxiliaries, by Type of Auxiliary</th>
<th>Percent of dental practitioners</th>
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<tbody>
<tr>
<td></td>
<td>Total</td>
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<tr>
<td>Type of auxiliary employed by dentists</td>
<td>Total</td>
</tr>
<tr>
<td></td>
<td>1,801</td>
</tr>
<tr>
<td>With one or more auxiliaries</td>
<td>1,238</td>
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<tr>
<td>Assistant</td>
<td>1,122</td>
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<tr>
<td>Hygienist</td>
<td>143</td>
</tr>
<tr>
<td>Laboratory technician</td>
<td>136</td>
</tr>
<tr>
<td>Secretary or receptionan</td>
<td>427</td>
</tr>
<tr>
<td>Other type of personnel</td>
<td>30</td>
</tr>
<tr>
<td>With no auxiliary</td>
<td>488</td>
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</tbody>
</table>

1/ Includes 75 dentists who did not report on auxiliary utilization.

Use of auxiliaries varies with the age of the dentist and tends to be more frequent among younger dentists. Eighty-six percent of Missouri dentists between the ages of 30 and 44 employ some type of auxiliary. The proportion utilizing auxiliaries decreases to 73 percent among dentists 45 to 64 years old and to only 38 percent among dentists 65 and over. Young dentists just starting their practices do not reach peak utilization of assistant until they are at least 30 years of age and of hygienists until age 35.

About 14 percent of the responding dentists in Missouri reported one or more vacant positions for auxiliary personnel. Of those reporting vacancies, one-third indicated a need for full-time hygienists and one-third reported vacancies for full-time dental assistants. Nine of every 10 dentists reporting a vacancy already employ one or more auxiliaries.
OTHER SURVEY FINDINGS

Ninety-four percent of the responding professionally active dentists in Missouri are primarily engaged in private practice, with 93 percent self-employed and one percent employed by another dentist. Three percent are on the staffs of dental schools, another one percent are employed by governmental agencies, and the remaining two percent are engaged in other dental activities, such as taking advanced training.

At least one part-time dental activity in addition to their principal employment as reported by 12 percent of the dentists. Part-time teaching in a dental school was the most frequently reported secondary employment. A variety of other secondary dental activities were reported, including employment by another dentist and working in governmental agencies.

Dentists reporting time spent in patient care devoted an average of 39.4 hours per week to this activity for 47.6 weeks during the year preceding the survey. About one dentist in seven worked the equivalent of 6 days a week, 48 hours or more, for at least 48 weeks.

About 13 percent of the practitioners reported they limit their practice to a dental specialty, primarily orthodontics or oral surgery. The metropolitan areas have a large share—about nine-tenths—of the dentists who limit their practices. One in every 7 dentists practicing in a metropolitan area limits his practice, whereas in nonmetropolitan counties, only one in every 25 dentists does so.

Of the 1,750 dentists licensed in Missouri but located out-of-state, approximately one-third were located in the adjacent states of Kansas and Illinois. The remaining out-of-state dentists are scattered throughout 45 other states, the largest numbers being in the nearby states of Arkansas, Colorado and Oklahoma, and the more distant state of California.

March 1968.
## APPENDIX TABLE

Selected Data on Dentists in Missouri, by Location

<table>
<thead>
<tr>
<th>County group and county</th>
<th>Total Respondents</th>
<th>Non-respondents</th>
<th>Age in 1965</th>
<th>Professionally active</th>
<th>Population (in 000's)</th>
<th>Persons per active dentist</th>
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<td>814</td>
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### APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Missouri, by Location

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<th>County group and county</th>
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<th>Professionally active</th>
<th>Population (in 000's)</th>
<th>Persons per active dentist</th>
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<td></td>
<td>Total respondents</td>
<td>Non-respondents</td>
<td>Age Under 40</td>
<td>Age 55 or more</td>
<td>Percent</td>
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<td>539</td>
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## APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Missouri, by Location

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<th>County group and county</th>
<th>Total Respondents</th>
<th>Non-respondents</th>
<th>Age in 1965 Percent</th>
<th>Professionally active</th>
<th>Population (in 000's)</th>
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### APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Missouri, by Location

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<tr>
<th>County group and county</th>
<th>Total Respondents</th>
<th>Non-respondents</th>
<th>Civilian dentists</th>
<th>Population (in 000's)</th>
<th>Persons per active dentist</th>
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<tr>
<td></td>
<td>Nonmetropolitan counties (cont'd.)</td>
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<td>Percent Under 40</td>
<td>Percent 55 or more</td>
<td>Active</td>
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### APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Missouri, by Location

<table>
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<th>County group and county</th>
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<th>Population per active dentist</th>
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<tr>
<td></td>
<td>Total respondents</td>
<td>Age in 1965</td>
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<tr>
<td></td>
<td>Non-respondents</td>
<td>Percent under 40</td>
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<tr>
<td><strong>Nonmetropolitan counties (cont'd.)</strong></td>
<td></td>
<td></td>
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<tr>
<td>Central city under 2,500 (cont'd.)</td>
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<td>Crawford</td>
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<tr>
<td>Dade</td>
<td>3</td>
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### APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Missouri, by Location

<table>
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<tr>
<th>County group and county</th>
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<td>Respondents</td>
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<td>Nonmetropolitan counties (cont'd.)</td>
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<td>Central city under 2,500 (cont'd.)</td>
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<tr>
<td>Ralls</td>
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<td>Shannon</td>
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<td>Shelby</td>
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<tr>
<td>Stone</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Sullivan</td>
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<td>1</td>
</tr>
<tr>
<td>Taney</td>
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<tr>
<td>Worth</td>
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</table>


2/ Missouri counties in the latest 1967 definition of Standard Metropolitan Statistical Areas, as established by the U.S. Bureau of the Budget, Office of Statistical Standards, have been grouped as metropolitan areas for the presentation of survey data. For the interstate St. Louis and Kansas City SMSA's, statistics are presented only for dentists located in the Missouri portions.

3/ Counties not included within an SMSA, as defined by the U.S. Bureau of the Budget, have been grouped according to the 1960 population of the largest (central) city within each county.
DENTISTS LICENSED IN MONTANA

During the 1966 registration period, 532 dentists registered with the Montana State Board of Dental Examiners. A total of 500 dentists responded to the survey, 94 percent of all those registered. Sixty-two percent of the responding dentists are civilians located in Montana, 32 percent are civilians located in other states, and 6 percent are on active duty with the Armed Forces.

<table>
<thead>
<tr>
<th>Location and Military Status of Dentists Licensed in Montana</th>
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</thead>
<tbody>
<tr>
<td>Location and military status</td>
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<tr>
<td>------------------------------</td>
</tr>
<tr>
<td>Total</td>
</tr>
<tr>
<td>Respondents</td>
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<tr>
<td>Nonrespondents</td>
</tr>
<tr>
<td>Respondents</td>
</tr>
<tr>
<td>Civilians in Montana</td>
</tr>
<tr>
<td>Civilians in another state</td>
</tr>
<tr>
<td>On active duty with Armed Forces</td>
</tr>
</tbody>
</table>

Multiple licensure is quite common in Montana, with more than three-fifths of the respondents located in the state holding more than one license. Forty-two percent indicated licensure in one additional state and 19 percent in two or more other states. Of those dentists registering in Montana, but located out of state, a relatively high proportion--38 percent--are licensed in two or more states other than Montana.

Survey respondents hold a total of some 1,000 licenses, an average of two per dentist. Two-fifths of the licenses held in states outside of Montana are held in the Western States of California, Oregon, Washington, and Idaho. Another one-fourth are held in the North Central States of Minnesota, Illinois, and Wisconsin.
More than four-fifths (83 percent) of Montana's dentists are graduates of 12 dental schools located in the North Central States. The largest contributor among these schools is the University of Minnesota, which has supplied almost one-fourth of the State's dental force. Northwestern and Marquette Universities have also made important contributions, each having provided 11 percent of the total supply. Other schools in this part of the Country to contribute as many as 20 of Montana's dentists are Creighton University and Loyola University of Chicago.

Fourteen schools located in other regions have provided the remaining 17 percent of the dentists in Montana. The only one of these schools to contribute a substantial number of dentists, however, is the University of Oregon, which has graduated 9 percent of the State's supply.

### Dental School Attended and Year of Graduation for Dentists in Montana

<table>
<thead>
<tr>
<th>Dental school attended</th>
<th>Number of dentists</th>
<th>Year of graduation</th>
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<td></td>
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<td>All</td>
</tr>
<tr>
<td>Total number</td>
<td>3091/3</td>
<td>93</td>
</tr>
<tr>
<td>(Percent distribution by school)</td>
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<td></td>
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<tr>
<td>Schools in North Central States</td>
<td>257</td>
<td>83</td>
</tr>
<tr>
<td>Minnesota</td>
<td>71</td>
<td>23</td>
</tr>
<tr>
<td>Northwestern</td>
<td>35</td>
<td>11</td>
</tr>
<tr>
<td>Marquette</td>
<td>35</td>
<td>11</td>
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<tr>
<td>Creighton</td>
<td>29</td>
<td>9</td>
</tr>
<tr>
<td>Loyola (Chicago)</td>
<td>22</td>
<td>8</td>
</tr>
<tr>
<td>7 other schools</td>
<td>65</td>
<td>21</td>
</tr>
<tr>
<td>Schools in other states</td>
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<td>17</td>
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<tr>
<td>Oregon</td>
<td>29</td>
<td>9</td>
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<tr>
<td>13 other schools</td>
<td>23</td>
<td>8</td>
</tr>
</tbody>
</table>
| 1/ Year of graduation not available for one dentist.

Some 13 percent of the survey respondents, 39 dentists, reported that they had completed one year or more of advanced training after receiving their dental degree. Of the 21 dentists with advanced clinical training, 5 had completed a residency and 16 an internship. Of the 25 dentists who reported advanced academic training, 14 had earned a master's or other advanced degree, and another 11 had received no additional degrees but had completed one or more years of postgraduate study. Seven dentists had completed both academic and clinical training.
DISTRIBUTION OF DENTISTS

Montana's dentists are unevenly distributed geographically, with two-thirds of the licensed dentists located in only 9 of the State's 56 counties. The two metropolitan areas, Billings (Yellowstone County) and Great Falls (Cascade County), have 28 percent of the dentists, 14 percent each. The 7 nonmetropolitan counties with at least 10,000 persons in their central cities have among them 119 dentists or 38 percent of the total dental force. Three of these nonmetropolitan counties--Missoula, Silver Bow, and Flathead--have more than 20 dentists, and two other counties--Gallatin and Lewis and Clark--have at least 10 dentists.

Distribution of Montana Dentists, by County Group

<table>
<thead>
<tr>
<th>County group*</th>
<th>Number of counties</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
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</thead>
<tbody>
<tr>
<td>All counties</td>
<td>56</td>
<td>309</td>
<td>100</td>
</tr>
<tr>
<td>Metropolitan areas</td>
<td>2</td>
<td>86</td>
<td>28</td>
</tr>
<tr>
<td>Billings area</td>
<td>1</td>
<td>44</td>
<td>14</td>
</tr>
<tr>
<td>Great Falls area</td>
<td>1</td>
<td>42</td>
<td>14</td>
</tr>
<tr>
<td>Nonmetropolitan counties</td>
<td>54</td>
<td>223</td>
<td>72</td>
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<tr>
<td>Central city 10,000-49,999</td>
<td>7</td>
<td>119</td>
<td>38</td>
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<tr>
<td>Central city 2,500-9,999</td>
<td>15</td>
<td>60</td>
<td>20</td>
</tr>
<tr>
<td>Central city under 2,500</td>
<td>32</td>
<td>44</td>
<td>14</td>
</tr>
</tbody>
</table>

* See Appendix Table for definition of metropolitan areas, and presentation of individual county data.

The 47 nonmetropolitan counties comprising the two groups of counties with fewer than 10,000 persons in their central cities have approximately one-third of the State's dentist supply. There are 60 dentists in the 15 counties having between 2,500 and 9,999 persons in their central cities, while only 44 dentists are scattered among the 32 counties with central cities of less than 2,500 population. Only 9 of these 47 counties have as many as 5 dentists, and 21 counties have fewer than 2 dentists.
AGE DISTRIBUTION OF DENTISTS BY AREA

The median age of Montana dentists is 43.4 years. One-fourth (76 dentists) are under 35, and almost a third (95 dentists) are between 35 and 44 years of age. On the other hand, a substantial proportion, approximately one-fourth, are 55 or over. Twelve percent (37 dentists) are at least 65 years of age, including 22 dentists who have reached the age of 70.

### Median Age and Age Distribution of Montana Dentists by County Group

<table>
<thead>
<tr>
<th>County group</th>
<th>Median age</th>
<th>Under 35</th>
<th>35-44</th>
<th>45-54</th>
<th>55 &amp; over</th>
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</thead>
<tbody>
<tr>
<td>All counties</td>
<td>43.4</td>
<td>25</td>
<td>31</td>
<td>18</td>
<td>26</td>
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<tr>
<td>Metropolitan areas</td>
<td>43.5</td>
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<td>36</td>
<td>23</td>
<td>21</td>
</tr>
<tr>
<td>Billings area</td>
<td>44.4</td>
<td>16</td>
<td>36</td>
<td>27</td>
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<tr>
<td>Great Falls area</td>
<td>42.8</td>
<td>24</td>
<td>36</td>
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<tr>
<td>Nonmetropolitan counties</td>
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<td>29</td>
<td>16</td>
<td>29</td>
</tr>
<tr>
<td>Central city 10,000-49,999</td>
<td>42.8</td>
<td>25</td>
<td>34</td>
<td>15</td>
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<tr>
<td>Central city 2,500-9,999</td>
<td>41.2</td>
<td>28</td>
<td>27</td>
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<td>25</td>
</tr>
<tr>
<td>Central city under 2,500</td>
<td>47.5</td>
<td>27</td>
<td>18</td>
<td>14</td>
<td>41</td>
</tr>
</tbody>
</table>

Some variation is to be found in the median ages of dentists in the individual metropolitan areas and in the nonmetropolitan county groups. Of the two metropolitan areas, Billings has the oldest group of dentists, with a median age of 44.4. The median age of dentists in the Great Falls area is 42.8 years, the same as the median for dentists in the group of nonmetropolitan counties with central cities of 10,000 or more population.

Dentists in the group of nonmetropolitan counties with central city populations between 2,500 and 9,999 have a median age of 41.2 years, about 2 years under the State average. In the counties with fewer than 2,500 persons in their central cities, however, dentists are considerably older as a group, with a median age of 47.5 years. While more than one-fourth are under the age of 35, a substantial proportion, 41 percent, are at least 55 years of age.
ACTIVE DENTISTS IN RELATION TO POPULATION

Of the 309 responding dentists in Montana, 96 percent (296) are active in their profession, giving Montana one professionally active dentist for every 2,426 persons. The two metropolitan areas, Billings and Great Falls, have similar ratios, averaging 2,047 persons per dentist. The seven nonmetropolitan counties with 10,000 or more inhabitants in their central cities average one dentist for every 1,958 persons, a ratio slightly better than that of the metropolitan areas, and considerably more favorable than the State average. Among these counties, three have persons-per-dentist ratios under 1,900—Missoula (1,467), Flathead (1,700), and Silver Bow (1,868).

### Number of Persons per Active Dentist in Montana

<table>
<thead>
<tr>
<th>County group*</th>
<th>Professionally active dentists</th>
<th>Population</th>
<th>Persons per dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td>All counties</td>
<td>296</td>
<td>718,100</td>
<td>2,426</td>
</tr>
<tr>
<td>Metropolitan areas</td>
<td>83</td>
<td>169,900</td>
<td>2,047</td>
</tr>
<tr>
<td>Billings area</td>
<td>42</td>
<td>86,100</td>
<td>2,050</td>
</tr>
<tr>
<td>Great Falls area</td>
<td>41</td>
<td>83,800</td>
<td>2,044</td>
</tr>
<tr>
<td>Nonmetropolitan counties</td>
<td>213</td>
<td>548,200</td>
<td>2,574</td>
</tr>
<tr>
<td>Central city 10,000-49,999</td>
<td>116</td>
<td>227,100</td>
<td>1,958</td>
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<td>Central city 2,500-9,999</td>
<td>56</td>
<td>175,600</td>
<td>3,136</td>
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<tr>
<td>Central city under 2,500</td>
<td>41</td>
<td>145,500</td>
<td>3,549</td>
</tr>
</tbody>
</table>

* See Appendix Table for individual county data.

Persons-per-dentist ratios are much less favorable in the two groups of counties with less than 10,000 persons in their central cities. The 15 counties with central city populations between 2,500 and 9,999 have an average of 3,136 persons per dentist, while the 32 counties with central cities of fewer than 2,500 inhabitants have an even less favorable ratio of 3,549 persons for every active dentist. Among these 47 counties, 13 have ratios exceeding 3,500 persons per dentist, including 8 counties with ratios in excess of 4,000. Another 12 counties have no active dentists, according to available information.
More than four-fifths of the dental practitioners in Montana (i.e., dentists who spend any time working at the chair) reported that they employ auxiliary personnel, including 76 percent who employ at least one auxiliary on a full-time basis. The most frequently employed auxiliary is the dental assistant. Three-fourths of the practitioners reported the use of an assistant, including 69 percent who utilize at least one full time. Approximately one-fourth of the dentists employ secretaries or receptionists, usually on a full-time basis. Dental hygienists and laboratory technicians are employed by fewer dentists, usually only part time.

Montana Dentists Employing Auxiliaries, by Type of Auxiliary

<table>
<thead>
<tr>
<th>Type of auxiliary employed</th>
<th>Percent of dental practitioners</th>
<th>With one full-time employee (or more)</th>
<th>With only part-time employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>2921/</td>
<td>100</td>
<td>76</td>
</tr>
<tr>
<td>With one or more auxiliaries</td>
<td>238</td>
<td>84</td>
<td>76</td>
</tr>
<tr>
<td>Assistant</td>
<td>217</td>
<td>76</td>
<td>69</td>
</tr>
<tr>
<td>Hygienist</td>
<td>36</td>
<td>12</td>
<td>2</td>
</tr>
<tr>
<td>Laboratory technician</td>
<td>9</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Secretary or receptionist</td>
<td>74</td>
<td>26</td>
<td>17</td>
</tr>
<tr>
<td>Other type of personnel</td>
<td>5</td>
<td>2</td>
<td>*</td>
</tr>
</tbody>
</table>

1/ Includes 8 dentists who did not report on auxiliary utilization.

* Less than one-half of one percent.

The use of auxiliaries varies with the age of the dentist and is less common among the older dentists. Ninety-one percent of the dental practitioners under the age of 55 reported employment of some type of auxiliary. The proportion utilizing auxiliaries decreases to 66 percent among dentists 55 to 65 years of age and to 46 percent among dentists 64 and over.

Some 17 percent of the dental practitioners in Montana reported one or more vacant positions for auxiliary personnel. Of these dentists, 35 percent indicated vacancies for full-time hygienists and 27 percent for full-time dental assistants.
OTHER SURVEY FINDINGS

Almost all (99 percent) of the professionally active dentists in Montana are engaged in private practice. Dentists reporting on time spent in providing patient care devoted an average of 40.3 hours per week to this activity for 48.1 weeks during the year preceding the survey. About one dentist in nine worked the equivalent of six days a week, 48 hours or more, for at least 48 weeks.

Approximately 10 percent of the dental practitioners reported that they limit their practice to a dental specialty, primarily orthodontics, with oral surgery and pedodontics the next most common specialties. Twenty percent of the dentists in metropolitan areas limit their practices, as compared to only six percent in nonmetropolitan counties.

Over two-fifths (43 percent) of the 161 civilian dentists licensed in Montana but located in another state are in one of the Pacific Coast states of Washington, Oregon, or California. Another 17 percent are located in adjacent states, primarily Idaho and Wyoming, and the remainder are scattered in 19 other states across the Nation.

About one out of five out-of-state dentists reported that they had been professionally active in Montana immediately prior to assuming their present location in another state. One-half of the out-migrant dentists are now located in Washington, Oregon, or California.

June 1968.
## APPENDIX TABLE

Selected Data on Dentists in Montana, by Location

<table>
<thead>
<tr>
<th>County group and county</th>
<th>Civilian dentists</th>
<th>Age in 1965</th>
<th>Professionally active</th>
<th>Population 1/</th>
<th>Persons per active dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Under 35</td>
<td>55 years or more</td>
<td>(in 000's)</td>
<td></td>
</tr>
<tr>
<td>All counties</td>
<td>309</td>
<td>76</td>
<td>82</td>
<td>296</td>
<td>718.1</td>
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<tr>
<td>Metropolitan areas 2/</td>
<td>86</td>
<td>17</td>
<td>18</td>
<td>83</td>
<td>169.9</td>
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<tr>
<td>Billings area</td>
<td>44</td>
<td>7</td>
<td>9</td>
<td>42</td>
<td>86.1</td>
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<tr>
<td>Yellowstone</td>
<td>44</td>
<td>7</td>
<td>9</td>
<td>42</td>
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<td>Great Falls area</td>
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<td>10</td>
<td>9</td>
<td>41</td>
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<td>Cascade</td>
<td>42</td>
<td>10</td>
<td>9</td>
<td>41</td>
<td>83.8</td>
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<tr>
<td>Nonmetropolitan counties 3/</td>
<td>223</td>
<td>59</td>
<td>64</td>
<td>213</td>
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<td>Central city 25,000-49,999</td>
<td>58</td>
<td>18</td>
<td>14</td>
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<td>10</td>
<td>5</td>
<td>33</td>
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<td>9</td>
<td>25</td>
<td>46.7</td>
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<td>-</td>
<td>-</td>
<td>2</td>
<td>19.3</td>
</tr>
<tr>
<td>Flathead</td>
<td>22</td>
<td>5</td>
<td>8</td>
<td>20</td>
<td>34.0</td>
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<td>13</td>
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<td>1</td>
<td>13</td>
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<td>2</td>
<td>4</td>
<td>8</td>
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<tr>
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<td>2</td>
<td>4</td>
<td>15</td>
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<tr>
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<td>5</td>
<td>8</td>
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<td>Custer</td>
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<td>2</td>
<td>5</td>
<td>14.0</td>
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<td>Dawson</td>
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<td>1</td>
<td>1</td>
<td>5</td>
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<td>Park</td>
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<td>-</td>
<td>3</td>
<td>5</td>
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<td>1</td>
<td>-</td>
<td>5</td>
<td>22.5</td>
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APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Montana, by Location

<table>
<thead>
<tr>
<th>County group and county</th>
<th>Civilian dentists</th>
<th>Age in 1965</th>
<th>Professionally active</th>
<th>Population 1/ (in 000's)</th>
<th>Persons per active dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Under 35</td>
<td>55 years or more</td>
<td></td>
<td></td>
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<tr>
<td>Nonmetropolitan counties</td>
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<td></td>
<td></td>
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<td>2</td>
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<td>1</td>
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<tr>
<td>Liberty</td>
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<td>McConr</td>
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<td>-</td>
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</table>
## APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Montana, by Location

<table>
<thead>
<tr>
<th>County group and county</th>
<th>Civilian dentists</th>
<th>Professionally active</th>
<th>Population (in 000's)</th>
<th>Persons per active dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Age in 1965</td>
<td>35 or more</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
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<td></td>
</tr>
<tr>
<td>Nonmetropolitan counties</td>
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<td></td>
</tr>
<tr>
<td>Central city under 2,500 (cont'd.)</td>
<td></td>
<td></td>
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<td></td>
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<td>Madison</td>
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<td>-</td>
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<td>-</td>
<td>-</td>
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<td>Prairie</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>2.3</td>
</tr>
<tr>
<td>Ravalli</td>
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<td>1</td>
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<td>7.4</td>
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<td>-</td>
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<td>2.8</td>
</tr>
<tr>
<td>Wibaux</td>
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<td>-</td>
<td>1</td>
<td>1.7</td>
</tr>
</tbody>
</table>

---


2/ Montana counties included in the latest 1967 definition of Standard Metropolitan Statistical Areas, as established by the U.S. Bureau of the Budget, Office of Statistical Standards, have been grouped as metropolitan areas for presentation of the survey data.

3/ Counties not included within an SMSA, as defined by the U.S. Bureau of the Budget, have been grouped according to the 1960 population of the largest (central) city within each county.
DENTISTS LICENSED IN NEBRASKA

During the 1967 registration period, 1,482 dentists registered with the Nebraska Board of Dental Examiners. A total of 1,350 dentists responded to the survey, 91 percent of all those registered. Sixty-four percent of the respondents are civilian dentists located in Nebraska, 32 percent are civilian dentists located in other States, and 4 percent are on active duty with the Armed Forces.

<table>
<thead>
<tr>
<th>Location and military status</th>
<th>All dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total licensed</td>
<td>1,482</td>
<td>100</td>
</tr>
<tr>
<td>Respondents</td>
<td>1,350</td>
<td>91</td>
</tr>
<tr>
<td>Nonrespondents</td>
<td>132</td>
<td>9</td>
</tr>
<tr>
<td>Respondents</td>
<td>1,350</td>
<td>100</td>
</tr>
<tr>
<td>Civilians in Nebraska</td>
<td>861</td>
<td>64</td>
</tr>
<tr>
<td>Civilians in another State</td>
<td>436</td>
<td>32</td>
</tr>
<tr>
<td>On active duty with Armed Forces</td>
<td>53</td>
<td>4</td>
</tr>
</tbody>
</table>

More than one-half (55 percent) of the survey respondents are licensed to practice dentistry in one or more other States. Approximately three of every ten dentists located in Nebraska hold more than one license, with 26 percent licensed in one other State and 5 percent licensed in two or more other States. Multiple licensure is considerably more common among dentists registered in Nebraska but located out-of-State, with about 30 percent having two or more licenses in addition to their Nebraska license.

Fifty-five percent of the out-of-State licenses are held in adjacent States, including 25 percent in Colorado, 15 percent in Iowa, and 15 percent in South Dakota, Wyoming, Kansas, and Missouri. The remainder are held in 32 other States throughout the Nation, with the largest proportion (12 percent) in California.
PROFESSIONAL TRAINING

More than nine-tenths of the 861 responding dentists in Nebraska are graduates of the two dental schools located in the State. The College of Dentistry at the University of Nebraska, the largest contributor, has graduated approximately one-half (52 percent) of the State's dental force. The Creighton University School of Dental Science has trained approximately two-fifths (42 percent) of the total dentist supply. The remaining 6 percent obtained their dental degrees from 14 out-of-State schools. Of these, the University of Missouri is the only school to have contributed as much as 2 percent of the State's dental force.

Dental School Attended and Year of Graduation for Dentists in Nebraska

<table>
<thead>
<tr>
<th>Dental school attended</th>
<th>Number of dentists</th>
<th>Year of graduation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>All years</td>
</tr>
<tr>
<td>Total number</td>
<td>861-1/</td>
<td>-</td>
</tr>
<tr>
<td>(Percent distribution by school)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Schools in Nebraska</td>
<td>807</td>
<td>4</td>
</tr>
<tr>
<td>University of Nebraska</td>
<td>445</td>
<td>52</td>
</tr>
<tr>
<td>The Creighton University</td>
<td>362</td>
<td>42</td>
</tr>
<tr>
<td>14 schools in other States</td>
<td>52</td>
<td>6</td>
</tr>
</tbody>
</table>

1/ Dental school attended not available for 2 dentists and year of graduation for 5 dentists. Percents based on known totals.

Relatively few of Nebraska's dentists are recent dental school graduates. Less than one-fourth (23 percent) of all dentists in the State have graduated since 1955, while almost one-half (49 percent) received their dental degrees prior to World War II. The overall proportion of the State's dentists graduating from the two in-State schools has remained relatively constant through the years; however, there has been a slight increase in the proportion graduating from the University of Nebraska, while the proportionate contribution of Creighton University has decreased somewhat.

Fourteen percent (119) of the survey respondents reported the completion of one or more years of advanced training after receiving their dental degree. Of 60 dentists reporting advanced clinical training, 50 had completed internships, and 10 had completed residencies. Seventy-one dentists reported advanced academic training, including 50 dentists who had received a master's or other advanced degree, and 21 who had received no additional degrees but had completed at least a year of postgraduate study. Twelve dentists had completed both academic and clinical training.
DISTRIBUTION OF DENTISTS

Approximately 47 percent of the responding dentists in Nebraska are located in the metropolitan areas. The Nebraska portion of the interstate Omaha area (Douglas and Sarpy Counties) has the largest number of dentists, 263, or 31 percent of the State supply. About nine-tenths of these dentists are concentrated in Douglas County, where Omaha is located. The second largest dental force, 16 percent of the State supply, is found in the Lincoln metropolitan area (Lancaster County).

Distribution of Nebraska Dentists, by County Group

<table>
<thead>
<tr>
<th>County group*</th>
<th>Number of counties</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>All counties</td>
<td>93</td>
<td>861</td>
<td>100</td>
</tr>
<tr>
<td>Metropolitan areas</td>
<td>4</td>
<td>404</td>
<td>47</td>
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<tr>
<td>Omaha area (Nebr. part)</td>
<td>2</td>
<td>263</td>
<td>31</td>
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<tr>
<td>Lincoln area</td>
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<td>138</td>
<td>16</td>
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<tr>
<td>Sioux City area (Nebr. part)</td>
<td>1</td>
<td>3</td>
<td>**</td>
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<tr>
<td>Nonmetropolitan counties</td>
<td>89</td>
<td>457</td>
<td>53</td>
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<tr>
<td>Central city 10,000-49,999</td>
<td>9</td>
<td>166</td>
<td>19</td>
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<tr>
<td>Central city 2,500-9,999</td>
<td>25</td>
<td>166</td>
<td>19</td>
</tr>
<tr>
<td>Central city under 2,500</td>
<td>55</td>
<td>125</td>
<td>15</td>
</tr>
</tbody>
</table>

* See Appendix Table for definition of interstate and other metropolitan areas and presentation of individual county data.

** Less than one-half of 1 percent.

More than one-half (457) of the State's dentists are located in the 89 nonmetropolitan counties. The nine counties with central city populations of 10,000 or more have 166 dentists, about one-fifth of the State's total dental force, while the 25 counties having central city populations between 2,500 and 9,999 have another fifth. The remaining 15 percent (125 dentists) are scattered among the 55 counties having fewer than 2,500 persons in their central cities. Of the 89 nonmetropolitan counties, only 13 have as many as 10 dentists, while 55 counties have under five, including 11 counties which have no dentists, according to available information.
The median age of dentists in Nebraska is 50.1 years. About 29 percent of the dentists are under 40 years of age, and an almost equal proportion are between 40 and 54. On the other hand, a substantial portion, more than two-fifths, are 55 or over. Almost one-fourth (208) are at least 65 years of age, including 120 who have reached the age of 70.

<table>
<thead>
<tr>
<th>Age in 1965</th>
<th>Number of Dentists</th>
<th>Percent of Dentists</th>
<th>Cumulative Percent</th>
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</thead>
<tbody>
<tr>
<td>Total</td>
<td>861</td>
<td>100</td>
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<tr>
<td>Under 30</td>
<td>61</td>
<td>7</td>
<td>7</td>
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<td>30 - 34</td>
<td>100</td>
<td>12</td>
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<tr>
<td>35 - 39</td>
<td>84</td>
<td>10</td>
<td>29</td>
</tr>
<tr>
<td>40 - 44</td>
<td>117</td>
<td>13</td>
<td>42</td>
</tr>
<tr>
<td>45 - 49</td>
<td>67</td>
<td>8</td>
<td>50</td>
</tr>
<tr>
<td>50 - 54</td>
<td>57</td>
<td>7</td>
<td>57</td>
</tr>
<tr>
<td>55 - 59</td>
<td>77</td>
<td>9</td>
<td>66</td>
</tr>
<tr>
<td>60 - 64</td>
<td>90</td>
<td>10</td>
<td>76</td>
</tr>
<tr>
<td>65 - 69</td>
<td>88</td>
<td>10</td>
<td>86</td>
</tr>
<tr>
<td>70 - 74</td>
<td>75</td>
<td>9</td>
<td>95</td>
</tr>
<tr>
<td>75 &amp; over</td>
<td>45</td>
<td>5</td>
<td>100</td>
</tr>
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</table>

* Age computed to 1965 to enable comparison among all States surveyed.

Dentists in the metropolitan areas, with a median age of 45.1 years, are more than 10 years younger, on the average, than are dentists in the nonmetropolitan counties, where the median age is 55.5 years. Slightly more than one-third of the dentists in metropolitan areas are under 40 years of age, while an almost equal proportion are 55 or over. In contrast, only one-fourth of the dentists in nonmetropolitan counties are under 40 years of age, while fully one-half are 55 or over.

The median ages of dentists in the Nebraska portion of the interstate Omaha metropolitan area and in the Lincoln area are somewhat similar, 44.6 and 46.1 years, respectively. Median ages in nonmetropolitan counties tend to increase as the size of the central city decreases. The median age of dentists in the counties with central cities of at least 10,000 population is 53.5 years, compared to a median age of 60.2 years in counties with fewer than 2,500 persons in their central cities.
ACTIVE DENTISTS IN RELATION TO POPULATION

More than nine in every ten, 95 percent, of the 861 dentists in Nebraska are active in their profession, giving the State one professionally active dentist for every 1,785 persons. Metropolitan areas have one dentist for every 1,565 persons, while nonmetropolitan counties have a somewhat higher ratio of 1,983.

The best ratio among the metropolitan areas is found in Lincoln, which has one dentist for every 1,298 persons. The Nebraska portion of the Omaha area has a somewhat higher ratio of 1,673. Dakota County, which constitutes the Nebraska part of the interstate Sioux City area, has a rather high ratio of 4,333 persons per dentist.

<table>
<thead>
<tr>
<th>County group*</th>
<th>Professionally active dentists</th>
<th>Population</th>
<th>Persons per dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td>All counties</td>
<td>820</td>
<td>1,464,000</td>
<td>1,785</td>
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<td>Metropolitan areas</td>
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<td>605,500</td>
<td>1,565</td>
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<td>Omaha area (Nebr. part)</td>
<td>251</td>
<td>419,900</td>
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<td>Lincoln area</td>
<td>133</td>
<td>172,600</td>
<td>1,298</td>
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<td>Sioux City area (Nebr. part)</td>
<td>3</td>
<td>13,000</td>
<td>4,333</td>
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<td>Nonmetropolitan counties</td>
<td>433</td>
<td>858,500</td>
<td>1,983</td>
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<td>Central city 10,000-49,999</td>
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<td>271,800</td>
<td>1,709</td>
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<td>Central city 2,500-9,999</td>
<td>156</td>
<td>304,000</td>
<td>1,949</td>
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<tr>
<td>Central city under 2,500</td>
<td>118</td>
<td>282,700</td>
<td>2,396</td>
</tr>
</tbody>
</table>

* See Appendix Table for individual county data.

Twenty-seven of the 89 nonmetropolitan counties in the State have persons-per-dentist ratios below the average for the State, including 13 counties with ratios under 1,500. On the other hand, 28 counties have ratios exceeding 2,500 persons per dentist, including 9 with 4,000 or more persons per dentist. When counties are grouped according to the population of central city, the persons-per-dentist ratios generally increase as the size of the central city decreases. Counties with central city populations of 10,000 or more have an average ratio of 1,709 persons per dentist, while counties with fewer than 2,500 inhabitants in their central cities have 2,396 persons per dentist.
UTILIZATION OF AUXILIARIES

Four-fifths of Nebraska's responding dental practitioners (i.e., dentists who spend any time working at the chair) employ some type of auxiliary personnel. Dental assistants, the most frequently employed auxiliary, are utilized by 73 percent of the dentists, including 65 percent who employ at least one assistant on a full-time basis. About 27 percent of the practitioners employ secretaries or receptionists, with more than three-fifths of these dentists utilizing such personnel full time. Dental hygienists and laboratory technicians are employed by 9 percent and 6 percent of the dentists, respectively. These auxiliaries are most often employed only part time.

<table>
<thead>
<tr>
<th>Type of auxiliary employed</th>
<th>Percent of dental practitioners</th>
<th>Percent with one full-time employee</th>
<th>Percent with only part-time employees</th>
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</thead>
<tbody>
<tr>
<td>Total</td>
<td>809</td>
<td>100</td>
<td>72</td>
</tr>
<tr>
<td>One or more auxiliaries</td>
<td>615</td>
<td>80</td>
<td>72</td>
</tr>
<tr>
<td>Assistant</td>
<td>566</td>
<td>73</td>
<td>65</td>
</tr>
<tr>
<td>Hygienist</td>
<td>67</td>
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<td>4</td>
</tr>
<tr>
<td>Laboratory technician</td>
<td>50</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>Secretary or receptionist</td>
<td>208</td>
<td>27</td>
<td>17</td>
</tr>
<tr>
<td>Other type of personnel</td>
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<td>2</td>
<td>1</td>
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<tr>
<td>No auxiliary</td>
<td>156</td>
<td>20</td>
<td>-</td>
</tr>
</tbody>
</table>

1/ Includes 38 dentists who did not report on auxiliary utilization.

Utilization of auxiliaries varies with the age of the dentist and is more common among the younger dentists. Approximately 95 percent of the practitioners between the ages of 30 and 44 employ auxiliaries. This proportion decreases to 80 percent for dentists 45 to 64 years of age and to only 50 percent for those 65 and over.

One of every seven dental practitioners reported a vacant position for auxiliary personnel. About one-third of these dentists indicated vacancies for full-time dental assistants, and one-third had vacancies for full-time dental hygienists.
OTHER SURVEY FINDINGS

1 Ninety-three percent of the dental practitioners in Nebraska are primarily engaged in private practice, with 92 percent self-employed and 1 percent employed by other dentists. Four percent are on the staffs of dental schools, 2 percent are employed by governmental agencies, and the remaining 1 percent are engaged in some other dental activity, such as taking advanced training.

2 About 12 percent of the dentists reported at least one secondary dental activity in addition to their principal employment. Part-time teaching at a dental school was reported by 6 percent of the dentists. Various other activities were reported, including employment by local government and assistance to voluntary agencies.

3 Dentists providing patient care during the year prior to the survey devoted an average of 39.6 hours a week to their practice for 47.1 weeks. About one dentist in six worked an equivalent of six days a week, 48 hours or more, for 48 weeks during the year.

4 Twelve percent of the responding dental practitioners said that they limit their practice to a dental specialty, commonly to orthodontics, oral surgery, or pedodontics. Twenty percent of the dentists in metropolitan areas limit their practice, compared to only 6 percent of those in nonmetropolitan counties.

5 Almost one-half (47 percent) of the dentists licensed in Nebraska but located in another State were in the six neighboring states, with the largest proportion, 23 percent, in Kansas. The remainder of the out-of-State dentists were located in 30 more distant States, primarily in California, with 18 percent.

March 1964.
### APPENDIX TABLE

Selected Data on Dentists in Nebraska, By Location

<table>
<thead>
<tr>
<th>County group and county</th>
<th>Civilian dentists</th>
<th>Professionally active</th>
<th>Population 1/</th>
<th>Persons per active dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Age in 1965</td>
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<tr>
<td></td>
<td></td>
<td>Under 40 years</td>
<td>55 years or more</td>
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<td>All counties</td>
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<td>245</td>
<td>375</td>
<td>820</td>
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<td>Metropolitan areas 2/</td>
<td>404</td>
<td>135</td>
<td>142</td>
<td>387</td>
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<td>Omaha area (Nebr. part)</td>
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<tr>
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<td>92</td>
<td>232</td>
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<td>Lincoln area</td>
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<td>47</td>
<td>47</td>
<td>133</td>
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<td>Nonmetropolitan counties 3/</td>
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<td>Scotts Bluff</td>
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## APPENDIX TABLE (cont'd.)

### Selected Data on Dentists in Nebraska, By Location

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<tr>
<th>County group and county</th>
<th>Civilian dentists</th>
<th>Population in 000's</th>
<th>Persons per active dentist</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Under 40</td>
<td>55 years or more</td>
</tr>
<tr>
<td>Nonmetropolitan counties</td>
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<td>Box Butte</td>
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APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Nebraska, By Location

<table>
<thead>
<tr>
<th>County group and county</th>
<th>Civilian dentist</th>
<th></th>
<th>Population 1/ per active dentist</th>
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<td>Total</td>
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<td>Nonmetropolitan counties 27 (cont'd.)</td>
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<tr>
<td>County group and county</td>
<td>Civilian dentists</td>
<td>Age in 1965</td>
<td>Professionally active</td>
</tr>
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<td>-------------------------</td>
<td>------------------</td>
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<td>-----------------------</td>
</tr>
<tr>
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<td>Total</td>
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<td>55 years or more</td>
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<td>Nonmetropolitan counties</td>
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<td>Central city under 2,500</td>
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<td>Hayes</td>
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</tr>
<tr>
<td>Hitchcock</td>
<td>1</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Hooker</td>
<td>1</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Howard</td>
<td>2</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>Johnson</td>
<td>4</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>Kearney</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Keya Paha</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Knox</td>
<td>7</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Logan</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Loup</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>McPherson</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Merrick</td>
<td>4</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Morrill</td>
<td>2</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Nance</td>
<td>2</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Pawnee</td>
<td>1</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Perkins</td>
<td>1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Pierce</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Polk</td>
<td>7</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Rock</td>
<td>1</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>Seward</td>
<td>8</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Sheridan</td>
<td>3</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>
### APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Nebraska, By Location

<table>
<thead>
<tr>
<th>County group and county</th>
<th>Civilian dentists</th>
<th>Population (in 000's)</th>
<th>Persons per active dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Age in 1965</td>
<td>Total</td>
<td>Under 55 years</td>
</tr>
<tr>
<td></td>
<td>Under 40 or more</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nonmetropolitan counties</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Central city under 2,500 (cont'd.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sherman</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Sioux</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Stanton</td>
<td>1</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>Thayer</td>
<td>2</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Thomas</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Thurston</td>
<td>2</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Valley</td>
<td>4</td>
<td>-</td>
<td>3</td>
</tr>
<tr>
<td>Webster</td>
<td>3</td>
<td>-</td>
<td>3</td>
</tr>
<tr>
<td>Wheeler</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>


2/ Nebraska counties included in the latest 1968 definition of Standard Metropolitan Statistical Areas, as established by the U.S. Bureau of the Budget, Office of Statistical Standards, have been grouped as metropolitan areas for presentation of the survey data. For interstate SMSA's--Omaha and Sioux City--statistics are presented only for dentists located in the Nebraska portions.

3/ Counties not included within an SMSA, as defined by the U.S. Bureau of the Budget, have been grouped according to the 1960 population of the largest (central) city within each county.
DENTISTS LICENSED IN NEVADA

During the 1965 registration period, 242 dentists registered with the Nevada Board of Dental Examiners (Table 1). The survey questionnaire was completed by 192 dentists, or 79 percent of all those registering. For dentists not responding to the survey, certain items of information, such as state and county location, dental school attended, and age, were obtained either from records maintained by the Nevada Board of Dental Examiners or from the 1966 American Dental Directory published by the American Dental Association. This report includes information for both respondents and nonrespondents unless otherwise indicated. (See Appendix Table A.)

Table 1.--Location and Military Status of Dentists Licensed in Nevada

<table>
<thead>
<tr>
<th>Location and military status</th>
<th>All dentists</th>
<th>Percent of dentist:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total licensed</td>
<td>242</td>
<td>100</td>
</tr>
<tr>
<td>Respondents</td>
<td>192</td>
<td>79</td>
</tr>
<tr>
<td>Nonrespondents</td>
<td>50</td>
<td>21</td>
</tr>
<tr>
<td>Total licensed</td>
<td>242</td>
<td>100</td>
</tr>
<tr>
<td>Civilians in Nevada</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respondents</td>
<td>177</td>
<td>73</td>
</tr>
<tr>
<td>Nonrespondents</td>
<td>37</td>
<td>-</td>
</tr>
<tr>
<td>Civilians in another state</td>
<td>57</td>
<td>24</td>
</tr>
<tr>
<td>On active duty with armed forces</td>
<td>8</td>
<td>3</td>
</tr>
</tbody>
</table>

Only 73 percent of the 242 dentists licensed in Nevada are civilians actually located in the State. Almost one-fourth of the registered dentists are civilians located in other states, and three percent are on active duty in the armed forces. About two-fifths of the 57 out-of-state civilian dentists reside in California, another one-fifth are located in Utah, and the remainder are scattered among 14 other states.
**Civilian Dentists in Nevada**

**Sources of Supply**

**Dental schools.** More than one-half (54 percent) of Nevada’s 177 dentists are graduates of 14 schools located in the North Central States (Table 2). Major contributors among these schools are Northwestern, Marquette, Washington, and Loyola Universities, having together trained one of every four dentists in the State. Other schools in this part of the Country to contribute as many as six of Nevada’s dentists are St. Louis University and the Universities of Missouri (Kansas City), Nebraska, and Minnesota.

**Table 2.** School Awarding Dental Degree, by Year Awarded

<table>
<thead>
<tr>
<th>Dental school attended</th>
<th>Number of dentists</th>
<th>Year of graduation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total number</td>
<td>177</td>
</tr>
<tr>
<td></td>
<td>1/</td>
<td>83</td>
</tr>
<tr>
<td></td>
<td>1955 or earlier</td>
<td>93</td>
</tr>
<tr>
<td></td>
<td>All years</td>
<td>177</td>
</tr>
<tr>
<td>North Central</td>
<td>95</td>
<td>54</td>
</tr>
<tr>
<td>Northwestern</td>
<td>18</td>
<td>10</td>
</tr>
<tr>
<td>Marquette</td>
<td>12</td>
<td>7</td>
</tr>
<tr>
<td>Washington (St. Louis)</td>
<td>10</td>
<td>6</td>
</tr>
<tr>
<td>Loyola (Chicago)</td>
<td>10</td>
<td>6</td>
</tr>
<tr>
<td>10 other schools</td>
<td>45</td>
<td>25</td>
</tr>
<tr>
<td>West</td>
<td>59</td>
<td>33</td>
</tr>
<tr>
<td>Southern California</td>
<td>18</td>
<td>10</td>
</tr>
<tr>
<td>Oregon</td>
<td>15</td>
<td>9</td>
</tr>
<tr>
<td>Pacific (Physicians &amp; Surgeons)</td>
<td>11</td>
<td>6</td>
</tr>
<tr>
<td>California (San Francisco)</td>
<td>11</td>
<td>6</td>
</tr>
<tr>
<td>2 other schools</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>South and Northeast</td>
<td>23</td>
<td>13</td>
</tr>
<tr>
<td>(17 schools)</td>
<td></td>
<td>13</td>
</tr>
</tbody>
</table>

(Percent distribution by school)

1/ Includes one dentist for whom year of graduation is not available.

Another one-third of the State’s dentists graduated from six schools located in Western States. Schools in California have contributed a large proportion of these dentists, led by the University of Southern California, which has supplied 10 percent of the dentist supply. Two other California schools, the University of the Pacific (Physicians and Surgeons) and the University of California (San Francisco), have each contributed about 6 percent of Nevada’s dental force. Among schools in other Western States, the University of Oregon is the major
contributor, having trained 9 percent of the State's dentists. Seventeen schools located in the South and Northeast regions of the Nation have provided the remaining 13 percent of the dentists in Nevada.

Over the years there has been a notable change in the source of Nevada's dentists. Traditionally, schools in the North Central States and the West have contributed about equally to the dental force. Since 1955, however, schools in the West have shown a rather marked decrease in the proportion they have contributed and schools in the North Central States have shown an increase to the point where North Central schools have contributed well over twice as many dentists as have schools in the West during this period.

Dentists relocating in Nevada.--One-fourth of the dentists responding to the survey reported practicing as a civilian in another state immediately prior to assuming their present location in Nevada. The adjacent states of California, Utah and Idaho have together contributed 15 dentists, or about two-fifths of the 35 in-migrants. The remaining 20 dentists have come from 12 more distant states. Dentists coming to Nevada from other states have, on the whole, located in Nevada rather recently. Nearly three-quarters of the in-migrant dentists have come to Nevada since 1950 and about two-fifths moved to the State during the 1960's.

Personal Characteristics

Age.--The dentists in Nevada represent a relatively young group with a median age of 39.4 years (Table 3). Almost one-third of the dentists are under 35 years of age, and another 37 percent are between the ages of 35 and 44. In contrast, only 11 percent are 60 years old or over.

Table 3.--Age Distribution

<table>
<thead>
<tr>
<th>Age</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
<th>Cumulative percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>177 1/</td>
<td>100</td>
<td>-</td>
</tr>
<tr>
<td>Under 30</td>
<td>13</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>30 - 34</td>
<td>44</td>
<td>25</td>
<td>32</td>
</tr>
<tr>
<td>35 - 39</td>
<td>35</td>
<td>20</td>
<td>52</td>
</tr>
<tr>
<td>40 - 44</td>
<td>30</td>
<td>17</td>
<td>69</td>
</tr>
<tr>
<td>45 - 49</td>
<td>17</td>
<td>10</td>
<td>79</td>
</tr>
<tr>
<td>50 - 54</td>
<td>12</td>
<td>7</td>
<td>86</td>
</tr>
<tr>
<td>55 - 59</td>
<td>5</td>
<td>3</td>
<td>89</td>
</tr>
<tr>
<td>60 - 64</td>
<td>11</td>
<td>6</td>
<td>95</td>
</tr>
<tr>
<td>65 &amp; over</td>
<td>9</td>
<td>5</td>
<td>100</td>
</tr>
</tbody>
</table>

1/ Includes one dentist for whom age is not available.
Advanced training.--Almost one-fifth of the 140 responding dentists have completed one year or more of advanced training. The percentage of dentists in Nevada who completed clinical training about equals the percentage who completed graduate or postgraduate academic work. Eight percent have had advanced clinical training as an intern or resident and 7 percent have earned a master's degree or completed at least one year of postgraduate study. Another 4 percent reported completion of both clinical and academic training.

Multiple licensure.--Eighty percent of the responding dentists located in Nevada hold more than one license to practice dentistry, including 53 percent who are licensed in one state in addition to Nevada, 21 percent in two other states, and 6 percent in three or more other states. Approximately one-half of the dentists holding out-of-state licenses are licensed to practice in California, 17 percent in Utah and 11 percent in Oregon. Nevada dentists are also licensed to practice in 22 additional states.

Distribution and Current Status

Distribution of dentists.--A large proportion of Nevada's dentists, about 85 percent, are located in Clark and Washoe Counties, the two counties that comprise the metropolitan areas of Las Vegas and Reno, respectively (Table 4). The Las Vegas area, with 46 percent of Nevada's dentists, has a slightly larger proportion than does the

Table 4.--Distribution by County Group

<table>
<thead>
<tr>
<th>County group</th>
<th>Number of counties</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>All counties</td>
<td>17</td>
<td>177</td>
<td>100</td>
</tr>
<tr>
<td>All metropolitan areas(^1/)</td>
<td>2</td>
<td>151</td>
<td>85</td>
</tr>
<tr>
<td>Las Vegas area</td>
<td>1</td>
<td>81</td>
<td>46</td>
</tr>
<tr>
<td>Reno area</td>
<td>1</td>
<td>70</td>
<td>39</td>
</tr>
<tr>
<td>Nonmetropolitan county groups(^2/)</td>
<td>15</td>
<td>26</td>
<td>15</td>
</tr>
<tr>
<td>Central city 5,000-9,999</td>
<td>2</td>
<td>12</td>
<td>7</td>
</tr>
<tr>
<td>Central city 2,500-4,999</td>
<td>4</td>
<td>9</td>
<td>5</td>
</tr>
<tr>
<td>Central city under 2,500</td>
<td>9</td>
<td>5</td>
<td>3</td>
</tr>
</tbody>
</table>

\(^1/\) Standard Metropolitan Statistical Areas as established by the U.S. Bureau of the Budget, Office of Statistical Standards.

\(^2/\) Counties not included within a SMSA, grouped according to the 1960 population of the largest (central) city within each county.
Reno area with 39 percent. The remaining 15 percent of the State's dentists are located in the 15 nonmetropolitan counties of the State.

Of the 26 dentists located in nonmetropolitan counties, 12 are located in the two counties with central cities of 5,000-9,999 population, 5 in Elko and 7 in Ormsby. Of the four counties with 2,500-4,999 persons in their central cities, Humboldt is the only county with as many as 3 dentists. The remaining three counties—Churchill, Mineral, and White Pine—have 2 dentists each. Only two of the nine counties with less than 2,500 persons in their central cities have dentists, Douglas County (3 dentists) and Lyon County (2 dentists). The remaining seven counties in this group—Esmeralda, Eureka, Lander, Lincoln, Nye, Pershing and Storey—have no civilian dentists according to available information.

There are differences in the age distribution of dentists between the two metropolitan areas, and between the metropolitan areas and the nonmetropolitan county groups. Dentists in the Reno metropolitan area, with a median age of about 41 years, are older as a group than their colleagues in the Las Vegas area, with a median age of 38. Almost four of every five dentists in the Las Vegas area are under 45 years of age, compared to three out of five in the Reno area.

The two metropolitan areas taken together have a younger group of dentists, on the average, than do the nonmetropolitan counties. Dentists in the metropolitan areas have a median age of 39, compared with a median age of 42 for the nonmetropolitan county groups combined. Furthermore, the proportion of dentists 55 years of age or older in the nonmetropolitan counties, one dentist in every four, is twice as great as the proportion of similar age in the metropolitan areas.

Active dentists in relation to population.—Based on available information, all but one of the 177 dentists in the State were professionally active at the time of the survey, resulting in a ratio of one active dentist for every 2,274 persons (Table 5). In metropolitan areas, the ratio is one dentist for every 2,127 persons compared to one for every 3,127 persons in nonmetropolitan counties. Furthermore, the ratios for the two metropolitan areas differ considerably. While the Las Vegas area has one dentist for every 2,635 persons, a ratio in excess of the State average, the Reno area has a more favorable ratio of 1,530 persons per dentist. Among the nonmetropolitan county groups there is a sharp increase in the persons-per-dentist ratio as the size of the central city decreases. The ratio is 1,942 in the two counties with a central city size of 5,000-9,999 persons while in the counties with fewer than 2,500 persons in their central cities, the ratio is 5,100.
Table 5.--Number of Persons per Active Dentist

<table>
<thead>
<tr>
<th>County group</th>
<th>Professionally active dentists</th>
<th>Population¹/</th>
<th>Persons per dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td>All counties</td>
<td>176</td>
<td>400,300</td>
<td>2,274</td>
</tr>
<tr>
<td>All metropolitan areas</td>
<td>150</td>
<td>319,000</td>
<td>2,127</td>
</tr>
<tr>
<td>Las Vegas area</td>
<td>81</td>
<td>213,400</td>
<td>2,635</td>
</tr>
<tr>
<td>Reno area</td>
<td>69</td>
<td>105,600</td>
<td>1,530</td>
</tr>
<tr>
<td>Nonmetropolitan county groups</td>
<td>26</td>
<td>81,300</td>
<td>3,127</td>
</tr>
<tr>
<td>Central city 5,000-9,999</td>
<td>12</td>
<td>23,300</td>
<td>1,942</td>
</tr>
<tr>
<td>Central city 2,500-4,999</td>
<td>9</td>
<td>32,500</td>
<td>3,611</td>
</tr>
<tr>
<td>Central city under 2,500</td>
<td>5</td>
<td>25,500</td>
<td>5,100</td>
</tr>
</tbody>
</table>

¹/ Copyright 1965, Sales Management Survey of Buying Power; further reproduction is forbidden.

Among the eight nonmetropolitan counties known to have dentists, Douglas and Ormsby Counties have the most favorable ratios, with one dentist for every 1,500 and 1,529 persons, respectively. Humboldt County, with 2,167 persons per dentist, is the only other nonmetropolitan county with a ratio more favorable than the State average. The ratio for Elko County, one dentist for every 2,570 persons, slightly exceeds the average for the State. The remaining four counties in which dentists are located have ratios in excess of 3,000 persons per dentist. These counties are Mineral (3,300), Lyon (3,700), Churchill (4,800), and White Pine (4,900).

Professional Activity

Current employment.--Almost all, 96 percent, of the responding dentists in Nevada are engaged primarily in private practice; 95 percent are self-employed and 1 percent are employed by another dentist. Most of the dentists who are not in private practice work for a state or local health agency.

A small proportion of the dentists, 6 percent, reported that they were employed in a part-time dental activity in addition to their primary professional employment. These dentists reported a variety of secondary dental activities, most frequently employment in a government agency.

Activity last year.--All but 5 of the dentists reporting their professional activity during the previous year indicated that they provided care to patients. Dentists reporting time spent in patient care
devoted an average of 47.1 weeks during the year to this activity and worked an average of 39.3 hours per week. About one dentist in every ten engaged in a professional activity other than patient care, usually taking advanced training.

Practice Characteristics

Limited practices.--Twenty-four dentists in Nevada, about one in six, reported that they limit their practice to a dental specialty. Seven of these dentists report specialization in orthodontics, five in pedodontics, four each in prosthodontics and periodontics, and two each in oral surgery and oral pathology. All but one of the dentists who reported limiting their practices are located in the State's two metropolitan areas. While one in every four dentists in the Reno area limits his practice, only one in every seven practitioners located in the Las Vegas area does so.

Use of auxiliaries.--About 19 of every 20 dental practitioners in Nevada (i.e., dentists who spend any time working at the chair) report that they employ auxiliary personnel (Table 6). The vast majority of the practitioners, 90 percent, employ at least one auxiliary full time, while only 4 percent employ part-time auxiliaries exclusively. Dental assistants are the most frequently employed auxiliary--usually on a full-time basis. Approximately 88 percent of the practitioners employ an assistant, including 83 percent who do so full time. Secretaries or receptionists are employed by almost 50 percent of the dentists, and

Table 6.--Auxiliary Utilization by Dental Practitioners

<table>
<thead>
<tr>
<th>Type of auxiliary</th>
<th>Percent of dental practitioners</th>
<th>Percent of dental practitioners</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1/ Total</td>
<td>With one full-time employee</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(or more)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>With only part-time personnel</td>
</tr>
<tr>
<td></td>
<td>138</td>
<td>100</td>
</tr>
<tr>
<td>With one or more auxiliaries</td>
<td>130</td>
<td>94</td>
</tr>
<tr>
<td></td>
<td></td>
<td>90</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>With assistant</td>
<td>122</td>
<td>88</td>
</tr>
<tr>
<td>With hygienist</td>
<td>39</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>With laboratory technician</td>
<td>12</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>With secretary or receptionist</td>
<td>68</td>
<td>49</td>
</tr>
<tr>
<td></td>
<td>35</td>
<td>14</td>
</tr>
<tr>
<td>With other type of personnel</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>With no auxiliary</td>
<td>8</td>
<td>6</td>
</tr>
</tbody>
</table>

1/ Based on respondents only.
a majority of these dentists utilize at least one of them full time. Dental hygienists and laboratory technicians are much less frequently employed by dentists in Nevada than are assistants and secretaries, and they are more likely to be employed on a part-time basis. While 28 percent of the practitioners employ dental hygienists and 9 percent employ dental technicians, about four-fifths and three-fourths, respectively, of the dentists employing these personnel do so on a part-time basis.
Appendix Table A.--Summary Statistics for Nevada

<table>
<thead>
<tr>
<th>Description</th>
<th>Total dentists</th>
<th>Responding dentists</th>
<th>Nonresponding dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total dentists licensed in Nevada(^1)</td>
<td>242</td>
<td>192</td>
<td>50</td>
</tr>
<tr>
<td>Civilian dentists in Nevada(^2) -- (designated simply as &quot;dentists&quot; in text tables)</td>
<td>177</td>
<td>140</td>
<td>37</td>
</tr>
<tr>
<td>Professionally active dentists(^3)</td>
<td>176</td>
<td>140</td>
<td>36</td>
</tr>
<tr>
<td>Dental practitioners(^4)</td>
<td>-</td>
<td>138</td>
<td>-</td>
</tr>
<tr>
<td>In limited practice(^5)</td>
<td>-</td>
<td>24</td>
<td>-</td>
</tr>
<tr>
<td>Located in Nevada last year:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reported professional activity(^6)</td>
<td>-</td>
<td>122</td>
<td>-</td>
</tr>
<tr>
<td>Dentists providing patient care(^7)</td>
<td>-</td>
<td>117</td>
<td>-</td>
</tr>
<tr>
<td>Reported time spent in patient care(^8)</td>
<td>-</td>
<td>101</td>
<td>-</td>
</tr>
<tr>
<td>Civilian dentists in another state</td>
<td>57</td>
<td>44</td>
<td>13</td>
</tr>
<tr>
<td>Dentists on active duty in armed forces</td>
<td>8</td>
<td>8</td>
<td>-</td>
</tr>
</tbody>
</table>

\(^1\) Data for nonresponding dentists were obtained from the Nevada Board of Dental Examiners and from the 1966 American Dental Directory published by the American Dental Association.

\(^2\) All dentists who currently work in Nevada (excluding those in the armed forces) or who are retired and currently live in the State. Data are not available for the following: year of graduation - 1, age - 1.

\(^3\) All active civilian dentists currently in Nevada--excludes 1 dentist who is fully retired.

\(^4\) All responding dentists practicing at the chair, that is, dentists who work as clinicians either as primary or secondary activity.

\(^5\) Dentists who reported they limited their practice to a dental specialty.

\(^6\) Dentists located in Nevada last year who indicated type(s) of activity in which they engaged.

\(^7\) All responding dentists who engaged in patient care last year, either as a primary or a secondary activity.

\(^8\) Dentists reporting both hours and weeks spent in patient care last year.
During the 1966 registration period, 508 dentists registered with the New Hampshire Dental Board. Of these dentists, 60 percent are civilians located in New Hampshire, 35 percent are civilians located in other states, and 5 percent are on active duty with the Armed Forces.

Location and Military Status of Dentists Licensed in New Hampshire

<table>
<thead>
<tr>
<th>Location and military status</th>
<th>All dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total licensed</td>
<td>508</td>
<td>100</td>
</tr>
<tr>
<td>Respondents</td>
<td>473</td>
<td>93</td>
</tr>
<tr>
<td>Nonrespondents</td>
<td>35</td>
<td>7</td>
</tr>
<tr>
<td>Total licensed</td>
<td>508</td>
<td>100</td>
</tr>
<tr>
<td>Civilians in New Hampshire</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respondents</td>
<td>305</td>
<td>60</td>
</tr>
<tr>
<td>Nonrespondents</td>
<td>280</td>
<td>-</td>
</tr>
<tr>
<td>Total licensed</td>
<td>35</td>
<td>-</td>
</tr>
<tr>
<td>Civilians in another state</td>
<td></td>
<td></td>
</tr>
<tr>
<td>On active duty with Armed Forces</td>
<td>178</td>
<td>35</td>
</tr>
<tr>
<td>Nonrespondents</td>
<td>25</td>
<td>-</td>
</tr>
</tbody>
</table>

The survey questionnaire was completed by 473 dentists, 93 percent of all those registered. Data provided by the survey respondents have been supplemented, when obtainable, by information on location, age, dental school attended, and year of graduation for dentists not responding to the survey. Information on nonrespondents was obtained either from records maintained by the New Hampshire Dental Board or from the 1967 American Dental Directory, published by the American Dental Association.

Among the survey respondents, approximately two of every three hold licenses to practice dentistry in one or more other states. About 47 percent of the dentists located in New Hampshire hold more than one license, with 36 percent licensed in one other state and 11 percent licensed in two or more other states. Multiple licensure is much more common among dentists who are not located in New Hampshire but maintain a license in the State; 34 percent hold two or more licenses in addition to their New Hampshire license.
PROFESSIONAL TRAINING

Three-fifths of New Hampshire's dentists are graduates of the two New England dental schools at Tufts University and Harvard University. Through the years Tufts University has been the primary source of New Hampshire's dentists, and its contribution has steadily increased since World War II. Harvard's relative contribution to the New Hampshire supply, on the other hand, has declined greatly during the post-war years.

Graduates of 11 other eastern dental schools in Maryland, Pennsylvania, the District of Columbia, New York and New Jersey account for another 26 percent of the dentists in New Hampshire. Among these schools, the University of Maryland and Georgetown University have been the primary contributors. However, the role of Maryland as a source of supply has declined through the years, while that of Georgetown has shown a considerable increase.

Another 6 percent of the State's dentists are graduates of dental schools located in Illinois, primarily Loyola University of Chicago. The remainder of New Hampshire's dentists received their dental education in 12 schools located in 10 other states and Canada.

Dental School Attended and Year of Graduation for Dentists in New Hampshire

<table>
<thead>
<tr>
<th>Dental school</th>
<th>Number of dentists</th>
<th>All years</th>
<th>After 1955</th>
<th>1945-1940</th>
<th>1940 or earlier</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tufts</td>
<td>154</td>
<td>50</td>
<td>55</td>
<td>51</td>
<td>46</td>
</tr>
<tr>
<td>Harvard</td>
<td>29</td>
<td>10</td>
<td>1</td>
<td>8</td>
<td>20</td>
</tr>
<tr>
<td>Maryland</td>
<td>23</td>
<td>8</td>
<td>3</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>Georgetown</td>
<td>17</td>
<td>6</td>
<td>10</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>Loyola (Chicago)</td>
<td>13</td>
<td>4</td>
<td>6</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>22 other schools</td>
<td>66</td>
<td>22</td>
<td>25</td>
<td>21</td>
<td>22</td>
</tr>
</tbody>
</table>

* Dental school attended not available for 3 dentists and year of graduation for 5 dentists. Percents based on known totals.

More than one-fifth of the 280 in-state survey respondents, 60 dentists, reported that they had completed one year or more of advanced training after receiving the dental degree. Forty-six dentists have received advanced clinical training as interns or residents, and 26 have completed at least one year of advanced academic work as graduate or postgraduate students. Twelve dentists had completed both academic and clinical training.
Almost three-fifths (59 percent) of the licensed dentists in New Hampshire are located in only 3 of the State's 10 counties. Hillsborough County, which contains most of the Manchester metropolitan area, has the largest number of dentists, 32 percent of the State's supply. Thirteen percent of the dental force is located in Merrimack County, which contains the small remaining portion of the Manchester metropolitan area. A similar percentage is located in Rockingham County, which contains the New Hampshire fragment of the interstate Lawrence-Haverhill metropolitan area.

Distribution of New Hampshire Dentists, by County

<table>
<thead>
<tr>
<th>County</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>All counties</td>
<td>305</td>
<td>100</td>
</tr>
<tr>
<td>Hillsborough*</td>
<td>98</td>
<td>32</td>
</tr>
<tr>
<td>Rockingham*</td>
<td>44</td>
<td>14</td>
</tr>
<tr>
<td>Merrimack*</td>
<td>40</td>
<td>13</td>
</tr>
<tr>
<td>Strafford</td>
<td>31</td>
<td>10</td>
</tr>
<tr>
<td>Grafton</td>
<td>26</td>
<td>9</td>
</tr>
<tr>
<td>Cheshire</td>
<td>20</td>
<td>7</td>
</tr>
<tr>
<td>Belknap</td>
<td>14</td>
<td>5</td>
</tr>
<tr>
<td>Sullivan</td>
<td>13</td>
<td>4</td>
</tr>
<tr>
<td>Coos</td>
<td>10</td>
<td>3</td>
</tr>
<tr>
<td>Carroll</td>
<td>9</td>
<td>3</td>
</tr>
</tbody>
</table>

* Contains a portion of a Standard Metropolitan Statistical area, as defined by the U.S. Bureau of the Budget, Office of Statistical Standards.

Of the seven other counties, which are entirely nonmetropolitan in character, Strafford County, with 10 percent of the State supply, has the largest number of dentists. Only two other counties, Grafton and Cheshire, have as many as 20 dentists, accounting for 9 percent and 7 percent of the total dental force, respectively. The remaining four counties—Belknap, Sullivan, Coos and Carroll—together have 15 percent of the State's dentist supply.
The median age of dentists in New Hampshire is 44.2 years. Almost one-fourth of the State's dentists are under 35, and 29 percent are between 35 and 44 years of age. On the other hand, a substantial proportion, 26 percent, are 55 or over. About 14 percent of the dentists (42) are at least 65 years of age, including 27 who have reached the age of 70.

<table>
<thead>
<tr>
<th>County</th>
<th>Total</th>
<th>Under 35</th>
<th>35-44</th>
<th>45-54</th>
<th>55 &amp; over</th>
</tr>
</thead>
<tbody>
<tr>
<td>All counties</td>
<td>305*</td>
<td>71</td>
<td>88</td>
<td>63</td>
<td>79</td>
</tr>
<tr>
<td>Hillsborough</td>
<td>98</td>
<td>25</td>
<td>28</td>
<td>19</td>
<td>23</td>
</tr>
<tr>
<td>Rockingham</td>
<td>44</td>
<td>14</td>
<td>17</td>
<td>9</td>
<td>4</td>
</tr>
<tr>
<td>Merrimack</td>
<td>40</td>
<td>11</td>
<td>11</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>Strafford</td>
<td>31</td>
<td>8</td>
<td>8</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>Grafton</td>
<td>26</td>
<td>4</td>
<td>6</td>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td>Cheshire</td>
<td>20</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td>Belknap</td>
<td>14</td>
<td>2</td>
<td>4</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Sullivan</td>
<td>13</td>
<td>1</td>
<td>5</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Coos</td>
<td>10</td>
<td>1</td>
<td>3</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Carroll</td>
<td>9</td>
<td>-</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

* Includes 4 dentists for whom age is not available.

Dentists' ages vary considerably among individual counties. Hillsborough, Rockingham, and Merrimack have the youngest groups of dentists, with median ages of 41 to 43 years. Moreover, some 27 percent of the dentists in these counties are under the age of 35, and only one-fifth are 55 years of age or older. In contrast, dentists in Grafton and Carroll Counties average at least seven years older, with median ages exceeding 50 years. Only 11 percent of the dentists in these two counties combined are under 35 years old, while 40 percent have reached the age of 55.
ACTIVE DENTISTS IN RELATION TO POPULATION

Of the 305 dentists in New Hampshire, 284, or 93 percent, are active in their profession, giving New Hampshire one professionally active dentist for every 2,242 persons. Individual county ratios range from a relatively favorable count of one dentist for every 1,913 persons in Carroll County to a considerably less favorable ratio of 3,640 persons per dentist in Coos County.

<table>
<thead>
<tr>
<th>County</th>
<th>Professionally active dentists</th>
<th>Population*</th>
<th>Persons per dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td>All counties</td>
<td>284</td>
<td>636,600</td>
<td>2,242</td>
</tr>
<tr>
<td>Hillsborough</td>
<td>94</td>
<td>191,000</td>
<td>2,032</td>
</tr>
<tr>
<td>Rockingham</td>
<td>42</td>
<td>109,900</td>
<td>2,617</td>
</tr>
<tr>
<td>Merrimack</td>
<td>36</td>
<td>70,700</td>
<td>1,964</td>
</tr>
<tr>
<td>Strafford</td>
<td>27</td>
<td>62,200</td>
<td>2,304</td>
</tr>
<tr>
<td>Grafton</td>
<td>24</td>
<td>49,000</td>
<td>2,042</td>
</tr>
<tr>
<td>Cheshire</td>
<td>18</td>
<td>45,000</td>
<td>2,500</td>
</tr>
<tr>
<td>Belknap</td>
<td>13</td>
<td>29,200</td>
<td>2,246</td>
</tr>
<tr>
<td>Sullivan</td>
<td>12</td>
<td>27,900</td>
<td>2,325</td>
</tr>
<tr>
<td>Coos</td>
<td>10</td>
<td>36,400</td>
<td>3,640</td>
</tr>
<tr>
<td>Carroll</td>
<td>8</td>
<td>15,300</td>
<td>1,913</td>
</tr>
</tbody>
</table>

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In addition to Carroll, only one other county--Merrimack--has a ratio under 2,000. Hillsborough and Grafton Counties have the next most favorable ratios--2,032 and 2,042, respectively. Belknap County, with one dentist for every 2,246 persons, has a ratio approximately equal to the State average. Strafford and Sullivan Counties have ratios just over 2,300 persons per dentist, slightly less favorable than the State average, while Cheshire and Rockingham Counties have ratios of 2,500 and 2,617, respectively.
UTILIZATION OF AUXILIARIES

Eight out of every ten responding dental practitioners in New Hampshire (i.e., dentists who spend any time working at the chair) reported that they employ auxiliary personnel. Dental assistants, the most frequently employed auxiliary, are utilized by 72 percent of all practitioners, including 66 percent who employ at least one assistant on a full-time basis. Almost one-third of the practitioners employ dental hygienists, most often on a part-time basis. Secretaries or receptionists are employed by 24 percent of the practitioners, with about four-fifths of these dentists utilizing such personnel full time. Only 5 percent employ laboratory technicians in their practices.

New Hampshire Dentists Employing Auxiliaries, by Type of Auxiliary

<table>
<thead>
<tr>
<th>Type of auxiliary employed</th>
<th>Dental practitioners</th>
<th>Percent of dental practitioners</th>
<th>With one full-time employee</th>
<th>With only part-time employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>256*</td>
<td>100</td>
<td>75</td>
<td>6</td>
</tr>
<tr>
<td>One or more auxiliaries</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assistant</td>
<td>202</td>
<td>81</td>
<td>75</td>
<td>6</td>
</tr>
<tr>
<td>Hygienist</td>
<td>180</td>
<td>72</td>
<td>66</td>
<td>6</td>
</tr>
<tr>
<td>Laboratory Technician</td>
<td>12</td>
<td>5</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Secretary or receptionist</td>
<td>59</td>
<td>24</td>
<td>19</td>
<td>5</td>
</tr>
<tr>
<td>Other type of personnel</td>
<td>9</td>
<td>4</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>No auxiliary</td>
<td>48</td>
<td>19</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

* Includes 6 dentists who did not report on auxiliary utilization.

The use of auxiliaries varies with the age of the dentist, and tends to be more frequent among younger dentists. Ninety percent of New Hampshire dentists between the ages of 30 and 44 employ some type of auxiliary. The proportion using auxiliaries decreases to 76 percent among dentists 45 to 64 years old and to only 43 percent among dentists 65 and over. Young dentists who are just starting their practices do not reach peak utilization of assistants until they are at least 30 years of age, and of hygienists, until age 35.

One-fifth of the dental practitioners in New Hampshire reported one or more vacant positions for auxiliary personnel. Of those reporting vacancies, 30 percent indicated a need for full-time hygienists, and 20 percent reported vacancies for full-time dental assistants.
OTHER SURVEY FINDINGS

Ninety-seven percent of the responding active dentists in New Hampshire are primarily engaged in private practice, with 96 percent self-employed and one percent employed by another dentist. The remaining 3 percent are either employed by a governmental agency or are engaged in other dental activities, such as taking advanced training.

Dentists reporting on time spent in providing patient care devoted an average of 39.6 hours per week to this activity for 47.4 weeks during the year preceding the survey. One in every nine dentists worked the equivalent of six days a week, 48 hours or more, for at least 48 weeks.

About 8 percent of the responding practitioners reported that they limit their practice to a dental specialty, primarily to oral surgery or orthodontics.

More than one-third of the 473 responding dentists who hold licenses in New Hampshire are located in another state. Eighty-four percent of these out-of-state dentists are currently located in the neighboring states of Massachusetts, Maine, Vermont, Connecticut, or New York.

About one in every eight out-of-state dentists reported that they had been professionally active in New Hampshire immediately prior to assuming their present location. Fifteen of these 21 out-migrant dentists are located in the three adjacent states--Massachusetts, Vermont and Maine.

June 1968.
DENTISTS LICENSED IN NEW JERSEY

During the 1965 registration period, 5,604 dentists registered with the New Jersey State Board of Dentistry. Three-fourths of the registered dentists were civilians located in New Jersey, another 20 percent were civilians located in other States, primarily New York, Pennsylvania, and Delaware, and 5 percent were on active duty in the Armed Forces.

Location and Military Status of Dentists Licensed in New Jersey

<table>
<thead>
<tr>
<th>Location and military status</th>
<th>All dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total licensed</td>
<td>5,604</td>
<td>100</td>
</tr>
<tr>
<td>Respondents</td>
<td>5,148</td>
<td>92</td>
</tr>
<tr>
<td>Nonrespondents</td>
<td>456</td>
<td>8</td>
</tr>
<tr>
<td>Total licensed</td>
<td>5,604</td>
<td>100</td>
</tr>
<tr>
<td>Civilians in New Jersey</td>
<td>4,185</td>
<td>75</td>
</tr>
<tr>
<td>Respondents</td>
<td>3,873</td>
<td>-</td>
</tr>
<tr>
<td>Nonrespondents</td>
<td>312</td>
<td>-</td>
</tr>
<tr>
<td>Civilians in another State</td>
<td>1,131</td>
<td>20</td>
</tr>
<tr>
<td>On active duty with Armed Forces</td>
<td>278</td>
<td>5</td>
</tr>
<tr>
<td>Not reported</td>
<td>10</td>
<td>*</td>
</tr>
</tbody>
</table>

* Less than one-half of one percent.

The survey questionnaire was completed by 5,148 dentists, 92 percent of all those registered. The data provided by the survey respondents has been supplemented, when obtainable, by information on location, age, dental school attended and year of graduation for dentists not responding to the survey. Information on nonrespondents was obtained either from records maintained by the New Jersey State Board of Dentistry or from the 1966 American Dental Directory published by the American Dental Association.
PROFESSIONAL TRAINING

More than four-fifths of New Jersey's dentists are graduates of 10 dental schools located in 3 eastern states—Pennsylvania, New York, Maryland—and the District of Columbia. Two dental schools in Pennsylvania, Temple University and the University of Pennsylvania, which have between them graduated 44% of the dentists in New Jersey, have long been the primary sources of the State's dentist supply. The dental schools of New York and Georgetown Universities and the University of Maryland have also been major contributors of dentists to New Jersey, New York University alone supplying one of every eight dentists in the State. New Jersey's two new dental schools at Fairleigh Dickinson University and the New Jersey College of Medicine and Dentistry have together supplied 5% of the State's dentists. The remaining 13% of the dentists were trained in 33 other dental schools scattered among 21 states.

School Awarding Dental Degree, By Year Awarded

<table>
<thead>
<tr>
<th>Dental school attended</th>
<th>Number of dentists</th>
<th>Year of graduation</th>
<th>All</th>
<th>After 1941-1940 or years</th>
<th>1955</th>
<th>1955 earlier</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number</td>
<td>4,185</td>
<td></td>
<td>1,042</td>
<td>1,355</td>
<td>1,693</td>
<td></td>
</tr>
<tr>
<td>(Percent distribution by school)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temple</td>
<td>906</td>
<td>22</td>
<td>25</td>
<td>25</td>
<td>17</td>
<td></td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>902</td>
<td>22</td>
<td>19</td>
<td>22</td>
<td>23</td>
<td></td>
</tr>
<tr>
<td>New York</td>
<td>516</td>
<td>12</td>
<td>12</td>
<td>13</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Maryland</td>
<td>464</td>
<td>11</td>
<td>6</td>
<td>9</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>Georgetown</td>
<td>254</td>
<td>6</td>
<td>6</td>
<td>7</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Columbia</td>
<td>182</td>
<td>4</td>
<td>3</td>
<td>4</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Fairleigh Dickinson</td>
<td>116</td>
<td>3</td>
<td>11</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Tufts</td>
<td>81</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>New Jersey College</td>
<td>79</td>
<td>2</td>
<td>7</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Pittsburgh</td>
<td>79</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Howard</td>
<td>79</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>34 other schools</td>
<td>512</td>
<td>12</td>
<td>6</td>
<td>13</td>
<td>16</td>
<td></td>
</tr>
</tbody>
</table>

1/ Dental school attended not available for 15 dentists and year of graduation for 95 dentists. Percent based on totals for whom the data are known.

While the proportionate contribution of the various schools has remained relatively constant through the years, the growing role of New Jersey's new dental schools in supplying dentists for the State has recently
affected the relative contribution of other schools. Although their first classes were not graduated until 1960, the new schools in New Jersey have already become substantial sources of dentist supply. Their graduates account for 37 percent of the dentists in the State who have completed their dental education in the years since these schools produced their first graduating classes. At the same time, the proportion has declined somewhat among the five schools which have traditionally been the major contributors--Temple, Pennsylvania, New York, Maryland and Georgetown--with these schools accounting for about one-half of the dentists who are graduates of the years since 1960 compared to three-fourths of those graduated prior to that time.

Almost a third of the survey respondents, or 1,240 dentists, reported they had completed one year or more of advanced training beyond receipt of the dental degree. Of the 974 dentists with advanced clinical training, 186 completed a residency and 788 an internship. Among the 474 dentists who reported advanced academic training, 161 earned a master's or other advanced degree, and another 313 received no additional degrees but completed one or more years of postgraduate study. These figures include 208 dentists who completed both academic and clinical training.

<table>
<thead>
<tr>
<th>Advanced Training</th>
<th>Number</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highest level of advanced training completed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total respondents</td>
<td>3,873</td>
<td>100</td>
</tr>
<tr>
<td>With advanced training</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clinical training only</td>
<td>766</td>
<td>20</td>
</tr>
<tr>
<td>Academic training only</td>
<td>266</td>
<td>7</td>
</tr>
<tr>
<td>Both clinical and academic training</td>
<td>208</td>
<td>5</td>
</tr>
<tr>
<td>With no advanced training</td>
<td>2,632</td>
<td>68</td>
</tr>
</tbody>
</table>

There is a growing tendency for young dentists to seek additional training beyond the dental degree, particularly advanced academic work. About 18 percent of the dentists under 40 years of age have had a year or more of graduate or postgraduate study as compared with 13 percent of those 40 to 54 years old and only 6 percent of those 55 and over.
DISTRIBUTION OF DENTISTS

More than four-fifths of the licensed dentists in New Jersey are located in the 8 metropolitan areas of the State. The Newark area alone has over 1,400 dentists, about one-third of all the dentists in the State. The Paterson-Clifton-Passaic metropolitan area is the location of another 933 dentists, 22 percent of the State's supply. The New Jersey portion of the Philadelphia area, containing the city of Camden, and the Jersey City area have the third and fourth largest dental forces, each accounting for about 9 percent of New Jersey's dentists. The Trenton and Atlantic City areas taken together account for only 6 percent of the dentist supply.

Distribution by Area

<table>
<thead>
<tr>
<th>Area</th>
<th>Number of counties</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>All counties</td>
<td>21</td>
<td>4,185</td>
<td>100</td>
</tr>
<tr>
<td>All metropolitan areas*</td>
<td>13</td>
<td>3,413</td>
<td>82</td>
</tr>
<tr>
<td>Newark area</td>
<td>3</td>
<td>1,469</td>
<td>34</td>
</tr>
<tr>
<td>Paterson-Clifton-Passaic area</td>
<td>2</td>
<td>933</td>
<td>22</td>
</tr>
<tr>
<td>Philadelphia, Pa. area - N.J. part</td>
<td>3</td>
<td>381</td>
<td>9</td>
</tr>
<tr>
<td>Jersey City area</td>
<td>1</td>
<td>369</td>
<td>9</td>
</tr>
<tr>
<td>Trenton area</td>
<td>1</td>
<td>179</td>
<td>4</td>
</tr>
<tr>
<td>Atlantic City area</td>
<td>1</td>
<td>99</td>
<td>2</td>
</tr>
<tr>
<td>Allentown-Bethlehem-Easton, Pa. area - N.J. part</td>
<td>1</td>
<td>24</td>
<td>1</td>
</tr>
<tr>
<td>Wilmington, Del. area - N.J. part</td>
<td>1</td>
<td>19</td>
<td>1</td>
</tr>
<tr>
<td>Nonmetropolitan counties*</td>
<td>8</td>
<td>772</td>
<td>18</td>
</tr>
<tr>
<td>Monmouth County</td>
<td>1</td>
<td>240</td>
<td>6</td>
</tr>
<tr>
<td>Middlesex County</td>
<td>1</td>
<td>233</td>
<td>5</td>
</tr>
<tr>
<td>Other counties</td>
<td>6</td>
<td>299</td>
<td>7</td>
</tr>
</tbody>
</table>

* See Appendix Table for definition of metropolitan areas and presentation of individual county data.

Less than 20 percent of the dentists are located in the 8 nonmetropolitan counties. Some of these counties, however, have fairly large numbers of dentists. Of the State's 772 dentists in nonmetropolitan counties, 240, or almost one-third, are located in Monmouth County and another 233 dentists are located in Middlesex County. The counties of Somerset, Ocean and Cumberland each have between 50 and 100 dentists, and the remaining three counties, Sussex, Cape May and Hunterdon, have between 20 and 30 dentists.
AGE OF DENTISTS

With slightly more than one-half of the dentists under 47 years of age, the median age of dentists in New Jersey is 46.6 years. Only 21 percent of the State's dentists are under 35, but almost one-third are 55 years of age or older. About one in every eight, or 500 dentists, are 65 years old or over, and 217 have reached the age of 70.

<table>
<thead>
<tr>
<th>Age in 1965</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
<th>Cumulative percent distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>4,185</td>
<td>100</td>
<td>-</td>
</tr>
<tr>
<td>Under 30</td>
<td>290</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>30 - 34</td>
<td>592</td>
<td>14</td>
<td>21</td>
</tr>
<tr>
<td>35 - 39</td>
<td>529</td>
<td>13</td>
<td>34</td>
</tr>
<tr>
<td>40 - 44</td>
<td>505</td>
<td>12</td>
<td>46</td>
</tr>
<tr>
<td>45 - 49</td>
<td>452</td>
<td>11</td>
<td>57</td>
</tr>
<tr>
<td>50 - 54</td>
<td>456</td>
<td>11</td>
<td>68</td>
</tr>
<tr>
<td>55 - 59</td>
<td>459</td>
<td>11</td>
<td>79</td>
</tr>
<tr>
<td>60 - 64</td>
<td>354</td>
<td>9</td>
<td>88</td>
</tr>
<tr>
<td>65 - 69</td>
<td>284</td>
<td>7</td>
<td>95</td>
</tr>
<tr>
<td>70 - 74</td>
<td>136</td>
<td>3</td>
<td>98</td>
</tr>
<tr>
<td>75 and over</td>
<td>83</td>
<td>2</td>
<td>100</td>
</tr>
</tbody>
</table>

1/ Age not available for 37 dentists. Percents based on total for whom age is known.

There are marked differences in the median ages of dentists in the metropolitan areas and in the nonmetropolitan counties. Among the metropolitan areas, the Jersey City area has the oldest dentists, with a median age of 55, about 5 years above the median in the Atlantic City area, which has the next oldest dentists. In contrast, dentists in the New Jersey portion of the Philadelphia area are young as a group, with a median age of 43 years. Dentists in the nonmetropolitan counties have a median age of 44 years compared to 47 years for those in all metropolitan areas combined. Among the individual nonmetropolitan counties, the median ages range from 49 years in Cumberland and Sussex Counties to a low of 39 years in Somerset County.
ACTIVE DENTISTS IN RELATION TO POPULATION

Of the 4,185 dentists in New Jersey, 4,069, or 97 percent, are active in their profession, giving New Jersey one professionally active dentist for every 1,634 persons. There is one dentist for every 1,561 persons in the metropolitan areas, while the remainder of the State has a slightly less favorable ratio of one dentist for every 1,955 persons.

Number of Persons Per Active Dentist

<table>
<thead>
<tr>
<th>Area</th>
<th>Professionally active dentists</th>
<th>Population</th>
<th>Persons per dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td>All areas</td>
<td>4,069</td>
<td>6,648,100</td>
<td>1,634</td>
</tr>
<tr>
<td>All metropolitan areas</td>
<td>3,114</td>
<td>5,171,700</td>
<td>1,656</td>
</tr>
<tr>
<td>Newark area</td>
<td>1,362</td>
<td>1,915,100</td>
<td>1,432</td>
</tr>
<tr>
<td>Paterson-Clifton-Passaic area</td>
<td>907</td>
<td>1,332,600</td>
<td>1,469</td>
</tr>
<tr>
<td>Philadelphia, Pa. area - N.J. part</td>
<td>373</td>
<td>845,100</td>
<td>2,266</td>
</tr>
<tr>
<td>Jersey City area</td>
<td>359</td>
<td>593,700</td>
<td>1,659</td>
</tr>
<tr>
<td>Trenton area</td>
<td>175</td>
<td>281,600</td>
<td>1,609</td>
</tr>
<tr>
<td>Atlantic City area</td>
<td>95</td>
<td>170,500</td>
<td>1,795</td>
</tr>
<tr>
<td>Allentown-Bethlehem-Easton, Pa. area - N.J. part</td>
<td>24</td>
<td>67,700</td>
<td>2,821</td>
</tr>
<tr>
<td>Wilmington, Del. area - N.J. part</td>
<td>19</td>
<td>63,400</td>
<td>3,337</td>
</tr>
<tr>
<td>Nonmetropolitan counties</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monmouth Count</td>
<td>238</td>
<td>382,000</td>
<td>1,605</td>
</tr>
<tr>
<td>Middlesex County</td>
<td>229</td>
<td>508,500</td>
<td>2,221</td>
</tr>
<tr>
<td>6 other counties</td>
<td>288</td>
<td>585,900</td>
<td>2,034</td>
</tr>
</tbody>
</table>

Among the metropolitan areas, Newark has the best ratio, with one dentist for every 1,333 persons. The persons-per-dentist ratio for Paterson-Clifton-Passaic, 1,469, is only slightly less favorable. Jersey City and Trenton have ratios very close to the State average, 1,659 and 1,609, respectively, while Atlantic City, with one dentist for every 1,795 persons, has a ratio that somewhat exceeds the State average. The remaining three metropolitan areas, all of which are outlying counties of larger interstate metropolitan areas, have persons-per-dentist ratios in excess of 2,200.

Among the nonmetropolitan counties of the State, only Monmouth County, with one dentist for every 1,605 persons, has a ratio as favorable as the State average. Ocean and Somerset Counties have ratios of about 1,800 persons per dentist, a little above the average for the State. The remaining five nonmetropolitan counties, Middlesex, Cumberland, Sussex, Cape May and Hunterdon, all have more than 2,000 persons for every active dentist.
About two-thirds of the responding dental practitioners in New Jersey (i.e., dentists who spend any time working at the chair) reported that they employ auxiliary personnel. Dental assistants, the most frequently employed auxiliary, are utilized by 59 percent of all practitioners, including 51 percent who employ at least one assistant on a full-time basis. Secretaries or receptionists are employed by 15 percent of the dentists with about two-thirds of these dentists utilizing such personnel full time. Only 9 percent of the dentists employ dental hygienists and 4 percent employ dental technicians. Dentists are more likely to employ hygienists and laboratory technicians on a part-time basis compared to other auxiliary personnel.

### Dental Practitioners Employing Auxiliaries, By Type of Auxiliary

<table>
<thead>
<tr>
<th>Type of auxiliary</th>
<th>Dental practitioners</th>
<th>Percent of dental practitioners</th>
<th>With one full-time employee (or more)</th>
<th>With only part-time personnel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>3,746/1</td>
<td>100</td>
<td>57</td>
<td>9</td>
</tr>
<tr>
<td>With one or more auxiliaries</td>
<td>2,415</td>
<td>66</td>
<td>57</td>
<td>9</td>
</tr>
<tr>
<td>With assistant</td>
<td>2,178</td>
<td>59</td>
<td>51</td>
<td>8</td>
</tr>
<tr>
<td>With hygienist</td>
<td>326</td>
<td>9</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>With laboratory technician</td>
<td>148</td>
<td>4</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>With secretary or receptionist</td>
<td>560</td>
<td>15</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>With other type personnel</td>
<td>109</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>With no auxiliary</td>
<td>1,253</td>
<td>34</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

1/ Includes 78 dentists who did not report on auxiliary utilization.

The use of auxiliaries varies with the age of the dentist and is more frequent among the young dentists. Eighty percent of the dental practitioners between the ages of 30 and 44 employ some type of auxiliary. The proportion utilizing auxiliaries decreases to 61 percent among dentists 45 to 64 years old and drops to 36 percent among dentists 65 and over. Peak utilization of both hygienists and dental assistants occurs between the ages of 35 and 44.
OTHER SURVEY FINDINGS

***Ninety-seven percent of the responding professionally active dentists in New Jersey are primarily engaged in private practice. Another one percent are on the staffs of dental schools, and the remaining two percent are either employed by governmental agencies or are engaged in other dental activities, such as taking advanced training.

***At least one part-time dental activity in addition to their principal employment was reported by 20 percent of the dentists. Part-time teaching in a dental school was the most frequently reported secondary employment. Other types of secondary dental activity reported by the dentists include employment by another dentist and serving in school dental health programs.

***Dentists reporting time spent in providing patient care devoted an average of 39.5 hours per week to this activity for 47.7 weeks during the year preceding the survey. About one dentist in seven worked the equivalent of six days a week, 48 hours or more, for at least 48 weeks.

***About 13 percent of the practitioners reported they limit their practices to a dental specialty, primarily to orthodontics or oral surgery. More than eighty percent of the dentists who reported limiting their practices are located in the State's metropolitan areas.

***Seven percent of the respondents, 271 dentists, practiced as a civilian dentist in one of 21 other states or the District of Columbia immediately prior to assuming their present New Jersey location. Nearly nine in every ten of these dentists came from the adjacent states of New York and Pennsylvania.

***Two-thirds of the 1,131 civilian dentists licensed in New Jersey but located in another state are in the adjacent states of New York, Pennsylvania or Delaware. The remaining out-of-state dentists are scattered among 37 other states, the District of Columbia or foreign countries.

October 1967.
## APPENDIX TABLE

### Selected Data on Dentists in New Jersey, by Location

<table>
<thead>
<tr>
<th>Area and County</th>
<th>Civilian dentists</th>
<th>Population (in 000's)</th>
<th>Persons per active dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Respondents</td>
<td>Age in 1965</td>
</tr>
<tr>
<td></td>
<td>Respondents</td>
<td>Non-respondents</td>
<td>Percent under 35</td>
</tr>
<tr>
<td>All counties</td>
<td>4,185</td>
<td>3,873</td>
<td>312</td>
</tr>
<tr>
<td>All metropolitan areas 2/</td>
<td>3,413</td>
<td>3,154</td>
<td>259</td>
</tr>
<tr>
<td>Newark area</td>
<td>1,609</td>
<td>1,308</td>
<td>101</td>
</tr>
<tr>
<td>Essex</td>
<td>779</td>
<td>727</td>
<td>52</td>
</tr>
<tr>
<td>Morris</td>
<td>207</td>
<td>190</td>
<td>17</td>
</tr>
<tr>
<td>Union</td>
<td>423</td>
<td>391</td>
<td>32</td>
</tr>
<tr>
<td>Paterson-Clifton-Passaic area</td>
<td>933</td>
<td>870</td>
<td>63</td>
</tr>
<tr>
<td>Bergen</td>
<td>644</td>
<td>603</td>
<td>41</td>
</tr>
<tr>
<td>Passaic</td>
<td>289</td>
<td>267</td>
<td>22</td>
</tr>
<tr>
<td>Philadelphia, Pa. area - N.J. part</td>
<td>381</td>
<td>368</td>
<td>36</td>
</tr>
<tr>
<td>Burlington</td>
<td>100</td>
<td>94</td>
<td>6</td>
</tr>
<tr>
<td>Camden</td>
<td>228</td>
<td>203</td>
<td>25</td>
</tr>
<tr>
<td>Gloucester</td>
<td>73</td>
<td>51</td>
<td>2</td>
</tr>
<tr>
<td>Jersey City area</td>
<td>389</td>
<td>353</td>
<td>36</td>
</tr>
<tr>
<td>Hudson</td>
<td>369</td>
<td>333</td>
<td>36</td>
</tr>
<tr>
<td>Trenton area</td>
<td>179</td>
<td>167</td>
<td>12</td>
</tr>
<tr>
<td>Mercer</td>
<td>179</td>
<td>167</td>
<td>12</td>
</tr>
<tr>
<td>Atlantic City area</td>
<td>99</td>
<td>88</td>
<td>11</td>
</tr>
<tr>
<td>Atlantic</td>
<td>99</td>
<td>88</td>
<td>11</td>
</tr>
<tr>
<td>Allentown-Bethlehem-Easton, Pa. area - New Jersey part</td>
<td>24</td>
<td>24</td>
<td>-</td>
</tr>
<tr>
<td>Warren</td>
<td>24</td>
<td>74</td>
<td>-</td>
</tr>
</tbody>
</table>
## APPENDIX TABLE (Cont'd.)

### Selected Data on Dentists in New Jersey, by Location

<table>
<thead>
<tr>
<th>Area and County</th>
<th>Civilian dentists</th>
<th>Professionally active</th>
<th>Population (in 000's)</th>
<th>Persons per active dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total respondents</td>
<td>Respondents</td>
<td>Age in 1965</td>
<td></td>
</tr>
<tr>
<td>All metropolitan areas</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wilmington, Delaware area - New</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jersey part</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Salem</td>
<td>19</td>
<td>16</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>All nonmetropolitan counties</td>
<td>772</td>
<td>719</td>
<td>53</td>
<td>29</td>
</tr>
<tr>
<td>Cape May</td>
<td>26</td>
<td>22</td>
<td>4</td>
<td>23</td>
</tr>
<tr>
<td>Cumberland</td>
<td>52</td>
<td>47</td>
<td>5</td>
<td>17</td>
</tr>
<tr>
<td>Hunterdon</td>
<td>24</td>
<td>22</td>
<td>2</td>
<td>21</td>
</tr>
<tr>
<td>Middlesex</td>
<td>233</td>
<td>221</td>
<td>12</td>
<td>27</td>
</tr>
<tr>
<td>Monmouth</td>
<td>240</td>
<td>225</td>
<td>15</td>
<td>32</td>
</tr>
<tr>
<td>Ocean</td>
<td>78</td>
<td>68</td>
<td>10</td>
<td>29</td>
</tr>
<tr>
<td>Somerset</td>
<td>92</td>
<td>89</td>
<td>3</td>
<td>35</td>
</tr>
<tr>
<td>Sussex</td>
<td>27</td>
<td>25</td>
<td>2</td>
<td>33</td>
</tr>
</tbody>
</table>


2/ New Jersey counties included in the latest 1967 definition of Standard Metropolitan Statistical areas, as established by the U.S. Bureau of the Budget, Office of Statistical Standards, have been grouped as metropolitan areas for presentation of the survey data. For interstate SMSA's statistics are presented only for dentists located in the New Jersey portion of the Philadelphia SMSA, Allentown-Bethlehem-Easton SMSA, and Wilmington SMSA.

3/ Counties not included within a SMSA, as defined by the U.S. Bureau of the Budget.
DENTISTS LICENSED IN NEW MEXICO

A total of 425 dentists registered with the New Mexico Board of Dental Examiners during the 1965 registration period (Table 1). The survey questionnaire was completed by 381 dentists, for an overall response rate of 90 percent. Of the responding dentists, only 255, or 67 percent, were civilians actually located in New Mexico. Civilians located in other States account for another 28 percent of the respondents, and an additional 4 percent were dentists on active duty in the Armed Forces. There were only two women dentists included among the respondents, both of them located within the State.

Table 1.--Location and Military Status of Dentists Licensed in New Mexico

<table>
<thead>
<tr>
<th>Location and military status</th>
<th>All dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total licensed</td>
<td>425</td>
<td>100</td>
</tr>
<tr>
<td>Respondents</td>
<td>381</td>
<td>90</td>
</tr>
<tr>
<td>Nonrespondents</td>
<td>44</td>
<td>10</td>
</tr>
<tr>
<td>Respondents</td>
<td>381</td>
<td>100</td>
</tr>
<tr>
<td>Civilians in New Mexico</td>
<td>255</td>
<td>67</td>
</tr>
<tr>
<td>Civilians in another State</td>
<td>108</td>
<td>28</td>
</tr>
<tr>
<td>On active duty with Armed Forces</td>
<td>16</td>
<td>4</td>
</tr>
<tr>
<td>Not reported</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

More than four out of every five dentists responding in the survey hold a license in at least one other State (Table 2). Multiple licensure is extremely common among dentists located in New Mexico. Three-fourths of the civilian in-State dentists are licensed in at least one additional State--60 percent in one other State and 15 percent in 2 or more other States. By comparison, 40 percent of the out-of-State civilian dentists hold licenses in 2 or more States in addition to their licenses in New Mexico and the State in which they are presently located.

Table 2.--Percent of Dentists Holding Licenses in Other States

<table>
<thead>
<tr>
<th>Licenses held</th>
<th>All respondents</th>
<th>Civilian dentists</th>
<th>Armed Forces</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>New Mexico only</td>
<td>18</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>Licensed in 1 other State</td>
<td>60</td>
<td>60</td>
<td>60</td>
</tr>
<tr>
<td>Licensed in 2 other States</td>
<td>17</td>
<td>13</td>
<td>28</td>
</tr>
<tr>
<td>Licensed in 3 or more other States</td>
<td>5</td>
<td>2</td>
<td>12</td>
</tr>
</tbody>
</table>
Civilian Dentists in New Mexico

Sources of Supply

Dental schools.--Graduates of 37 dental schools are represented among New Mexico's dentists, including 3 dental schools (Colorado College, San Francisco College of Medicine and Surgery, and Tulane University) which are no longer in existence. Well over one-half of the State's dentists are graduates of schools located in the North Central States (Table 3). The University of Missouri at Kansas City has made the largest single contribution, having trained almost one-fourth of all dentists in the State. Creighton and Indiana Universities, and Loyola University of Chicago have also made significant contributions. Another one-fourth of the dentists received their dental education in schools in the South. Among Southern schools, Baylor University has been the outstanding contributor, supplying 17 percent of the State's dentists. Schools in the West have contributed 12 percent of the dentist supply, with the University of Southern California the largest Western contributor. Dental schools in the Northeast account for only 5 percent of the total.

Table 3.--School Awarding Dental Degree, by Year Awarded

<table>
<thead>
<tr>
<th>Dental school attended</th>
<th>Number of dentists</th>
<th>Year of graduation</th>
<th>All</th>
<th>After</th>
<th>1941-1955</th>
<th>1955 or earlier</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number</td>
<td>2551/</td>
<td>-</td>
<td>95</td>
<td>93</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td>(Percent distribution by school)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>North Central</td>
<td>146</td>
<td>58</td>
<td>54</td>
<td>54</td>
<td>69</td>
<td></td>
</tr>
<tr>
<td>Missouri (Kansas City)</td>
<td>56</td>
<td>23</td>
<td>30</td>
<td>14</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Creighton</td>
<td>13</td>
<td>5</td>
<td>6</td>
<td>8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indiana</td>
<td>11</td>
<td>4</td>
<td>1</td>
<td>2</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>Loyola of Chicago</td>
<td>9</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Northwestern</td>
<td>8</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Washington (St. Louis)</td>
<td>8</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marquette</td>
<td>8</td>
<td>3</td>
<td>1</td>
<td>7</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>8 other schools</td>
<td>33</td>
<td>13</td>
<td>8</td>
<td>15</td>
<td>19</td>
<td></td>
</tr>
<tr>
<td>South</td>
<td>64</td>
<td>25</td>
<td>29</td>
<td>29</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>Baylor</td>
<td>42</td>
<td>17</td>
<td>20</td>
<td>19</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>9 other schools</td>
<td>21</td>
<td>8</td>
<td>9</td>
<td>10</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>West</td>
<td>29</td>
<td>12</td>
<td>11</td>
<td>10</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Southern California</td>
<td>8</td>
<td>3</td>
<td>1</td>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 other schools</td>
<td>21</td>
<td>9</td>
<td>10</td>
<td>3</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Northeast</td>
<td>13</td>
<td>5</td>
<td>7</td>
<td>2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1/ Individual items in this and succeeding tables may not add to the totals shown due to the failure of some responding dentists to reply to all items on the questionnaire. Where percentages are shown, they are based on data supplied by dentists responding to the item. (See Appendix Table A.)
Both the University of Missouri at Kansas City and Baylor University have played an increasingly important role in recent years in supplying dentists for the State. Together, they account for half of all dentists in the State who have completed their dental education within the past ten years. By contrast, graduates of these schools make up only 77 percent of all dentists in the State who finished dental school in the years prior to World War II. The proportionate contribution of Indiana University and Loyola University of Chicago has decreased considerably over earlier years. Together these two schools account for 22 percent of all dentists graduated prior to World War II, but for only 3 percent of those graduated since 1955.

Dentists relocating in New Mexico.—Only about one out of five dentists (22 percent) presently in New Mexico reported previous professional locations as civilians in other States. One-fourth of these dentists who have migrated into New Mexico were previously located in Texas. Another 18 percent of the in-migrant dentists moved from 3 other adjacent States—Colorado, Oklahoma, and Arizona. Although dentists have come to New Mexico from 19 other States, most of these States account for only one dentist each, and none for more than 3.

Personal Characteristics

Age.—Dentists in New Mexico are relatively young—their median age in 1965 was only 42.0 years. Three-fifths of the State's dentists were under 45 years of age, including 26 percent who were under 35 (Table 4). Only 5 percent were 65 years old or over.

Table 4.—Age Distribution

<table>
<thead>
<tr>
<th>Age</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
<th>Cumulative percent distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>255</td>
<td>100</td>
<td>-</td>
</tr>
<tr>
<td>Under 30</td>
<td>19</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>30-34</td>
<td>44</td>
<td>18</td>
<td>26</td>
</tr>
<tr>
<td>35-39</td>
<td>41</td>
<td>17</td>
<td>43</td>
</tr>
<tr>
<td>40-44</td>
<td>41</td>
<td>17</td>
<td>69</td>
</tr>
<tr>
<td>45-49</td>
<td>34</td>
<td>14</td>
<td>74</td>
</tr>
<tr>
<td>50-54</td>
<td>16</td>
<td>7</td>
<td>81</td>
</tr>
<tr>
<td>55-59</td>
<td>17</td>
<td>7</td>
<td>88</td>
</tr>
<tr>
<td>60-64</td>
<td>16</td>
<td>7</td>
<td>95</td>
</tr>
<tr>
<td>65-69</td>
<td>8</td>
<td>3</td>
<td>98</td>
</tr>
<tr>
<td>70 &amp; over</td>
<td>5</td>
<td>2</td>
<td>100</td>
</tr>
</tbody>
</table>
Advanced training.--One of every six dentists in New Mexico reported the completion of a year or more of advanced training (Table 5). About 6 percent of the State’s dentists have taken clinical training. A larger proportion, or about 13 percent, have completed at least one year of advanced academic training, including 6 percent of the dentists who reported earning a master’s degree since leaving dental school. Both clinical and academic training have been taken by about 5 percent of all dentists in the State.

<table>
<thead>
<tr>
<th>Highest level of training completed</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>With advanced training</td>
<td>40</td>
<td>16</td>
</tr>
<tr>
<td>Clinical training only</td>
<td>8</td>
<td>3</td>
</tr>
<tr>
<td>Academic training only</td>
<td>21</td>
<td>8</td>
</tr>
<tr>
<td>Both clinical and academic</td>
<td>11</td>
<td>5</td>
</tr>
<tr>
<td>Clinical training</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residency completed</td>
<td>9</td>
<td>4</td>
</tr>
<tr>
<td>Internship completed</td>
<td>10</td>
<td>4</td>
</tr>
<tr>
<td>Academic training</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M.A., M.S., or other advanced degree</td>
<td>16</td>
<td>6</td>
</tr>
<tr>
<td>Postgraduate 1 year or more (no degree)</td>
<td>18</td>
<td>7</td>
</tr>
</tbody>
</table>

Distribution and Current Status:

Distribution of dentists.--The largest concentration of responding dentists in New Mexico is in the Albuquerque metropolitan area (Bernalillo County). More than two-fifths of the State’s licensed civilian dental force is located in this single county (Table 6). The remaining 56 percent of the dentists in the State are located in nonmetropolitan counties. However, of the 37 nonmetropolitan counties in the State, 7 have no reporting dentists.

<table>
<thead>
<tr>
<th>County group</th>
<th>Number of counties</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>All</td>
</tr>
<tr>
<td>All counties</td>
<td>32</td>
<td>255</td>
<td>100</td>
</tr>
<tr>
<td>Albuquerque metropolitan area</td>
<td>1</td>
<td>113</td>
<td>44</td>
</tr>
<tr>
<td>Nonmetropolitan county group</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Central city 25,000-49,999</td>
<td>5</td>
<td>72</td>
<td>28</td>
</tr>
<tr>
<td>Central city 10,000-24,999</td>
<td>6</td>
<td>40</td>
<td>16</td>
</tr>
<tr>
<td>Central city 5,000-9,999</td>
<td>7</td>
<td>20</td>
<td>8</td>
</tr>
<tr>
<td>Central city under 5,000</td>
<td>13</td>
<td>10</td>
<td>4</td>
</tr>
</tbody>
</table>
If the nonmetropolitan counties are grouped according to the population of the largest (central) city within each county, the number of dentists in a county generally declines as the population of the central city decreases (see Appendix Table B). Of the 5 counties with central cities of 25,000-49,999 population, Santa Fe is the only county with more than 20 dentists. The remaining 4 counties—Chaves, Dona Ana, Eddy, and Lea—have between 10 and 14 dentists. In the 6 counties with central cities of 10,000-24,999 population, only Curry and San Juan Counties have 10 or more dentists, while each of the other 4 counties in this group has less than 6 reporting dentists. Among the 7 counties with 5,000-9,999 persons in their central cities, only San Miguel has as many as 5 dentists. The majority of the 13 counties in the smallest size category (counties with central cities of under 5,000 inhabitants) have no reporting dentists at all and those with licensed civilian dentists have 3 or fewer dentists per county.

As the data in Table 6 indicate, each of the county groups in New Mexico has a substantial representation of young dentists. In the Albuquerque metropolitan area, 61 percent of the dentists are under 45 years of age, including 27 percent who are under 35. Among the nonmetropolitan county groups, the one with central cities of 10,000-24,999 inhabitants had the youngest reporting dentists. Sixty-seven percent were under 45, and only 13 percent were 55 years old or over. Some variation exists in the age distribution of reporting dentists in the remaining county groups, but in all cases at least 56 percent were under the age of 45.

Active dentists in relation to population.—Of the 255 responding civilian dentists in New Mexico, 252 reported that they were professionally active at the time of the survey. Based on this count, there was one professionally active dentist for every 4,116 persons in New Mexico in 1965 (Table 7). By county size group, the number of persons per dentist in the nonmetropolitan areas range from 4,114 in the 5 counties with 25,000 or more persons in their central cities to 10,780 in the 13 counties with central cities of less than 5,000 residents. Among the 25 counties known to have dentists, Santa Fe County had the most favorable ratio, with one professionally active dentist for every 2,104 persons. At the opposite end of the scale, and differing by more than 10,000 persons, was Valencia County with a ratio of 13,367 persons per dentist (see Appendix Table C for individual county data).

Table 7—Distribution of Professionally Active Dentists

<table>
<thead>
<tr>
<th>County group</th>
<th>Professionally active dentists</th>
<th>Population</th>
<th>Persons per dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td>All counties</td>
<td>252</td>
<td>1,037,300</td>
<td>4,116</td>
</tr>
<tr>
<td>Albuquerque metropolitan area</td>
<td>119</td>
<td>310,500</td>
<td>2,823</td>
</tr>
<tr>
<td>Nonmetropolitan county group</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Central city 25,000-49,999</td>
<td>72</td>
<td>296,200</td>
<td>4,114</td>
</tr>
<tr>
<td>Central city 10,000-24,999</td>
<td>40</td>
<td>217,200</td>
<td>5,430</td>
</tr>
<tr>
<td>Central city 5,000-9,999</td>
<td>20</td>
<td>105,600</td>
<td>5,280</td>
</tr>
<tr>
<td>Central city under 5,000</td>
<td>10</td>
<td>107,800</td>
<td>10,780</td>
</tr>
</tbody>
</table>

355
As the map on the following page indicates, only 8 of the 25 counties with reporting dentists had dentist-population ratios as favorable as the State average of 4,116. The metropolitan county of Bernalillo ranked second in the State with a ratio of one dentist for every 2,823 persons, and Los Alamos County ranked third, with a ratio of one for every 3,060. The number of persons per dentist in the remaining 5 counties with better than average ratios ranged from 3,400 in Colfax County to 3,886 in Eddy County. One county--Lincoln--had a ratio (4,150 persons per dentist) that is only slightly higher than the State average. Of the remaining counties with reporting dentists, however, there were 3 counties with ratios in excess of one dentist per 8,000 persons. In addition to Valencia County, they included McKinley (8,320), Rio Arriba (8,567), Taos (8,650), Otero (8,675), Roosevelt (8,850), Socorro (10,330), and Quay (13,100).

The counties without reporting dentists are not necessarily without the services of a dentist. For example, Sandoval County, from which no active dentist reported, has an Indian population which accounts for more than 20 percent of its total inhabitants. Since dentists employed by the Federal Government in such agencies as the Division of Indian Health of the Public Health Service are not required to be licensed in the State in which they are assigned, there is every likelihood that the survey results underestimate the dental force available to the residents of this county. This is also true of some of the counties with reporting dentists. A case in point is McKinley County, with 5 reporting dentists serving a population of over 41,000. Since 28 percent of its residents are Indian, the dental force available to the community is undoubtedly greater than the survey figures indicate.

Professional Activity

Current employment.--As might be expected, self-employment predominates among dentists who are active in the profession. Of the 252 professionally active dentists located in New Mexico, 95 percent are primarily in private practice. The remaining 5 percent includes 2 percent who are primarily employed by other dentists, another 2 percent employed by a government agency, and one percent engaged in other dental employment.

Only 17 dentists, or 7 percent of those professionally active, reported a secondary dental employment. Nine of these dentists, seven of whom are located in Bernalillo County, engage in work with a voluntary agency as their secondary activity. Other dentists reported that they teach part time at the dental hygiene school in Albuquerque or work for a government agency.

Activity last year.--All but one dentist reporting on their professional activity in New Mexico last year indicated that they had provided care for patients. Dentists reporting on time spent last year in providing patient care devoted an average of 47.4 weeks to this activity and worked an average
POPULATION PER DENTIST IN NEW MEXICO
BY COUNTY: 1965

persons per dentist:
under 3,000
3,000 - 3,995
4,000 - 4,999
5,000 & over
no dentists
of 38.2 hours per week. The figures in Table 8 show that one-half of the reporting dentists spent at least 40 hours per week at this activity for 48 or more weeks during the year. Furthermore, almost one dentist in ten worked 48 or more hours per week for this number of weeks.

Table 8.--Time Spent in Patient Care Last Year

<table>
<thead>
<tr>
<th>Weeks spent in patient care</th>
<th>Percent of dentists providing care</th>
<th>Percent distribution by work week</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>48 hours</td>
<td>41-47</td>
</tr>
<tr>
<td>Total reporting time spent</td>
<td></td>
<td></td>
</tr>
<tr>
<td>50 weeks or more</td>
<td>41%</td>
<td>6%</td>
</tr>
<tr>
<td>48-49 weeks</td>
<td>32%</td>
<td>3%</td>
</tr>
<tr>
<td>40-47 weeks</td>
<td>19%</td>
<td>1%</td>
</tr>
<tr>
<td>Less than 40 weeks</td>
<td>5%</td>
<td>-</td>
</tr>
</tbody>
</table>

Practice Characteristics

Limited practice.--Approximately 16 percent of the reporting dentists in New Mexico limit their practices to a dental specialty. Almost one-half of these dentists report their practices are limited to orthodontia. Fifty-nine percent of the dentists limiting their practices are located in the Albuquerque metropolitan area (Bernalillo County), where one in every five dentists reported limiting his practice. Specialization is even more common in Santa Fe County, however, where one-fourth of the dentists are limited practitioners.

Use of auxiliaries.--Almost nine out of ten of the dental practitioners report that they employ auxiliary personnel (Table 9). Dental assistants are the most frequently employed auxiliary. Eighty-six percent of all practitioners employ assistants, including 82 percent who employ at least one assistant on a full-time basis. Secretaries and receptionists are employed by 44 percent of the dentists, with about two-thirds of these dentists employing such personnel on a full-time basis. Only 16 percent of the dentists employ hygienists and 12 percent employ dental technicians. A majority of the dentists who employ hygienists or technicians do so only part time.

Although dentists in the Albuquerque metropolitan area are no more likely to employ auxiliary personnel than are those located in the nonmetropolitan areas, the use of hygienists is much more common in this county than in the remainder of the State. About 24 percent of the dentists in the Albuquerque area report the employment of a hygienist, compared with only 11 percent of the dentists located elsewhere.
Table 9.--Auxiliary Utilization by Dental Practitioners

<table>
<thead>
<tr>
<th>Type of auxiliary</th>
<th>Number of practitioners</th>
<th>Percent of practitioners</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>248</td>
<td>100</td>
</tr>
<tr>
<td>With one or more auxiliaries</td>
<td>211</td>
<td>88</td>
</tr>
<tr>
<td>With assistant</td>
<td>206</td>
<td>85</td>
</tr>
<tr>
<td>With hygienist</td>
<td>39</td>
<td>16</td>
</tr>
<tr>
<td>With laboratory technician</td>
<td>28</td>
<td>12</td>
</tr>
<tr>
<td>With secretary or receptionist</td>
<td>106</td>
<td>44</td>
</tr>
<tr>
<td>With other type of personnel</td>
<td>10</td>
<td>4</td>
</tr>
<tr>
<td>With no auxiliary</td>
<td>28</td>
<td>12</td>
</tr>
</tbody>
</table>

The use of auxiliaries varies with the age of the dentist. Over 90 percent of the dental practitioners under age 55 employ some type of auxiliary. Among dentists 55 years of age and over, the proportion using auxiliaries drops to approximately 65 percent.

Almost one-fifth of the dental practitioners in New Mexico who are currently without auxiliaries report one or more vacant positions for auxiliary personnel. The proportion reporting one or more vacancies among dentists currently employing auxiliaries was 15 percent. More than half of all vacancies were for hygienists. Most dentists reporting a hygienist vacancy did not currently employ this type of auxiliary personnel.

Out-of-State Civilian Dentists

There are at least 108 civilian dentists in 27 other States who maintain licenses in New Mexico. More than one-third of these out-of-State dentists are located in the adjacent States--26 percent are in Texas and another 10 percent are in Arizona, Oklahoma, and Colorado. The remaining

Table 10.--Present Location of Out-of-State Civilian Dentists

<table>
<thead>
<tr>
<th>Present location</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>108</td>
<td>100</td>
</tr>
<tr>
<td>Texas</td>
<td>28</td>
<td>26</td>
</tr>
<tr>
<td>California</td>
<td>18</td>
<td>17</td>
</tr>
<tr>
<td>Kansas</td>
<td>11</td>
<td>10</td>
</tr>
<tr>
<td>Missouri</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>23 other States</td>
<td>45</td>
<td>42</td>
</tr>
</tbody>
</table>
64 percent of the out-of-State respondents are located in 23 other States, primarily in California and Kansas. About one of every six out-of-State respondents reported they had formerly been professionally active in New Mexico. Nearly half of these out-migrant dentists are presently located in the neighboring State of Texas.
### Appendix Table A.--Summary Statistics for New Mexico

<table>
<thead>
<tr>
<th>Category</th>
<th>Number of Dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>All licensed dentists</td>
<td>425</td>
</tr>
<tr>
<td>Respondents -- total dentists participating in survey</td>
<td>381</td>
</tr>
<tr>
<td>(number not reporting current location or military status - 2)</td>
<td></td>
</tr>
<tr>
<td>Civilian dentists in New Mexico(^1) -- civilian respondents</td>
<td>255</td>
</tr>
<tr>
<td>designated simply as &quot;dentists&quot; in text tables</td>
<td></td>
</tr>
<tr>
<td>(number not reporting: age - 14, dental school attended - 3, and year of graduation - 7)</td>
<td></td>
</tr>
<tr>
<td>Professionally active dentists(^2)</td>
<td>252</td>
</tr>
<tr>
<td>In limited practice(^3)</td>
<td>252</td>
</tr>
<tr>
<td>Dental practitioners(^4)</td>
<td></td>
</tr>
<tr>
<td>Located in New Mexico last year:</td>
<td></td>
</tr>
<tr>
<td>Reported professional activity(^5)</td>
<td>225</td>
</tr>
<tr>
<td>Dentists providing patient care(^6)</td>
<td>224</td>
</tr>
<tr>
<td>Reported time spent in patient care(^7)</td>
<td>191</td>
</tr>
<tr>
<td>Civilian dentists in another State</td>
<td>108</td>
</tr>
<tr>
<td>Dentists on active duty in Armed Forces</td>
<td>16</td>
</tr>
<tr>
<td>Nonrespondents -- licensed dentists not participating in survey</td>
<td>44</td>
</tr>
</tbody>
</table>

\(^1\) All responding dentists who currently work in New Mexico (excluding those in the Armed Forces) or who are retired and currently live in the State.

\(^2\) All active civilian dentists currently in New Mexico -- excludes 3 dentists who are fully retired.

\(^3\) Dentists who reported they limit their practice to a dental specialty.

\(^4\) All dentists practicing at the chair, that is, dentists who work as clinicians either as primary or secondary activity.

\(^5\) Dentists located in New Mexico last year who indicated type(s) of activity in which they engaged.

\(^6\) All dentists who engaged in patient care last year, either as a primary or secondary activity.

\(^7\) Dentists reporting both hours and weeks spent in patient care last year.
Appendix Table B.--New Mexico Counties by County Group

### Metropolitan Area

<table>
<thead>
<tr>
<th>County</th>
<th>Number of responding civilian dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albuquerque area</td>
<td></td>
</tr>
<tr>
<td>Bernalillo</td>
<td>113</td>
</tr>
</tbody>
</table>

### Nonmetropolitan Counties

<table>
<thead>
<tr>
<th>County group</th>
<th>Central city</th>
<th>Number of responding civilian dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central city 25,000-49,999</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chaves</td>
<td>Roswell</td>
<td>13</td>
</tr>
<tr>
<td>Dona Ana</td>
<td>Las Cruces</td>
<td>12</td>
</tr>
<tr>
<td>Eddy</td>
<td>Carlsbad</td>
<td>14</td>
</tr>
<tr>
<td>Lea</td>
<td>Hobbs</td>
<td>10</td>
</tr>
<tr>
<td>Santa Fe</td>
<td>Santa Fe</td>
<td>23</td>
</tr>
<tr>
<td>Central city 10,000-24,999</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Curry</td>
<td>Clovis</td>
<td>10</td>
</tr>
<tr>
<td>Los Alamos</td>
<td>Los Alamos</td>
<td>5</td>
</tr>
<tr>
<td>McKinley</td>
<td>Gallup</td>
<td>5</td>
</tr>
<tr>
<td>Otero</td>
<td>Alamogorda</td>
<td>4</td>
</tr>
<tr>
<td>San Juan</td>
<td>Farmington</td>
<td>13</td>
</tr>
<tr>
<td>Valencia</td>
<td>Grants</td>
<td>3</td>
</tr>
<tr>
<td>Central city 5,000-9,999</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Colfax</td>
<td>Raton</td>
<td>4</td>
</tr>
<tr>
<td>Grant</td>
<td>Silver City</td>
<td>4</td>
</tr>
<tr>
<td>Luna</td>
<td>Deming</td>
<td>3</td>
</tr>
<tr>
<td>Quay</td>
<td>Tucumcari</td>
<td>1</td>
</tr>
<tr>
<td>Roosevelt</td>
<td>Portales</td>
<td>2</td>
</tr>
<tr>
<td>San Miguel</td>
<td>Las Vegas</td>
<td>5</td>
</tr>
<tr>
<td>Socorro</td>
<td>Socorro</td>
<td>1</td>
</tr>
<tr>
<td>Central city 2,500-4,999</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hidalgo</td>
<td>Lordsburg</td>
<td>1</td>
</tr>
<tr>
<td>Sandoval</td>
<td>Bernalillo</td>
<td>-</td>
</tr>
<tr>
<td>Sierra</td>
<td>Truth or Consequences</td>
<td>1</td>
</tr>
<tr>
<td>Union</td>
<td>Clayton</td>
<td>1</td>
</tr>
</tbody>
</table>
Appendix Table B.--New Mexico Counties by County Group (continued)

Nonmetropolitan Counties

<table>
<thead>
<tr>
<th>County group</th>
<th>Central city</th>
<th>Number of responding civilian dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central city under 2,500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Catron</td>
<td>Reserve</td>
<td>-</td>
</tr>
<tr>
<td>Do Baca</td>
<td>Fort Sumner</td>
<td>-</td>
</tr>
<tr>
<td>Guadalupe</td>
<td>Santa Rosa</td>
<td>-</td>
</tr>
<tr>
<td>Harding</td>
<td>Roy</td>
<td>-</td>
</tr>
<tr>
<td>Lincoln</td>
<td>Ruidoso</td>
<td>2</td>
</tr>
<tr>
<td>Mora</td>
<td>Wagon Mound</td>
<td>-</td>
</tr>
<tr>
<td>Rio Arriba</td>
<td>Espanola</td>
<td>3</td>
</tr>
<tr>
<td>Taos</td>
<td>Taos</td>
<td>2</td>
</tr>
<tr>
<td>Torrance</td>
<td>Mountainair</td>
<td>-</td>
</tr>
</tbody>
</table>

1/ The Albuquerque area, including all of Bernalillo County, is defined as a Standard Metropolitan Statistical Area as established by the U.S. Bureau of the Budget, Office of Statistical Standards.

2/ Counties not included within a SMSA, as defined by the U.S. Bureau of the Budget, have been grouped according to the 1960 population of the largest (central) city within each county.
### Appendix Table C.—Selected Data for New Mexico Counties

<table>
<thead>
<tr>
<th>Counties with responding active dentists</th>
<th>Professionally active dentists (in 000's)</th>
<th>Population</th>
<th>Persons per dentist</th>
<th>Number of active dentists</th>
<th>By age</th>
<th>Reporting use of auxiliaries</th>
</tr>
</thead>
<tbody>
<tr>
<td>All counties</td>
<td>232</td>
<td>1,037.3²/</td>
<td>4,116</td>
<td>63</td>
<td>43</td>
<td>211</td>
</tr>
<tr>
<td>Bernalillo</td>
<td>110</td>
<td>310.5</td>
<td>2,823</td>
<td>29</td>
<td>18</td>
<td>90</td>
</tr>
<tr>
<td>Chaves</td>
<td>13</td>
<td>69.5</td>
<td>5,366</td>
<td>3</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>Colfax</td>
<td>4</td>
<td>12.6</td>
<td>3,400</td>
<td>1</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Curry</td>
<td>10</td>
<td>37.4</td>
<td>3,740</td>
<td>4</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>Dona Ana</td>
<td>12</td>
<td>59.7</td>
<td>5,808</td>
<td>4</td>
<td>-</td>
<td>12</td>
</tr>
<tr>
<td>Eddy</td>
<td>14</td>
<td>54.4</td>
<td>3,886</td>
<td>5</td>
<td>3</td>
<td>11</td>
</tr>
<tr>
<td>Grant</td>
<td>4</td>
<td>18.4</td>
<td>4,600</td>
<td>-</td>
<td>-</td>
<td>4</td>
</tr>
<tr>
<td>Hidalgo</td>
<td>1</td>
<td>4.9</td>
<td>4,800</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Lee</td>
<td>10</td>
<td>54.2</td>
<td>5,540</td>
<td>2</td>
<td>2</td>
<td>9</td>
</tr>
<tr>
<td>Lincoln</td>
<td>2</td>
<td>8.3</td>
<td>4,150</td>
<td>1</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Los Alamos</td>
<td>5</td>
<td>13.3</td>
<td>3,060</td>
<td>1</td>
<td>-</td>
<td>5</td>
</tr>
<tr>
<td>Luna</td>
<td>3</td>
<td>10.4</td>
<td>3,667</td>
<td>1</td>
<td>-</td>
<td>3</td>
</tr>
<tr>
<td>McKinley</td>
<td>5</td>
<td>41.6</td>
<td>8,320</td>
<td>1</td>
<td>-</td>
<td>3</td>
</tr>
<tr>
<td>Otero</td>
<td>4</td>
<td>34.7</td>
<td>8,675</td>
<td>-</td>
<td>-</td>
<td>4</td>
</tr>
<tr>
<td>Quay</td>
<td>1</td>
<td>13.1</td>
<td>13,100</td>
<td>1</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Rio Arriba</td>
<td>3</td>
<td>25.7</td>
<td>8,567</td>
<td>1</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Roosevelt</td>
<td>2</td>
<td>17.7</td>
<td>8,850</td>
<td>-</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>San Juan</td>
<td>13</td>
<td>48.1</td>
<td>3,700</td>
<td>3</td>
<td>2</td>
<td>11</td>
</tr>
<tr>
<td>San Miguel</td>
<td>5</td>
<td>22.1</td>
<td>4,420</td>
<td>-</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Santa Fe</td>
<td>23</td>
<td>48.4</td>
<td>2,104</td>
<td>5</td>
<td>5</td>
<td>18</td>
</tr>
<tr>
<td>Sierra</td>
<td>1</td>
<td>6.9</td>
<td>6,900</td>
<td>-</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>Socorro</td>
<td>1</td>
<td>10.3</td>
<td>10,300</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Taos</td>
<td>2</td>
<td>17.3</td>
<td>8,650</td>
<td>-</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Union</td>
<td>1</td>
<td>5.9</td>
<td>5,900</td>
<td>1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Valencia</td>
<td>3</td>
<td>40.1</td>
<td>13,367</td>
<td>-</td>
<td>1</td>
<td>3</td>
</tr>
</tbody>
</table>

¹/ Copyright 1965, Sales Management Survey of Buying Power; further reproduction is forbidden.

²/ Includes 38,900 persons in Catron, De Baca, Guadalupe, Harding, Mora, Sandoval and Torrance Counties which have no responding dentists.
DENTISTS LICENSED IN NEW YORK

During the 1966 registration period, 15,397 dentists registered with the New York State Board of Dental Examiners. A total of 14,929 dentists responded to the survey, 97 percent of those registered. A large proportion of the responding dentists, 87 percent, are civilians located in New York State, 10 percent are civilians located in other states, and approximately 3 percent are on active duty with the Armed Forces.

<table>
<thead>
<tr>
<th>Location and Military Status of Dentists Licensed in New York</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location and military status</td>
</tr>
<tr>
<td>Total</td>
</tr>
<tr>
<td>Respondents</td>
</tr>
<tr>
<td>Nonrespondents</td>
</tr>
<tr>
<td>Respondents</td>
</tr>
<tr>
<td>Civilians in New York</td>
</tr>
<tr>
<td>Civilians in another state</td>
</tr>
<tr>
<td>On active duty with Armed Forces</td>
</tr>
<tr>
<td>Not reported</td>
</tr>
</tbody>
</table>

*Less than one-half of one percent.

Multiple licensure is not too common among New York dentists. Less than one-fourth of all respondents hold a license to practice dentistry in one or more other states. Only 13 percent of the dentists located in New York hold more than one license, with 11 percent licensed in one other state and a mere 2 percent licensed in two or more other states. The proportion of out-of-state dentists holding multiple licenses is considerably greater; 25 percent hold two or more licenses in addition to their New York license.

Two-thirds of the licenses held outside of New York are held in adjacent states, including 28 percent in New Jersey, some 15 percent each in Pennsylvania and Connecticut, and approximately 9 percent in Massachusetts. An additional 10 percent of the licenses are maintained in California and Florida.
Over three-fifths of New York's 12,891 dentists are graduates of in-state dental schools. New York University has made the largest contribution, over 4,700 dentists, or almost 40 percent of the total dental force. The two remaining in-state schools, Columbia University and the State University of New York at Buffalo, with considerably smaller contributions, have each trained approximately 12 percent of the dentists.

Dental School Attended and Year of Graduation for Dentists in New York

<table>
<thead>
<tr>
<th>Dental school attended</th>
<th>Number of dentists</th>
<th>Year of graduation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>12,891 1/</td>
<td>1955</td>
</tr>
<tr>
<td></td>
<td></td>
<td>After 1941-1940 or earlier</td>
</tr>
<tr>
<td>Total number</td>
<td></td>
<td>2,523</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4,658</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5,705</td>
</tr>
<tr>
<td>(Percent distribution by school)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Schools in New York</td>
<td></td>
<td></td>
</tr>
<tr>
<td>New York University</td>
<td>8,038</td>
<td>63</td>
</tr>
<tr>
<td>Columbia</td>
<td>4,739</td>
<td>37</td>
</tr>
<tr>
<td>New York (Buffalo)</td>
<td>1,714</td>
<td>12</td>
</tr>
<tr>
<td>Schools located elsewhere</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>1,467</td>
<td>10</td>
</tr>
<tr>
<td>Georgetown</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Tufts</td>
<td>443</td>
<td>4</td>
</tr>
<tr>
<td>Temple</td>
<td>296</td>
<td>4</td>
</tr>
<tr>
<td>Pittsburgh</td>
<td>253</td>
<td>5</td>
</tr>
<tr>
<td>Maryland</td>
<td>200</td>
<td>2</td>
</tr>
<tr>
<td>30 other schools</td>
<td>1,740</td>
<td>13</td>
</tr>
</tbody>
</table>

* Less than one-half of one percent.

1/ Dental school attended not available for 4 dentists and year of graduation for 5 dentists.

Schools in adjacent states have provided another one-fifth of New York's dentists. Among these schools, the University of Pennsylvania has been the principal contributor, supplying almost 1,500 dentists, or 12 percent of the total dental force. Two other Pennsylvania schools, Temple University and the University of Pittsburgh, have between them provided 4 percent of the dentist supply. More than 400 dentists, about 3 percent of the State's supply, were trained at Tufts University in Massachusetts.

Among the more distant schools, the largest contributors are Georgetown University in the District of Columbia and the University of Maryland, which have supplied 3 percent and 2 percent of the State's dentists, respectively. The only other schools to provide as many as 150 of New York dentists are three schools in the North Central States, St. Louis University, Western Reserve and Illinois. Approximately 180 New York dentists were trained in Canadian schools, principally McGill University.
PROFESSIONAL TRAINING (cont'd.)

Relatively few of New York's dentists are recent dental school graduates; only 20 percent of the dental force graduated from dental school after 1955. By comparison, more than 40 percent of the State's dentists were graduates during the years prior to World War II. The relative contribution of New York University and the State University at Buffalo have remained fairly constant through the years, while the proportion of Columbia University graduates has decreased considerably since World War II.

In New York a relatively high proportion of survey respondents—approximately one-third, or 4,160 dentists—reported that they had completed one year or more of advanced training after receiving their dental degrees. Of the 3,105 dentists with advanced clinical training, 592 completed a residency and 2,513 an internship. Among the 1,749 dentists who reported advanced academic training, 116 earned a second doctorate, 437 earned a master's degree and another 1,196 received no additional degrees but completed one or more years of postgraduate study. These figures include 694 dentists who completed both academic and clinical training.

### Advanced Training Completed by New York Dentists

<table>
<thead>
<tr>
<th>Highest level of training completed</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total respondents</td>
<td>12,891</td>
<td>100</td>
</tr>
<tr>
<td>With advanced training</td>
<td>4,160</td>
<td>32</td>
</tr>
<tr>
<td>With no advanced training</td>
<td>8,731</td>
<td>68</td>
</tr>
<tr>
<td>Clinical training</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residency completed</td>
<td>592</td>
<td>5</td>
</tr>
<tr>
<td>Internship completed</td>
<td>2,513</td>
<td>19</td>
</tr>
<tr>
<td>Academic training</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ph.D., M.D., or other doctorate</td>
<td>116</td>
<td>1</td>
</tr>
<tr>
<td>M.A., M.S., or other master's degree</td>
<td>437</td>
<td>3</td>
</tr>
<tr>
<td>Postgraduate 1 year or more (no degree)</td>
<td>1,196</td>
<td>9</td>
</tr>
</tbody>
</table>

There is a growing tendency for young dentists to seek additional training beyond the dental degree. Twenty percent of all New York dentists under 40 years of age have a year or more of academic training as compared with 15 percent of those 40-54 years old and only 7 percent of those 55 and over. Residencies show the same pattern by age, but the trend varies somewhat with respect to internships. Twenty-one percent of the dentists under 40 years of age reported completion of an internship. This percentage is slightly lower than that recorded for dentists 40 to 54 years old, but is considerably greater than the 12 percent recorded for dentists 55 and over.
DISTRIBUTION OF DENTISTS

A very high percentage of all licensed dentists in New York--92 percent--are located within the State's seven metropolitan areas. The 9-county New York metropolitan area alone contains approximately three-fourths of the State's total dental force. Furthermore, one of every two dentists in the State (6,994 dentists) are actually located within the 5 boroughs of New York City--Manhattan, Brooklyn, Queens, Bronx and Richmond (Staten Island)--while another 2,613 dentists are found in the remaining 4 counties of the New York metropolitan area. Within New York City itself, approximately 4 of every 10 dentists are located in Manhattan, 3 in Brooklyn, 2 in Queens, and 1 in the Bronx (relatively few are located in Richmond). Among the other counties in the New York metropolitan area, Nassau County has the largest number of dentists, almost 1,200, followed by Westchester with more than 750 dentists.

Distribution of New York Dentists, by County Group

<table>
<thead>
<tr>
<th>County group*</th>
<th>Number of counties</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>62</td>
<td>12,891</td>
<td>100</td>
</tr>
<tr>
<td>New York metropolitan area</td>
<td>9</td>
<td>9,607</td>
<td>75</td>
</tr>
<tr>
<td>New York City</td>
<td>5</td>
<td>6,994</td>
<td>54</td>
</tr>
<tr>
<td>Other counties</td>
<td>4</td>
<td>2,613</td>
<td>21</td>
</tr>
<tr>
<td>Other metropolitan areas</td>
<td>17</td>
<td>2,236</td>
<td>17</td>
</tr>
<tr>
<td>Buffalo area</td>
<td>2</td>
<td>778</td>
<td>6</td>
</tr>
<tr>
<td>Rochester area</td>
<td>4</td>
<td>509</td>
<td>4</td>
</tr>
<tr>
<td>Albany-Schenectady-Troy area</td>
<td>4</td>
<td>365</td>
<td>3</td>
</tr>
<tr>
<td>Syracuse area</td>
<td>3</td>
<td>300</td>
<td>2</td>
</tr>
<tr>
<td>Utica-Rome area</td>
<td>2</td>
<td>158</td>
<td>1</td>
</tr>
<tr>
<td>Binghamton area (N.Y. part)</td>
<td>2</td>
<td>126</td>
<td>1</td>
</tr>
<tr>
<td>Nonmetropolitan counties</td>
<td>36</td>
<td>1,048</td>
<td>8</td>
</tr>
<tr>
<td>Central city 25,000-49,999</td>
<td>9</td>
<td>550</td>
<td>4</td>
</tr>
<tr>
<td>Central city 10,000-24,999</td>
<td>13</td>
<td>310</td>
<td>3</td>
</tr>
<tr>
<td>Central city under 10,000</td>
<td>14</td>
<td>188</td>
<td>1</td>
</tr>
</tbody>
</table>

*See Appendix Table for definition of metropolitan areas and presentation of individual county data.

Of the other metropolitan areas, Buffalo has the largest dental force, although it accounts for only 6 percent of the State supply. The next largest dental forces are found in the Rochester and the Albany-Schenectady-Troy areas, which account for 4 percent and 3 percent of the State's dentists, respectively. The remaining three metropolitan areas, Syracuse, Utica-Rome and Binghamton, together account for 4 percent of the dentist supply.

Only 8 percent of New York's dentists are located in the 36 nonmetropolitan counties of the State. More than one-half of these dentists are located in the 9 counties with central cities of 25,000 or more persons.
Dentists in New York have a rather high median age of 48.9 years. Only 25 percent, or 3,221, of the State's dentists are under 40 years of age, including just 16 percent who are under 35. On the other hand, well over one-third, or 4,568 dentists, are 55 years of age or older. About one in every six, or 2,031 dentists, are 65 years old or over, including 946 who have reached the age of 70.

Some variation is to be found in the median ages of dentists in the individual metropolitan areas and in the nonmetropolitan county groups. Among the metropolitan areas, Rochester and Syracuse have the youngest dentists, with median ages of 44.6 and 44.5 years, respectively. The New York metropolitan area has the oldest dentists, with a median age of 49.5 years. Age differences among the components of this area, however, are even more pronounced. The median age of dentists in New York City is 51.8 years, with that of Manhattan Borough a high 54.4 years and the average of the remaining 4 boroughs 50.4 years. Dentists in the four other counties comprising the New York metropolitan area are considerably younger, with a median age of 45.0 years.

Dentist ages in nonmetropolitan counties tend to increase as the size of the central city declines. The median age of dentists in counties with central cities of at least 25,000 population is 47.0 years, compared to a median age of 49.8 years in counties containing a central city of 10,000-24,999 inhabitants and 51.2 years in counties with less than 10,000 persons in their central cities.
ACTIVE DENTISTS IN RELATION TO POPULATION

Of the 12,891 responding dentists in New York, 12,427, or 96 percent, are active in their profession, giving New York one professionally active dentist for every 1,424 persons. There is one dentist for every 1,212 persons in the New York metropolitan area, while the remaining 6 metropolitan areas have a somewhat less favorable ratio of one dentist for every 1,904 persons and the nonmetropolitan counties have an even less favorable ratio of 2,334 persons per dentist.

Number of Persons per Active Dentist in New York State

<table>
<thead>
<tr>
<th>County group*</th>
<th>Professionally active dentists</th>
<th>Population</th>
<th>Persons per dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>12,427</td>
<td>17,696,500</td>
<td>1,424</td>
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<tr>
<td>New York metropolitan area</td>
<td>9,252</td>
<td>11,216,600</td>
<td>1,212</td>
</tr>
<tr>
<td>New York City (5 boroughs)</td>
<td>6,716</td>
<td>7,829,900</td>
<td>1,166</td>
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<tr>
<td>4 other counties</td>
<td>2,536</td>
<td>3,386,700</td>
<td>1,335</td>
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<td>Other metropolitan areas</td>
<td>2,162</td>
<td>4,115,900</td>
<td>1,904</td>
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<tr>
<td>Buffalo area</td>
<td>749</td>
<td>1,403,600</td>
<td>1,874</td>
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<td>Rochester area</td>
<td>497</td>
<td>788,000</td>
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<td>Albany-Schenectady-Troy area</td>
<td>350</td>
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<td>Syracuse area</td>
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<td>611,000</td>
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<td>Utica-Rome area</td>
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<tr>
<td>Central city under 10,000</td>
<td>181</td>
<td>443,400</td>
<td>2,450</td>
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</tbody>
</table>

*See Appendix Table for individual county data.

New York City has a comparatively favorable ratio of 1,166 persons, while the other 4 counties in the New York metropolitan area have an average persons-per-dentist ratio of 1,335. Within New York City itself, Manhattan has a low ratio of 622, while the remaining 4 boroughs have ratios similar to each other, ranging between 1,444 and 1,671. Among the metropolitan areas exclusive of New York, Rochester has the best ratio, 1,586 persons per dentist, while the Utica-Rome area has the least favorable ratio of one dentist for every 2,314 persons. Ratio differences among individual counties within the metropolitan areas are more pronounced. For example, while the persons-per-dentist ratio in the 4-county Albany-Schenectady-Troy area is 1,975, the individual county ratios within the area range from 1,542 in Schenectady County to 3,856 in Saratoga County.

Among the 36 nonmetropolitan counties of the State, Dutchess County has the most favorable ratio, with one dentist for every 1,599 persons. In addition to Dutchess, 6 other counties have ratios under 2,000 persons per dentist. On the other hand, there are 16 counties with ratios over 2,500, including 8 with ratios in excess of 3,000 persons per dentist. By county grouping according to size of central city, the most favorable ratios are found in the 9 counties with more than 25,000 persons in their central cities.
UTILIZATION OF AUXILIARIES

Over three-fifths of the responding dentists in New York State reported that they employ some type of auxiliary personnel. Dental assistants, the most frequently employed auxiliary, are utilized by 53 percent of all practitioners, including 43 percent who employ at least one assistant on a full-time basis. Secretaries or receptionists are employed by 19 percent of the dentists, with more than two-thirds of these dentists utilizing such personnel full time. Fourteen percent of the dentists employ dental hygienists, with half of these dentists utilizing such personnel on a full-time basis. Only 4 percent of the dentists employ laboratory technicians, principally for part-time assistance.

New York Dentists Employing Auxiliaries, by Type of Auxiliary

<table>
<thead>
<tr>
<th>Type of auxiliary employed by dentists</th>
<th>Percent of Dental Practitioners</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>With one full-time auxiliary</td>
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<tr>
<td>Total</td>
<td>12,281</td>
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<tr>
<td>One or more auxiliaries</td>
<td>7,445</td>
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<tr>
<td>Assistant</td>
<td>6,312</td>
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<tr>
<td>Hygienist</td>
<td>1,718</td>
</tr>
<tr>
<td>Laboratory technician</td>
<td>541</td>
</tr>
<tr>
<td>Secretary or receptionist</td>
<td>2,190</td>
</tr>
<tr>
<td>Other type personnel</td>
<td>258</td>
</tr>
<tr>
<td>No auxiliaries</td>
<td>4,585</td>
</tr>
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</table>

1/ Includes 251 dentists who did not report on auxiliary utilization.

Use of auxiliaries varies with the age of the dentist and tends to be more frequent among younger dentists. Seventy-six percent of New York dentists between the ages of 30 and 44 employ some type of auxiliary. The proportion using auxiliaries decreases to 59 percent among dentists 45 to 64 years old and to only 38 percent among dentists 65 and over. Young dentists who are just starting their practices do not reach peak utilization of assistants until they are 30 years of age and of hygienists until age 35.

Dentists in the New York metropolitan area are less likely to employ auxiliary personnel than are those located in the remainder of the State. Auxiliaries are employed by 59 percent of the dentists in the New York metropolitan area as compared to 71 percent of those in other areas of the State. In the New York metropolitan area one-half of the dentists employ an assistant and only 10 percent employ a hygienist. In contrast, three-fifths of the dentists located in the remainder of the State employ at least one assistant and 27 percent report employment of a hygienist.
OTHER SURVEY FINDINGS

Ninety-five percent of the professionally active dentists in New York are primarily engaged in private practice, with 93 percent self-employed and 2 percent employed by another dentist. One percent of the dentists are on the staff of a dental school, and another 2 percent are employed by governmental agencies. The remaining 2 percent are engaged in other dental activities, such as taking advanced training.

At least one part-time dental activity in addition to their principal employment was reported by 19 percent of the New York dentists. Part-time teaching in a dental school was the most frequently reported type of secondary employment, followed by employment in a State or local government agency. A variety of other secondary dental activities were reported, including employment by another dentist, and serving in voluntary agencies.

Dentists reporting time spent in providing patient care devoted an average of 39.2 hours per week to this activity for 47.4 weeks during the year preceding the survey. About one dentist in seven worked the equivalent of six days a week, 48 hours or more, for at least 48 weeks.

About 11 percent of the practitioners reported they limit their practice to a dental specialty, primarily orthodontics or oral surgery. Other specialty areas frequently reported were periodontics, prosthodontics and endodontics. There is very little difference in the proportion of dentists limiting their practice in the New York metropolitan area and in the remainder of the State.

Of the 1,470 dentists licensed in New York but located in another state at the time of the survey, one-third were in New Jersey and 28 percent were located in the other adjacent states of Connecticut, Massachusetts, Pennsylvania and Vermont. The remaining out-of-state dentists were located in 43 other states, predominantly California and Florida.

January 1968.
### APPENDIX TABLE

Selected Data on Dentists in New York, by Location

<table>
<thead>
<tr>
<th>County group and county</th>
<th>Age in 1965</th>
<th>Professionally active</th>
<th>Population (in 000's)</th>
<th>Persons per active dentist</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Percent under 40</td>
<td>Percent 55 or more</td>
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<td><strong>All counties</strong></td>
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<td>37</td>
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APPENDIX TABLE (Cont'd)

Selected Data on Dentists in New York, by Location

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<th>County group and county</th>
<th>Civilian dentists</th>
<th>Population</th>
<th>Persons per active dentist</th>
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<td>Age in 1965</td>
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<td></td>
<td>Percent</td>
<td>Percent</td>
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### Selected Data on Dentists in New York, by Location

<table>
<thead>
<tr>
<th>County group and county</th>
<th>Civilian dentists</th>
<th>Population (in 000's)</th>
<th>Persons per active dentist</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Percent under 40</td>
<td>Percent 55 or more</td>
</tr>
<tr>
<td>Central City 10,000-24,999</td>
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APPENDIX TABLE  (Cont'd)

Selected Data on Dentists in New York, by Location

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<thead>
<tr>
<th>County group and county</th>
<th>Civilian dentist</th>
<th>Population</th>
<th>1/ Persons per active dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Age in 1965</td>
<td>Professionally active</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Percent under 40</td>
<td>Percent 55 or more</td>
</tr>
<tr>
<td>Central City 2,500-4,999</td>
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<td>29</td>
</tr>
<tr>
<td>Lewis</td>
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<td>Schoharie</td>
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<td>Schuyler</td>
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<td>29</td>
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<tr>
<td>Central City under 2,500</td>
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<td>50</td>
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<tr>
<td>Hamilton</td>
<td>2</td>
<td>50</td>
<td>50</td>
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2/ New York counties in the latest 1967 definition of Standard Metropolitan Statistical Areas, as established by the U.S. Bureau of the Budget, Office of Statistical Standards, have been grouped as metropolitan areas for presentation of the survey data. For the interstate Binghamton SMSA, statistics are presented only for dentists located in the New York portion.

3/ Counties not included within an SMSA, as defined by the U.S. Bureau of the Budget, have been grouped according to the 1960 population of the largest (central) city within each county.
DENTISTS LICENSED IN NORTH CAROLINA

During the 1966 registration period, 1,574 dentists registered with the North Carolina State Board of Dental Examiners. Ninety percent of these dentists, 1,410, responded to the survey. Almost nine in every ten (89 percent) of the survey respondents are civilian dentists located in North Carolina, another 5 percent are civilians located in other States, primarily Virginia, Florida, and South Carolina, and the remaining 6 percent are on active duty with the Armed Forces.

Location and Military Status of Dentists Licensed in North Carolina

<table>
<thead>
<tr>
<th>Location and military status</th>
<th>All dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total licensed</td>
<td>1,574</td>
<td>100</td>
</tr>
<tr>
<td>Respondents</td>
<td>1,410</td>
<td>90</td>
</tr>
<tr>
<td>Nonrespondents</td>
<td>164</td>
<td>10</td>
</tr>
<tr>
<td>Respondents</td>
<td>1,410</td>
<td>100</td>
</tr>
<tr>
<td>Civilians in North Carolina</td>
<td>1,262</td>
<td>89</td>
</tr>
<tr>
<td>Civilians in another State</td>
<td>69</td>
<td>5</td>
</tr>
<tr>
<td>On active duty with Armed Forces</td>
<td>79</td>
<td>6</td>
</tr>
</tbody>
</table>

Approximately one-half (48 percent) of the survey respondents hold licenses to practice dentistry in one or more other States. Forty-five percent of the dentists located in North Carolina have at least one other license, with 38 percent licensed in one other State, and 7 percent in two or more other States. Multiple licensure is more common among dentists licensed in North Carolina but located in another State; one-third of these dentists have two or more licenses in addition to their North Carolina license. Seven of every ten out-of-State licenses were issued by adjacent States, with 26 percent in Georgia, 23 percent in Virginia, 15 percent in South Carolina, and 6 percent in Tennessee. The remainder are held in 32 other States and the District of Columbia.
Three-fifths of the 1,262 responding dentists in North Carolina are graduates of the dental schools located at the University of North Carolina and Emory University, each school having contributed approximately 30 percent of the State's dental force. Since the mid-1950's, however, when the first students graduated from the School of Dentistry at the University of North Carolina, this school has become the primary source of dentists for the State, accounting for 3 of every 4 dentists (74 percent) who completed their dental education since that time. Concurrently, the contribution of Emory University has declined sharply, from more than two-fifths (42 percent) of the State's dentists graduating in 1955 or earlier to only 4 percent of those graduating in recent years.

Dental School Attended and Year of Graduation for Dentists in North Carolina

<table>
<thead>
<tr>
<th>Dental school attended</th>
<th>Number of dentists</th>
<th>Year of graduation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>All 1955 or earlier</td>
</tr>
<tr>
<td>Total number</td>
<td>1,262</td>
<td>446</td>
</tr>
</tbody>
</table>

(Percent distribution by school)

<table>
<thead>
<tr>
<th>Dental school attended</th>
<th>Number of dentists</th>
<th>Year of graduation</th>
</tr>
</thead>
<tbody>
<tr>
<td>University of North Carolina</td>
<td>387</td>
<td>31</td>
</tr>
<tr>
<td>Emory University</td>
<td>360</td>
<td>29</td>
</tr>
<tr>
<td>Medical College of Virginia</td>
<td>150</td>
<td>12</td>
</tr>
<tr>
<td>University of Maryland</td>
<td>92</td>
<td>7</td>
</tr>
<tr>
<td>University of Tennessee</td>
<td>42</td>
<td>3</td>
</tr>
<tr>
<td>Howard University</td>
<td>36</td>
<td>3</td>
</tr>
<tr>
<td>Meharry Medical College</td>
<td>31</td>
<td>2</td>
</tr>
<tr>
<td>University of Louisville</td>
<td>20</td>
<td>2</td>
</tr>
<tr>
<td>32 other schools</td>
<td>144</td>
<td>11</td>
</tr>
</tbody>
</table>

* Less than one-half of one percent.

The dental schools at the Medical College of Virginia and the University of Maryland have provided almost one-fifth of North Carolina's dentists, accounting for 12 percent and 7 percent, respectively. However, the relative contribution of these two schools has also decreased considerably since the in-State school began providing dentists. The remaining 21 percent of the dentists in North Carolina are graduates of 36 other dental schools. Among these, the University of Tennessee and Howard University have each contributed 3 percent of the State's dentists, while Meharry Medical College and the University of Louisville have each provided 2 percent.
DISTRIBUTION OF DENTISTS

Approximately 48 percent of the 1,262 dentists in North Carolina who responded to the survey are located in the seven metropolitan areas of the State. The Greensboro-Winston-Salem-High Point area has the largest number of dentists, 186, or 14 percent of the State supply. The Charlotte area, with 10 percent of the dentists, has the second largest dental force, while the areas of Durham and Raleigh have 8 percent and 7 percent, respectively. Of the remaining three areas, Asheville has 5 percent of the dentists and Fayetteville and Wilmington have 2 percent each.

Distribution of North Carolina Dentists, by County Group

<table>
<thead>
<tr>
<th>County group*</th>
<th>Number of counties</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>All counties</td>
<td>100</td>
<td>1,262</td>
<td>100</td>
</tr>
<tr>
<td>Metropolitan areas</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Greensboro-Winston-Salem-High Point area</td>
<td>13</td>
<td>607</td>
<td>48</td>
</tr>
<tr>
<td>Charlotte area</td>
<td>4</td>
<td>186</td>
<td>14</td>
</tr>
<tr>
<td>Durham area</td>
<td>2</td>
<td>128</td>
<td>10</td>
</tr>
<tr>
<td>Raleigh area</td>
<td>2</td>
<td>105</td>
<td>8</td>
</tr>
<tr>
<td>Asheville area</td>
<td>1</td>
<td>57</td>
<td>5</td>
</tr>
<tr>
<td>Fayetteville area</td>
<td>1</td>
<td>26</td>
<td>2</td>
</tr>
<tr>
<td>Wilmington area</td>
<td>2</td>
<td>20</td>
<td>2</td>
</tr>
<tr>
<td>Nonmetropolitan counties</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Central city 10,000-49,999</td>
<td>24</td>
<td>372</td>
<td>30</td>
</tr>
<tr>
<td>Central city 5,000-9,999</td>
<td>18</td>
<td>163</td>
<td>13</td>
</tr>
<tr>
<td>Central city 2,500-4,999</td>
<td>12</td>
<td>51</td>
<td>4</td>
</tr>
<tr>
<td>Central city under 2,500</td>
<td>33</td>
<td>69</td>
<td>5</td>
</tr>
</tbody>
</table>

* See Appendix Table for definition of metropolitan areas and presentation of individual county data.

More than one-half (52 percent) of North Carolina's dentists are located in the State's 87 nonmetropolitan counties. The 24 counties with central city populations of 10,000 or more have 372 dentists, 30 percent of the State supply. Another 13 percent of the dentists are located in the 18 counties having populations between 5,000 and 9,999 in their central cities, while the remaining 45 counties with central cities of under 5,000 have only 9 percent of the State's dentists. Of the 87 nonmetropolitan counties, only five have more than 20 dentists and 19 have between 10 and 20, while 38 counties have fewer than five dentists, including eight which have no dentists, according to survey response.
AGE DISTRIBUTION OF DENTISTS BY AREA

The median age of the 1,262 responding dentists in North Carolina is 42.4 years. About one-fourth (305) of the dentists are under 35 years of age, and more than a third (452) are between 35 and 44. Almost one-fifth (234) of the dentists are 45-54 years of age, while an equal proportion are 55 or over. One in every eight, 152 dentists, are 65 years old or more, including 82 dentists who have reached the age of 70.

### Median Age and Age Distribution of Dentists in North Carolina, by County Group

<table>
<thead>
<tr>
<th>County group</th>
<th>Median age</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Under 35</td>
</tr>
<tr>
<td>All counties</td>
<td>42.4</td>
<td>24</td>
</tr>
<tr>
<td>Metropolitan areas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Durham area</td>
<td>41.4</td>
<td>27</td>
</tr>
<tr>
<td>Fayetteville area</td>
<td>39.6</td>
<td>35</td>
</tr>
<tr>
<td>Raleigh area</td>
<td>40.8</td>
<td>31</td>
</tr>
<tr>
<td>Greensboro-Winston-Salem-High Point area</td>
<td>41.2</td>
<td>27</td>
</tr>
<tr>
<td>Charlotte area</td>
<td>41.7</td>
<td>25</td>
</tr>
<tr>
<td>Asheville area</td>
<td>42.0</td>
<td>24</td>
</tr>
<tr>
<td>Wilmington area</td>
<td>42.3</td>
<td>21</td>
</tr>
<tr>
<td>Nonmetropolitan counties</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Central city 10,000-49,999</td>
<td>43.2</td>
<td>22</td>
</tr>
<tr>
<td>Central city 5,000-9,999</td>
<td>42.6</td>
<td>22</td>
</tr>
<tr>
<td>Central city 2,500-4,999</td>
<td>43.6</td>
<td>22</td>
</tr>
<tr>
<td>Central city under 2,500</td>
<td>44.2</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>47.1</td>
<td>23</td>
</tr>
</tbody>
</table>

The median age of dentists in the metropolitan areas is 41.4 years, almost two years below the median of 43.2 for dentists in nonmetropolitan counties. The youngest group of dentists is in the Durham area, where the median age is 39.6 years. More than one-third (35 percent) of the dentists in this area are under 35 years of age, while only one in every eight is 55 or over. The Wilmington area has the oldest group of dentists, with a median age of 43.8 years. One-fourth of these dentists are under age 35 and an equal proportion are 55 or older.

Among the nonmetropolitan county groups, the median ages tend to increase as the size of the central city decreases. The median age of dentists in counties with central cities of 10,000 or more is 42.6 years, compared to 47.1 years for dentists in the group of counties with central city populations under 2,500.
ACTIVE DENTISTS IN RELATION TO POPULATION

Of the 1,262 responding dentists in North Carolina, 1,238, or 98 percent, are active in their profession, giving the State one professionally active dentist for every 3,881 persons. In the metropolitan areas—which have 47 percent of all active dentists and only 35 percent of the population—the ratio is one dentist for every 2,848 persons. The remainder of the State—which has 52 percent of the active dentists and 65 percent of the population—has a much less favorable ratio of one dentist for every 4,828 persons.

<table>
<thead>
<tr>
<th>County group*</th>
<th>Professionally active dentists</th>
<th>Population</th>
<th>Persons per dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td>All counties</td>
<td>1,238</td>
<td>4,805,200</td>
<td>3,881</td>
</tr>
<tr>
<td>Metropolitan areas</td>
<td>592</td>
<td>1,686,300</td>
<td>2,848</td>
</tr>
<tr>
<td>Durham area</td>
<td>103</td>
<td>166,400</td>
<td>1,616</td>
</tr>
<tr>
<td>Raleigh area</td>
<td>82</td>
<td>181,600</td>
<td>2,215</td>
</tr>
<tr>
<td>Asheville area</td>
<td>54</td>
<td>136,300</td>
<td>2,524</td>
</tr>
<tr>
<td>Charlotte area</td>
<td>127</td>
<td>357,700</td>
<td>2,817</td>
</tr>
<tr>
<td>Greensboro-Winston-Salem-High Point area</td>
<td>181</td>
<td>572,300</td>
<td>3,162</td>
</tr>
<tr>
<td>Wilmington area</td>
<td>20</td>
<td>95,600</td>
<td>4,780</td>
</tr>
<tr>
<td>Fayetteville area</td>
<td>25</td>
<td>176,400</td>
<td>7,056</td>
</tr>
<tr>
<td>Nonmetropolitan counties</td>
<td>646</td>
<td>3,118,900</td>
<td>4,828</td>
</tr>
<tr>
<td>Central city 10,000-49,999</td>
<td>366</td>
<td>1,655,000</td>
<td>4,522</td>
</tr>
<tr>
<td>Central city 5,000-9,999</td>
<td>160</td>
<td>722,200</td>
<td>4,514</td>
</tr>
<tr>
<td>Central city 2,500-4,999</td>
<td>51</td>
<td>272,900</td>
<td>5,351</td>
</tr>
<tr>
<td>Central city under 2,500</td>
<td>69</td>
<td>468,800</td>
<td>6,794</td>
</tr>
</tbody>
</table>

* See Appendix Table for individual county data.

The best ratio among the metropolitan areas, 1,616 persons per dentist, is found in the Durham area, which includes Orange County where the University of North Carolina School of Dentistry is located. The Raleigh area has the next best ratio, one dentist for every 2,215 persons. Three other areas—Asheville, Charlotte, and Greensboro-Winston-Salem-High Point—also have ratios considerably below the State average, while the Wilmington and Fayetteville areas have much higher ratios.

Among the 87 nonmetropolitan counties, only eight have persons-per-dentist ratios under 3,000, while 36 have more than 5,000 persons for every dentist, including 13 counties which have only one dentist for every 8,000 or more persons. Generally, the ratio of persons per dentist becomes less favorable as the size of the central city decreases. Counties with central cities of 5,000 or more population have an average persons-per-dentist ratio of approximately 4,500, while those counties with central cities of fewer than 2,500 inhabitants average nearly 6,800 persons per dentist.
UTILIZATION OF AUXILIARIES

Nine of every ten dental practitioners in North Carolina (i.e., dentists who spend any time working at the chair) reported the employment of one or more auxiliary personnel. Dental assistants, the most frequently employed auxiliary, are utilized by 85 percent of the practitioners, including 79 percent who employ at least one assistant on a full-time basis. Secretaries or receptionists are employed by 39 percent of the dentists, three-fourths of whom employ at least one full time. Only 14 percent of the dentists employ dental hygienists and 6 percent employ laboratory technicians. A majority of the dentists who employ hygienists or technicians do so only part time.

<table>
<thead>
<tr>
<th>Type of auxiliary employed</th>
<th>Percent of dental practitioners</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Dental practitioners</td>
</tr>
<tr>
<td>---------------------------</td>
<td>----------------------</td>
</tr>
<tr>
<td>Total</td>
<td>1,207</td>
</tr>
<tr>
<td>One or more auxiliaries</td>
<td>1,063</td>
</tr>
<tr>
<td>Assistant</td>
<td>1,008</td>
</tr>
<tr>
<td>Hygienist</td>
<td>162</td>
</tr>
<tr>
<td>Laboratory technician</td>
<td>74</td>
</tr>
<tr>
<td>Secretary or receptionist</td>
<td>460</td>
</tr>
<tr>
<td>Other type of personnel</td>
<td>36</td>
</tr>
<tr>
<td>No auxiliary</td>
<td>122</td>
</tr>
</tbody>
</table>

1/ Includes 22 dentists who did not report on auxiliary utilization.

The utilization of auxiliaries varies with the age of the dentist and is less common among the older dentists. Ninety-four percent of the dentists under age 55 report the employment of at least one auxiliary. The proportion utilizing auxiliaries decreases to 82 percent for those dentists 55-64 years of age and to only 62 percent for dentists 65 and over.

Almost one-fourth of the dental practitioners in North Carolina reported one or more vacancies for auxiliary personnel. Of these dentists, 45 percent indicate vacant positions for full-time dental hygienists and 21 percent, for full-time dental assistants.
OTHER SURVEY FINDINGS

About 16 percent (201 dentists) of the respondents reported that they had completed one or more years of advanced training after receiving the dental degree. A total of 131 dentists have completed at least one year of advanced academic work as graduate or postgraduate students, and 97 dentists have received advanced clinical training as interns or residents. There are 27 dentists who have completed both academic and clinical training.

Approximately 93 percent of the professionally active dentists in North Carolina are primarily in private practice. Three percent are on the staff of the dental school, and another 3 percent are employed by a governmental agency. The remaining 1 percent are engaged in some other dental activity, such as taking advanced training.

Dentists reporting on time spent in patient care devoted an average of 38.5 hours per week to this activity for 47.7 weeks during the year preceding the survey. About one dentist in ten worked the equivalent of six days a week, 48 hours or more, for at least 48 weeks.

Twelve percent of the practitioners reported that they limit their practice to a dental specialty, including 4 percent in orthodontics, 3 percent in oral surgery, 2 percent in periodontics, and the remaining 3 percent in four other areas. A large proportion (49 percent) of the dental practitioners in the Durham metropolitan area reported a dental specialty, compared to 14 percent of the dentists in other metropolitan areas and only 4 percent of those in nonmetropolitan counties.

December 1968.
## Selected Data on Dentists in North Carolina, By Location

<table>
<thead>
<tr>
<th>County group and county</th>
<th>Responding civilian dentists</th>
<th>Population (in 000's)</th>
<th>Persons per active dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Age in 1965</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>Under 55</td>
<td>55 or more</td>
</tr>
<tr>
<td>All counties</td>
<td>1,262</td>
<td>305</td>
<td>271</td>
</tr>
<tr>
<td>Metropolitan areas 2/</td>
<td>607</td>
<td>162</td>
<td>124</td>
</tr>
<tr>
<td>Greensboro-Winston-Salem-High Point area</td>
<td>186</td>
<td>46</td>
<td>43</td>
</tr>
<tr>
<td>Forsyth</td>
<td>74</td>
<td>18</td>
<td>21</td>
</tr>
<tr>
<td>Guilford</td>
<td>92</td>
<td>21</td>
<td>20</td>
</tr>
<tr>
<td>Randolph</td>
<td>15</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Yadkin</td>
<td>5</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Charlotte area</td>
<td>128</td>
<td>31</td>
<td>30</td>
</tr>
<tr>
<td>Mecklenburg</td>
<td>118</td>
<td>29</td>
<td>25</td>
</tr>
<tr>
<td>Union</td>
<td>10</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Raleigh area</td>
<td>85</td>
<td>23</td>
<td>15</td>
</tr>
<tr>
<td>Wake</td>
<td>85</td>
<td>23</td>
<td>15</td>
</tr>
<tr>
<td>Fayetteville area</td>
<td>26</td>
<td>8</td>
<td>3</td>
</tr>
<tr>
<td>Cumberland</td>
<td>26</td>
<td>8</td>
<td>3</td>
</tr>
<tr>
<td>Durham area</td>
<td>105</td>
<td>37</td>
<td>13</td>
</tr>
<tr>
<td>Durham</td>
<td>50</td>
<td>13</td>
<td>10</td>
</tr>
<tr>
<td>Orange</td>
<td>55</td>
<td>24</td>
<td>3</td>
</tr>
<tr>
<td>Asheville area</td>
<td>57</td>
<td>12</td>
<td>15</td>
</tr>
<tr>
<td>Buncombe</td>
<td>57</td>
<td>12</td>
<td>15</td>
</tr>
</tbody>
</table>
## APPENDIX TABLE (cont'd.)

### Selected Data on Dentists in North Carolina, By Location

<table>
<thead>
<tr>
<th>County group and county</th>
<th>Responding civilian dentists</th>
<th>Population (in 000's)</th>
<th>Persons per active dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Age in 1965</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>Under 35</td>
<td>55 years or more</td>
</tr>
<tr>
<td>Wilmington area</td>
<td>20</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Brunswick</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>New Hanover</td>
<td>18</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>655</td>
<td>143</td>
<td>147</td>
</tr>
<tr>
<td>Nonmetropolitan counties</td>
<td>3/</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Central city 25,000-49,999</td>
<td>89</td>
<td>19</td>
<td>17</td>
</tr>
<tr>
<td>Alamance</td>
<td>24</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>Gaston</td>
<td>32</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>Wayne</td>
<td>19</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Wilson</td>
<td>14</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>283</td>
<td>62</td>
<td>61</td>
</tr>
<tr>
<td>Central city 10,000-24,999</td>
<td>20</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
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<td>1</td>
</tr>
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<td>Caldwell</td>
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<td>3</td>
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<td>Catawba</td>
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<td>2</td>
</tr>
<tr>
<td>Cleveland</td>
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<td>Craven</td>
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<td>4</td>
</tr>
<tr>
<td>Davidson</td>
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<td>2</td>
<td>3</td>
</tr>
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## APPENDIX TABLE (cont'd.)

### Selected Data on Dentists in North Carolina, By Location

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<th>County group and county</th>
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### APPENDIX TABLE (cont'd.)

Selected Data on Dentists in North Carolina, By Location

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<th>County group and county</th>
<th>Responding civilian dentists</th>
<th>Age in 1965</th>
<th>Professionally active</th>
<th>Population (in 000's)</th>
<th>Persons per active dentist</th>
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### APPENDIX TABLE (cont'd.)

**Selected Data on Dentists in North Carolina, By Location**

<table>
<thead>
<tr>
<th>County group and county</th>
<th>Responding civilian dentists</th>
<th>Population (in 000's)</th>
<th>Persons per active dentist</th>
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2/ North Carolina counties included in the latest 1968 definition of Standard Metropolitan Statistical Areas, as established by the U.S. Bureau of the Budget, Office of Statistical Standards, have been grouped as metropolitan areas for presentation of the survey data.
DENTISTS LICENSED IN NORTH DAKOTA

During the 1966 registration period, 370 dentists registered with the North Dakota State Board of Dental Examiners. Sixty-nine percent of the registered dentists were civilians located in North Dakota, 27 percent were civilians located in other States, and 4 percent were on active duty with the Armed Forces.

<table>
<thead>
<tr>
<th>Location and military status</th>
<th>All dentists</th>
<th>Percent of dentists</th>
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<tr>
<td>Total licensed</td>
<td>370</td>
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<tr>
<td>Respondents</td>
<td>275</td>
<td>74</td>
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<td>Nonrespondents</td>
<td>95</td>
<td>26</td>
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<tr>
<td>Total licensed</td>
<td>370</td>
<td>100</td>
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<tr>
<td>Civilians in North Dakota</td>
<td>256</td>
<td>69</td>
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<tr>
<td>Respondents</td>
<td>183</td>
<td></td>
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<td>Nonrespondents</td>
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<td>Civilians in another State</td>
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<td>27</td>
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<tr>
<td>On active duty with Armed Forces</td>
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</table>

The survey questionnaire was completed by 275 dentists, 74 percent of the total registered. Data provided by survey respondents has been supplemented, when possible, by information on location, age, dental school attended, and year of graduation for dentists not responding to the survey. Information on nonrespondents was obtained from records maintained by the North Dakota State Board of Dental Examiners or from the 1967 American Dental Directory, published by the American Dental Association.

About four-fifths of the survey respondents (79 percent) hold a license to practice dentistry in one or more other States. Sixty percent of the dentists located in North Dakota have one other license, while only 10 percent have two or more other licenses. The proportion of out-of-State dentists holding multiple licenses is considerably greater; two-fifths hold two or more licenses in addition to their North Dakota license. Almost one-half of the licenses held in States outside of North Dakota are held in Minnesota, with an additional 10 percent maintained in Illinois and Wisconsin, and 5 percent in California. The remainder are held in 21 other States scattered across the Nation.
PROFESSIONAL TRAINING

More than nine in every 10 of North Dakota's 256 dentists are graduates of 13 dental schools located in the North Central States. The largest contributor among these schools is the University of Minnesota, which has supplied almost half (46 percent) of the State's dental force. Marquette and Northwestern Universities and Loyola University of Chicago have also made important contributions, having provided among them 30 percent of the supply. The University of Missouri is the only other dental school to have supplied as much as 5 percent of the State's dentists.

Only about one-fourth (24 percent) of North Dakota's dentists graduated from dental school since 1955. In contrast, some 45 percent received their dental degrees prior to World War II. The proportional contribution of the University of Minnesota has increased in recent years from 42 percent of the dentists who graduated in 1955 or earlier to 57 percent of those graduating since that time.

| Dental School Attended and Year of Graduation for Dentists in North Dakota |
|---------------------------------|----------------|----------------|------------------|----------------|
| Dental school attended          | Number of dentists | Year of graduation | After 1941-1955 | Earlier 1955 |
| Schools in North Central States | Total number 256 1/ | All years 1955 | 92 | 93 | 88 | 93 |
| University of Minnesota         | 231             | 92            | 93 | 88 | 93 |
| Marquette University            | 114             | 46            | 57 | 42 | 43 |
| Loyola University of Chicago    | 30              | 12            | 11 |  8 | 15 |
| Northwestern University         | 21              |  8            |  3 | 12 |  9 |
| 9 other schools                 | 41              | 16            | 11 | 22 | 14 |
| 12 schools located elsewhere    | 21              |  8            |  7 | 12 |  7 |
|                                  | (Percent distribution by school) |

1/ Dental school attended not available for 4 dentists and year of graduation for 8 dentists. Percents based on known totals.

Some 11 percent of the survey respondents, 20 dentists, reported that they had completed one or more years of advanced training after receiving the dental degree. Of these dentists, 16 had completed one year or more of advanced academic work as graduate or postgraduate students, and seven had received advanced clinical training as residents or interns. Three dentists had completed both academic and clinical training.
DISTRIBUTION OF DENTISTS

North Dakota's dentists are unevenly distributed geographically with 70 percent of the dentists located in only 14 of the State's 53 counties. The Fargo metropolitan area (Cass County), with 32 dentists, has 12 percent of the State's supply.

<table>
<thead>
<tr>
<th>County group*</th>
<th>Number of counties</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
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</thead>
<tbody>
<tr>
<td>All counties</td>
<td>53</td>
<td>256</td>
<td>100</td>
</tr>
<tr>
<td>Fargo metropolitan area</td>
<td>1</td>
<td>32</td>
<td>12</td>
</tr>
<tr>
<td>Nonmetropolitan counties</td>
<td>52</td>
<td>224</td>
<td>88</td>
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<tr>
<td>Central city 10,000-49,999</td>
<td>6</td>
<td>100</td>
<td>39</td>
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<tr>
<td>Central city 2,500-9,999</td>
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<td>48</td>
<td>19</td>
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<tr>
<td>Central city under 2,500</td>
<td>39</td>
<td>76</td>
<td>30</td>
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* See Appendix Table for definition of metropolitan area and presentation of individual county data.

The six nonmetropolitan counties with at least 10,000 persons in their central cities have among them 100 dentists, or approximately 40 percent of the total dental force. Three of these nonmetropolitan counties--Grand Forks, Ward, and Burleigh--have between 20 and 25 dentists each. The seven counties with central city populations between 2,500 and 9,999 have 48 dentists, about one-fifth of the total supply.

Thirty percent (76) of North Dakota's dentists are scattered among the 39 counties with less than 2,500 inhabitants in their central cities. Only three of these 39 counties have as many as five dentists, while 27 counties have fewer than three dentists each, including eight which have no dentists, according to available information.
The median age of dentists in North Dakota is 48.4 years. Approximately 30 percent (71) of the dentists are under 40 years of age, and an almost equal proportion are between 40 and 54 years of age. On the other hand, a substantial portion, more than two-fifths, are 55 or over. Some 17 percent of the dentists are at least 65 years of age, including 12 percent who have reached the age of 70.

### Median Age and Age Distribution of North Dakota Dentists

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<th>Median age</th>
<th>Percent of dentists</th>
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<td>All counties</td>
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<td>Fargo metropolitan area</td>
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</tbody>
</table>

Dentists in the Fargo metropolitan area have a median age of 43.8 years, more than four years younger than the average for the State. Slightly over one-third of these dentists are under 40 years of age, while another one-third are 55 years or more.

The median ages of dentists average 48.0 years in the two groups of nonmetropolitan counties with 2,500 or more persons in their central cities. By contrast, the median age of dentists in counties with central city populations of less than 2,500 is 52.0 years, some 4 years above the State average. In this latter group, only about one-fourth of the dentists are under 40 years of age, while almost one-half are 55 years or more.
ACTIVE DENTISTS IN RELATION TO POPULATION

Of the 256 licensed dentists in North Dakota, 236, or 92 percent, are active in their profession, giving North Dakota one professionally active dentist for every 2,714 persons. There is one professionally active dentist for every 2,271 persons in the Fargo metropolitan area, a ratio considerably better than the State average.

### Number of Persons Per Active Dentist in North Dakota

<table>
<thead>
<tr>
<th>County group*</th>
<th>Professionally active dentists</th>
<th>Population</th>
<th>Persons per dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td>All counties</td>
<td>236</td>
<td>640,400</td>
<td>2,714</td>
</tr>
<tr>
<td>Fargo metropolitan area</td>
<td>31</td>
<td>70,400</td>
<td>2,271</td>
</tr>
<tr>
<td>Nonmetropolitan counties</td>
<td>205</td>
<td>570,000</td>
<td>2,780</td>
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<tr>
<td>Central city 10,000-49,999</td>
<td>95</td>
<td>218,800</td>
<td>2,303</td>
</tr>
<tr>
<td>Central city 2,500-9,999</td>
<td>42</td>
<td>102,800</td>
<td>2,428</td>
</tr>
<tr>
<td>Central city under 2,500</td>
<td>68</td>
<td>248,400</td>
<td>3,653</td>
</tr>
</tbody>
</table>

* See Appendix Table for individual county data.

The six nonmetropolitan counties with 10,000 or more persons in their central cities have one dentist for every 2,303 persons, a ratio quite similar to the Fargo metropolitan area. The seven counties with central city populations between 2,500 and 9,999 have a slightly higher persons-per-dentist ratio of 2,428.

The 39 nonmetropolitan counties with less than 2,500 persons in their central cities have a much less favorable persons-per-dentist ratio of 3,653, due in part to eight counties which have no active dentists. Among the remaining 31 counties, 17 have ratios exceeding 3,000 persons per dentist, including eight counties with ratios in excess of 5,000.
UTILIZATION OF AUXILIARIES

More than four-fifths of North Dakota's responding practitioners (i.e., dentists who spend any time working at the chair) employ some type of auxiliary personnel. Dental assistants, the most frequently employed auxiliary, are utilized by 74 percent of all dentists, with 67 percent employing full-time assistants. More than one in every four practitioners reported the employment of a secretary or receptionist, usually on a full-time basis. Nine percent of the dentists employ dental hygienists, and 4 percent employ laboratory technicians in their practices.

North Dakota Dentists Employing Auxiliaries, By Type of Auxiliary

<table>
<thead>
<tr>
<th>Type of auxiliary employed</th>
<th>Dental practitioners Total</th>
<th>With one full-time employee</th>
<th>With only part-time (or more) employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>172-1/</td>
<td>100</td>
<td>76</td>
</tr>
<tr>
<td>One or more auxiliaries</td>
<td>138</td>
<td>81</td>
<td>76</td>
</tr>
<tr>
<td>Assistant</td>
<td>125</td>
<td>74</td>
<td>67</td>
</tr>
<tr>
<td>Hygienist</td>
<td>16</td>
<td>9</td>
<td>6</td>
</tr>
<tr>
<td>Laboratory technician</td>
<td>7</td>
<td>4</td>
<td>-</td>
</tr>
<tr>
<td>Secretary or receptionist</td>
<td>46</td>
<td>27</td>
<td>16</td>
</tr>
<tr>
<td>Other type of personnel</td>
<td>3</td>
<td>2</td>
<td>-</td>
</tr>
<tr>
<td>No auxiliary</td>
<td>32</td>
<td>19</td>
<td>-</td>
</tr>
</tbody>
</table>

1/ Includes 2 dentists who did not report on auxiliary utilization.

Utilization of auxiliaries varies with the age of the dentist and is less common among older dentists. Ninety-four percent of the dental practitioners under age 55 employ at least one auxiliary, as compared to approximately 58 percent of those dentists 55 years of age or older. Young dentists just starting their practices do not reach peak utilization of assistants until they are at least 30 years of age, and of hygienists, until age 35.
OTHER SURVEY FINDINGS

☐ Ninety-six percent of the responding professionally active dentists in North Dakota are primarily engaged in private practice, with 95 percent self-employed and 1 percent employed by other dentists. The remaining 4 percent are employed in governmental agencies or are engaged in other dental activities, such as taking advanced training.

☐ Dentists reporting on time spent in providing patient care devoted an average of 38.8 hours per week to this activity for 46.3 weeks during the year preceding the survey.

☐ Seven percent of the respondents reported that they limit their practice to a dental specialty, primarily to orthodontics and oral surgery. About one in every five dentists in the Fargo metropolitan area limits his practice as compared to one in every 20 in non-metropolitan counties.

☐ Fourteen percent of the responding dentists had practiced as civilian dentists in other States immediately prior to assuming their present North Dakota location. Half of these dentists came from Minnesota, while the remainder came from more distant States, principally Wisconsin and Illinois.

☐ Of the dentists who are licensed in North Dakota but located in other States, about one-fourth are located in Minnesota and another 16 percent are in California, while the remainder are scattered among 20 other States across the Country.

April 1969.
## APPENDIX TABLE

Selected Data on Dentists in North Dakota, By Location

<table>
<thead>
<tr>
<th>County group and county</th>
<th>Civilian dentists</th>
<th>Population (in 000's)</th>
<th>Persons per active dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total Respondents</td>
<td>Non-respondents</td>
<td>Age in 1965</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Under 55 yrs.</td>
</tr>
<tr>
<td>All counties</td>
<td>256</td>
<td>183</td>
<td>73</td>
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<tr>
<td>Fargo metropolitan area</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Cass</td>
<td>32</td>
<td>23</td>
<td>9</td>
</tr>
<tr>
<td>Nonmetropolitan counties</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Central city 25,000-49,999</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Burleigh</td>
<td>21</td>
<td>12</td>
<td>9</td>
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<tr>
<td>Grand Forks</td>
<td>24</td>
<td>16</td>
<td>8</td>
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<tr>
<td>Ward</td>
<td>23</td>
<td>19</td>
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<tr>
<td>Stutsman</td>
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<td>11</td>
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<tr>
<td>Williams</td>
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<td>3</td>
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<td>Bottineau</td>
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<td>Pierce</td>
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</tr>
</tbody>
</table>

1/ Population figures are rounded to the nearest 100.000.
## Selected Data on Dentists in North Dakota, By Location

<table>
<thead>
<tr>
<th>County group and county</th>
<th>Total Civilian dentists</th>
<th>Respondents</th>
<th>Non-respondents</th>
<th>Age in 1965 Under 55 yrs.</th>
<th>Professionally active 40 or more</th>
<th>Population (in 000's)</th>
<th>Persons per active dentist</th>
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<tr>
<td>Nonmetropolitan counties</td>
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<td>-</td>
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<td>1</td>
<td>2</td>
<td>2</td>
<td>10.4</td>
<td>2,600</td>
</tr>
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</table>
Selected Data on Dentists in North Dakota, By Location

<table>
<thead>
<tr>
<th>County group and county</th>
<th>Civilian dentists</th>
<th>Non-metropolitan counties</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total respondents</td>
<td>Non-respondents</td>
</tr>
<tr>
<td></td>
<td>Respondents</td>
<td>Non-response</td>
</tr>
<tr>
<td>Central city under 2,500</td>
<td>6.5</td>
<td>6,500</td>
</tr>
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<td>(cont'd.)</td>
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<tr>
<td>Nelson</td>
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</tr>
<tr>
<td>Oliver</td>
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</tr>
<tr>
<td>Pembina</td>
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<td>3</td>
</tr>
<tr>
<td>Ransom</td>
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<tr>
<td>Renville</td>
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<td>Rolette</td>
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<tr>
<td>Steele</td>
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<tr>
<td>Towner</td>
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<td>1</td>
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<tr>
<td>Trail</td>
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<td>5</td>
</tr>
<tr>
<td>Wells</td>
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<td>5</td>
</tr>
</tbody>
</table>


2/ North Dakota part of the interstate Fargo-Moorhead Standard Metropolitan Statistical area, as established by the U.S. Bureau of the Budget, Office of Statistical Standards. Statistics are presented only for dentists located in the Fargo area (Cass County).

3/ Counties not included within an SMSA, as defined by the U.S. Bureau of the Budget, have been grouped according to the 1960 population of the largest (central) city within each county.
DENTISTS LICENSED IN OHIO

During the 1967 registration period, some 5,000 dentists registered with the Ohio State Dental Board. Of these dentists, 92 percent were located in Ohio, and 8 percent were located in other States. Ohio dentists on active duty with the Armed Forces were not included in the survey, since they are exempted from annual registration requirements while on active military duty.

Location of Dentists Licensed in Ohio

<table>
<thead>
<tr>
<th>Location</th>
<th>All dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total licensed</td>
<td>4,999</td>
<td>100</td>
</tr>
<tr>
<td>Respondents</td>
<td>4,178</td>
<td>84</td>
</tr>
<tr>
<td>Nonrespondents</td>
<td>821</td>
<td>16</td>
</tr>
<tr>
<td>Total licensed</td>
<td>4,999</td>
<td>100</td>
</tr>
<tr>
<td>Dentists in Ohio</td>
<td>4,579</td>
<td>92</td>
</tr>
<tr>
<td>Respondents</td>
<td>3,850</td>
<td>-</td>
</tr>
<tr>
<td>Nonrespondents</td>
<td>729</td>
<td>-</td>
</tr>
<tr>
<td>Dentists in another State</td>
<td>420</td>
<td>3</td>
</tr>
</tbody>
</table>

The survey questionnaire was completed by 4,178 dentists, 84 percent of all those registered. The information provided by these survey respondents has been supplemented, when possible, by data on location, age, dental school attended, and year of graduation for dentists not responding to the survey. This information was obtained from records maintained by the Ohio State Dental Board or from the 1968 American Dental Directory, published by the American Dental Association.

Multiple licensure is not too common among dentists registered in Ohio; only one-fifth hold a license to practice dentistry in one or more other States. Of those dentists located in the State, about 14 percent have more than one license, including 12 percent with just one other license and a mere 2 percent with two or more other licenses. The proportion of out-of-State dentists having multiple licenses is considerably greater; 22 percent hold two or more licenses in addition to the one held in Ohio.
Four-fifths of Ohio's dentists graduated from in-State schools, including the dental schools at Ohio State and Case Western Reserve Universities and two other schools which are no longer in existence. One-half of the State's dental force--some 2,300 dentists--are graduates of Ohio State University. This school has consistently graduated the largest number of Ohio's dentists, with the proportion increasing from 38 percent of all dentists graduating prior to World War II to 62 percent of those graduating since 1955. Over one-fourth of the State's dentists--27 percent--are graduates of Case Western Reserve University, which over the years has trained a relatively constant proportion of Ohio's dental force. Three percent of the dentists are graduates of two extinct schools, the Cincinnati and Ohio Colleges of Dental Surgery.

Dental School Attended and Year of Graduation for Dentists in Ohio

<table>
<thead>
<tr>
<th>Dental school attended</th>
<th>Number of dentists</th>
<th>Year of graduation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>All years</td>
</tr>
<tr>
<td>Total number</td>
<td>4,579</td>
<td>-</td>
</tr>
</tbody>
</table>

(Percent distribution by school)

<table>
<thead>
<tr>
<th>Schools in Ohio</th>
<th>3,642</th>
<th>80</th>
<th>84</th>
<th>82</th>
<th>75</th>
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</thead>
<tbody>
<tr>
<td>Ohio State University</td>
<td>2,276</td>
<td>50</td>
<td>62</td>
<td>52</td>
<td>38</td>
</tr>
<tr>
<td>Case Western Reserve University</td>
<td>1,223</td>
<td>27</td>
<td>22</td>
<td>30</td>
<td>28</td>
</tr>
<tr>
<td>2 other schools (extinct)</td>
<td>143</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Schools in other States</th>
<th>937</th>
<th>20</th>
<th>16</th>
<th>18</th>
<th>25</th>
</tr>
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<td>University of Louisville</td>
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<td>2</td>
<td>3</td>
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<tr>
<td>University of Pittsburgh</td>
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<td>2</td>
<td>2</td>
<td>3</td>
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<tr>
<td>St. Louis University</td>
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<td>1</td>
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<td>Loyola University (Chicago)</td>
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<td>1</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>38 other schools</td>
<td>382</td>
<td>8</td>
<td>8</td>
<td>7</td>
<td>10</td>
</tr>
</tbody>
</table>

One-fifth of the State's dentists obtained their dental degree from 44 schools located in other States. Of these dentists, 9 percent, or 403, graduated from eight schools located in adjacent States, primarily the Universities of Louisville, Pittsburgh, and Indiana. The remaining 1 percent, 534 dentists, are graduated of dental schools located in more distant States, mainly St. Louis and Northwestern Universities, and Loyola University of Chicago.
More than four-fifths (84 percent) of Ohio's dentists are located in the 16 metropolitan areas of the State. The Cleveland area has the largest dental force, over 1,200 dentists, about one-fourth of all dentists in the State. The Columbus area and the Ohio portion of the interstate Cincinnati area have the next largest dental forces, 11 percent and 10 percent, respectively. Seven percent of the dentists are located in the Dayton area, while the Akron area and the Ohio portion of the interstate Toledo area have 6 percent each. The Youngstown-Warren and Canton areas have 5 percent and 4 percent of the State's dentists, respectively. The remaining eight metropolitan areas have a combined total of 402 dentists, 9 percent of the total dentist supply.

Distribution of Ohio Dentists, by County Group

<table>
<thead>
<tr>
<th>County group*</th>
<th>Number of counties</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>All counties</td>
<td>88</td>
<td>4,579</td>
<td>100</td>
</tr>
<tr>
<td>Metropolitan areas</td>
<td>31</td>
<td>3,857</td>
<td>84</td>
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<tr>
<td>Cleveland area</td>
<td>4</td>
<td>1,231</td>
<td>26</td>
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<td>Columbus area</td>
<td>3</td>
<td>529</td>
<td>11</td>
</tr>
<tr>
<td>Cincinnati area (Ohio part)</td>
<td>3</td>
<td>442</td>
<td>10</td>
</tr>
<tr>
<td>Dayton area</td>
<td>4</td>
<td>319</td>
<td>7</td>
</tr>
<tr>
<td>Akron area</td>
<td>2</td>
<td>290</td>
<td>6</td>
</tr>
<tr>
<td>Toledo area (Ohio part)</td>
<td>2</td>
<td>259</td>
<td>6</td>
</tr>
<tr>
<td>Youngstown-Warren area</td>
<td>2</td>
<td>224</td>
<td>5</td>
</tr>
<tr>
<td>Canton area</td>
<td>1</td>
<td>161</td>
<td>4</td>
</tr>
<tr>
<td>8 other areas</td>
<td>10</td>
<td>402</td>
<td>9</td>
</tr>
<tr>
<td>Nonmetropolitan counties</td>
<td>57</td>
<td>722</td>
<td>16</td>
</tr>
<tr>
<td>Central city 10,000-49,999</td>
<td>28</td>
<td>545</td>
<td>12</td>
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<tr>
<td>Central city under 10,000</td>
<td>29</td>
<td>177</td>
<td>4</td>
</tr>
</tbody>
</table>

* See Appendix Table for definition of interstate and other metropolitan areas and for presentation of individual county data.

Only 16 percent (722) of Ohio's dentists are located in the State's 57 nonmetropolitan counties. Three-fourths of these dentists are concentrated in the 28 counties with 10,000 or more persons in their central cities, while the 29 counties with central city populations under 10,000 have only 4 percent of all dentists in the State.
ACE OF DENTISTS

The median age of dentists in Ohio is 44.4 years. A full one-fourth of the State's dentists are under 35 years of age, but almost one-third are 55 or older. More than two-fifths (43 percent) of the dentists are between 35 and 54 years of age, with 27 percent between 35 and 44. Fifteen percent, or 679 dentists, are 65 or older, including 316 dentists who have reached age 70.

### Age Distribution of Ohio Dentists

<table>
<thead>
<tr>
<th>Age in 1965</th>
<th>Number of Dentists</th>
<th>Percent of Dentists</th>
<th>Cumulative Percent Distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>4,579(^1)</td>
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<td></td>
</tr>
<tr>
<td>Under 30</td>
<td>439</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>30 - 34</td>
<td>673</td>
<td>15</td>
<td>25</td>
</tr>
<tr>
<td>35 - 39</td>
<td>556</td>
<td>12</td>
<td>37</td>
</tr>
<tr>
<td>40 - 44</td>
<td>673</td>
<td>15</td>
<td>52</td>
</tr>
<tr>
<td>45 - 49</td>
<td>394</td>
<td>9</td>
<td>61</td>
</tr>
<tr>
<td>50 - 54</td>
<td>296</td>
<td>7</td>
<td>68</td>
</tr>
<tr>
<td>55 - 59</td>
<td>379</td>
<td>8</td>
<td>76</td>
</tr>
<tr>
<td>60 - 64</td>
<td>426</td>
<td>9</td>
<td>85</td>
</tr>
<tr>
<td>65 - 69</td>
<td>363</td>
<td>8</td>
<td>93</td>
</tr>
<tr>
<td>70 - 74</td>
<td>202</td>
<td>4</td>
<td>97</td>
</tr>
<tr>
<td>75 &amp; over</td>
<td>114</td>
<td>3</td>
<td>100</td>
</tr>
</tbody>
</table>

\(^{1}\) Age not available for 64 dentists. Percents are based on total for whom age is known.

Dentists in the metropolitan areas, with a median age of 44.2 years, are only slightly younger than dentists in the nonmetropolitan counties, where the median age is 45.4 years. Among the metropolitan areas, Dayton and Columbus have the youngest groups of dentists, with median ages of approximately 41 years. About 40 percent of the dentists in these areas are under 40 years of age, while only 23 percent are 55 or older. The Cleveland area, with a median age of about 49 years, has the oldest dentists as a group. Less than one-third of the dentists in this area are under 40 years of age, while slightly more than two-fifths are 55 or older.

In nonmetropolitan counties, dentist ages tend to increase as the population of the central city decreases. The overall median age for dentists in counties with central city populations over 10,000 is 44.9 years, while dentists in counties with smaller central cities have a median age of 47.5 years.
ACTIVE DENTISTS IN RELATION TO POPULATION

Of the 4,579 dentists in Ohio, 4,409, or 96 percent, are professionally active, giving the State one active dentist for every 2,375 persons. The 16 metropolitan areas combined have 2,176 persons per dentist, while the nonmetropolitan counties have a considerably less favorable ratio of 3,429.

<table>
<thead>
<tr>
<th>County group*</th>
<th>Professionally active dentists</th>
<th>Population</th>
<th>Persons per dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td>All counties</td>
<td>4,409</td>
<td>10,471,200</td>
<td>2,375</td>
</tr>
<tr>
<td>Metropolitan areas</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cleveland area</td>
<td>3,714</td>
<td>8,088,000</td>
<td>2,178</td>
</tr>
<tr>
<td>Columbus area</td>
<td>1,182</td>
<td>2,020,500</td>
<td>1,709</td>
</tr>
<tr>
<td>Cincinnati area (Ohio part)</td>
<td>516</td>
<td>857,700</td>
<td>1,662</td>
</tr>
<tr>
<td>Dayton area</td>
<td>423</td>
<td>1,110,700</td>
<td>2,626</td>
</tr>
<tr>
<td>Akron area</td>
<td>308</td>
<td>810,100</td>
<td>2,630</td>
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<tr>
<td>Toledo area (Ohio part)</td>
<td>274</td>
<td>662,500</td>
<td>2,418</td>
</tr>
<tr>
<td>Youngstown-Warren area</td>
<td>248</td>
<td>563,000</td>
<td>2,270</td>
</tr>
<tr>
<td>Canton area</td>
<td>218</td>
<td>363,900</td>
<td>2,378</td>
</tr>
<tr>
<td>Central city under 10,000</td>
<td>392</td>
<td>1,151,300</td>
<td>2,937</td>
</tr>
<tr>
<td>Nonmetropolitan counties</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Central city 10,000-49,999</td>
<td>695</td>
<td>2,383,200</td>
<td>3,429</td>
</tr>
<tr>
<td>Central city under 10,000</td>
<td>526</td>
<td>1,672,000</td>
<td>3,179</td>
</tr>
<tr>
<td></td>
<td>169</td>
<td>711,200</td>
<td>4,208</td>
</tr>
</tbody>
</table>

* See Appendix Table for data pertaining to other metropolitan areas and individual counties.

Among the metropolitan areas, the 3-county Columbus area has the best ratio with 1,662 persons per active dentist. Franklin County, the hub of the area, has the best county ratio in the State, 1,575 persons per dentist. The 4-county Cleveland area, with 1,709 persons per dentist, is the only other metropolitan area with a ratio under 2,000. However, the ratios for the Ohio portion of the interstate Toledo area and the Mansfield area are below the average for the State, 2,270 and 2,275, respectively, while that of the Canton area is essentially the same as the State average. In five areas--Akron, Youngstown-Warren, Dayton, and the Ohio portions of the interstate areas of Wheeling and Cincinnati--the ratios range between 2,400 and 2,600, while the areas of Springfield, Lorain-Elyria, and Steubenville-Weirton (Ohio part) have between 2,700 and 2,900 persons per dentist. The remaining three areas--Lima, Hamilton-Middletown, and Huntington-Ashland (Ohio part) have more than 3,400 persons for every active dentist.

Among the 57 nonmetropolitan counties, only one, Erie, with one dentist for every 2,248 persons, has a ratio below the State average, and just three others have ratios under 2,500. There are 11 other counties with persons-per-dentist ratios under 3,000, yet 15 counties have more than 5,000 persons per dentist, including three with only one dentist for every 10,000 or more.
UTILIZATION OF AUXILIARIES

Almost four-fifths of Ohio's responding practitioners (i.e., dentists who spend any time working at the chair) reported the employment of one or more auxiliaries. The dental assistant, the most widely utilized auxiliary, is employed by 71 percent of the practitioners, including 63 percent who employ at least one assistant on a full-time basis. Secretaries and receptionists are employed by 29 percent of the dentists, with more than two-thirds utilizing such personnel full time. Dental hygienists are employed by 18 percent of the dentists, and laboratory technicians, by 7 percent; these auxiliaries are most often employed part-time only.

<table>
<thead>
<tr>
<th>Type of auxiliary employed</th>
<th>Dental practitioners</th>
<th>Percent of dental practitioners with one full-time employee (or more)</th>
<th>With only part-time employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>3,674(^{1/})</td>
<td>100</td>
<td>71</td>
</tr>
<tr>
<td>One or more auxiliaries</td>
<td>2,831</td>
<td>79</td>
<td>71</td>
</tr>
<tr>
<td>Assistant</td>
<td>2,523</td>
<td>71</td>
<td>63</td>
</tr>
<tr>
<td>Hygienist</td>
<td>638</td>
<td>18</td>
<td>8</td>
</tr>
<tr>
<td>Laboratory technician</td>
<td>256</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>Secretary or receptionist</td>
<td>1,042</td>
<td>29</td>
<td>20</td>
</tr>
<tr>
<td>Other type of personnel</td>
<td>130</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>No auxiliary</td>
<td>731</td>
<td>21</td>
<td>-</td>
</tr>
</tbody>
</table>

\(^{1/}\) Includes 112 dentists who did not report on auxiliary utilization.

Auxiliary utilization varies with the age of the dentist and tends to be more common among the younger dentists. Approximately 90 percent of the practitioners under 45 years of age employ some type of auxiliary. This proportion decreases to 73 percent for dentists 45 to 64 years of age and to only 48 percent for those 65 and over.

Sixteen percent of the dentists reported one or more vacant positions for auxiliary personnel. Two-fifths of these dentists had vacancies for full-time dental hygienists, and one-fourth reported vacancies for full-time dental assistants.
OTHER SURVEY FINDINGS

Approximately one of every four survey respondents (889 dentists) reported that he had completed one or more years of advanced training after receiving the dental degree. Of 605 dentists taking advanced clinical training, 442 had completed an internship, and 163, a residency. Of 468 dentists reporting advanced academic training, 214 had received a master's or other advanced degree and 254 had received no additional degrees but had completed at least one year of study at the postgraduate level. A total of 184 dentists reported the completion of both academic and clinical training.

Ninety-six percent of the responding professionally active dentists in Ohio are primarily engaged in private practice, with 95 percent self-employed and 1 percent employed by other dentists. The remaining 4 percent are employed by governmental agencies or are engaged in other dental activities, such as taking advanced training.

Twelve percent of the responding active dentists reported at least one part-time dental activity in addition to their principal employment. Part-time teaching in a dental school was the most frequently reported secondary activity, followed by employment in a State or local government agency. Various other activities were reported, including employment by other dentists and serving in a voluntary agency.

About 14 percent of the responding dental practitioners reported that they limit their practice to a dental specialty, primarily to orthodontics and oral surgery. Dentists in metropolitan areas are almost twice as likely to limit their practices as are those in nonmetropolitan counties.

Of the 420 dentists licensed in Ohio but located in another State, one-fourth are in the five adjacent States, primarily Pennsylvania, Kentucky, and Michigan. Twenty percent of the out-of-State dentists are located in Florida, 14 percent in California, and 7 percent in New York. The remainder are scattered among 31 other States, the District of Columbia, and foreign countries.

April 1969.
APPENDIX TABLE

Selected Data on Dentists in Ohio, By Location

<table>
<thead>
<tr>
<th>County group and county</th>
<th>Civilian dentists</th>
<th>1/</th>
<th>Persons per active dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total Respondents</td>
<td>Non-respondents</td>
<td>Age in 1965</td>
</tr>
<tr>
<td>All counties</td>
<td>4,579</td>
<td>3,850</td>
<td>729</td>
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<tr>
<td>Metropolitan areas</td>
<td>3,857</td>
<td>3,233</td>
<td>624</td>
</tr>
<tr>
<td>Cleveland area</td>
<td>1,231</td>
<td>1,017</td>
<td>214</td>
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<tr>
<td>Cuyahoga</td>
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<tr>
<td>Lake</td>
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<td>Medina</td>
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<td>28</td>
<td>3</td>
</tr>
<tr>
<td>Cincinnati area (Ohio part)</td>
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<td>376</td>
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</tr>
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<td>Miami</td>
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<td>21</td>
<td>2</td>
</tr>
<tr>
<td>Montgomery</td>
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</tr>
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<td>Preble</td>
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<td>5</td>
<td>1</td>
</tr>
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<td>Summit</td>
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<td>210</td>
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### Selected Data on Dentists in Ohio, By Location

<table>
<thead>
<tr>
<th>County group and county</th>
<th>Civilian dentists</th>
<th></th>
<th>Population (in 000's)</th>
<th>Persons per active dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total respondents</td>
<td>Non-respondents</td>
<td>Age in 1965</td>
<td>Professionally active</td>
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</tr>
<tr>
<td></td>
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<td>Under 55 yrs.</td>
<td>40 or more</td>
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<tr>
<td>Metropolitan areas 2/ (cont'd.)</td>
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<td></td>
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<td>Toledo area (Ohio part)</td>
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<td>100</td>
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<td>92</td>
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<td>8</td>
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<tr>
<td>Youngstown-Warren area</td>
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<td>116</td>
<td>33</td>
<td>54</td>
</tr>
<tr>
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<td>64</td>
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<td>33</td>
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<td>52</td>
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<td>25</td>
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<td>Butler</td>
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</tr>
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## APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Ohio, By Location

<table>
<thead>
<tr>
<th>County group and county</th>
<th>Civilian dentists</th>
<th>Non-professionally active</th>
<th>Age in 1965</th>
<th>Professionally active</th>
<th>Population (in 000's)</th>
<th>Persons per active dentist</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Total respondents</td>
<td>Non-respondents</td>
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<td>40 or more</td>
<td></td>
<td></td>
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<td>Metropolitan areas 2/</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
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<td>Steubenville-Weirton area (Ohio part)</td>
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<td>9</td>
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<td>14</td>
<td>14</td>
<td>36</td>
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<td>Wheeling area (Ohio part)</td>
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<td>6</td>
<td>10</td>
<td>12</td>
<td>32</td>
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<td>5</td>
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</tr>
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## APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Ohio, By Location

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<tr>
<th>County group and county</th>
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<td>Nonmetropolitan counties</td>
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## APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Ohio, By Location

<table>
<thead>
<tr>
<th>County group and county</th>
<th>Civilian dentists</th>
<th>Age in 1965</th>
<th>Professionally active (in 000's)</th>
<th>Population 1/ per active dentist</th>
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<tbody>
<tr>
<td>Nonmetropolitan counties 2/ (cont'd.)</td>
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<td>-</td>
<td>1</td>
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<td>1</td>
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<td>1</td>
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<td>1</td>
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<td>3</td>
<td>-</td>
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APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Ohio, By Location

<table>
<thead>
<tr>
<th>County group and county</th>
<th>Civilian dentists</th>
<th></th>
<th></th>
<th></th>
<th>Persons per active dentist</th>
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<tbody>
<tr>
<td></td>
<td>Total respondents</td>
<td>Non-respondents</td>
<td>Age in 1965 Under 55 yrs.</td>
<td>Professionally active</td>
<td>Population (in 000's)</td>
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<td>Nonmetropolitan counties 3/ (cont'd.)</td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<td>Adams</td>
<td>2</td>
<td>2</td>
<td>-</td>
<td>1</td>
<td>6</td>
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<tr>
<td>Morgan</td>
<td>4</td>
<td>4</td>
<td>-</td>
<td>3</td>
<td>4</td>
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<tr>
<td>Noble</td>
<td>2</td>
<td>2</td>
<td>-</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Vinton</td>
<td>1</td>
<td>1</td>
<td>-</td>
<td>1</td>
<td>1</td>
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</tbody>
</table>


2/ Ohio counties included in the latest 1968 definition of Standard Metropolitan Statistical Areas, as established by the U.S. Bureau of the Budget, Office of Statistical Standards, have been grouped as metropolitan areas for presentation of the survey data. Statistics presented for the interstate areas of Cincinnati, Toledo, Steubenville-Weirton, Wheeling and Huntington-Ashland include only those dentists located in the Ohio portion of the SMSA.

3/ Counties not included within an SMSA, as defined by the U.S. Bureau of the Budget, have been grouped according to the 1960 population of the largest (central) city within each county.
During the 1965 registration period, 1,348 dentists registered with the Oklahoma Board of Governors of Registered Dentists. A total of 1,209 dentists responded to the survey, 90 percent of all those registered. Sixty-nine percent of the responding dentists are civilians located in Oklahoma, 25 percent are civilians located in other states, and 5 percent are on active duty with the Armed Forces.

**Location and Military Status of Dentists Licensed in Oklahoma**

<table>
<thead>
<tr>
<th>Location and military status</th>
<th>All dentists</th>
<th>Percent of dentists</th>
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<tr>
<td>Total</td>
<td>1,345</td>
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<tr>
<td>Respondents</td>
<td>1,209</td>
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<td>Nonrespondents</td>
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<tr>
<td>Respondents</td>
<td>1,209</td>
<td>100</td>
</tr>
<tr>
<td>Civilians in Oklahoma</td>
<td>840</td>
<td>69</td>
</tr>
<tr>
<td>Civilians in another state</td>
<td>299</td>
<td>25</td>
</tr>
<tr>
<td>On active duty with Armed Forces</td>
<td>62</td>
<td>5</td>
</tr>
<tr>
<td>Not reported</td>
<td>8</td>
<td>1</td>
</tr>
</tbody>
</table>

Multiple licensure is quite common in Oklahoma, with almost two of every three dentists licensed in the State (64 percent) holding more than one license. Fifty-one percent of the dentists located in Oklahoma hold more than one license, with 41 percent licensed in one other state and 10 percent licensed in two or more other states. Multiple licensure is much more common among dentists registered in Oklahoma but located out of state; 36 percent hold two or more licenses in addition to their Oklahoma license.

Almost three-fourths of the licenses held in states outside of Oklahoma are held in adjacent states, predominantly Missouri, Kansas, and Texas. The remainder are held in 36 other states scattered across the Nation.
Almost four-fifths of Oklahoma's dentists graduated from dental schools in adjacent states. The majority, 62 percent, graduated from dental schools in neighboring Missouri. Of these, the principal contributor has been the University of Missouri at Kansas City, which has provided half of the State's dentists, while Washington and St. Louis Universities have together supplied twelve percent. Baylor University, the only other major source of dentist manpower, has provided 15 percent of the State's dentists.

The remaining 22 percent of Oklahoma's dentists are graduates of 30 other dental schools located in more distant states. Among these, the University of Tennessee, the largest contributor, has supplied only 42 dentists, 5 percent of the dental force, while Northwestern University has provided 2 percent. In addition, the Universities of Iowa and Nebraska, Loyola University (New Orleans), and Meharry Medical College have each contributed approximately 1 percent of the total.

Dental School Attended and Year of Graduation
for Dentists in Oklahoma

<table>
<thead>
<tr>
<th>Dental school attended</th>
<th>Number of dentists</th>
<th>All years</th>
<th>After 1941-1955</th>
<th>1955-1960</th>
<th>1955 or earlier</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number</td>
<td>840^1/</td>
<td>243</td>
<td>296</td>
<td>297</td>
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</tr>
</tbody>
</table>

(Percent distribution by school)

Missouri (Kansas City) | 420 | 50 | 47 | 50 | 53 |
Baylor                 | 129 | 15 | 19 | 20 | 8 |
Washington (St. Louis) | 59  | 7  | 6  | 10 | 6 |
Tennessee              | 42  | 5  | 13 | 2  | 1 |
St. Louis              | 38  | 5  | 4  | 2  | 7 |
31 other schools       | 150 | 18 | 11 | 16 | 25 |

Dental school attended for 2 dentists and year of graduation for 4 dentists not available. Percents based on known totals.

Some 16 percent of the survey respondents, 137 dentists, reported that they had completed one or more of advanced training after their dental degree. Of the 71 dentists with advanced clinical training, 27 had completed a residency, and 44 an internship. Among the 96 dentists who reported advanced academic training, 61 had earned a master's or other advanced degree, and another 35 had received no additional degree but had completed one or more years of postgraduate study. These figures include 30 dentists who had taken both academic and clinical training.
DISTRIBUTION OF DENTISTS

Over one-half (55 percent) of the 840 responding dentists in Oklahoma are located in the 4 metropolitan areas. The 3-county Oklahoma City area has 241 dentists, 29 percent of all dentists in the State. The majority of these dentists (210) are concentrated in Oklahoma County, where Oklahoma City is located, while the two other counties, combined, have only 31 dentists. The 3-county Tulsa area has the second largest dental force (189 dentists), 23 percent of the State supply, with nine-tenths of these dentists located in Tulsa County. The two remaining metropolitan areas, Lawton and the Oklahoma portion of the interstate Ft. Smith area, have 2 percent and 1 percent of Oklahoma's dentists, respectively.

Distribution of Oklahoma Dentists, by County Group

<table>
<thead>
<tr>
<th>County group*</th>
<th>Number of counties</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>All counties</td>
<td>77</td>
<td>840</td>
<td>100</td>
</tr>
<tr>
<td>Metropolitan areas</td>
<td>9</td>
<td>459</td>
<td>55</td>
</tr>
<tr>
<td>Oklahoma City area</td>
<td>3</td>
<td>241</td>
<td>29</td>
</tr>
<tr>
<td>Tulsa area</td>
<td>3</td>
<td>189</td>
<td>23</td>
</tr>
<tr>
<td>Lawton area</td>
<td>1</td>
<td>20</td>
<td>2</td>
</tr>
<tr>
<td>Ft. Smith, Ark. area (Okla. part)</td>
<td>2</td>
<td>9</td>
<td>1</td>
</tr>
<tr>
<td>Nonmetropolitan counties</td>
<td>68</td>
<td>381</td>
<td>45</td>
</tr>
<tr>
<td>Central city 10,000-49,999</td>
<td>16</td>
<td>217</td>
<td>25</td>
</tr>
<tr>
<td>Central city 5,000-9,999</td>
<td>17</td>
<td>90</td>
<td>11</td>
</tr>
<tr>
<td>Central city under 5,000</td>
<td>35</td>
<td>74</td>
<td>9</td>
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</tbody>
</table>

* See Appendix Table for definition of metropolitan areas and presentation of individual county data.

Forty-five percent (381) of Oklahoma's dentists are located in the 68 nonmetropolitan counties of the State. The 16 counties with central cities of 10,000 or more persons have 217 dentists, or about one-fourth of the State's dental force. Of these, four counties--Garfield, Muskogee, Washington, and Kay--have more than 20 dentists, while five other counties--Carter, Okmulgee, Payne, Pittsburg, and Stephens--have between 10 and 20 dentists.

The 52 counties with central cities of fewer than 10,000 inhabitants have about one-fifth of the State's dentist supply. There are 90 dentists located in the 17 counties having populations from 5,000 to 9,999 in their central cities, while 74 dentists are scattered among the 35 counties with central cities of less than 5,000. Among these 52 counties, only 8 have more than 5 dentists, while 23 have fewer than 3 dentists.
AGE DISTRIBUTION OF DENTISTS BY AREA

With slightly more than one-half of the State's dentists under 45 years of age, the median age of Oklahoma dentists is 44.6 years. Only 21 percent of the dentists (175) are under 35, while almost one-third (272 dentists) are 55 or older. About one in every six, or 141 dentists, are 65 years old or more, and 97 have reached the age of 70.

<table>
<thead>
<tr>
<th>County group</th>
<th>Median age</th>
<th>Percent of dentists</th>
</tr>
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<tr>
<td></td>
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<td>Under 35</td>
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<tr>
<td>All counties</td>
<td>44.6</td>
<td>21</td>
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<tr>
<td>Metropolitan areas</td>
<td>43.1</td>
<td>23</td>
</tr>
<tr>
<td>Nonmetropolitan counties</td>
<td>48.1</td>
<td>19</td>
</tr>
<tr>
<td>Central city 10,000-49,999</td>
<td>46.1</td>
<td>17</td>
</tr>
<tr>
<td>Central city 5,000-9,999</td>
<td>51.3</td>
<td>22</td>
</tr>
<tr>
<td>Central city under 5,000</td>
<td>54.3</td>
<td>19</td>
</tr>
</tbody>
</table>

In metropolitan areas, the median age of dentists is 43.1 years, a full five years lower than the median of 48.1 years for dentists in nonmetropolitan counties. There is very little difference in age distribution among the metropolitan areas. The youngest dentists as a group are found in the Oklahoma City and Lawton areas, where the median ages are quite similar, slightly over 42 years. In the Tulsa area, the median age is approximately one year older, 43.5 years.

There are greater differences in age among the nonmetropolitan county groups, with median ages tending to increase rapidly as the size of the central city declines. The median age of dentists in counties with central cities of 10,000-49,999 inhabitants is 46.1 years, with 35 percent of these dentists 55 years of age or more. By comparison, in counties with central cities under 5,000, the median age is 54.3 years, almost 10 years above the State average, since almost half of the dentists (48 percent) are 55 years of age or older.
ACTIVE DENTISTS IN RELATION TO POPULATION

Of the 840 responding dentists in Oklahoma, 94 percent (787) are active in their profession, giving Oklahoma one professionally active dentist for every 3,064 persons. The 4 metropolitan areas together have 2,785 persons per active dentist, while the nonmetropolitan counties have a less favorable ratio of 3,400 persons per dentist.

Number of Persons per Active Dentist in Oklahoma

<table>
<thead>
<tr>
<th>County group*</th>
<th>Professionally active dentists</th>
<th>Population</th>
<th>Persons per dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td>All counties</td>
<td>787</td>
<td>2,411,200</td>
<td>3,064</td>
</tr>
<tr>
<td>Metropolitan areas</td>
<td>430</td>
<td>1,197,400</td>
<td>2,785</td>
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<tr>
<td>Oklahoma City area</td>
<td>226</td>
<td>590,800</td>
<td>2,614</td>
</tr>
<tr>
<td>Tulsa area</td>
<td>178</td>
<td>455,500</td>
<td>2,559</td>
</tr>
<tr>
<td>Lawton area</td>
<td>19</td>
<td>107,700</td>
<td>5,668</td>
</tr>
<tr>
<td>Ft. Smith, Ark. area (Okla. part)</td>
<td>7</td>
<td>43,400</td>
<td>6,200</td>
</tr>
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<td>Nonmetropolitan counties</td>
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<td>Central city 10,000-49,999</td>
<td>357</td>
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<td>84</td>
<td>284,300</td>
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<tr>
<td>Central city under 5,000</td>
<td>70</td>
<td>315,100</td>
<td>4,501</td>
</tr>
</tbody>
</table>

* See Appendix Table for individual county data.

Among the metropolitan areas, the 3-county Tulsa area has the best ratio, with 2,559 persons per dentist. Tulsa County itself has an even more favorable ratio of 2,373, compared to a combined ratio of 4,438 for the other two counties in that area. The ratio of the Oklahoma City area is 2,614 persons per dentist, quite similar to that of the Tulsa area. However, the ratios of the Lawton and Ft. Smith areas are considerably less favorable, 5,668 and 6,200, respectively.

Among the 68 nonmetropolitan counties, there are 11 counties with persons-per-dentist ratios under 2,500, yet 26 counties have ratios over 4,000, including eight with ratios in excess of 6,000 persons per dentist. Another six counties have no active dentists, according to available information.
Almost 9 of every 10 Oklahoma dental practitioners (i.e., dentists who spend any time working at the chair) reported that they employ some type of auxiliary personnel. Dental assistants, the most frequently employed auxiliary, are utilized by 83 percent of all practitioners, including 77 percent who employ at least one assistant on a full-time basis. Secretaries or receptionists are employed by 32 percent of the dentists, with almost three-fourths of these dentists utilizing them full time. Only 16 percent of the dentists employ dental hygienists, and 6 percent employ dental technicians. A majority of the dentists who employ hygienists or technicians do so on a part-time basis.

Oklahoma Dentists Employing Auxiliaries, by Type of Auxiliary

<table>
<thead>
<tr>
<th>Type of auxiliary</th>
<th>Dental practitioners</th>
<th>Percent of dental practitioners</th>
<th>With one full-time employee</th>
<th>With only part-time employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>784</td>
<td>100</td>
<td>83</td>
<td>5</td>
</tr>
<tr>
<td>One or more auxiliaries</td>
<td>676</td>
<td>88</td>
<td>83</td>
<td>5</td>
</tr>
<tr>
<td>Assistant</td>
<td>639</td>
<td>83</td>
<td>77</td>
<td>6</td>
</tr>
<tr>
<td>Hygienist</td>
<td>121</td>
<td>16</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td>Laboratory Technician</td>
<td>47</td>
<td>6</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Secretary/Receptionist</td>
<td>247</td>
<td>32</td>
<td>22</td>
<td>9</td>
</tr>
<tr>
<td>Other type of personnel</td>
<td>14</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>No auxiliary</td>
<td>95</td>
<td>12</td>
<td>-</td>
<td>-</td>
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</table>

1/ Includes 13 dentists who did not report on auxiliary utilization.

Use of auxiliaries varies with the age of the dentist, becoming less frequent among dentists in the older age groups. Approximately 96 percent of Oklahoma dentists under age 45 employ some type of auxiliary. The proportion using auxiliaries decreases to 87 percent among dentists 45 to 64 years of age, and to 52 percent among dentists 65 and over.

Although dentists in nonmetropolitan counties are almost as likely to employ auxiliaries as are those located in metropolitan areas, the use of dental hygienists is considerably more common in metropolitan areas than in the remainder of the State. About 21 percent of the dentists in metropolitan areas report the employment of a hygienist, compared to only 9 percent of dentists located elsewhere.
OTHER SURVEY FINDINGS

Ninety-eight percent of the professionally active dentists in Oklahoma are primarily engaged in private practice. The remaining two percent are either employed by governmental agencies or are engaged in other dental activities, such as taking advanced training.

Dentists providing patient care in the year prior to the survey devoted an average of 39.8 hours per week to this activity for 48.1 weeks during the year. About one dentist in eight worked the equivalent of six days a week, 48 hours or more, for at least 43 weeks.

About 10 percent of the respondents reported that they limit their practice to a dental specialty, primarily to orthodontics, followed by oral surgery and pedodontics. Fifteen percent of the dentists in metropolitan areas limit their practice as compared to 4 percent in nonmetropolitan counties.

Only seven percent (60) of the responding dentists have practiced as civilian dentists in one of 18 other states immediately prior to assuming their present Oklahoma location. More than half of these dentists came from adjacent states, primarily Kansas, Missouri, and Texas.

Two-thirds of the 299 dentists licensed in Oklahoma but located in other states are in one of the six adjacent states, predominantly Texas, Kansas, and Missouri. The remainder are scattered throughout 26 other states across the Country.

June 1968.
### APPENDIX TABLE

Selected Data on Dentists in Oklahoma, by Location

<table>
<thead>
<tr>
<th>County group and county</th>
<th>Civilian dentists</th>
<th>Age in 1965</th>
<th>Professionally active</th>
<th>Population 1/</th>
<th>Persons per active dentist</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
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<td>55 years or more</td>
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<tr>
<td>All counties</td>
<td>840</td>
<td>282</td>
<td>272</td>
<td>787</td>
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<td>Metropolitan areas 2/</td>
<td></td>
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<tr>
<td>Oklahoma City area</td>
<td>459</td>
<td>173</td>
<td>122</td>
<td>430</td>
<td>1,197.4</td>
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<tr>
<td>Canadian</td>
<td>241</td>
<td>98</td>
<td>63</td>
<td>226</td>
<td>590.8</td>
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<td>Cleveland</td>
<td>9</td>
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<td>3</td>
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<tr>
<td>Oklahoma</td>
<td>210</td>
<td>86</td>
<td>56</td>
<td>197</td>
<td>516.5</td>
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<tr>
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<td>189</td>
<td>65</td>
<td>51</td>
<td>178</td>
<td>455.5</td>
</tr>
<tr>
<td>Creek</td>
<td>11</td>
<td>3</td>
<td>4</td>
<td>11</td>
<td>39.0</td>
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<tr>
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<td>5</td>
<td>2</td>
<td>3</td>
<td>5</td>
<td>32.0</td>
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<tr>
<td>Tulsa</td>
<td>173</td>
<td>60</td>
<td>44</td>
<td>162</td>
<td>384.5</td>
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<td>4</td>
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<td>4</td>
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<td>3</td>
<td>26.3</td>
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<td>150</td>
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<td>24</td>
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<td>165.7</td>
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<td>Muskogee</td>
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<td>7</td>
<td>11</td>
<td>22</td>
<td>55.8</td>
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<tr>
<td>Washington</td>
<td>21</td>
<td>6</td>
<td>5</td>
<td>2</td>
<td>62.1</td>
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1/ Population in 000's
2/ Metropolitan areas
3/ Nonmetropolitan counties
## APPENDIX TABLE (cont'd.)

### Selected Data on Dentists in Oklahoma, by Location

<table>
<thead>
<tr>
<th>County group and county</th>
<th>Civilian dentists</th>
<th>Population</th>
<th>Persons per active dentist</th>
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</tr>
<tr>
<td></td>
<td>Total</td>
<td>Under 55 years</td>
<td>Professionally active</td>
</tr>
<tr>
<td>Nonmetropolitan counties</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Central city 10,000-24,999</td>
<td>149</td>
<td>40</td>
<td>51</td>
</tr>
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<tr>
<td>Carter</td>
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<tr>
<td>Grady</td>
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<td>Central city 5,000-9,999</td>
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<td>39</td>
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## APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Oklahoma, by Location

<table>
<thead>
<tr>
<th>County group and county</th>
<th>Civilian dentists</th>
<th>Population</th>
<th>Persons per active dentist</th>
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<td>Age in 1965</td>
<td>Professionally active</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Under 40</td>
<td>55 years or more</td>
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<td>Nonmetropolitan counties</td>
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<td></td>
<td></td>
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<tr>
<td>Noble</td>
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<td>Tillman</td>
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<tr>
<td>Woods</td>
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<td>23</td>
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### Selected Data on Dentists in Oklahoma, by Location

<table>
<thead>
<tr>
<th>County group and county</th>
<th>Civilian dentists</th>
<th>Population (in 000's)</th>
<th>Persons per active dentist</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Age in 1965</td>
<td>Total</td>
<td>Under 55 years or more</td>
</tr>
<tr>
<td>Nonmetropolitan counties</td>
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<tr>
<td>Central city under 2,500</td>
<td></td>
<td></td>
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</table>


2/ Oklahoma counties in the latest 1967 definition of Standard Metropolitan Statistical Areas, as established by the U.S. Bureau of the Budget, Office of Statistical Standards, have been grouped as metropolitan areas for the presentation of survey data. For the metropolitan Fort Smith SMSA, statistics are presented only for dentists located in the Oklahoma portion.

3/ Counties not included within an SMSA, as defined by the U.S. Bureau of the Budget, have been grouped according to the 1960 population of the largest (central) city within each county.
**Survey highlights**

More than 2,300 dentists registered with the Oregon State Board of Dental Examiners during its 1965 registration period.

Three fifths of those registering, about 1,390 dentists, were civilians located in Oregon.

Two thirds of the 870 civilian dentists licensed in Oregon but located in another state were in the neighboring states of Washington and California.

Slightly more than four in every five of the dentists in Oregon received their dental degrees from the University of Oregon.

Advanced professional training beyond their dental degrees was reported by one in every six Oregon dentists. Proportionately more of those who graduated from dental school after 1940 had taken advanced training than those graduated prior to that time.

Seven in every ten dentists in Oregon were located in one of the state's three metropolitan areas—53 percent in the Portland area, 9 percent in the Eugene area and 8 percent in the Salem area.

The median age in 1965 of all Oregon dentists was 44.1 years. However, Portland area dentists on the average were more than 2 years older than those in the remainder of the state.

At the time of the survey about 1,300 dentists, 94 percent of all those in the state, were active in their profession.

The active dentists were somewhat unevenly distributed among the population residing in Oregon. The 3-county Portland metropolitan area had 52 percent of the state's active dentists as compared with only 41 percent of the population. Conversely, the remaining 33 counties in the state, with 49 percent of the population, had only 48 percent of the dentists. As a result, the Portland area had one active dentist for every 1,164 residents while the remainder of the state had a comparatively less favorable ratio, or one dentist for every 1,793 persons.

Almost ninety-five percent of the professionally active dentists were primarily in private practice. About one half of the remaining active dentists were on the staff of the dental school.

One in every ten practitioners reported they limited their practices to a dental specialty, primarily to orthodontics or oral surgery.

Almost one half of the self-employed practitioners devoted at least 48 weeks of the year to their practice and worked 40 hours or more per week. However, proportionately twice as many dentists under 35 years of age (6 in every 10) spent this amount of time in practice as did those 55 years or older (only 3 in every 10).

Auxiliaries were employed by 73 percent of the practicing dentists. Utilization of auxiliaries varied according to the age of the dentist and was most frequent among dentists between the ages of 25 and 54 (4 out of 5 employed at least one auxiliary).

Almost 70 percent of the practitioners employed dental assistants, almost always on a full-time basis. Dental hygienists, on the other hand, were employed by only 15 percent of the practicing dentists, most frequently on a part-time basis.
The survey

A nationwide program is being conducted by the American Association of Dental Examiners under a contract with the Division of Dental Health, U.S. Public Health Service to assist states in developing information about their professional and auxiliary manpower. As a part of the national program, a study was undertaken in 1965 by the Oregon State Board of Dental Examiners to develop needed information about the characteristics of dentists licensed in Oregon. The preparation and publication of this report, which summarizes the results of the study conducted by the Oregon Board, has been made possible through the cooperation of the American Association of Dental Examiners and the Resource Analysis Branch of the Division of Dental Health.

The Oregon State Board of Dental Examiners registered more than 2,300 dentists during its 1965 registration period. Almost three fifths of those registering, about 1,390 dentists, were civilians located in Oregon. Oregon licenses were also held by 870 civilian dentists located in other states or abroad and by 70 dentists on active duty in the armed forces.

The Oregon Board sent each licensed dentist a survey questionnaire with the 1965 registration form. Of all dentists registering, 73 percent returned the questionnaire. However, proportionately more of the dentists actually located in Oregon participated in the survey—1,072 dentists or 77 percent returned their questionnaires. The data provided by the survey respondents has been supplemented, when obtainable, by information on location, age, dental school attended and year of graduation for dentists not responding to the survey. This information was obtained either from records of the Oregon Board or from the 1966 American Dental Directory published by the American Dental Association.
Civilian dentists licensed in Oregon

Two thirds of the civilian dentists licensed in Oregon but located in another state were in the neighboring states of Washington and California. Eighty-one of the 603 out-of-state respondents reported they had been practicing as a civilian in Oregon before moving to their present location in another state. Of the dentists reporting such a relocation, 4% percent were in California at the time of the survey and 35 percent were in Washington.

Many of the responding dentists located in Oregon when the survey was conducted also indicated either present or past professional ties to Washington or California. Of the 408 Oregon dentists who reported they were also licensed to practice in another state, 45 percent maintained licenses in Washington and 20 percent in California. In addition, 145 dentists reported that immediately prior to coming to their present Oregon location they had been established professionally as a civilian in another state. Nineteen percent of these dentists had moved to their present Oregon location from Washington and 17 percent had come from California.
The majority of the dentists in Oregon received their dental degrees from the University of Oregon. This school has trained slightly more than four fifths of the 1,385 dentists in the state. The University of Oregon has been graduating dentists since before the turn of the century and, as a result, has been the major contributor to the state's dentist supply through the years.

While only 18 percent of the Oregon dentists received their dental education at schools in other states, they were awarded their dental degrees by 41 different schools. The five dental schools in the adjacent states of California and Washington were attended by only one percent of the Oregon dentists. The University of Minnesota and Northwestern University were the most frequently attended out-of-state schools.

One half of all the dentists in Oregon received their dental degrees after 1950. Relatively more of these dentists attended out-of-state schools than did those who completed their dental education in earlier years. While 85 percent of all the dentists completing dental school in 1950 or earlier attended the University of Oregon, only 78 percent of those graduating after that year received their degrees from the Oregon school.
There is a growing tendency among Oregon dentists to take professional training beyond their dental degrees. In total, one in every six dentists reported they had taken one or more years of advanced professional training. Yet, 18 percent of those graduated from dental school after 1940, as compared with only 11 percent who completed dental school in 1940 or earlier, had continued their training.

A few Oregon dentists (3 percent) reported taking both advanced academic and clinical training, but in total, 12 percent had taken academic training. 2 percent had completed both internships and residencies and 5 percent had completed their internships only. More than one half of those who continued their academic training earned at least a master's degree in addition to their doctor's degree in dentistry.
Location and age of Oregon dentists

Seven in every ten of the 1,385 licensed dentists in Oregon were located in the state's three metropolitan areas: Portland, Eugene, and Salem. More than half (about 740) of all the dentists in the state are in the Portland area alone, including 43 percent in Multnomah County, and 5 percent each in Clackamas and Washington Counties. Lane County, which is defined as the Eugene metropolitan area, was the location of 120 dentists, or 9 percent of all those in the state. The 2-county Salem area had almost as many dentists, seven percent, in Marion County and one percent in Polk County.

In total, Oregon's Willamette Valley area contained more than three-fourths of the state's dentist supply. In addition to the dentists in the three metropolitan areas, another 6 percent were located in the Valley's four nonmetropolitan counties (Linn, Benton, Hood River and Yamhill). By comparison, only 14 percent were in Western Oregon, which is defined to include the six coastal counties of Clatsop, Coos, Curry, Douglas, Lincoln, and Tillamook, as well as the three inland counties of Columbia, Josephine, and Jackson. Eastern Oregon, which includes the remaining 17 counties in the state, had only 10 percent of the state's dentists.

Among the four nonmetropolitan counties in the Willamette Valley, the largest number of dentists were located in Linn and Benton Counties, which are situated between the Salem and Eugene areas. Each of these two counties had about 30 dentists, or three times as many as in the Salem area's Polk County, the metropolitan county with the least number of dentists. By far the greatest number of dentists in Western Oregon were located in Jackson County which had more than 60 dentists. Coos and Douglas Counties, with about 25 dentists each, were the only other counties in the Western section with more than 20 dentists. Among the Eastern Oregon counties only Klamath and Deschutes Counties had as many as 20 dentists. Two of the remaining 15 counties in the Eastern section, Sherman and Wheeler Counties, apparently had no licensed dentists.
With more than one half of the dentists under 45 years of age in 1965, the median dentist age in Oregon was 44.1 years. One third of the dentists were between the ages of 35 and 44, a figure considerably higher than for either the 45 to 54 or 55 to 64 years age group. Dentists in the youngest age groups, that is, under 35 years, outnumbered those who were 65 years or older.

The average dentist age varied somewhat among the various areas of the state. The Portland area, where about one half of the dentists were located, had proportionately fewer young dentists than did either of the other two metropolitan areas or the group of nonmetropolitan counties. The median age of the Portland area's dentists, therefore, was older—45.2 years, as compared with 43.1 for the nonmetropolitan counties, 42.7 for the Eugene area and only 41.6 for the Salem area.

The ages of dentists also varied among individual counties, sometimes considerably. For example in the 3-county Portland area, Multnomah County, which contains the city of Portland, had relatively more older dentists than young ones. While the suburban counties of Clackamas and Washington had relatively more young dentists. In Multnomah County there were 2 dentists aged 55 or older for every dentist under 35. In contrast, Clackamas County had 3 dentists under 35 for every 2 dentists 55 and over, and Washington County had 3 dentists in the younger age group for each dentist in the older group.
Active dentists in relation to the Oregon population

At the time of the survey about 1,300 dentists were active in their profession in Oregon. These dentists represented 94 percent of all those in the state. Another 4 percent were retired, while only a negligible number were active in nondental activities. The professional status of 2 percent of the dentists was not obtainable.

The concentration of dentists in the metropolitan areas resulted in a somewhat uneven distribution of the active dentists among the state's population. The Portland metropolitan area had proportionately more dentists than population, 92 percent of the state's active dentists as compared with only 41 percent of the population. As a result of this disproportionate distribution of dentists and population, there was one dentist for every 1,164 persons residing in the Portland area, while the remainder of the state had a less favorable ratio of one dentist for every 1,798 persons.

If all three metropolitan areas are considered together, they had 89 percent of the active dentists and 60 percent of the population, or 1,263 persons per dentist as compared to an average of 1,944 persons for every active dentist in the nonmetropolitan counties. The nonmetropolitan ratio, however, varied only slightly among the three geographical sections of the state, ranging from an average of 1,894 persons per dentist in the 4 nonmetropolitan counties in the Willamette Valley area to only 1,914 persons in Eastern Oregon and 1,990 persons in Western Oregon.

The persons-per-active dentist ratios varied considerably more among individual counties. Among the six metropolitan counties the population per dentist ranged from 1,017 in the Portland area's Multnomah County to 2,960 in the Salem area's Polk County.

Two counties in Eastern Oregon had the extremes in persons-per-active dentist ratios among the state's 28 nonmetropolitan counties which had professionally active dentists. Crook County had the most favorable ratio of 1,188 persons while the state's least favorable ratio of 5,459 occurred in Jefferson County. However, in more than two thirds of the nonmetropolitan counties the ratios were between 1,500 and 2,499 persons.
NUMBER OF PERSONS PER ACTIVE DENTIST FOR OREGON COUNTIES: 1965

WILLAMETTE VALLEY AREA

WESTERN OREGON

EASTERN OREGON

<table>
<thead>
<tr>
<th>County</th>
<th>Number of Persons per Active Dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multnomah</td>
<td>1,200</td>
</tr>
<tr>
<td>Marion</td>
<td>1,000</td>
</tr>
<tr>
<td>Clackamas</td>
<td>800</td>
</tr>
<tr>
<td>Washington</td>
<td>600</td>
</tr>
<tr>
<td>Hood River</td>
<td>400</td>
</tr>
<tr>
<td>Lane</td>
<td>300</td>
</tr>
<tr>
<td>Benton</td>
<td>200</td>
</tr>
<tr>
<td>Josephine</td>
<td>180</td>
</tr>
<tr>
<td>Tillamook</td>
<td>160</td>
</tr>
<tr>
<td>Coos</td>
<td>140</td>
</tr>
<tr>
<td>Curry</td>
<td>120</td>
</tr>
<tr>
<td>Douglas</td>
<td>100</td>
</tr>
<tr>
<td>Lincoln</td>
<td>80</td>
</tr>
<tr>
<td>Clatsop</td>
<td>60</td>
</tr>
<tr>
<td>Tillamook</td>
<td>40</td>
</tr>
<tr>
<td>Coos</td>
<td>20</td>
</tr>
<tr>
<td>Curry</td>
<td>0</td>
</tr>
<tr>
<td>Douglas</td>
<td>0</td>
</tr>
<tr>
<td>Lincoln</td>
<td>0</td>
</tr>
<tr>
<td>Clatsop</td>
<td>0</td>
</tr>
<tr>
<td>Tillamook</td>
<td>0</td>
</tr>
<tr>
<td>Coos</td>
<td>0</td>
</tr>
<tr>
<td>Curry</td>
<td>0</td>
</tr>
<tr>
<td>Douglas</td>
<td>0</td>
</tr>
<tr>
<td>Lincoln</td>
<td>0</td>
</tr>
<tr>
<td>Clatsop</td>
<td>0</td>
</tr>
<tr>
<td>Tillamook</td>
<td>0</td>
</tr>
<tr>
<td>Coos</td>
<td>0</td>
</tr>
<tr>
<td>Curry</td>
<td>0</td>
</tr>
<tr>
<td>Douglas</td>
<td>0</td>
</tr>
<tr>
<td>Lincoln</td>
<td>0</td>
</tr>
</tbody>
</table>

Metropolitan

Nonmetropolitan
Almost all of the dentists who reported on their professional activities in Oregon during the year preceding the survey indicated that they spent at least a portion of their time in providing dental care to patients. On the average, they spent 38.3 hours per week at this activity for 46.8 weeks during the year. Total time spent by those dentists in patient care accounted for 92 percent of the aggregate professional time reported for the year by all active dentists.

Professional activities other than patient care were also reported by some Oregon dentists; however, only 8 percent of the total professional time during the year was spent in all activities other than patient care. Nine percent of the dentists were teaching either in the dental school or in one of the schools in Oregon which train dental assistants and six percent were engaged in dental research. Other dental activities were reported by six percent of the dentists, including those who were taking advanced professional training, serving as consultants to the Veterans Administration and other organizations, or serving in official capacities in various state-wide and local dental organizations.

Almost all of the dentists who were professionally active at the time of the survey reported that they were primarily in private practice—ninety-three percent were self-employed and one percent were employed by other dentists. About one half of the remaining dentists who were not primarily in private practice were on the staff of the dental school.

About one in every ten active dentists indicated they were engaged in more than one type of dental employment. For example, one in every twenty-five active dentists was primarily engaged in his own practice but also was a member of the dental school faculty.
By far the majority of the dentists were in general practice. However, one in every ten reported that they limited their practices to a dental specialty, primarily orthodontics or oral surgery (each was reported by 3 percent of the dentists). Limited practices were more frequently reported by dentists in the Salem metropolitan area than by those in other sections of the state. Seventeen percent of the Salem area dentists reported limiting their practices as compared with 12 percent of the dentists in the Portland area, and only 9 percent in the Eugene area and 4 percent in the nonmetropolitan counties.

Almost one half (47 percent) of the self-employed practitioners devoted at least 48 weeks of the year to their practices and worked 40 hours or more per week. However, proportionately more younger dentists than older dentists spent this much time in their practices. For example, almost 6 of every 10 dentists under 35 years of age spent 40 hours or more for at least 48 weeks in the year in their practices, while only about 3 in every 10 dentists 55 years or older practiced this amount of time. Furthermore, another 3 in every 10 dentists in this older age group not only practiced less than 48 weeks of the year but also spent less than 40 hours a week in their practices, whereas only 1 in every 20 dentists under age 35 spent so little time in practice.
Almost three fourths of all practicing dentists employed one or more auxiliaries, yet the utilization of auxiliaries varied considerably according to the age of the dentist. About four fifths of those between the ages of 35 and 54 utilized at least one auxiliary in their practices. Among the younger and older dentists, however, the use of auxiliaries was less frequent—about 7 of every 10 dentists under 35 years old employed an auxiliary, while only slightly more than one half of those 55 years or older did so.

A somewhat similar age pattern occurred in the utilization of each type of auxiliary. However, many more dentists in every age group employed dental assistants than any other type of personnel. Almost 70 percent of all the dental practitioners utilized dental assistants in their practices as compared with only 19 percent with secretaries or receptionists, 15 percent with dental hygienists and 7 percent with dental laboratory technicians.

Not only did more dentists employ dental assistants in their practices than any other type of auxiliary, but they also more frequently employed them full time. Among dentists with assistants, 95 percent employed at least one full time. By comparison, the dental hygienist, the auxiliary least likely to be employed full time, was utilized full time by only 18 percent of the dentists who employed a hygienist in their practices.

The utilization of dental assistants and laboratory technicians was somewhat less frequent in the Portland area than in the remainder of the state. However, dental hygienists were employed by a larger proportion of the Portland area dentists than by those in other areas.
## Table 1.—Survey Response

<table>
<thead>
<tr>
<th>Military status and location</th>
<th>Licensed dentists</th>
<th>Survey respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percent</td>
</tr>
<tr>
<td>Total dentists</td>
<td>2,329</td>
<td>100</td>
</tr>
<tr>
<td>Civilian dentists in Oregon</td>
<td>1,385</td>
<td>60</td>
</tr>
<tr>
<td>Civilians in another state</td>
<td>867</td>
<td>37</td>
</tr>
<tr>
<td>On active duty in armed forces</td>
<td>71</td>
<td>3</td>
</tr>
</tbody>
</table>

1 Total includes 6 dentists whose status was not obtainable.

## Table 2.—Dental School Attended, by Year Dental Degree was Awarded

<table>
<thead>
<tr>
<th>Dental school attended</th>
<th>Number of dentists</th>
<th>Year dental degree was awarded</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>All years</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1,385</td>
</tr>
<tr>
<td>University of Oregon</td>
<td>1,087</td>
<td>82</td>
</tr>
<tr>
<td>University of Minnesota</td>
<td>45</td>
<td>3</td>
</tr>
<tr>
<td>Northwestern University</td>
<td>37</td>
<td>3</td>
</tr>
<tr>
<td>The Creighton University</td>
<td>23</td>
<td>2</td>
</tr>
<tr>
<td>State University of Iowa</td>
<td>14</td>
<td>1</td>
</tr>
<tr>
<td>Loyola University of Chicago</td>
<td>13</td>
<td>1</td>
</tr>
<tr>
<td>Marquette University</td>
<td>12</td>
<td>1</td>
</tr>
<tr>
<td>35 other dental schools</td>
<td>96</td>
<td>7</td>
</tr>
</tbody>
</table>

(Percent distribution by school)

Note: Individual items presented in tables may not add to the totals shown due to the failure of some responding dentists to reply to all items on the questionnaire, or, in the case of nonrespondents, because data were not obtainable for all items. For each item where percentages are shown, they are based on the number of dentists for whom the data are known.
<table>
<thead>
<tr>
<th>Area and county</th>
<th>Licensed dentists</th>
<th>Population</th>
<th>Survey respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Under 35</td>
<td>55 years or more</td>
</tr>
<tr>
<td>All areas</td>
<td>1,385</td>
<td>264</td>
<td>349</td>
</tr>
<tr>
<td>Willamette Valley area</td>
<td>1,053</td>
<td>201</td>
<td>277</td>
</tr>
<tr>
<td>Metropolitan areas</td>
<td>967</td>
<td>182</td>
<td>258</td>
</tr>
<tr>
<td>Portland metropolitan area</td>
<td>737</td>
<td>132</td>
<td>217</td>
</tr>
<tr>
<td>Clackamas</td>
<td>74</td>
<td>21</td>
<td>14</td>
</tr>
<tr>
<td>Multnomah</td>
<td>595</td>
<td>91</td>
<td>196</td>
</tr>
<tr>
<td>Washington</td>
<td>68</td>
<td>20</td>
<td>7</td>
</tr>
<tr>
<td>Salem metropolitan area</td>
<td>110</td>
<td>22</td>
<td>19</td>
</tr>
<tr>
<td>Marion</td>
<td>190</td>
<td>20</td>
<td>16</td>
</tr>
<tr>
<td>Polk</td>
<td>10</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Eugene metropolitan area</td>
<td>120</td>
<td>28</td>
<td>22</td>
</tr>
<tr>
<td>Lane</td>
<td>120</td>
<td>28</td>
<td>22</td>
</tr>
<tr>
<td>Nonmetropolitan counties</td>
<td>86</td>
<td>19</td>
<td>19</td>
</tr>
<tr>
<td>Benton</td>
<td>29</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>Hood River</td>
<td>9</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Linn</td>
<td>30</td>
<td>8</td>
<td>3</td>
</tr>
<tr>
<td>Yamhill</td>
<td>18</td>
<td>2</td>
<td>6</td>
</tr>
</tbody>
</table>
Table 3.—Location of Dentists in Oregon, by Selected Characteristics (cont'd)

<table>
<thead>
<tr>
<th>Area and county</th>
<th>Licensed dentists</th>
<th>Population</th>
<th>Survey respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Age in 1965</td>
<td></td>
<td>Percent of practitioners using auxiliaries</td>
</tr>
<tr>
<td></td>
<td>Under 35</td>
<td>55 or more</td>
<td>Professionally active</td>
</tr>
<tr>
<td>Western Oregon</td>
<td>187</td>
<td>37</td>
<td>43</td>
</tr>
<tr>
<td>Clatsop</td>
<td>10</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Columbia</td>
<td>25</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Coos</td>
<td>7</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Douglas</td>
<td>27</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Jackson</td>
<td>64</td>
<td>19</td>
<td>10</td>
</tr>
<tr>
<td>Josephine</td>
<td>17</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Lincoln</td>
<td>10</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Tillamook</td>
<td>9</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Eastern Oregon</td>
<td>141</td>
<td>25</td>
<td>28</td>
</tr>
<tr>
<td>Baker</td>
<td>10</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Crook</td>
<td>8</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Deschutes</td>
<td>21</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>Gilliam</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Grant</td>
<td>4</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Harney</td>
<td>3</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Jefferson</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Klamath</td>
<td>31</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Lake</td>
<td>3</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Malheur</td>
<td>11</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Morrow</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>
Table 3.—Location of Dentists in Oregon, by Selected Characteristics (cont’d)

<table>
<thead>
<tr>
<th>Area and county</th>
<th>Licensed dentists</th>
<th>Population</th>
<th>Survey respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Age in 1965</td>
<td></td>
<td>Percent of practitioners using auxiliaries</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>Total ²</td>
<td>Per active dentist</td>
</tr>
<tr>
<td></td>
<td>Under 35</td>
<td>55 years or more</td>
<td>Professionally active</td>
</tr>
<tr>
<td>Eastern Oregon (cont’d.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sherman</td>
<td>3.5</td>
<td>2,756</td>
<td>16</td>
</tr>
<tr>
<td>Umatilla</td>
<td>18</td>
<td>44.1</td>
<td>16</td>
</tr>
<tr>
<td>Union</td>
<td>10</td>
<td>18.2</td>
<td>9</td>
</tr>
<tr>
<td>Wallowa</td>
<td>4</td>
<td>6.9</td>
<td>4</td>
</tr>
<tr>
<td>Wasco</td>
<td>12</td>
<td>22.3</td>
<td>12</td>
</tr>
<tr>
<td>Wheeler</td>
<td>2.5</td>
<td>2.5</td>
<td></td>
</tr>
</tbody>
</table>

¹ Includes all responding dentists who reported they were professionally active in Oregon at the time of the survey and all non—respondents known to be under 70 years of age.

² Copyright 1965, Sales Management Survey of Buying Power; further reproduction is forbidden.

³ Includes four dentists who failed to give their county location.

⁴ Oregon counties included in the latest 1966 definition of Standard Metropolitan Statistical Areas, as established by the U.S. Bureau of the Budget, Office of Statistical Standards, have been grouped in metropolitan areas for the presentation of survey data. Statistics are presented only for dentists in the Oregon portion of the interstate Portland SMSA.
Table 4.—Age in 1965, by Location

<table>
<thead>
<tr>
<th>Age in 1965</th>
<th>All areas</th>
<th>Portland metropolitan area</th>
<th>Remainder of state</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Eugene area</td>
<td>Salem area</td>
</tr>
<tr>
<td>Number of dentists</td>
<td>1,385</td>
<td>737</td>
<td>644</td>
</tr>
<tr>
<td>Percent of dentists</td>
<td>100 %</td>
<td>100 %</td>
<td>100 %</td>
</tr>
<tr>
<td>Under 35</td>
<td>21</td>
<td>19</td>
<td>22</td>
</tr>
<tr>
<td>35-44</td>
<td>33</td>
<td>30</td>
<td>36</td>
</tr>
<tr>
<td>45-54</td>
<td>19</td>
<td>19</td>
<td>20</td>
</tr>
<tr>
<td>55-64</td>
<td>13</td>
<td>15</td>
<td>12</td>
</tr>
<tr>
<td>65 and over</td>
<td>14</td>
<td>17</td>
<td>11</td>
</tr>
<tr>
<td>Median age</td>
<td>44.1</td>
<td>45.2</td>
<td>42.9</td>
</tr>
</tbody>
</table>

Table 5.—Selected Practice Characteristics, by Age of Dentist

<table>
<thead>
<tr>
<th>Practice characteristics</th>
<th>Under 35</th>
<th>35-44</th>
<th>45-54</th>
<th>55 and over</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dental practitioners</td>
<td>100 %</td>
<td>100 %</td>
<td>100 %</td>
<td>100 %</td>
</tr>
<tr>
<td>With one or more auxiliaries</td>
<td>71 %</td>
<td>81 %</td>
<td>80 %</td>
<td>53 %</td>
</tr>
<tr>
<td>With dental assistants</td>
<td>68 %</td>
<td>79 %</td>
<td>78 %</td>
<td>48 %</td>
</tr>
<tr>
<td>With dental hygienists</td>
<td>11 %</td>
<td>22 %</td>
<td>18 %</td>
<td>5 %</td>
</tr>
<tr>
<td>Dentists reporting time in private practice</td>
<td>100 %</td>
<td>100 %</td>
<td>100 %</td>
<td>100 %</td>
</tr>
<tr>
<td>48 weeks or more:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>40 hours or more per week</td>
<td>59 %</td>
<td>53 %</td>
<td>41 %</td>
<td>28 %</td>
</tr>
<tr>
<td>Less than 40 hours per week</td>
<td>20 %</td>
<td>23 %</td>
<td>30 %</td>
<td>34 %</td>
</tr>
<tr>
<td>Less than 48 weeks:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>40 hours or more per week</td>
<td>16 %</td>
<td>14 %</td>
<td>16 %</td>
<td>9 %</td>
</tr>
<tr>
<td>Less than 40 hours per week</td>
<td>5 %</td>
<td>10 %</td>
<td>13 %</td>
<td>29 %</td>
</tr>
</tbody>
</table>
Table 6.—Professional Characteristics

<table>
<thead>
<tr>
<th>Professional characteristics</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total reporting activity</td>
<td>956</td>
<td>100</td>
</tr>
<tr>
<td>Patient care</td>
<td>917</td>
<td>96</td>
</tr>
<tr>
<td>Teaching</td>
<td>87</td>
<td>9</td>
</tr>
<tr>
<td>Research</td>
<td>58</td>
<td>6</td>
</tr>
<tr>
<td>Other activity</td>
<td>56</td>
<td>6</td>
</tr>
<tr>
<td>Professional employment</td>
<td>1,015</td>
<td>100</td>
</tr>
<tr>
<td>Self-employed</td>
<td>344</td>
<td>93</td>
</tr>
<tr>
<td>Employed by another dentist</td>
<td>13</td>
<td>1</td>
</tr>
<tr>
<td>On staff of dental school</td>
<td>33</td>
<td>3</td>
</tr>
<tr>
<td>Employed by state or local government</td>
<td>10</td>
<td>1</td>
</tr>
<tr>
<td>Other dental employment</td>
<td>15</td>
<td>2</td>
</tr>
<tr>
<td>Limited practices</td>
<td>830</td>
<td>100</td>
</tr>
<tr>
<td>With limited practices</td>
<td>81</td>
<td>10</td>
</tr>
<tr>
<td>In orthodontics</td>
<td>29</td>
<td>3</td>
</tr>
<tr>
<td>In oral surgery</td>
<td>21</td>
<td>3</td>
</tr>
<tr>
<td>In pedodontics</td>
<td>16</td>
<td>2</td>
</tr>
<tr>
<td>In other specialty areas</td>
<td>15</td>
<td>2</td>
</tr>
</tbody>
</table>

1. Dentists primarily practicing the survey who indicated the type of professional activity in which they engaged. Some dentists reported more than one type activity.

2. Dentists who indicated whether or not they engaged in dental practice in the preceding year, who reported whether or not they limited their practices to a dental specialty.

3. Dentists practicing at the time of the survey who indicated whether or not they utilized auxiliaries.

4. Dentists practicing at the time of the survey who indicated whether or not they utilized auxiliaries.

September 1967.
During the 1966 registration period, 7,934 dentists registered with the Pennsylvania Dental Council and Examining Board. A total of 7,754 dentists responded to the survey, 98 percent of all those registered. Eighty percent of the responding dentists are civilians located in Pennsylvania, 15 percent are civilians located in other states, and 5 percent are on duty with the Armed Forces. There were 116 women dentists included among the respondents, 94 of them located within the State.

<table>
<thead>
<tr>
<th>Location and military status</th>
<th>All dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>7,934</td>
<td>100</td>
</tr>
<tr>
<td>Respondents</td>
<td>7,754</td>
<td>98</td>
</tr>
<tr>
<td>Nonrespondents</td>
<td>180</td>
<td>2</td>
</tr>
<tr>
<td>Respondents</td>
<td>7,754</td>
<td>100</td>
</tr>
<tr>
<td>Civilians in Pennsylvania</td>
<td>6,162</td>
<td>80</td>
</tr>
<tr>
<td>Civilians located in other states</td>
<td>1,149</td>
<td>15</td>
</tr>
<tr>
<td>On active duty with Armed Forces</td>
<td>422</td>
<td>5</td>
</tr>
<tr>
<td>Not reported</td>
<td>21</td>
<td>*</td>
</tr>
</tbody>
</table>

* Less than one-half of one percent.

Multiple licensure is not too common among Pennsylvania dentists. Only a little over one-fourth of all respondents hold a license to practice dentistry in one or more other states. Only 13 percent of the dentists located in Pennsylvania hold more than one license, with 11 percent licensed in one other state and a mere 2 percent licensed in two or more other states. Multiple licensure is much more common among dentists registering in Pennsylvania but located out-of-state; 20 percent hold two or more licenses in addition to their Pennsylvania license.

Two-thirds of the licenses held outside of Pennsylvania are held in adjacent states, including 33 percent in New Jersey, 21 percent in New York and some 5 percent each in Ohio and Maryland. More distant states frequently reported were Florida and California.
PROFESSIONAL TRAINING

Over 90 percent of Pennsylvania's 6,162 dentists are graduates of three in-state dental schools. The University of Pittsburgh and Temple University have together provided almost three-fourths of the State's dentists, each contributing more than one-third of the total supply. The University of Pennsylvania, with a considerably smaller contribution, has trained approximately one-fifth of the dentists.

The remaining 8 percent of Pennsylvania's dentists were trained in 42 out-of-state schools. Among these schools, the University of Maryland, the large contributor, has supplied only about 100 dentists, or two percent of the dental force. The only other schools to provide as much as one percent of Pennsylvania's dentist supply are two schools in the District of Columbia, Georgetown and Howard Universities.

Dental School Attended and Year of Graduation
for Dentists in Pennsylvania

<table>
<thead>
<tr>
<th>Dental school attended</th>
<th>Number of dentists</th>
<th>Year of graduation</th>
<th>All</th>
<th>After 1940 or 1941</th>
<th>1940 or 1955</th>
<th>1955 or earlier</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number</td>
<td>6,162</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Schools in this State</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pittsburgh</td>
<td>2,372</td>
<td>92</td>
<td>42</td>
<td>38</td>
<td>35</td>
<td>32</td>
</tr>
<tr>
<td>Temple</td>
<td>2,149</td>
<td>35</td>
<td>32</td>
<td>33</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>1,177</td>
<td>19</td>
<td>18</td>
<td>19</td>
<td></td>
<td></td>
</tr>
<tr>
<td>42 schools located elsewhere</td>
<td>464</td>
<td>8</td>
<td>8</td>
<td>7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(Percent distribution by school)

1/ Year of graduation not available for 7 dentists.

Only one-fifth of the State's dentists graduated from dental school within the last 10 years. In contrast, a full 50 percent received their dental degrees during the years prior to World War II. There has been virtually no change over the years in the overall proportion of dentists graduating either from Pennsylvania's own dental schools or from out-of-state schools.

In Pennsylvania approximately one-fifth of the survey respondents, or 1,270 dentists, reported that they had completed one year or more of advanced training after receiving their dental degrees. Of the 864 dentists with advanced clinical training, 267 completed a residency and 597 an internship. Among the 659 dentists who reported advanced academic training, 240 earned a master's or other advanced degree and another 419 received no additional degrees but completed one or more years of postgraduate study. A total of 253 dentists completed both academic and clinical training.
More than four-fifths of the 6,162 responding dentists in Pennsylvania are located in the State's 13 metropolitan areas. The Pennsylvania portion of the Philadelphia area alone has almost 2,300 dentists, 37 percent of all the dentists in the State. Furthermore, one of every five dentists in the State (1,259) is actually located within Philadelphia County. Two of the remaining four counties in the Philadelphia area, Montgomery and Delaware, have 350 to 400 dentists, while Bucks and Chester Counties have 100 to 150 dentists. The 4-county Pittsburgh metropolitan area has 22 percent of the dental force, or 1,355 dentists. Three-fourths of these dentists (1,023) are in Allegheny County, where Pittsburgh is located.

<table>
<thead>
<tr>
<th>Area</th>
<th>Number of counties</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>67</td>
<td>6,162</td>
<td>100</td>
</tr>
<tr>
<td>All metropolitan areas</td>
<td>25</td>
<td>5,147</td>
<td>84</td>
</tr>
<tr>
<td>Philadelphia area (Pa. part)</td>
<td>5</td>
<td>2,274</td>
<td>37</td>
</tr>
<tr>
<td>Pittsburgh area</td>
<td>4</td>
<td>1,355</td>
<td>22</td>
</tr>
<tr>
<td>11 other areas</td>
<td>16</td>
<td>1,518</td>
<td>25</td>
</tr>
<tr>
<td>Nonmetropolitan counties</td>
<td>42</td>
<td>1,015</td>
<td>16</td>
</tr>
<tr>
<td>Central city 10,000-49,999</td>
<td>19</td>
<td>736</td>
<td>12</td>
</tr>
<tr>
<td>Central city under 10,000</td>
<td>23</td>
<td>279</td>
<td>4</td>
</tr>
</tbody>
</table>

* See Appendix Table for complete listing and definition of metropolitan areas, including explanation of interstate areas, and presentation of individual county data.

Of the other metropolitan areas, Allentown-Bethlehem-Easton has the largest dental force, although it accounts for only 4 percent of the State supply. The next largest dental forces are found in the Wilkes-Barre-Hazleton, Harrisburg and Reading areas, each of which accounts for 3 percent of the State's dentists. Five of the remaining metropolitan areas--Lancaster, Scranton, York, Erie and Johnstown--each have approximately 2 percent of Pennsylvania's dentists.

Only 16 percent of the State's dentists are located in the 42 nonmetropolitan counties. Three-fourths of these dentists are located in the 19 counties with central cities of 10,000 or more persons. The 23 counties which do not have a city this large account for only 4 percent of the dentists in the State.
AGE DISTRIBUTION OF DENTISTS BY AREA

With slightly more than one-half of the dentists 50 years of age or older, the median age of dentists in Pennsylvania is 50.3 years. Only 15 percent of the State’s dentists are under 35, but more than two and a half times this proportion, 41 percent, are 55 years of age or older. Nearly 1,000 dentists are 65 years old or over, including more than 400 who have reached the age of 70.

### Age Distribution of Pennsylvania Dentists

<table>
<thead>
<tr>
<th>Age in 1965</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
<th>Cumulative percent distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>6,162</td>
<td>100</td>
<td>-</td>
</tr>
<tr>
<td>Under 30</td>
<td>316</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>30 - 34</td>
<td>634</td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td>35 - 39</td>
<td>688</td>
<td>11</td>
<td>26</td>
</tr>
<tr>
<td>40 - 44</td>
<td>783</td>
<td>13</td>
<td>39</td>
</tr>
<tr>
<td>45 - 49</td>
<td>613</td>
<td>10</td>
<td>49</td>
</tr>
<tr>
<td>50 - 54</td>
<td>585</td>
<td>10</td>
<td>59</td>
</tr>
<tr>
<td>55 - 59</td>
<td>732</td>
<td>12</td>
<td>71</td>
</tr>
<tr>
<td>60 - 64</td>
<td>817</td>
<td>13</td>
<td>84</td>
</tr>
<tr>
<td>65 - 69</td>
<td>343</td>
<td>9</td>
<td>93</td>
</tr>
<tr>
<td>70 - 74</td>
<td>294</td>
<td>5</td>
<td>98</td>
</tr>
<tr>
<td>75 &amp; over</td>
<td>144</td>
<td>2</td>
<td>100</td>
</tr>
</tbody>
</table>

1/ Includes 13 dentists who did not report age.

In metropolitan areas the median age of dentists is 49.9 years, more than two years younger than the 52.3 year median for dentists in the nonmetropolitan counties. Median ages vary considerably among the metropolitan areas. The areas of Allentown-Bethlehem-Easton and Lancaster have the youngest dentists, with median ages under 46 years. The oldest dentists are found in the Altoona, Scranton and Wilkes-Barre-Hazleton areas, where the median ages are 54 years or more. In the Pittsburgh area, the median age is 51.4 years, approximately one year older than the State average, while dentists in the Philadelphia area have a median age about equal to the State average, 49.8 years.

Age differences among the counties in the Philadelphia area are quite pronounced, with older dentists concentrated in the hub of the area. The median age of dentists in Philadelphia County itself is 53.0 years. By contrast, dentists in the four other counties comprising the Pennsylvania part of the Philadelphia area are considerably younger, with a median age of 43.0 years.
ACTIVE DENTISTS IN RELATION TO POPULATION

Of the 6,162 responding dentists in Pennsylvania, 5,936, or 96 percent, are active in their profession, giving Pennsylvania one professionally active dentist for every 1,967 persons. The 13 metropolitan areas together have 1,869 persons per active dentist, while the 42 nonmetropolitan counties have a somewhat higher ratio of 2,467 persons per dentist. Of the principal metropolitan areas, Philadelphia has the more favorable ratio of 1,734 persons per dentist compared to a ratio of 1,907 in the Pittsburgh area.

<table>
<thead>
<tr>
<th>Area*</th>
<th>Professionally active dentists</th>
<th>Population</th>
<th>Persons per dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>5,936</td>
<td>11,676,800</td>
<td>1,967</td>
</tr>
<tr>
<td>All metropolitan areas</td>
<td>4,959</td>
<td>9,266,500</td>
<td>1,869</td>
</tr>
<tr>
<td>Philadelphia area (Pa. part)</td>
<td>2,201</td>
<td>3,816,000</td>
<td>1,734</td>
</tr>
<tr>
<td>Pittsburgh area</td>
<td>1,284</td>
<td>2,448,100</td>
<td>1,907</td>
</tr>
<tr>
<td>11 other areas</td>
<td>1,474</td>
<td>3,002,400</td>
<td>2,037</td>
</tr>
<tr>
<td>Nonmetropolitan counties</td>
<td>977</td>
<td>2,410,300</td>
<td>2,467</td>
</tr>
<tr>
<td>Central city 10,000-49,999</td>
<td>707</td>
<td>1,718,700</td>
<td>2,431</td>
</tr>
<tr>
<td>Central city under 10,000</td>
<td>270</td>
<td>691,600</td>
<td>2,561</td>
</tr>
</tbody>
</table>

* See Appendix Table for data pertaining to individual metropolitan areas and counties.

In the 5-county Philadelphia metropolitan area, the persons-per-dentist ratios range from 1,519 in Montgomery County to 2,460 in Bucks County. Philadelphia County itself has one dentist for every 1,669 persons. In the Pittsburgh metropolitan area, Allegheny County, the hub of the area, has the most favorable ratio--1,717, while the three other counties in the area all have similar ratios which average about 2,500 persons per dentist.

Among the other metropolitan areas, four have ratios more favorable than the State average--Scranton, Wilkes-Barre - Hazleton, Allentown-Bethlehem-Easton and Reading. Three metropolitan areas--Harrisburg, Erie and Lancaster--have ratios between 2,100 and 2,300, and three other areas--Altoona, York and Johnstown--have ratios between 2,300 and 2,500. The remaining area, Susquehanna County, an outlying county in the Binghamton, New York metropolitan area, has a persons-per-dentist ratio exceeding 3,000.

Of the 42 nonmetropolitan counties of the State, only five have persons-per-dentist ratios under 2,000. There are 20 counties with ratios of more than 2,500, including 9 counties with ratios in excess of 3,000 persons per dentist.
Almost three-fifths of the dental practitioners in Pennsylvania (i.e., dentists who spend any time working at the chair) employ auxiliary personnel. Dental assistants, the most frequently employed auxiliary, are utilized by 46 percent of the dentists, including 39 percent who employ at least one on a full-time basis. Secretaries or receptionists are employed by 17 percent of the practitioners, with about two-thirds of these dentists utilizing such personnel full time. Only 10 percent of the dentists employ dental hygienists and 5 percent employ dental technicians. Hygienists and laboratory technicians are more likely to be employed on a part-time basis than are other auxiliary personnel.

Pennsylvania Dentists Employing Auxiliaries, by Type of Auxiliary

<table>
<thead>
<tr>
<th>Type of auxiliary</th>
<th>Dental practitioners</th>
<th>Percent of dental practitioners</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Total</td>
</tr>
<tr>
<td>Total</td>
<td>5,810</td>
<td>100</td>
</tr>
<tr>
<td>One or more auxiliaries</td>
<td>3,152</td>
<td>56</td>
</tr>
<tr>
<td>Assistant</td>
<td>2,596</td>
<td>46</td>
</tr>
<tr>
<td>Hygienist</td>
<td>562</td>
<td>10</td>
</tr>
<tr>
<td>Laboratory technician</td>
<td>257</td>
<td>5</td>
</tr>
<tr>
<td>Secretary or receptionist</td>
<td>953</td>
<td>17</td>
</tr>
<tr>
<td>Other type of personnel</td>
<td>204</td>
<td>4</td>
</tr>
<tr>
<td>No auxiliaries</td>
<td>2,464</td>
<td>44</td>
</tr>
</tbody>
</table>

1/ Includes 212 dentists who did not report on auxiliary utilization.

The use of auxiliaries varies with the age of the dentist and is more frequent among the young dentists. Approximately 73 percent of the dental practitioners between the ages of 30 and 44 employ some type of auxiliary. The proportion utilizing auxiliaries decreases to 51 percent among dentists 45 to 64 years old and to 31 percent among dentists 65 and over.

Dentists in metropolitan areas employ auxiliaries with about the same frequency as those located in nonmetropolitan counties. Even though the proportion of dentists utilizing auxiliaries in the Philadelphia area approximates the State average, differences among individual counties within the area are rather pronounced. In Philadelphia County only 43 percent of the dentists employ auxiliaries, compared to 66 percent in the four other counties comprising the Pennsylvania part of the Philadelphia metropolitan area.
OTHER SURVEY FINDINGS

Ninety five percent of the professionally active dentists in Pennsylvania are primarily engaged in private practice. Two percent are on the staffs of dental schools. The remaining three percent are either employed by government agencies or are engaged in other dental activities, such as taking advanced training.

At least one part-time dental activity in addition to their principal employment was reported by 18 percent of the Pennsylvania dentists. Part-time teaching in a dental school was the most frequently reported type of secondary employment, followed by employment in a State or local government agency. A variety of other secondary dental activities were reported, including employment by another dentist and serving in voluntary agencies.

About 10 percent of the practitioners reported they limit their practice to a dental specialty, primarily to oral surgery and orthodontics. Some 12 percent of the dental practitioners in both the Philadelphia and Pittsburgh areas limit their practices, compared to 10 percent of those in other metropolitan areas and only 6 percent of those located in nonmetropolitan counties.

Dentists providing patient care during the year prior to the survey devoted an average of 40.0 hours a week to this activity for 47.6 weeks. About one dentist in six worked the equivalent of six days a week, 48 hours or more, for at least 48 weeks.

Of the 1,149 dentists licensed in Pennsylvania but located in another state at the time of the survey, one-third were in New Jersey and 26 percent were located in the other adjacent states of New York, Maryland, Ohio, West Virginia and Delaware. The remaining out-of-state dentists were located in 37 other states, predominantly Florida and California.
### APPENDIX TABLE

Selected Data on Dentists in Pennsylvania, by Location

<table>
<thead>
<tr>
<th>County group and county</th>
<th>Civilian dentists</th>
<th>Age in 1965</th>
<th>Professionally active</th>
<th>Population 1/ (in 000's)</th>
<th>Persons per active dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Percent</td>
<td>Percent</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>under 40</td>
<td>55 or more</td>
<td></td>
<td></td>
</tr>
<tr>
<td>All counties</td>
<td>6,162</td>
<td>27</td>
<td>41</td>
<td>5,936</td>
<td>11,676.8</td>
</tr>
<tr>
<td>Metropolitan areas 2/</td>
<td>5,147</td>
<td>27</td>
<td>40</td>
<td>4,959</td>
<td>9,266.5</td>
</tr>
<tr>
<td>Philadelphia area (Pa. part)</td>
<td>2,274</td>
<td>26</td>
<td>39</td>
<td>2,201</td>
<td>3,816.0</td>
</tr>
<tr>
<td>Bucks</td>
<td>146</td>
<td>43</td>
<td>17</td>
<td>146</td>
<td>359.1</td>
</tr>
<tr>
<td>Chester</td>
<td>124</td>
<td>36</td>
<td>27</td>
<td>121</td>
<td>235.0</td>
</tr>
<tr>
<td>Delaware</td>
<td>354</td>
<td>26</td>
<td>50</td>
<td>343</td>
<td>600.1</td>
</tr>
<tr>
<td>Montgomery</td>
<td>391</td>
<td>34</td>
<td>26</td>
<td>383</td>
<td>581.8</td>
</tr>
<tr>
<td>Philadelphia</td>
<td>1,259</td>
<td>20</td>
<td>47</td>
<td>1,208</td>
<td>2,040.0</td>
</tr>
<tr>
<td>Pittsburgh area</td>
<td>1,355</td>
<td>29</td>
<td>46</td>
<td>1,284</td>
<td>2,448.1</td>
</tr>
<tr>
<td>Allegheny</td>
<td>1,023</td>
<td>29</td>
<td>46</td>
<td>969</td>
<td>1,663.5</td>
</tr>
<tr>
<td>Beaver</td>
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## APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Pennsylvania, by Location

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<th>County group and county</th>
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<th>Persons per active dentist</th>
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<td>Percent under 40</td>
<td>Percent 55 or more</td>
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### APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Pennsylvania, by Location

<table>
<thead>
<tr>
<th>County group and county</th>
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<th>Persons per active dentist</th>
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<td>Total</td>
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### APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Pennsylvania, by Location

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Central city 5,000-9,999

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<th>Persons (1/) active dentist</th>
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Central city 2,500-4,999

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### APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Pennsylvania, by Location

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<td>Fulton</td>
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<td>465</td>
<td>1</td>
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<tr>
<td>Juniata</td>
<td>3</td>
<td>535</td>
<td>25</td>
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<td>Pike</td>
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<td>Sullivan</td>
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<tr>
<td>Wyoming</td>
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<td>1105</td>
<td>46</td>
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2/ Pennsylvania counties included in the latest 1968 definition of Standard Metropolitan Statistical Areas, as established by the U.S. Bureau of the Budget, Office of Statistical Standards, have been grouped as metropolitan areas for presentation of the survey data. For interstate SMSA's, statistics are presented only for dentists reporting their location in the Pennsylvania portion of the Philadelphia SMSA, Allentown-Bethlehem-Easton SMSA, and Binghamton SMSA.

3/ Counties not included within an SMSA, as defined by the U.S. Bureau of the Budget, have been grouped according to the 1960 population of the largest (central) city within each county.
DENTISTS LICENSED IN RHODE ISLAND

During the 1965 registration period, a total of 537 dentists registered with the Rhode Island Department of Health, Board of Examiners in Dentistry (Table 1). A large proportion of these dentists, 86 percent, are civilians located in Rhode Island; another 10 percent are civilians located in other States, and only 3 percent are on active duty in the Armed Forces. Almost two-thirds of the 53 out-of-State civilian dentists are located in adjacent States, 30 in Massachusetts and 4 in Connecticut.

Table 1.--Location and Military Status of Dentists Licensed in Rhode Island

<table>
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<td>7</td>
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<tr>
<td>Total licensed</td>
<td>537</td>
<td>100</td>
</tr>
<tr>
<td>Civilians in Rhode Island</td>
<td>463</td>
<td>86</td>
</tr>
<tr>
<td>Respondents</td>
<td>429</td>
<td>-</td>
</tr>
<tr>
<td>Nonrespondents</td>
<td>34</td>
<td>-</td>
</tr>
<tr>
<td>Civilians in another State</td>
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<td>10</td>
</tr>
<tr>
<td>On active duty with Armed Forces</td>
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<td>3</td>
</tr>
<tr>
<td>Not available</td>
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<td>1</td>
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</table>

The survey questionnaire was completed by 497 dentists, 93 percent of all those registered. Certain items of information--State and county location, age, dental school attended, and year of graduation--were obtained for nonrespondents from records maintained either by the Rhode Island Department of Health, Board of Examiners in Dentistry, or from the 1966 American Dental Directory published by the American Dental Association. This report includes information on both respondents and nonrespondents unless otherwise indicated. (See Appendix Table A.)
Of all dentists responding to the survey, almost two in every five hold a license in one or more States in addition to Rhode Island. About one-fourth of the dentists located in Rhode Island are licensed in one other State, but only 5 percent are licensed in two or more other States. By comparison, out-of-State respondents tend to have a considerably larger number of licenses, with 32 percent holding two or more licenses in addition to the one held in Rhode Island.

Civilian Dentists in Rhode Island

Age.--The median age of dentists in Rhode Island is a rather high 48.1 years. Three in every 10 of the State's dentists are 45 to 54 years of age and another 30 percent are 55 years old or over, including 11 percent who are at least 65 years of age. In contrast, only 12 percent of the dentists are under age 35 (Table 2).

<table>
<thead>
<tr>
<th>Age</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>463(^1/)</td>
<td>100</td>
</tr>
<tr>
<td>Under 35</td>
<td>53</td>
<td>12</td>
</tr>
<tr>
<td>35 - 44</td>
<td>122</td>
<td>28</td>
</tr>
<tr>
<td>45 - 54</td>
<td>133</td>
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<tr>
<td>55 - 64</td>
<td>85</td>
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<tr>
<td>65 - 74</td>
<td>31</td>
<td>7</td>
</tr>
<tr>
<td>75 &amp; over</td>
<td>18</td>
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</tbody>
</table>

\(^1/\) Includes 21 dentists for whom age is not available.

A relatively large proportion of survey nonrespondents are in the older age groups. Almost 40 percent of the nonresponding dentists are 65 years of age or older, but only 9 percent of the respondents are in this age group. Moreover, the median age of dentists not responding to the survey is 59.7 years, almost 12 years higher than for respondents.

Dental schools.--As would be expected because of their high median age, relatively few of Rhode Island's dentists are recent dental school graduates. Only 16 percent of the State's dental force graduated from dental school within the past 10 years, which contrasts sharply with the 41 percent of the dental force graduating prior to World War II.
More than four of every five dentists currently located in Rhode Island are graduates of eight dental schools located in three States—Massachusetts, Pennsylvania, Maryland—and the District of Columbia. The two dental schools located in Massachusetts have trained about 43 percent of the State's total dentist supply (Table 3). Tufts University has made the largest contribution, accounting for about one-third of the total dental force, while Harvard University, with a considerably smaller contribution, has trained slightly more than one-tenth of the dentists. Other schools making important contributions are the University of Maryland and Georgetown University, which have supplied Rhode Island with 17 percent and 11 percent of its dentists, respectively. The only other schools in these States to contribute as many as 20 dentists to the Rhode Island dentist supply are the University of Pennsylvania and Temple University.

Table 3.--Dental School Attended

<table>
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<th>Percent of dentists</th>
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<td>Georgetown</td>
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<td>11</td>
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<td>6</td>
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<tr>
<td>Pennsylvania</td>
<td>24</td>
<td>5</td>
</tr>
<tr>
<td>Other schools</td>
<td>57</td>
<td>12</td>
</tr>
</tbody>
</table>

The remaining 17 percent of the State's dentists were trained in 20 other dental schools, including 3 in Canada. Among these schools, St. Louis University has contributed the largest number of graduates, about 6 percent of the total supply.

Advanced training.—About 28 percent of the respondents, or 121 dentists, reported they had completed one year or more of advanced training beyond the dental degree (Table 4). Of the 94 dentists with advanced clinical training, 19 had completed a residency and 75 an internship. Among the 46 dentists who reported advanced academic training, 16 had earned a master's or other advanced degree, and another 30 received no additional degrees but had completed one or more years of postgraduate study.
Table 4.--Advanced Training

<table>
<thead>
<tr>
<th>Type of advanced training</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>With advanced training</td>
<td>429¹/</td>
<td>100</td>
</tr>
<tr>
<td>Clinical training only</td>
<td>121</td>
<td>28</td>
</tr>
<tr>
<td>Academic training only</td>
<td>75</td>
<td>18</td>
</tr>
<tr>
<td>Both clinical and academic training</td>
<td>27</td>
<td>6</td>
</tr>
<tr>
<td>With no advanced training</td>
<td>308</td>
<td>72</td>
</tr>
</tbody>
</table>

¹/ Includes survey respondents only.

Distribution of dentists.--For the presentation of data on the geographical distribution of dentists, Rhode Island has been divided into two areas as defined in "Economic Areas of the United States," by Donald J. Bogue and Calvin L. Beale. The Providence area includes the three counties of Providence, Kent and Bristol, and the Lower Narragansett Bay area consists of Washington and Newport Counties.

About 9 in every 10 of the 463 dentists in Rhode Island are concentrated in the Providence area (Table 5). Providence County alone is the location of three-fourths of the State's dentists. Another 11 percent are located in Kent County, while only 3 percent are located in Bristol County. The remainder of the State's dentists are located in the Narragansett Bay area, 7 percent in Newport County and 5 percent in Washington County.

Table 5.--Distribution by Area and County

<table>
<thead>
<tr>
<th>Area and county</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>All counties</td>
<td>463</td>
<td>100</td>
</tr>
<tr>
<td>Providence area</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Providence</td>
<td>408</td>
<td>88</td>
</tr>
<tr>
<td>Kent</td>
<td>52</td>
<td>11</td>
</tr>
<tr>
<td>Bristol</td>
<td>14</td>
<td>3</td>
</tr>
<tr>
<td>Lower Narragansett Bay area</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Newport</td>
<td>33</td>
<td>7</td>
</tr>
<tr>
<td>Washington</td>
<td>22</td>
<td>5</td>
</tr>
</tbody>
</table>
There is only a slight difference in the average age of dentists in the two geographic areas. The median age of dentists in the Lower Narragansett Bay area is 48.8 years, while dentists in the Providence area are on the average about one year younger, with a median age of 47.9 years. Although the median ages of dentists in the two counties which comprise the Lower Narragansett Bay area are virtually the same, there is a notable age difference among dentists in the counties making up the Providence area. In Providence County the median age of dentists is 49.1 years, with only 10 percent of the dentists under age 35 and 33 percent 55 years old or over. This county, containing the city of Providence, represents the location of long-established dentists who tend to be concentrated in the hub of large metropolitan areas. By contrast, the median age of dentists in the counties of Kent and Bristol, combined, is 42.9 years, with 20 percent of the dentists under 35 years of age and only 17 percent 55 or older.

Active dentists in relation to population.--During the 1965 registration period approximately 450 dentists in Rhode Island were active in their profession. These dentists represented 97 percent of all those in the State. The remaining 3 percent include responding dentists who reported themselves fully retired and nonresponding dentists who are known to be 70 years of age or older. Based on these data, Rhode Island had one professionally active dentist for every 2,007 persons in 1965 (Table 6).

Table 6.--Number of Persons Per Active Dentist

<table>
<thead>
<tr>
<th>Area and county</th>
<th>Professionally active dentists</th>
<th>Population 1/</th>
<th>Persons per dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td>All counties</td>
<td>451</td>
<td>905.2</td>
<td>2,007</td>
</tr>
<tr>
<td>Providence area</td>
<td>399</td>
<td>749.0</td>
<td>1,877</td>
</tr>
<tr>
<td>Providence</td>
<td>334</td>
<td>580.5</td>
<td>1,738</td>
</tr>
<tr>
<td>Kent</td>
<td>51</td>
<td>127.3</td>
<td>2,496</td>
</tr>
<tr>
<td>Bristol</td>
<td>14</td>
<td>41.2</td>
<td>2,943</td>
</tr>
<tr>
<td>Lower Narragansett Bay area</td>
<td>52</td>
<td>156.2</td>
<td>3,004</td>
</tr>
<tr>
<td>Newport</td>
<td>30</td>
<td>91.7</td>
<td>3,057</td>
</tr>
<tr>
<td>Washington</td>
<td>22</td>
<td>64.5</td>
<td>2,932</td>
</tr>
</tbody>
</table>

1/ Copyright 1965, Sales Management Survey of Buying Power. Further reproduction is forbidden.
The number of persons per active dentist in the Providence area is about 1,880 compared to a less favorable ratio of 3,000 in the Lower Narragansett Bay area. Within the Providence area, Providence County has the most favorable ratio of 1,740 persons per dentist, Kent County ranks second with a ratio of 2,500 and Bristol County has 2,940 persons per dentist, the highest ratio in the 3-county area. In the Lower Narragansett Bay area, Washington and Newport Counties have similar persons-per-dentist ratios, 2,930 and 3,060, respectively.

Professional activity.--Of the 424 responding dentists who reported that they were professionally active at the time of the survey, 97 percent were primarily engaged in private practice, with 96 percent self-employed and one percent employed by another dentist. Of the remaining dentists, 2 percent were employed by a government agency and one percent were engaged in other dental activities, such as taking advanced training.

About one out of every five dentists reported that they were employed in a part-time dental activity in addition to their primary professional employment. These dentists reported a variety of specialty dental activities, including employment in a government agency, a clinic, and working for a voluntary agency.

Almost all dentists who reported on their professional activity in Rhode Island last year indicated they had provided dental care to their patients, devoting an average of 40.4 hours per week to this activity for 48.5 weeks during the year. Only 8 percent of the dentists worked less than 40 hours per week for less than 48 weeks. On the other hand, a substantial number of dentists worked exceptionally long hours. About one dentist in every five spent the equivalent of a 6-day week (or even a little more) in patient care for at least 48 weeks during the year.

Practice characteristics.--Thirty-nine practicing dentists, or about 10 percent, reported that they limit their practice to one speciality. Almost all of the limited practitioners are concentrated in the Providence area including 33 in Providence County and 3 in Kent County. Orthodontics and oral surgery are the two most frequently reported speciality areas, accounting for about two-thirds of the dentists who limit their practices. The next most frequently reported areas of limited practice are periodontics and prosthodontics.

About 38 percent of the dental practitioners in Rhode Island (i.e., dentists who spend any time working at the chair) hire their auxiliary personnel. The dental assistant, the most frequently utilized auxiliary, is employed by about 60 percent of these dentists. Dental hygienists and secretaries are utilized with somewhat less frequency, each of these auxiliaries being employed by about 20 percent of the
dentists. Only one practitioner in 12 employs a laboratory technician in his practice.

Employment of auxiliaries varies with the age of the dentist, becoming less frequent among dentists in the older age groups. Auxiliaries are employed by one-half of the dental practitioners in the age group 55 through 64, compared to more than three-fourths of the practitioners under age 55. An even lower proportion, only one-third, of the practitioners 65 years old or over employ auxiliaries.
## Appendix Table A: Summary Statistics for Rhode Island

<table>
<thead>
<tr>
<th>Category</th>
<th>Total dentists licensed in Rhode Island</th>
<th>Responding dentists</th>
<th>Non-responding dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Civilian dentists in Rhode Island (designated simply as &quot;dentists&quot; in text tables)</td>
<td>537(^1)</td>
<td>497(^1)</td>
<td>40(^2)</td>
</tr>
<tr>
<td>Professionally active dentists (^4)</td>
<td>451</td>
<td>424</td>
<td>27</td>
</tr>
<tr>
<td>Dental practitioners (^5)</td>
<td>-</td>
<td>420</td>
<td>-</td>
</tr>
<tr>
<td>In limited practice (^6)</td>
<td>-</td>
<td>39</td>
<td>-</td>
</tr>
<tr>
<td>Located in Rhode Island last year:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reported professional activity (^7)</td>
<td>-</td>
<td>411</td>
<td>-</td>
</tr>
<tr>
<td>Dentists providing patient care (^8)</td>
<td>-</td>
<td>403</td>
<td>-</td>
</tr>
<tr>
<td>Reported time spent in patient care (^9)</td>
<td>-</td>
<td>300</td>
<td>-</td>
</tr>
<tr>
<td>Civilian dentists in another State</td>
<td>53</td>
<td>47</td>
<td>6</td>
</tr>
<tr>
<td>Dentists on active duty in Armed Forces</td>
<td>17</td>
<td>17</td>
<td>-</td>
</tr>
</tbody>
</table>

---

1/ Includes 4 dentists not reporting current location or military status.

2/ Data for nonresponding dentists were obtained from the Rhode Island Department of Health, Board of Examiners in Dentistry, and from the 1966 American Dental Directory published by the American Dental Association.

3/ All dentists who currently work in Rhode Island (excluding those in the Armed Forces) or who are retired and currently live in the State. Data are not available for the following: year of graduation - 16, age - 21.

4/ Include all responding dentists who reported they were professionally active in Rhode Island at the time of the survey and all nonrespondents known to be under 70 years of age.

5/ All responding dentists practicing at the chair, that is, dentists who work as clinicians either as primary or secondary activity.

6/ Dentists who reported they limited their practice to a dental specialty.

7/ Dentists located in Rhode Island last year who indicated type(s) of activity in which they engaged.

8/ All responding dentists who engaged in patient care last year, either as a primary or a secondary activity.

9/ Dentists reporting both hours and weeks spent in patient care last year.
DENTISTS LICENSED IN SOUTH CAROLINA

During the 1965 registration period, 963 dentists registered with the South Carolina State Board of Dental Examiners. Of these dentists, 57 percent were located in the State, 37 percent were located in other States, and 6 percent were on active duty with the Armed Forces.

<table>
<thead>
<tr>
<th>Location and Military Status of Dentists Licensed in South Carolina</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location and military status</td>
</tr>
<tr>
<td>-----------------------------</td>
</tr>
<tr>
<td>Total licensed</td>
</tr>
<tr>
<td>Respondents</td>
</tr>
<tr>
<td>Nonrespondents</td>
</tr>
<tr>
<td>Total licensed</td>
</tr>
<tr>
<td>Civilians in South Carolina</td>
</tr>
<tr>
<td>Respondents</td>
</tr>
<tr>
<td>Nonrespondents</td>
</tr>
<tr>
<td>Civilians in another State</td>
</tr>
<tr>
<td>On active duty with Armed Forces</td>
</tr>
</tbody>
</table>

The survey questionnaire was completed by 697 dentists, 72 percent of the total registered. However, the response rate of dentists actually located in South Carolina is considerably higher, 84 percent. Information provided by the survey respondents has been supplemented, when possible, by data on location, age, dental school attended, and year of graduation for dentists not responding to the survey. This information was obtained from records maintained by the South Carolina State Board of Dental Examiners or from the 1966 American Dental Directory, published by the American Dental Association.

Multiple licensure is fairly common among dentists registered in South Carolina; 63 percent of the respondents hold a license to practice dentistry in one or more other States. About 48 percent of the dentists located in the State have one other license, but only 8 percent have two or more other licenses. The proportion of out-of-State dentists holding multiple licenses is considerably greater; more than two-fifths have two or more licenses in addition to the one held in South Carolina.
DENTAL SCHOOL ATTENDED

Nine in every ten of the 551 dentists located in South Carolina are graduates of 15 dental schools located in the South. Emory University, the largest contributor, has graduated 38 percent of the State's dentists, and the Medical College of Virginia has supplied 17 percent. The Universities of Louisville and Maryland have each provided the State with 8 percent of its dental force, while the University of Tennessee and Meharry Medical College have trained 6 percent and 5 percent, respectively. Nine other schools in the South have supplied about 9 percent of South Carolina's dentists, including 4 percent who graduated from the University of North Carolina. The remaining dentists (9 percent) are graduates of 19 dental schools located in other parts of the Nation.

Dental School Attended and Year of Graduation for Dentists in South Carolina

<table>
<thead>
<tr>
<th>Dental school attended</th>
<th>Number of dentists</th>
<th>Year of graduation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>All years</td>
</tr>
<tr>
<td>Total number</td>
<td>551</td>
<td>-</td>
</tr>
</tbody>
</table>

(Percent distribution by school)

<table>
<thead>
<tr>
<th>Schools in the South</th>
<th>Year of graduation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Emory University</td>
<td>207</td>
</tr>
<tr>
<td>Medical College of Virginia</td>
<td>97</td>
</tr>
<tr>
<td>University of Louisville</td>
<td>43</td>
</tr>
<tr>
<td>University of Maryland</td>
<td>42</td>
</tr>
<tr>
<td>University of Tennessee</td>
<td>36</td>
</tr>
<tr>
<td>Meharry Medical College</td>
<td>26</td>
</tr>
<tr>
<td>9 other schools</td>
<td>52</td>
</tr>
<tr>
<td>19 schools in other regions</td>
<td>48</td>
</tr>
</tbody>
</table>

1/ Year of graduation not available for 9 dentists. Percents are based on total for whom data are known.

The proportionate contribution of dental schools in the South to the State's dentist supply has remained relatively constant through the years. However, the role of Emory University as the major supplier of dentists to South Carolina has declined substantially since 1955. Prior to that time more than one-half (52 percent) of all dentists in the State were graduates of Emory; in contrast, less than one-fifth of the State's dentists graduating since 1955 came from this school. The contribution of the Medical College of Virginia to the State's total supply has increased from 9 percent of all dentists in South Carolina who graduated in 1955 or earlier to 30 percent of all those graduating since that time.
DISTRIBUTION OF DENTISTS

Dentists in South Carolina are unevenly distributed geographically, with slightly more than three-fifths located in only seven of the State's 46 counties. Three of these counties--Richland, Greenville, and Charleston--are located in metropolitan areas and have 65 or more dentists each. The remaining four counties--Spartanburg, Florence, Anderson, and York--are nonmetropolitan, but each has a central city of 10,000 or more inhabitants, and has between 20 and 45 dentists.

Forty-seven percent of the 551 dentists in South Carolina are located in the four metropolitan areas of the State. The Columbia area has 96 dentists, 18 percent of the total supply. The Greenville area, with 83 dentists, has 15 percent; and the Charleston area, with 66 dentists, has 12 percent. The South Carolina portion of the interstate Augusta area contains only 2 percent of the State's dentist supply.

The 39 nonmetropolitan counties have more than one-half of the State's total dental force. The 10 counties which have 10,000 or more persons in their central cities have 178 dentists, almost one-third of the total supply. Fifteen percent are located in the 15 counties having between 5,000 and 9,999 inhabitants in their central cities, and the remaining 6 percent are located in the 14 counties with central city populations under 5,000.
South Carolina's dentists are relatively young as a group, with a median age of 41.5 years. Thirty-one percent of the dentists are under 35 years of age, and an almost equal proportion are between 35 and 44. Slightly more than one-fourth of the State's total dental force is between 45 and 64 years of age, while only one-tenth (54 dentists) are 65 years of age or older. Of these, 6 percent, or 34 dentists, are at least 70 years of age.

<table>
<thead>
<tr>
<th>Age in 1965</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
<th>Cumulative percent distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>551</td>
<td>100</td>
<td>-</td>
</tr>
<tr>
<td>Under 30</td>
<td>77</td>
<td>14</td>
<td>14</td>
</tr>
<tr>
<td>30 - 34</td>
<td>95</td>
<td>17</td>
<td>3</td>
</tr>
<tr>
<td>35 - 39</td>
<td>71</td>
<td>13</td>
<td>44</td>
</tr>
<tr>
<td>40 - 44</td>
<td>106</td>
<td>19</td>
<td>63</td>
</tr>
<tr>
<td>45 - 49</td>
<td>66</td>
<td>12</td>
<td>75</td>
</tr>
<tr>
<td>50 - 54</td>
<td>31</td>
<td>6</td>
<td>81</td>
</tr>
<tr>
<td>55 - 59</td>
<td>21</td>
<td>4</td>
<td>85</td>
</tr>
<tr>
<td>60 - 64</td>
<td>29</td>
<td>5</td>
<td>90</td>
</tr>
<tr>
<td>65 - 69</td>
<td>20</td>
<td>4</td>
<td>94</td>
</tr>
<tr>
<td>70 - 74</td>
<td>19</td>
<td>3</td>
<td>97</td>
</tr>
<tr>
<td>75 &amp; over</td>
<td>15</td>
<td>3</td>
<td>100</td>
</tr>
</tbody>
</table>

The age distribution of dentists by area is similar throughout the State. The median age and proportion of dentists in each age group are essentially the same in the metropolitan areas as in the nonmetropolitan counties.
ACTIVE DENTISTS IN RELATION TO POPULATION

With 537 of the 551 dentists in South Carolina active in their profession, the State has only one professionally active dentist for every 4,748 persons. In the metropolitan areas, which have 38 percent of the State's population and 47 percent of its dentists, the ratio is a high 3,887. The remainder of the State, with 53 percent of the dentists and 62 percent of the population, has an even higher ratio of 5,498 persons per dentist.

Number of Persons Per Active Dentist in South Carolina

<table>
<thead>
<tr>
<th>County group</th>
<th>Professionally active dentists</th>
<th>Population</th>
<th>Persons per dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td>All counties</td>
<td>537</td>
<td>2,549,800</td>
<td>4,748</td>
</tr>
<tr>
<td>Metropolitan areas</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Columbia area</td>
<td>25</td>
<td>971,800</td>
<td>3,887</td>
</tr>
<tr>
<td>Greenville area</td>
<td>82</td>
<td>277,600</td>
<td>3,385</td>
</tr>
<tr>
<td>Charleston area</td>
<td>63</td>
<td>303,000</td>
<td>4,810</td>
</tr>
<tr>
<td>Augusta area (S.C. part)</td>
<td>12</td>
<td>94,700</td>
<td>7,892</td>
</tr>
<tr>
<td>Nonmetropolitan counties</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Central city 25,000-49,999</td>
<td>86</td>
<td>344,800</td>
<td>4,009</td>
</tr>
<tr>
<td>Central city 10,000-24,999</td>
<td>86</td>
<td>390,600</td>
<td>4,595</td>
</tr>
<tr>
<td>Central city 5,000-9,999</td>
<td>81</td>
<td>579,000</td>
<td>7,148</td>
</tr>
<tr>
<td>Central city under 5,000</td>
<td>35</td>
<td>263,600</td>
<td>7,531</td>
</tr>
</tbody>
</table>

Among metropolitan areas, the best ratios are found in the Columbia and Greenville areas, with 3,188 and 3,385, respectively. The Charleston area has 4,810 persons per dentist, and the South Carolina portion of the interstate Augusta area has 7,892. Within the Columbia metropolitan area, Richland County, with 2,762 persons per dentist, has the most favorable ratio in the State and is the only one of the 46 counties with fewer than 3,000 persons per dentist.

Of the 39 nonmetropolitan counties, only 11 have persons-per-dentist ratios under 5,000, while 24 counties have 6,000 or more persons per dentist, including 10 counties with ratios in excess of 10,000, and one county which has no dentist according to available information. When counties are grouped according to the population of their central cities, the persons-per-dentist ratios increase considerably as the population of the central city decreases. Counties with central city populations between 25,000 and 49,999 average some 4,000 persons per dentist, while counties with fewer than 5,000 persons in their central cities have an average of only one dentist for every 7,500 persons.
Almost nine-tenths of South Carolina's dental practitioners (i.e., dentists who spend any time working at the chair) reported the employment of one or more auxiliary personnel. Dental assistants, the most frequently employed auxiliary, are utilized by 83 percent of the dentists, with practically all of them employing at least one assistant on a full-time basis. Secretaries or receptionists are employed by slightly more than one-third of the dentists, three-fourths of whom employ at least one full-time. Dental hygienists are employed by 13 percent of the dentists, and laboratory technicians, by 7 percent. These auxiliaries are most often employed part-time.

### Dental Practitioners Employing Auxiliaries, by Type of Auxiliary

<table>
<thead>
<tr>
<th>Type of auxiliary</th>
<th>Percent of dental practitioners</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
</tr>
<tr>
<td>One or more auxiliaries</td>
<td>396</td>
</tr>
<tr>
<td>Assistant</td>
<td>370</td>
</tr>
<tr>
<td>Hygienist</td>
<td>59</td>
</tr>
<tr>
<td>Laboratory technician</td>
<td>32</td>
</tr>
<tr>
<td>Secretary/receptionist</td>
<td>152</td>
</tr>
<tr>
<td>Other type personnel</td>
<td>29</td>
</tr>
<tr>
<td>No auxiliary</td>
<td>48</td>
</tr>
</tbody>
</table>

1/ Includes 7 dentists who did not report on auxiliary utilization.

Utilization of auxiliaries varies with the age of the dentist, becoming less frequent among dentists in the older age groups. Ninety-four percent of the practitioners under 55 years of age employ some type of auxiliary. This proportion decreases to 70 percent for dentists 55 to 64 years of age, and to only 55 percent for dentists 65 and over.

Approximately one-fifth of the responding practitioners reported one or more vacant positions for dental auxiliaries. Of these dentists, 45 percent indicated a need for full-time hygienists, and 21 percent, for full-time assistants.
OTHER SURVEY FINDINGS

About one in every six (78) dentists in South Carolina reported the completion of one year or more of advanced training after receiving their dental degree. Of 45 dentists with advanced clinical training, 13 had completed a residency, and 32, an internship. Among the 46 dentists who had completed advanced academic training, 24 had earned at least a master's degree, and another 22 had completed one or more years of study at the postgraduate level. There were 13 dentists who had completed both academic and clinical training.

Ninety-six percent of the responding professionally active dentists are primarily engaged in private practice. Two percent are employed by governmental agencies, and another two percent are engaged in some other dental activity, such as taking advanced training. Only 8 percent of the dentists reported a secondary dental employment, such as service with a voluntary agency or employment by State or local government.

Dentists reporting time spent in patient care during the year preceding the survey devoted an average of 40.5 hours per week to this activity for 48.0 weeks. About one dentist in eight reported working the equivalent of six days a week, 48 hours or more, for at least 48 weeks.

About 10 percent of the dental practitioners reported that they limit their practice to a dental specialty, primarily to orthodontics and oral surgery. Fourteen percent of the dentists in metropolitan areas have limited practices as compared to 6 percent in the remainder of the State.

Approximately three-fifths of the 357 dentists who are licensed in South Carolina but located in another State are in the two adjacent States—33 percent in North Carolina and 25 percent in Georgia. Ten percent of the out-of-State dentists are in Florida, and 5 percent are in Virginia. The remainder are located in over 20 other States throughout the Nation.

June 1969.
## APPENDIX TABLE

**Selected Data on Dentists in South Carolina, By Location**

<table>
<thead>
<tr>
<th>County group and county</th>
<th>Civilian dentists</th>
<th></th>
<th></th>
<th>Population</th>
<th>Persons per active dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Respondents</td>
<td>Non-respondents</td>
<td>Age in 1965</td>
<td>Professionally active</td>
</tr>
<tr>
<td>All counties</td>
<td>551</td>
<td>462</td>
<td>89</td>
<td>172</td>
<td>104</td>
</tr>
<tr>
<td>Metropolitan areas 2/</td>
<td>257</td>
<td>221</td>
<td>36</td>
<td>82</td>
<td>44</td>
</tr>
<tr>
<td>Charleston area</td>
<td>66</td>
<td>59</td>
<td>7</td>
<td>17</td>
<td>14</td>
</tr>
<tr>
<td>Charleston</td>
<td>65</td>
<td>59</td>
<td>6</td>
<td>17</td>
<td>14</td>
</tr>
<tr>
<td>Berkeley</td>
<td>1</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Columbia area</td>
<td>66</td>
<td>81</td>
<td>15</td>
<td>33</td>
<td>18</td>
</tr>
<tr>
<td>Lexington</td>
<td>11</td>
<td>10</td>
<td>1</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>Richland</td>
<td>85</td>
<td>71</td>
<td>14</td>
<td>27</td>
<td>17</td>
</tr>
<tr>
<td>Greenville area</td>
<td>83</td>
<td>75</td>
<td>8</td>
<td>25</td>
<td>10</td>
</tr>
<tr>
<td>Greenville</td>
<td>72</td>
<td>65</td>
<td>7</td>
<td>21</td>
<td>9</td>
</tr>
<tr>
<td>Pickens</td>
<td>11</td>
<td>10</td>
<td>1</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Augusta area (S.C. part)</td>
<td>12</td>
<td>6</td>
<td>6</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>Aiken</td>
<td>12</td>
<td>6</td>
<td>6</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>Nonmetropolitan counties</td>
<td>294</td>
<td>241</td>
<td>53</td>
<td>90</td>
<td>60</td>
</tr>
<tr>
<td>Central city 25,000-49,999</td>
<td>89</td>
<td>69</td>
<td>20</td>
<td>29</td>
<td>21</td>
</tr>
<tr>
<td>Anderson</td>
<td>24</td>
<td>18</td>
<td>6</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>Spartanburg</td>
<td>43</td>
<td>33</td>
<td>10</td>
<td>10</td>
<td>11</td>
</tr>
<tr>
<td>York</td>
<td>22</td>
<td>18</td>
<td>4</td>
<td>9</td>
<td>5</td>
</tr>
</tbody>
</table>

1/ Population figures are 1960 Census data.
2/ Metropolitan areas include Charleston, Berkeley, and Horry counties.
3/ Nonmetropolitan counties include Aiken, Anderson, and Spartanburg counties.
## APPENDIX TABLE (cont'd.)

Selected Data on Dentists in South Carolina, By Location

<table>
<thead>
<tr>
<th>County group and county</th>
<th>Civilian dentists</th>
<th>Persons per active dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total respondents</td>
<td>Non-respondents</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nonmetropolitan counties (cont'd.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Central city 10,000-24,999</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cherokee</td>
<td>89</td>
<td>75</td>
</tr>
<tr>
<td>Florence</td>
<td>26</td>
<td>25</td>
</tr>
<tr>
<td>Georgetown</td>
<td>9</td>
<td>8</td>
</tr>
<tr>
<td>Greenwood</td>
<td>17</td>
<td>12</td>
</tr>
<tr>
<td>Orangeburg</td>
<td>15</td>
<td>14</td>
</tr>
<tr>
<td>Sumter</td>
<td>14</td>
<td>11</td>
</tr>
<tr>
<td>Union</td>
<td>0</td>
<td>2</td>
</tr>
</tbody>
</table>

Central city 5,000-9,999

| Abbeville               | 2                 | 1                 | 1             | 1           | 2              | 20.9            | 10,450         |
| Beaufort                | 4                 | 4                 | -             | 2           | -              | 4               | 53.0           | 13,250         |
| Chester                 | 4                 | 2                 | 2             | 3           | 4              | 30.0            | 7,500          |
| Chesterfield            | 6                 | 5                 | 1             | 2           | -              | 6               | 32.6           | 5,433          |
| Colleton                | 4                 | 4                 | -             | 1           | 4              | 27.5            | 6,875          |
| Darlington              | 10                | 8                 | 2             | 5           | 2              | 10              | 55.4           | 5,540          |
| Dillon                  | 5                 | 4                 | 1             | 2           | 2              | 5               | 30.4           | 6,080          |
| Horry                   | 10                | 8                 | 2             | 3           | 1              | 10              | 77.7           | 7,770          |
| Kershaw                 | 8                 | 4                 | 4             | 2           | 3              | 8               | 34.1           | 4,263          |
| Lancaster               | 4                 | 3                 | 1             | -           | 1              | 4               | 41.9           | 10,475         |
| Laurens                 | 6                 | 5                 | 1             | -           | 1              | 6               | 47.9           | 7,983          |
| Marion                  | 4                 | 4                 | -             | -           | -              | 4               | 31.4           | 7,850          |
| Marlboro                | 2                 | 2                 | -             | 1           | -              | 2               | 26.9           | 13,450         |
| Newberry                | 5                 | 5                 | -             | 1           | -              | 5               | 28.6           | 5,720          |
| Oconee                  | 7                 | 7                 | -             | 2           | 3              | 7               | 40.7           | 5,814          |
### APPENDIX TABLE (cont'd.)

Selected Data on Dentists in South Carolina, By Location

<table>
<thead>
<tr>
<th>County group and county</th>
<th>Civilian dentists</th>
<th>Population</th>
<th>Persons active per active dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total Respondents</td>
<td>Non-respondents</td>
<td>Age in 1965</td>
</tr>
<tr>
<td>Nonmetropolitan counties</td>
<td></td>
<td></td>
<td>Under 55 yrs.</td>
</tr>
<tr>
<td>Central city 2,500-4,999</td>
<td>13</td>
<td>11</td>
<td>2</td>
</tr>
<tr>
<td>Allendale</td>
<td>1</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>Bamberg</td>
<td>4</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Barnwell</td>
<td>4</td>
<td>4</td>
<td>-</td>
</tr>
<tr>
<td>Clarendon</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Edgefield</td>
<td>1</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>Fairfield</td>
<td>2</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Lee</td>
<td>2</td>
<td>2</td>
<td>-</td>
</tr>
<tr>
<td>Williamsburg</td>
<td>5</td>
<td>5</td>
<td>-</td>
</tr>
<tr>
<td>Central city under 2,500</td>
<td>13</td>
<td>11</td>
<td>2</td>
</tr>
<tr>
<td>Calhoun</td>
<td>1</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>Dorchester</td>
<td>5</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Hampton</td>
<td>5</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Jasper</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>McCormick</td>
<td>1</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>Saluda</td>
<td>1</td>
<td>1</td>
<td>-</td>
</tr>
</tbody>
</table>


2/ South Carolina counties included in the latest 1968 definition of Standard Metropolitan Statistical Areas, as established by the U.S. Bureau of the Budget, Office of Statistical Standards, have been grouped as metropolitan areas for presentation of the survey data. For the interstate Augusta SMSA, statistics are presented only for dentists located in the South Carolina portion of the area.

3/ Counties not included within an SMSA, as defined by the U.S. Bureau of the Budget, have been grouped according to the 1960 population of the largest (central) city within each county.
A total of 426 dentists registered with the South Dakota Board of Dental Examiners in 1965 (Table 1). Of this total, 362 completed the questionnaire, for an overall response rate of 85 percent. About two-thirds of the responding dentists were civilians located in South Dakota at the time of the survey. Civilians located in other States accounted for 28 percent of the respondents and 4 percent were dentists on active duty in the Armed Forces.

Table 1.--Location and Military Status of Dentists Licensed in South Dakota

<table>
<thead>
<tr>
<th>Location and military status</th>
<th>All dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>426</td>
<td>100</td>
</tr>
<tr>
<td>Respondents</td>
<td>362</td>
<td>85</td>
</tr>
<tr>
<td>Nonrespondents</td>
<td>64</td>
<td>15</td>
</tr>
<tr>
<td>Respondents</td>
<td>362</td>
<td>100</td>
</tr>
<tr>
<td>Civilians in South Dakota</td>
<td>239</td>
<td>66</td>
</tr>
<tr>
<td>Civilians in another State</td>
<td>102</td>
<td>28</td>
</tr>
<tr>
<td>On active duty with Armed Forces</td>
<td>13</td>
<td>4</td>
</tr>
<tr>
<td>Not reported</td>
<td>5</td>
<td>2</td>
</tr>
</tbody>
</table>

Of the 102 civilian out-of-State dentists, more than one-half were located in States adjoining South Dakota. There were respondents from every adjoining State except Wyoming. The remaining 48 out-of-State respondents were located in 16 other States scattered across the Nation and in one foreign country. About one-fifth of the 102 dentists were formerly located in South Dakota, and all but a few have left the State since 1955.

Of all dentists responding, nearly three-fourths hold a license in one or more additional States (Table 2). As a result, the total number of State licenses held by the 362 respondents exceeds 700. Multiple licenses are held by almost two-thirds of South Dakota's dentists, including 53 percent who are licensed in one other State and 11 percent in 2 or more other States.
Table 2.--Percent of Dentists Holding Licenses in Other States

<table>
<thead>
<tr>
<th>Licenses held</th>
<th>All respondents</th>
<th>Civilian dentists</th>
<th>Civilian dentists</th>
<th>Civilian dentists</th>
<th>Civilian dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>In South Dakota</td>
<td>Cut-off State</td>
<td>Armed Forces</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>South Dakota only</td>
<td>26</td>
<td>36</td>
<td></td>
<td>23</td>
<td></td>
</tr>
<tr>
<td>Licensed in 1 other State</td>
<td>56</td>
<td>53</td>
<td>63</td>
<td>62</td>
<td></td>
</tr>
<tr>
<td>Licensed in 2 other States</td>
<td>14</td>
<td>10</td>
<td>26</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Licensed in 3 or more other States</td>
<td>4</td>
<td>1</td>
<td>11</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Civilian Dentists in South Dakota

Sources of Supply

Dental schools.--Graduates of 17 dental schools are represented among South Dakota's dentists, including one dental school, Detroit College, which is no longer in existence (Table 3). However, more than three-fifths of the dentists are graduates of four dental schools in three adjacent States--University of Minnesota (23 percent), Creighton University (18 percent), University of Iowa (13 percent), and University of Nebraska (7 percent). Three dental schools in Illinois, notably Northwestern and Loyola in Chicago, have contributed another 27 percent of South Dakota's dentists. Marquette is the only other school to have graduated 10 or more of the State's dentists.

Table 3.--School Awarding Dental Degree by Year Awarded

<table>
<thead>
<tr>
<th>Dental school attended</th>
<th>Number of dentists</th>
<th>All years</th>
<th>Year of graduation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>After 1941-</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1955</td>
</tr>
<tr>
<td>Total</td>
<td>239(^1/)</td>
<td></td>
<td>48</td>
</tr>
</tbody>
</table>

(Percent distribution by school)

<table>
<thead>
<tr>
<th>Dental school attended</th>
<th>Number of dentists</th>
<th>All years</th>
<th>Year of graduation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minnesota</td>
<td>56</td>
<td>23</td>
<td>40</td>
</tr>
<tr>
<td>Creighton</td>
<td>44</td>
<td>18</td>
<td>17</td>
</tr>
<tr>
<td>Northwestern</td>
<td>37</td>
<td>16</td>
<td>4</td>
</tr>
<tr>
<td>Iowa</td>
<td>30</td>
<td>13</td>
<td>8</td>
</tr>
<tr>
<td>Loyola (Chicago)</td>
<td>21</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Nebraska</td>
<td>16</td>
<td>7</td>
<td>13</td>
</tr>
<tr>
<td>Marquette</td>
<td>10</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>Other schools</td>
<td>25</td>
<td>10</td>
<td>10</td>
</tr>
</tbody>
</table>

\(^1/\) Individual items in this and succeeding tables may not add to the totals shown due to the failure of some responding dentists to reply to all items on the questionnaire. Where percentages are shown, they are based on data supplied by dentists responding to the item (see Appendix Table A).
The University of Minnesota, which through the years has contributed a significant portion of dentists to the State, has since 1955 graduated 40 percent of the new dentists in South Dakota. Northwestern and Iowa together supplied over two-fifths of the State's dentists graduating prior to World War II, but only 12 percent of those graduated since 1955.

Dentists relocating in South Dakota.--Less than one-fifth of all dentists currently located in South Dakota reported they had previously been located elsewhere (Table 4). Over three-fifths of these in-migrant dentists had moved from Minnesota and three other adjacent States. The greatest in-migration took place during the years 1945-1959.

Table 4.--In-migrant Dentists

<table>
<thead>
<tr>
<th>Last previous location</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>239</td>
<td>100</td>
</tr>
<tr>
<td>Previously located elsewhere</td>
<td>44</td>
<td>18</td>
</tr>
<tr>
<td>Minnesota</td>
<td>12</td>
<td>5</td>
</tr>
<tr>
<td>Iowa</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>Nebraska</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>Other</td>
<td>19</td>
<td>8</td>
</tr>
<tr>
<td>Never located elsewhere</td>
<td>195</td>
<td>82</td>
</tr>
</tbody>
</table>

Personal Characteristics

Age and sex.--The median age of dentists reporting their age was relatively high--48.6 years. Even so, almost one-third of the dentists were between 35 and 45 years of age (Table 5). Only 11 percent of the dentists were younger. A substantial number of the State's dentists were well along in years. Over one-fourth--58 dentists--were 65 years old and over, and in this group were 34 who were 70 years old or over, including 15 who had reached 75 years of age.

Only 2 of the 239 civilian dentists responding in the survey are women. Since they are so few, data will not be shown separately for them.
Table 5.—Age and Sex

<table>
<thead>
<tr>
<th>Sex and age</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>239</td>
<td>100</td>
</tr>
<tr>
<td>Male</td>
<td>237</td>
<td>99</td>
</tr>
<tr>
<td>Female</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Under 30</td>
<td>8</td>
<td>3</td>
</tr>
<tr>
<td>30 - 34</td>
<td>18</td>
<td>8</td>
</tr>
<tr>
<td>35 - 39</td>
<td>31</td>
<td>14</td>
</tr>
<tr>
<td>40 - 44</td>
<td>40</td>
<td>18</td>
</tr>
<tr>
<td>45 - 49</td>
<td>22</td>
<td>10</td>
</tr>
<tr>
<td>50 - 54</td>
<td>14</td>
<td>6</td>
</tr>
<tr>
<td>55 - 59</td>
<td>18</td>
<td>8</td>
</tr>
<tr>
<td>60 - 64</td>
<td>17</td>
<td>7</td>
</tr>
<tr>
<td>65 - 69</td>
<td>24</td>
<td>11</td>
</tr>
<tr>
<td>70 - 74</td>
<td>19</td>
<td>8</td>
</tr>
<tr>
<td>75 &amp; over</td>
<td>15</td>
<td>7</td>
</tr>
</tbody>
</table>

Advanced training.— Eleven percent of South Dakota's dentists reported some kind of advanced training (Table 6). Only 6 percent have had advanced clinical training, whereas 8 percent have completed at least one year of advanced academic training, including 5 percent who have earned a master's degree since leaving dental school. Over one-half of the 27 dentists with advanced training graduated from dental school since 1950.

Table 6.—Advanced Training

<table>
<thead>
<tr>
<th>Highest level of training completed</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>239</td>
<td>100</td>
</tr>
<tr>
<td>With advanced training</td>
<td>27</td>
<td>11</td>
</tr>
<tr>
<td>With no advanced training</td>
<td>212</td>
<td>89</td>
</tr>
</tbody>
</table>

Clinical training
Residency completed | 4 | 2
Internship completed | 9 | 4

Academic training
M.A., M.S., or other master's | 13 | 5
Postgraduate 1 year or more (no degree) | 7 | 3
Distribution and Current Status

Distribution of dentists.--The largest concentration of dentists in South Dakota is in the Sioux Falls metropolitan area (Minnehaha County) and in Pennington County, the one nonmetropolitan county with a central city of 25,000-49,999 residents (Table 7). Almost one-third of the State's licensed civilian dental force is located in these two counties. Another one-fifth of the dentists are in six counties with central cities of 10,000-24,999 population. The number of dentists per county steadily declines among the county groups as the size of the county's central city decreases. Among the 44 counties in the smallest size category (counties with central cities of under 2,500 inhabitants) those with licensed civilian dentists have fewer than 2 dentists per county. Sixteen of these counties had no dentists reporting. However, not all of these counties were necessarily without the services of a dentist. For instance, one-half

Table 7.--Distribution, by County Group

<table>
<thead>
<tr>
<th>County size category</th>
<th>Number of counties</th>
<th>Number of dentists</th>
<th>Percent of dentists by age</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td></td>
<td>Total</td>
</tr>
<tr>
<td>Sioux Falls metropolitan area</td>
<td>1</td>
<td>39</td>
<td>16</td>
</tr>
<tr>
<td>Nonmetropolitan county groups</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Central city 25,000-49,999</td>
<td>1</td>
<td>32</td>
<td>14</td>
</tr>
<tr>
<td>Central city 10,000-24,999</td>
<td>6</td>
<td>51</td>
<td>21</td>
</tr>
<tr>
<td>Central city 5,000-9,999</td>
<td>4</td>
<td>27</td>
<td>11</td>
</tr>
<tr>
<td>Central city 2,500-4,999</td>
<td>11</td>
<td>32</td>
<td>14</td>
</tr>
<tr>
<td>Central city under 2,500</td>
<td>44</td>
<td>58</td>
<td>24</td>
</tr>
</tbody>
</table>

of the counties from which no dentists reported have relatively large Indian populations, and since dentists employed by the Federal Government in such agencies as the Division of Indian Health of the Public Health Service are not required to be licensed in the State in which they are assigned, there is every likelihood that the survey results underestimate the dental force available to the residents of these counties, and perhaps also to those of a few of the counties with reporting dentists.

As the data in Table 7 reveal, there are marked differences in the age distribution of reporting dentists in the various county groups. A relatively large percentage of the dentists in the two county groups with medium-sized central cities (5,000-24,999 inhabitants) are 65 years old or over. By contrast, in Minnehaha and Pennington counties 52 and 67 percent,
respectively, of the dentists were under 45 years of age in 1965. Of the 51 counties with reporting dentists, 35 have no dentists under 35 years of age. Included in this total are 17 counties with no dentist under 45 years old and 9 with no dentist under 40.

Professional status.—Of the 239 civilian dentists in South Dakota, 231 reported that they were professionally active at the time of the survey. Two dentists regarded themselves as fully retired and the remaining 6 did not report on their current status.

There was one professionally active responding dentist for every 3,060 persons in South Dakota in 1965 (Table 8). The sole dentist reporting from Jackson County was not professionally active, raising to 17 the number of counties that must be assumed to be without a dentist. Among remaining counties, the number of persons per active dentist ranged from 1,670 in Davison County to 8,100 in McCook County (see Appendix Table B for individual county data). Of the 50 counties with dentists who were professionally active, 20 had dentist-population ratios as favorable as the State average. In addition to McCook County, there were 6 counties with ratios in excess of one dentist per 5,000 persons—Deuel (6,400), Marshall (6,000), Spink (5,800), Edmunds (5,400), Dewey (5,300), and Charles Mix (5,050).

Table 8.--Distribution of Professionally Active Dentists

<table>
<thead>
<tr>
<th>County size category</th>
<th>Professionally active dentists</th>
<th>Civilian population</th>
<th>Persons per dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>231</td>
<td>706,800</td>
<td>3,060</td>
</tr>
<tr>
<td>Sioux Falls metropolitan area</td>
<td>37</td>
<td>99,200</td>
<td>2,681</td>
</tr>
<tr>
<td>Nonmetropolitan county group</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Central city 25,000-49,999</td>
<td>32</td>
<td>76,400</td>
<td>2,388</td>
</tr>
<tr>
<td>Central city 10,000-24,999</td>
<td>49</td>
<td>132,300</td>
<td>2,700</td>
</tr>
<tr>
<td>Central city 5,000-9,999</td>
<td>26</td>
<td>58,400</td>
<td>2,246</td>
</tr>
<tr>
<td>Central city 2,500-4,999</td>
<td>31</td>
<td>106,000</td>
<td>3,419</td>
</tr>
<tr>
<td>Central city under 2,500</td>
<td>56</td>
<td>236,500</td>
<td>4,188</td>
</tr>
</tbody>
</table>
Professional Activity

As might be expected, self-employment predominates among dentists who are active in the profession. Of the 231 professionally active dentists licensed in South Dakota, 96 percent are primarily in private practice. The remaining few dentists are either employed by another dentist or by a governmental agency.

All but one dentist reporting on their professional activity in South Dakota last year indicated that they had provided care for patients. Dentists reporting on time spent last year in providing patient care devoted an average of 47.2 weeks to this activity and worked an average of 40.4 hours per week. The figures in Table 9 show that one in every ten reporting dentists spent the equivalent of 8 hours or more per day at this activity six days per week, for 48 or more weeks per year.

Table 9.--Time Spent in Patient Care Last Year

<table>
<thead>
<tr>
<th>Weeks of activity reported</th>
<th>Dentists providing patient care</th>
<th>Percent of total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>48 hours</td>
<td>41-47 hours</td>
</tr>
<tr>
<td>Total reporting time spent</td>
<td>100</td>
<td>14</td>
</tr>
<tr>
<td>50 weeks or more</td>
<td>34</td>
<td>5</td>
</tr>
<tr>
<td>48 - 49 weeks</td>
<td>37</td>
<td>5</td>
</tr>
<tr>
<td>40 - 47 weeks</td>
<td>24</td>
<td>4</td>
</tr>
<tr>
<td>Less than 40 weeks</td>
<td>5</td>
<td>-</td>
</tr>
</tbody>
</table>

Practice Characteristics

Limited practices.--Only 13 of the dentists in South Dakota reported that they limit their practices to a dental specialty. Almost one-half of these dentists reported their specialty area in orthodontics. Specialization was most common in Minnehaha and Pennington Counties where over 10 percent of the dentists reported limited practices.

Use of auxiliaries.--Four in every five dental practitioners report that they employ auxiliary personnel of some type (Table 10). Dental assistants are the most frequently employed auxiliary. Almost 75 percent of all practitioners employ assistants, including 68 percent who employ one or more full time. Twelve percent of the practitioners employ hygienists, while only five percent employ a laboratory technician. A majority of the dentists who employ hygienists or technicians do so only part time.
Table 10.--Dental Practitioners Employing One or More Auxiliaries, by Type of Auxiliary

<table>
<thead>
<tr>
<th>Type of auxiliary</th>
<th>Dental practitioners</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
</tr>
<tr>
<td>Total</td>
<td>231</td>
</tr>
<tr>
<td>With no auxiliary</td>
<td>48</td>
</tr>
<tr>
<td>With one or more auxiliaries</td>
<td>183</td>
</tr>
<tr>
<td>With assistant</td>
<td>170</td>
</tr>
<tr>
<td>With hygienist</td>
<td>28</td>
</tr>
<tr>
<td>With laboratory technician</td>
<td>12</td>
</tr>
<tr>
<td>With secretary or receptionist</td>
<td>58</td>
</tr>
<tr>
<td>With other type of personnel</td>
<td>9</td>
</tr>
</tbody>
</table>

The use of auxiliaries varies with the age of the dentist (Table 11). Well over 90 percent of the dental practitioners under age 35 and between the ages of 45 and 54 employed some type of auxiliary. Among dentists 65 years and over, the proportion using auxiliaries dropped to approximately 50 percent. Peak utilization of dental assistants occurs among dentists under 45 years of age. By contrast, a larger proportion of the dentists aged 55-64 employed hygienists than in any other age group.

Table 11.--Percent of Dental Practitioners Employing Auxiliaries, by Age

<table>
<thead>
<tr>
<th>Age</th>
<th>With auxiliaries</th>
<th>With assistants</th>
<th>With hygienists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 35</td>
<td>96</td>
<td>88</td>
<td>15</td>
</tr>
<tr>
<td>35 - 44</td>
<td>88</td>
<td>88</td>
<td>13</td>
</tr>
<tr>
<td>45 - 54</td>
<td>92</td>
<td>83</td>
<td>11</td>
</tr>
<tr>
<td>55 - 64</td>
<td>76</td>
<td>71</td>
<td>18</td>
</tr>
<tr>
<td>65 &amp; over</td>
<td>51</td>
<td>40</td>
<td>7</td>
</tr>
</tbody>
</table>

Twenty-three percent of the dental practitioners in South Dakota reported one or more vacant positions for auxiliary personnel. Approximately 47 percent of the vacancies were for hygienists, and another 21 percent were for assistants. Most dentists reporting a hygienist vacancy did not currently employ a hygienist, whereas most dentists desiring to employ an assistant were already utilizing at least one assistant.
Appendix Table A—Summary Statistics Used in Text

<table>
<thead>
<tr>
<th>Description</th>
<th>Number of Dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total dentists licensed in South Dakota</td>
<td>426</td>
</tr>
<tr>
<td>Respondents—total dentists participating in survey</td>
<td>362</td>
</tr>
<tr>
<td>(number not reporting current location or military status—8)</td>
<td></td>
</tr>
<tr>
<td>Civilian dentists in South Dakota—1/ (designated simply as &quot;dentists&quot; in text tables)</td>
<td>239</td>
</tr>
<tr>
<td>(number not reporting: age—13, principal current employment—6, year of graduation—3)</td>
<td></td>
</tr>
<tr>
<td>Professionally active dentists—2/</td>
<td>231</td>
</tr>
<tr>
<td>In limited practice—3/</td>
<td>13</td>
</tr>
<tr>
<td>Dental practitioners—4/</td>
<td>231</td>
</tr>
<tr>
<td>Located in South Dakota last year:</td>
<td></td>
</tr>
<tr>
<td>Reported professional activity—5/</td>
<td>206</td>
</tr>
<tr>
<td>Dentists providing patient care—6/</td>
<td>205</td>
</tr>
<tr>
<td>Reported time spent in patient care—7/</td>
<td>172</td>
</tr>
<tr>
<td>Dentists in private practice—8/</td>
<td>205</td>
</tr>
<tr>
<td>Reported time spent in practice—9/</td>
<td>169</td>
</tr>
<tr>
<td>Out-of-State dentists—civilian respondents not located in South Dakota—10/</td>
<td>102</td>
</tr>
</tbody>
</table>

1/ All responding dentists who currently work in South Dakota (excluding those in the Armed Forces) or who are retired and currently live in the State.

2/ All active civilian dentists currently in South Dakota—excludes 2 dentists who are fully retired and 6 who did not report their principal current activity.

3/ Dentists who reported they limited their practice to a dental specialty.

4/ All dentists practicing at the chair, that is, dentists who work as clinicians either as primary or secondary activity.

5/ Dentists located in South Dakota last year who indicated type(s) of activity in which they engaged.

6/ All dentists who engaged in patient care last year, either as a primary or secondary activity.

7/ Dentists reporting both hours and weeks spent in patient care last year.

8/ Dentists who reported they were primarily self-employed both currently and last year.

2/ Dentists reporting both hours and weeks spent last year as a self-employed dentist.
## Appendix Table B.--County Data

<table>
<thead>
<tr>
<th>County</th>
<th>Civilian population (in 000's)</th>
<th>Professionally active dentists</th>
<th>Persons per dentist¹/</th>
<th>County</th>
<th>Civilian population (in 000's)</th>
<th>Professionally active dentists</th>
<th>Persons per dentist¹/</th>
</tr>
</thead>
<tbody>
<tr>
<td>All counties</td>
<td>706.8</td>
<td>231</td>
<td>3,060</td>
<td>Jones</td>
<td>1.9</td>
<td>1</td>
<td>1,900</td>
</tr>
<tr>
<td>Aurora</td>
<td>4.6</td>
<td>7</td>
<td>4,600</td>
<td>Kingsbury</td>
<td>8.7</td>
<td>5</td>
<td>3,900</td>
</tr>
<tr>
<td>Beadle</td>
<td>23.4</td>
<td>7</td>
<td>3,343</td>
<td>Lake</td>
<td>11.7</td>
<td>3</td>
<td>3,900</td>
</tr>
<tr>
<td>Bon Homme</td>
<td>9.1</td>
<td>4</td>
<td>2,277</td>
<td>Lawrence</td>
<td>12.3</td>
<td>8</td>
<td>1,663</td>
</tr>
<tr>
<td>Brookings</td>
<td>21.1</td>
<td>6</td>
<td>3,517</td>
<td>Lincoln</td>
<td>12.2</td>
<td>3</td>
<td>4,067</td>
</tr>
<tr>
<td>Brown</td>
<td>34.7</td>
<td>11</td>
<td>3,155</td>
<td>McCook</td>
<td>8.1</td>
<td>1</td>
<td>8,100</td>
</tr>
<tr>
<td>Brule</td>
<td>6.3</td>
<td>2</td>
<td>3,150</td>
<td>McPherson</td>
<td>5.2</td>
<td>2</td>
<td>2,600</td>
</tr>
<tr>
<td>Butte</td>
<td>8.7</td>
<td>2</td>
<td>3,000</td>
<td>Marshall</td>
<td>6.0</td>
<td>1</td>
<td>6,000</td>
</tr>
<tr>
<td>Charles Mix</td>
<td>10.1</td>
<td>2</td>
<td>5,050</td>
<td>Meade</td>
<td>12.4</td>
<td>4</td>
<td>3,100</td>
</tr>
<tr>
<td>Clay</td>
<td>10.7</td>
<td>5</td>
<td>2,140</td>
<td>Miner</td>
<td>4.9</td>
<td>1</td>
<td>4,900</td>
</tr>
<tr>
<td>Coteado</td>
<td>21.4</td>
<td>12</td>
<td>1,783</td>
<td>Minnehaha</td>
<td>99.2</td>
<td>37</td>
<td>2,681</td>
</tr>
<tr>
<td>Custer</td>
<td>4.6</td>
<td>1</td>
<td>4,600</td>
<td>Meade</td>
<td>12.4</td>
<td>4</td>
<td>3,100</td>
</tr>
<tr>
<td>Davenport</td>
<td>16.7</td>
<td>10</td>
<td>1,670</td>
<td>Meade</td>
<td>12.4</td>
<td>4</td>
<td>3,100</td>
</tr>
<tr>
<td>Day</td>
<td>9.8</td>
<td>5</td>
<td>1,960</td>
<td>Meade</td>
<td>12.4</td>
<td>4</td>
<td>3,100</td>
</tr>
<tr>
<td>Deuel</td>
<td>6.4</td>
<td>1</td>
<td>9,400</td>
<td>Meade</td>
<td>12.4</td>
<td>4</td>
<td>3,100</td>
</tr>
<tr>
<td>Dewey</td>
<td>5.3</td>
<td>1</td>
<td>5,300</td>
<td>Meade</td>
<td>12.4</td>
<td>4</td>
<td>3,100</td>
</tr>
<tr>
<td>Douglas</td>
<td>4.9</td>
<td>1</td>
<td>4,500</td>
<td>Meade</td>
<td>12.4</td>
<td>4</td>
<td>3,100</td>
</tr>
<tr>
<td>Edmunds</td>
<td>5.4</td>
<td>1</td>
<td>9,400</td>
<td>Meade</td>
<td>12.4</td>
<td>4</td>
<td>3,100</td>
</tr>
<tr>
<td>Fall River</td>
<td>18.8</td>
<td>5</td>
<td>3,160</td>
<td>Meade</td>
<td>12.4</td>
<td>4</td>
<td>3,100</td>
</tr>
<tr>
<td>Grant</td>
<td>9.7</td>
<td>3</td>
<td>3,233</td>
<td>Meade</td>
<td>12.4</td>
<td>4</td>
<td>3,100</td>
</tr>
<tr>
<td>Gregory</td>
<td>9.8</td>
<td>2</td>
<td>3,500</td>
<td>Meade</td>
<td>12.4</td>
<td>4</td>
<td>3,100</td>
</tr>
<tr>
<td>Hamlin</td>
<td>3.3</td>
<td>1</td>
<td>3,300</td>
<td>Meade</td>
<td>12.4</td>
<td>4</td>
<td>3,100</td>
</tr>
<tr>
<td>Hardin</td>
<td>5.9</td>
<td>3</td>
<td>1,567</td>
<td>Meade</td>
<td>12.4</td>
<td>4</td>
<td>3,100</td>
</tr>
<tr>
<td>Hanson</td>
<td>6.6</td>
<td>2</td>
<td>3,300</td>
<td>Meade</td>
<td>12.4</td>
<td>4</td>
<td>3,100</td>
</tr>
<tr>
<td>Hughes</td>
<td>15.0</td>
<td>3</td>
<td>5,000</td>
<td>Meade</td>
<td>12.4</td>
<td>4</td>
<td>3,100</td>
</tr>
<tr>
<td>Hutchinson</td>
<td>10.9</td>
<td>3</td>
<td>3,633</td>
<td>Meade</td>
<td>12.4</td>
<td>4</td>
<td>3,100</td>
</tr>
<tr>
<td>Hyde</td>
<td>2.5</td>
<td>1</td>
<td>2,500</td>
<td>Meade</td>
<td>12.4</td>
<td>4</td>
<td>3,100</td>
</tr>
</tbody>
</table>

¹/ In a few counties which have a relatively large Indian population, such as Charles Mix and Dewey Counties, the ratios presented above are slightly less favorable than if computed only for the non-Indian population.

²/ There are 16 counties with no civilian dentists reporting: Bennett, Buffalo, Campbell, Clark, Corson, Faulk, Harding, Jerauld, Lyman, Mellette, Sanborn, Shannon, Sully, Todd, Washabaugh and Ziebach. In addition, there was one county--Jackson--in which the one responding civilian dentist was reported as professionally inactive.
During the 1965 registration period, 2,101 dentists registered with the Tennessee Board of Dental Examiners (Table 1). Sixty-nine percent of the registered dentists were civilians located in Tennessee, another 29 percent were civilians located in other states, and only 2 percent were on active duty in the armed forces.

Table 1.--Location and Military Status

<table>
<thead>
<tr>
<th>Location and military status</th>
<th>All dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total licensed</td>
<td>2,103</td>
<td>100</td>
</tr>
<tr>
<td>Respondents</td>
<td>1,886</td>
<td>90</td>
</tr>
<tr>
<td>Nonrespondents</td>
<td>217</td>
<td>10</td>
</tr>
<tr>
<td>Civilians in Tennessee</td>
<td>1,455</td>
<td>69</td>
</tr>
<tr>
<td>Respondents</td>
<td>1,355</td>
<td>-</td>
</tr>
<tr>
<td>Nonrespondents</td>
<td>100</td>
<td>-</td>
</tr>
<tr>
<td>Civilians in another state</td>
<td>600</td>
<td>29</td>
</tr>
<tr>
<td>On active duty with armed forces</td>
<td>43</td>
<td>2</td>
</tr>
<tr>
<td>Not reported</td>
<td>5</td>
<td>*</td>
</tr>
</tbody>
</table>

* less than one-half of one percent.

The survey questionnaire was completed by 1,886 dentists, 90 percent of all those registered. The response rate of the 1,455 civilian dentists actually located in Tennessee was even higher, 93 percent, with 1,355 of these dentists replying. Certain items of information--state and county location, age, dental school attended, and year of graduation--were obtained on nonrespondents either from records maintained by the Tennessee Board of Dental Examiners or from the 1966 American Dental Directory published by the American Dental Association. Tables in this report include information on both respondents and nonrespondents unless otherwise indicated.

Of all dentists responding to the survey, over half (56 percent) hold a license solely in Tennessee, 35 percent are licensed in one other state, and 9 percent hold licenses in two or more additional states. Multiple licensure is not as common among civilian respondents located in Tennessee as among those located in other states. Three-fourths of the civilian in-state dentists are licensed just in Tennessee, 20 percent are licensed in one other state, and only one in every 20 hold licenses in two or more other states. By comparison, almost one in every four dentists licensed in other states hold licenses in two or more other states.
of the out-of-state civilian respondents holds two or more licenses in addition to the one held in Tennessee.

Civilian Dentists in Tennessee

Sources of Supply

Dental schools.--More than 85 percent of Tennessee's dentists graduated from dental schools located in Tennessee, including those schools at the University of Tennessee and Meharry Medical College and those formerly in existence at Vanderbilt University and the University of West Tennessee (Table 2). Over three-fourths of the State's dentists received their dental degrees from the University of Tennessee. This one school has consistently graduated the largest number of dentists in Tennessee, with the proportion increasing from 56 percent of the dentists who graduated prior to World War II to 90 percent of those who graduated within the last 10 years. The relative contribution of Meharry Medical College has declined from 6 percent of the total supply before 1940 to only 2 percent since 1955. Vanderbilt University graduated 6 percent of the dentists in the state, even though its dental school closed in 1926.

Table 2.--School Awarding Dental Degree, by Year Awarded

<table>
<thead>
<tr>
<th>Dental school attended</th>
<th>Number of dentists</th>
<th>Year of graduation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>All</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1955</td>
</tr>
<tr>
<td>Total number</td>
<td>1,4551/372625408</td>
<td>95</td>
</tr>
<tr>
<td>South</td>
<td>1,382</td>
<td>95</td>
</tr>
<tr>
<td>Tennessee</td>
<td>1,101</td>
<td>76</td>
</tr>
<tr>
<td>Vanderbilt (extinct)</td>
<td>85</td>
<td>6</td>
</tr>
<tr>
<td>Meharry</td>
<td>57</td>
<td>4</td>
</tr>
<tr>
<td>Emory</td>
<td>56</td>
<td>4</td>
</tr>
<tr>
<td>Louisville</td>
<td>51</td>
<td>3</td>
</tr>
<tr>
<td>7 other schools</td>
<td>32</td>
<td>2</td>
</tr>
<tr>
<td>Other regions (20 schools)</td>
<td>69</td>
<td>5</td>
</tr>
</tbody>
</table>

1/ Individual items in this and succeeding tables may not add to the totals shown due to the failure of some responding dentists to reply to all items on the questionnaire, or, in the case of non-respondents, due to the data not being obtainable for all dentists. For each item where percentages are shown, they are based on the number of dentists for whom the data are known. (See Appendix Table A.)

Less than one-half of one percent.
Eight other dental schools in the South have trained an additional 9 percent of Tennessee's dentists. Principally, contributors among these schools have been Emory University and the University of Louisville. However, the contribution of these 8 dental schools has declined from 12 percent of the graduates prior to 1941 to about 3 percent of those who completed their dental education during the last 10 years. The remaining 5 percent of the dentists in Tennessee received their dental degrees from 20 schools in other regions of the Nation with only one school, Northwestern University, supplying as much as 1 percent of the State's dentists.

Dentists relocating in Tennessee.--Seven percent of the respondents practiced as civilian dentists in one of 26 other states or the District of Columbia immediately prior to assuming their present Tennessee location. Almost three-fourths of the 92 in-migrant dentists came from another Southern state including 1 in every 4 who moved to Tennessee from Virginia or Alabama, and 1 in every 7 who came from Arkansas or Texas.

Personal Characteristics

Age.--The median age in 1965 of dentists licensed in Tennessee was 42.9 years. Half of the State's dentists are between 35 and 54, including one in every three who is in the 35 to 44 age group (Table 3). Dentists 55 years of age or older slightly outnumber those under 35. Almost one in every eight, or 169 dentists, is 65 years old or over, and 89 have reached the age of 70.

<table>
<thead>
<tr>
<th>Age in 1965</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>1,455</td>
<td>100</td>
</tr>
<tr>
<td>Under 35</td>
<td>348</td>
<td>24</td>
</tr>
<tr>
<td>35 - 44</td>
<td>478</td>
<td>33</td>
</tr>
<tr>
<td>45 - 54</td>
<td>252</td>
<td>17</td>
</tr>
<tr>
<td>55 - 64</td>
<td>196</td>
<td>14</td>
</tr>
<tr>
<td>65 &amp; over</td>
<td>169</td>
<td>12</td>
</tr>
</tbody>
</table>

A relatively large proportion of survey nonrespondents are in the older age groups. Fully one-fourth of the nonresponding dentists are 65 years of age or older, but only 10 percent of the respondents are in this age group. Moreover, the median age of dentists not responding to the survey is 46.4 years, almost 4 years higher than that for respondents.
Advanced training.--Eighteen percent of the survey respondents, or 240 dentists, reported they had completed one year or more of advanced training (Table 4). The number of dentists who completed clinical training almost equals the number who completed graduate or postgraduate academic work. In advanced clinical training, 51 dentists completed a residency and 90 an internship. Among the dentists who reported advanced academic training, 10 had earned a second doctorate, 64 a master's degree, and another 79 received no additional degrees but had completed one or more years of postgraduate study. These figures include 54 dentists who completed both clinical and academic training.

<table>
<thead>
<tr>
<th>Type of advanced training</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>1,355</td>
<td>100</td>
</tr>
<tr>
<td>With advanced training</td>
<td>240</td>
<td>18</td>
</tr>
<tr>
<td>Clinical training only</td>
<td>87</td>
<td>7</td>
</tr>
<tr>
<td>Academic training only</td>
<td>99</td>
<td>7</td>
</tr>
<tr>
<td>Both clinical and academic training</td>
<td>54</td>
<td>4</td>
</tr>
<tr>
<td>With no advanced training</td>
<td>1,115</td>
<td>82</td>
</tr>
</tbody>
</table>

1/ Includes survey respondents only.

Additional education beyond receipt of the dental degree is more common among dentists in the younger age groups. Twenty-two percent of the dentists under 40 years of age have had a year or more of advanced training, compared with 17 percent of those 40 to 54 years old and 12 percent of those 55 and over. The growing tendency for young dentists to seek additional training is most pronounced in the academic areas.

Distribution and Current Status

Distribution of dentists.--Dentists in Tennessee are unevenly distributed geographically, with slightly more than 70 percent located in only 10 of the State's 95 counties. Six of these 10 counties, each of which has 20 or more dentists, are located in metropolitan areas. The remaining four are nonmetropolitan counties, i.e., they have central cities of less than 50,000 population, and they are not part of a multi-county grouping with a central city of 50,000 or more. Appendix Table B lists individual counties by size of central city and presents selected data for the dentists in each county.

More than three-fifths of the dentists in Tennessee are located in the four metropolitan areas of the State (Table 5). The greatest concentration of dentists, almost 400, is in Shelby County which constitutes the...
Tennessee portion of the Memphis interstate metropolitan area. The metropolitan areas of Nashville and Knoxville, which contain three counties each, have the second and third largest dental forces. The Tennessee portion of the Chattanooga interstate metropolitan area, Hamilton County, has the fourth largest dentist supply in the State.

Table 5.--Distribution by County Group

<table>
<thead>
<tr>
<th>County group</th>
<th>Number of counties</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>All counties</td>
<td>95</td>
<td>1,455</td>
<td>100</td>
</tr>
<tr>
<td>All metropolitan areas</td>
<td>8</td>
<td>920</td>
<td>63</td>
</tr>
<tr>
<td>Memphis area</td>
<td>1</td>
<td>391</td>
<td>27</td>
</tr>
<tr>
<td>Nashville area</td>
<td>3</td>
<td>230</td>
<td>16</td>
</tr>
<tr>
<td>Knoxville area</td>
<td>3</td>
<td>183</td>
<td>12</td>
</tr>
<tr>
<td>Chattanooga area</td>
<td>1</td>
<td>116</td>
<td>8</td>
</tr>
<tr>
<td>Nonmetropolitan counties</td>
<td>87</td>
<td>535</td>
<td>37</td>
</tr>
<tr>
<td>Central city 10,000-49,999</td>
<td>14</td>
<td>253</td>
<td>18</td>
</tr>
<tr>
<td>Central city 5,000-9,999</td>
<td>17</td>
<td>131</td>
<td>9</td>
</tr>
<tr>
<td>Central city 2,500-4,999</td>
<td>21</td>
<td>90</td>
<td>6</td>
</tr>
<tr>
<td>Central city under 2,500</td>
<td>3</td>
<td>61</td>
<td>4</td>
</tr>
</tbody>
</table>

Some of the nonmetropolitan counties have fairly large numbers of dentists. For example, of the 14 counties containing a central city of 10,000 or more people, Sullivan County has 57 dentists and 3 other counties--Madison, Washington and Montgomery--each have more than 20 dentists. By contrast, only 4 of the 73 counties without a city of this size have as many as 10 dentists. All 4 of these counties are in the group of 17 counties with central cities of 5,000-9,999 inhabitants. The 21 counties with central cities of 2,500-4,999 population include 14 with fewer than 5 dentists. None of the 35 counties with less than 2,500 persons in their central cities have as many as 5 dentists, and 4 of these counties--Clay, Meigs, Pickett, and Van Buren--have no dentists according to available information.

The age distribution of dentists is similar throughout the State. The median age and the proportion of dentists in each age group is almost identical in the metropolitan and nonmetropolitan areas.

Active dentists in relation to population.--During the 1965 registration period about 1,400 dentists in Tennessee were active in their profession. These dentists represented 96 percent of all those in the State. The remaining 4 percent included 26 responding dentists who were retired, 12 engaged principally in a nondental activity, and 13 nonresponding dentists who are known to be 70 years of age or older. Based on these counts, Tennessee had one professionally active dentist for every 2,663 persons in 1965 (Table 6).
Table 6.--Number of Persons Per Dentist

<table>
<thead>
<tr>
<th>County group</th>
<th>Professionally active dentists</th>
<th>Population</th>
<th>Persons per dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td>All counties</td>
<td>1,404</td>
<td>3,738,800</td>
<td>2,663</td>
</tr>
<tr>
<td>All metropolitan areas</td>
<td>889</td>
<td>1,855,800</td>
<td>2,088</td>
</tr>
<tr>
<td>Memphis area</td>
<td>376</td>
<td>708,100</td>
<td>1,883</td>
</tr>
<tr>
<td>Nashville area</td>
<td>223</td>
<td>501,600</td>
<td>2,249</td>
</tr>
<tr>
<td>Knoxville area</td>
<td>179</td>
<td>389,000</td>
<td>2,173</td>
</tr>
<tr>
<td>Chattanooga area</td>
<td>111</td>
<td>257,100</td>
<td>2,316</td>
</tr>
<tr>
<td>Nonmetropolitan counties</td>
<td>515</td>
<td>1,883,000</td>
<td>3,656</td>
</tr>
<tr>
<td>Central city 10,000-49,999</td>
<td>247</td>
<td>705,900</td>
<td>2,858</td>
</tr>
<tr>
<td>Central city 5,000-9,999</td>
<td>124</td>
<td>447,700</td>
<td>3,610</td>
</tr>
<tr>
<td>Central city 2,500-4,999</td>
<td>85</td>
<td>398,500</td>
<td>4,688</td>
</tr>
<tr>
<td>Central city under 2,500</td>
<td>59</td>
<td>330,900</td>
<td>5,608</td>
</tr>
</tbody>
</table>

The four metropolitan areas have proportionately more of the State's dentists than of its population—63 percent of the State's active dentists as compared with only 50 percent of the population. As a result of this disproportionate distribution of dentists in relation to population, there is one dentist for every 2,088 persons in the metropolitan areas, while the remainder of the State has a less favorable ratio of one dentist for every 3,656 persons. Each of the four metropolitan areas also has a more favorable persons-per-dentist ratio than any of the nonmetropolitan county groups. The Memphis metropolitan area has the best persons-per-dentist ratio in the State, 1,883. The persons-per-dentist ratios in the other three metropolitan areas are slightly less favorable—2,173 in the Knoxville area, 2,249 in the Nashville area, and 2,316 in the Chattanooga area.

In both of the three-county metropolitan areas, there is a considerably better persons-per-dentist ratio in the county with the largest population than in the other two counties. In the Knoxville area, Knox County has a ratio of 1,906, while the ratio for Blount County is 2,790 and for Anderson County, 3,442. In the Nashville area the contrast is also quite sharp with Davidson County, containing Nashville, having a ratio of 2,126 compared with 3,538 in Wilson County and 3,750 in Sumner County. (See Appendix Table B for individual county data.)

Among the nonmetropolitan counties of the State, the group of counties with central cities of 10,000-49,999 population have an average of 2,858 persons per dentist. Of the 14 counties in this group, 5 have ratios better than the State average—Sullivan (2,239), Madison (2,304), Washington (2,515), Dyer (2,527), and Green (2,624). Six of the remaining 9 counties have relatively favorable ratios of fewer than 3,500 persons per dentist.
On the average, there are 4,392 persons per dentist in the three groups of nonmetropolitan counties with central cities under 10,000 population. In general, the ratio of persons per dentist becomes less favorable as the size of the central city declines. The average ratio increases from 3,610 persons per dentist in the group of counties with central cities between 5,000-9,999 population to 4,688 among the counties with 2,500-4,999 persons in their central cities and to 5,608 persons per dentist among the counties with fewer than 2,500 persons in their central cities. Only 5 of the 73 counties with central cities under 10,000 population have ratios better than the State average, while many of these counties have considerably less favorable ratios. For example, 5 of the 17 counties with 5,000-9,999 persons in their central cities have ratios exceeding 5,000 persons per dentist. Ten of the 21 counties with central cities between 2,500-4,999 persons also have ratios over 5,000, including 3 counties with ratios over 7,500—Monroe (7,567), Hawkins (7,625), and Chester (8,900). Among the 35 counties with central cities of less than 2,500 persons, which account for over one-third of all counties in the State, 21 have ratios in excess of 5,000 persons per dentist, including the 4 counties which are assumed to have no dentist. Seven of these counties have more than 7,500 persons per dentist—Decatur (7,800), Cannon (8,100), Lake (8,500), Grundy (10,900), Wayne (11,000), Fayette (11,650), and Morgan (13,700).

Professional Activity

Current employment.—Of the 1,317 responding dentists who reported that they were professionally active at the time of the survey, 92 percent were primarily engaged in private practice with 91 percent self-employed and one percent employed by another dentist (Table 7). About four percent are on the staffs of dental schools at the University of Tennessee and Meharry Medical College and the remaining four percent are either employed by Federal, State or local government agencies or engaged in other dental employment.

<table>
<thead>
<tr>
<th>Type of employment</th>
<th>Principal employment</th>
<th>Secondary employment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number employed</td>
<td>Percent</td>
</tr>
<tr>
<td>Total</td>
<td>1,317</td>
<td>100</td>
</tr>
<tr>
<td>Self-employed</td>
<td>1,203</td>
<td>91</td>
</tr>
<tr>
<td>Employed by other dentist</td>
<td>17</td>
<td>1</td>
</tr>
<tr>
<td>On staff of dental school</td>
<td>48</td>
<td>4</td>
</tr>
<tr>
<td>Employed by State or local government</td>
<td>23</td>
<td>2</td>
</tr>
<tr>
<td>Employed by Federal Government</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>Voluntary agency</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Other dental employment</td>
<td>10</td>
<td>1</td>
</tr>
</tbody>
</table>

1/ Includes survey respondents only.
2/ Individual items add to more than total because some dentists reported more than one type of secondary employment. Less than one-half of one percent.
About 160 dentists reported at least one part-time dental activity in addition to their principal employment. Fifty-two of these dentists said they were employed by the State or local governments on a part-time basis providing dental services in hospitals and local health clinics. The number of dentists so employed is more than twice the number reporting their principal employment as working for these governmental agencies. Part-time faculty appointments at the two dental schools were reported by 54 dentists, which slightly exceeds the number of dentists reporting dental school appointments as their principal employment. Other types of secondary dental activity reported by the dentists include self-employment and employment by voluntary agencies.

Activity last year. — Of all dentists reporting their profession as activity in Tennessee last year, 95 percent said they provided care to patients. These dentists spent 92 percent of the total reported professional time in providing patient care. Eight percent of the dentists reported they spent some time in teaching and 2 percent reported some time in research, but only 5 percent of total professional time was spent in these activities. While 6 percent of the dentists spent time in some other dental activity, such as taking additional training, only 3 percent of the total professional time was spent in these activities.

Of the dentists who provided patient care, 85 percent reported having spent 48 weeks or more at this activity in the previous year. Dentists who worked all year (48-52 weeks) spent longer hours providing patient care than did those who worked only part of the year. Almost 8 of every 10 dentists spending 48 weeks or more in patient care worked 40 or more hours per week, while only 6 of every 10 working less than 48 weeks spent as many hours each week providing care.

Practice Characteristics

Limited practices. — Among dentists reporting type of practice, 135, or slightly more than one in every 10, limit their practices to a dental specialty. Almost two-thirds of these dentists reported limiting their practices to one of two specialty areas — 38 percent in orthodontics and 27 percent in oral surgery.

The metropolitan areas have a disproportionate share of the dentists with limited practices. Over four-fifths of the dentists who reported limiting their practices are located in the State's metropolitan areas. One in every 7 dentists practicing in a metropolitan area limits his practice, whereas in counties which are not part of metropolitan areas, only one in every 20 dentists does so. The Memphis area alone has over one-third of the State's dentists with limited practices, and almost twice as many as all 87 nonmetropolitan counties combined.
Use of auxiliaries.—About 86 percent of the dental practitioners in Tennessee (i.e., dentists who spend any time working at the chair) report that they employ auxiliary personnel (Table 8). The vast majority, 80 percent, of the practitioners employ at least one auxiliary full time, while only 6 percent employ part-time auxiliaries exclusively. Dental Assistants are the most frequently employed auxiliary—usually on a full-time basis. Approximately 79 percent of the practitioners employ an assistant, including 72 percent who do so full time. Secretaries or receptionists are employed by 30 percent of the dentists, and a majority of these dentists employ at least one of them full time. Dental hygienists and laboratory technicians are much less frequently utilized by dentists in Tennessee than are assistants and secretaries, and they are more likely to be employed on a part-time basis. While 16 percent of all dentists employ dental hygienists and 6 percent employ dental technicians, over one-half and four-fifths, respectively, of the dentists employing these personnel do so on a part-time basis.

Table 8.—Dental Practitioners Employing Auxiliaries, by Type of Auxiliary

<table>
<thead>
<tr>
<th>Type of auxiliary</th>
<th>Dental practitioners</th>
<th>Percent of dental practitioners</th>
<th>With one full-time employee</th>
<th>With only part-time personnel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>1,276</td>
<td>100</td>
<td>80</td>
<td>6</td>
</tr>
<tr>
<td>With one or more auxiliaries</td>
<td>1,079</td>
<td>86</td>
<td>80</td>
<td>6</td>
</tr>
<tr>
<td>With assistant</td>
<td>996</td>
<td>79</td>
<td>72</td>
<td>7</td>
</tr>
<tr>
<td>With hygienist</td>
<td>203</td>
<td>16</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td>With laboratory technician</td>
<td>76</td>
<td>6</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>With secretary or receptionist</td>
<td>376</td>
<td>30</td>
<td>20</td>
<td>10</td>
</tr>
<tr>
<td>With other type personnel</td>
<td>72</td>
<td>6</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>With no auxiliary</td>
<td>181</td>
<td>14</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

1/ Includes survey respondents only.

The use of auxiliaries varies with the age of the dentist and is more frequent among the young dentists. Ninety-one percent of the dental practitioners between the ages of 30 and 44 employ some type of auxiliary. However, the proportion of practitioners utilizing auxiliaries decreases to 84 percent among dentists 45 to 64 years old and drops to 62 percent among dentists 65 and over.
Although dentists in the metropolitan areas are no more likely to employ auxiliary personnel than are those located in the nonmetropolitan areas, the use of hygienists is considerably more common in the metropolitan areas than in the remainder of the State. About 20 percent of the dentists in the metropolitan areas report the employment of a hygienist, compared with only 9 percent of the dentists located elsewhere.

About 16 percent of the responding dentists in Tennessee reported one or more vacant positions for auxiliary personnel. Vacancies were reported most frequently for dental hygienists and dental assistants.

Out-of-State Civilian Dentists

At the time of the survey, Tennessee licenses were maintained by 483 civilian respondents located in 38 States and the District of Columbia. Over three-fourths of these out-of-State dentists are located in Southern States and almost two out of every five are in Florida, Arkansas, or Mississippi. Georgia, North Carolina, Alabama, and Texas are the only other States in which at least five percent of these dentists are currently located. Three in every four of the out-of-State dentists are graduates of the dental school at the University of Tennessee.

Almost one in every five out-of-State respondents reported they had been professionally active in Tennessee immediately prior to assuming their present location in another State. Sixty of the 85 reporting out-migrant dentists moved to another Southern State, most frequently Florida, Georgia, or North Carolina, and the remaining 25 dentists moved to 15 other States scattered across the Nation.

June 1967.
Appendix Table A.--Summary Statistics for Tennessee

<table>
<thead>
<tr>
<th>Category</th>
<th>Total dentists licensed in Tennessee</th>
<th>Responding dentists</th>
<th>Nonresponding dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total dentists licensed in Tennessee</td>
<td>2,103</td>
<td>1,886</td>
<td>217</td>
</tr>
<tr>
<td>Civilian dentists in Tennessee</td>
<td>1,455</td>
<td>1,355</td>
<td>106</td>
</tr>
<tr>
<td>(designated simply as &quot;dentists&quot; in text tables)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Professionally active dentists</td>
<td>1,404</td>
<td>1,317</td>
<td>87</td>
</tr>
<tr>
<td>Dental practitioners</td>
<td>1,276</td>
<td></td>
<td></td>
</tr>
<tr>
<td>In limited practice</td>
<td></td>
<td>135</td>
<td></td>
</tr>
<tr>
<td>Located in Tennessee last year:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reported professional activity</td>
<td>1,273</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dentists providing patient care</td>
<td>1,205</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reported time spent in patient care</td>
<td>933</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Civilian dentists in another State</td>
<td>600</td>
<td>483</td>
<td>117</td>
</tr>
<tr>
<td>Dentists on active duty in Armed Forces</td>
<td>43</td>
<td>43</td>
<td>-</td>
</tr>
</tbody>
</table>

1/ Includes 5 dentists not reporting current location or military status.

2/ Data for nonresponding dentists were obtained from the Tennessee Board of Dental Examiners, and from the 1966 American Dental Directory published by the American Dental Association.

3/ All dentists who currently work in Tennessee (excluding those in the Armed Forces) or who are retired and currently live in the State. Data are not available for the following: year of graduation - 50, age - 12, dental school attended - 4.

4/ Includes all responding dentists who reported they were professionally active in Tennessee at the time of the survey and all nonrespondents known to be under 70 years of age.

5/ All responding dentists practicing at the chair, that is, dentists who work as clinicians either as primary or secondary activity.

6/ Dentists who reported they limited their practice to a dental specialty.

7/ Dentists located in Tennessee last year who indicated type(s) of activity in which they engaged.

8/ All responding dentists who engaged in patient care last year, either as a primary or a secondary activity.

9/ Dentists reporting both hours and weeks spent in patient care last year.
### Appendix Table 8.--Selected Data on Dentists in Tennessee, by Location

<table>
<thead>
<tr>
<th>County group and county</th>
<th>Civilian dentists</th>
<th>Nonrespondents</th>
<th>Age 1965</th>
<th>Professionally active</th>
<th>Population (in 000's)</th>
<th>Persons per active dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Respondents</td>
<td>Under 35</td>
<td>or more</td>
<td></td>
<td></td>
</tr>
<tr>
<td>All counties</td>
<td>1,455</td>
<td>1,355</td>
<td>100</td>
<td>348</td>
<td>365</td>
<td>1,404</td>
</tr>
<tr>
<td>Metropolitan areas 2/</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Memphis area</td>
<td>920</td>
<td>835</td>
<td>61</td>
<td>222</td>
<td>232</td>
<td>889</td>
</tr>
<tr>
<td>Shelby</td>
<td>391</td>
<td>374</td>
<td>17</td>
<td>93</td>
<td>96</td>
<td>376</td>
</tr>
<tr>
<td>Nashville area</td>
<td>220</td>
<td>205</td>
<td>25</td>
<td>55</td>
<td>61</td>
<td>223</td>
</tr>
<tr>
<td>Davidson</td>
<td>212</td>
<td>189</td>
<td>23</td>
<td>47</td>
<td>59</td>
<td>205</td>
</tr>
<tr>
<td>Sumner</td>
<td>10</td>
<td>9</td>
<td>1</td>
<td>5</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>Wilson</td>
<td>8</td>
<td>7</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>Knoxville area</td>
<td>183</td>
<td>174</td>
<td>9</td>
<td>46</td>
<td>44</td>
<td>179</td>
</tr>
<tr>
<td>Knox</td>
<td>142</td>
<td>134</td>
<td>8</td>
<td>36</td>
<td>37</td>
<td>139</td>
</tr>
<tr>
<td>Blount</td>
<td>21</td>
<td>20</td>
<td>1</td>
<td>4</td>
<td>5</td>
<td>21</td>
</tr>
<tr>
<td>Anderson</td>
<td>26</td>
<td>20</td>
<td>-</td>
<td>6</td>
<td>2</td>
<td>19</td>
</tr>
<tr>
<td>Chattanooga area</td>
<td>116</td>
<td>106</td>
<td>10</td>
<td>28</td>
<td>31</td>
<td>111</td>
</tr>
<tr>
<td>Hamilton</td>
<td>116</td>
<td>106</td>
<td>10</td>
<td>28</td>
<td>31</td>
<td>111</td>
</tr>
<tr>
<td>Nonmetropolitan counties 3/</td>
<td>525</td>
<td>496</td>
<td>39</td>
<td>126</td>
<td>133</td>
<td>515</td>
</tr>
<tr>
<td>Central city 25,000-49,999</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Madison</td>
<td>112</td>
<td>105</td>
<td>7</td>
<td>27</td>
<td>21</td>
<td>111</td>
</tr>
<tr>
<td>Sullivan</td>
<td>28</td>
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Total Population: 398.5

Total Active Dentists: 4,688

Persons per Active Dentist: 3,740
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Appendix Table B.--Selected Data on Dentists in Tennessee, by Location - (continued)

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1/ Copyright 1965. Sales Management Survey of Buying Power; further reproduction is forbidden.

2/ Tennessee counties included in the latest 1966 definition of Standard Metropolitan Statistical areas, as established by the U.S. Bureau of the Budget, Office of Statistical Standards, have been grouped as metropolitan areas for the presentation of the survey data. For interstate SMSA's, statistics are presented only for dentists located in the Tennessee portion of the Memphis SMSA and Chattanooga SMSA.

3/ Counties not included within a SMSA, as defined by the U.S. Bureau of the Budget, have been grouped according to the 1960 population of the largest (central) city within each county.
A total of 4,180 dentists registered with the Texas State Board of Dental Examiners during the 1965 registration period (Table 1). About 86 percent of the registered dentists were civilians located in Texas at the time of the survey. Civilians located in other states or abroad accounted for only 5 percent of all dentists, and 7 percent were on active duty in the armed forces. Information on location or military status was not available for the remaining 2 percent of the dentists licensed in Texas at the time of the survey.

Table 1.--Location and Military Status

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<thead>
<tr>
<th>Location and military status</th>
<th>All dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total licensed</td>
<td>4,180</td>
<td>100</td>
</tr>
<tr>
<td>Respondents</td>
<td>2,923</td>
<td>70</td>
</tr>
<tr>
<td>Nonrespondents</td>
<td>1,257</td>
<td>30</td>
</tr>
<tr>
<td>Total licensed</td>
<td>4,180</td>
<td>100</td>
</tr>
<tr>
<td>Civilians in Texas</td>
<td>3,610</td>
<td>86</td>
</tr>
<tr>
<td>Respondents</td>
<td>2,518</td>
<td>-</td>
</tr>
<tr>
<td>Nonrespondents</td>
<td>1,092</td>
<td>-</td>
</tr>
<tr>
<td>Civilians in another state</td>
<td>227</td>
<td>5</td>
</tr>
<tr>
<td>On active duty with armed forces</td>
<td>279</td>
<td>7</td>
</tr>
<tr>
<td>Not reported</td>
<td>64</td>
<td>2</td>
</tr>
</tbody>
</table>

The survey questionnaire was completed by 2,923 dentists, or 70 percent of all those registered. The response rate of the 3,610 civilian dentists located in Texas was the same, with 2,518 of these dentists completing the questionnaire. For dentists not responding to the survey, certain items of information—state and county location, military status, dental school attended, year dental degree granted, age and professional status—were obtained from records maintained by the Texas State Board of Dental Examiners, or from the 1965 American Dental Directory, published by the American Dental Association.

Relatively few dentists registered in Texas also maintain licenses in other states. In total, the number of licenses held by the 2,923 respondents is approximately 3,700. An estimate of the total number held by all dentists registered in Texas, assuming a similar occurrence of multiple licensure among nonrespondents, would be about 5,300. Of all dentists responding,
nearly four fifths (79 percent) are licensed only in Texas (Table 2). For dentists actually located in Texas, the percentage licensed only in Texas is a high 84 percent. More than three fourths of the dentists on active duty in the Armed Forces hold licenses only in Texas. Among the out-of-state dentists, 71 percent maintain licenses only in Texas in addition to their state of location.

Table 2.--Percent of Dentists Holding Licenses in Other States

<table>
<thead>
<tr>
<th>Licenses held</th>
<th>All respondents</th>
<th>Civilian dentists</th>
<th>Armed Forces</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Texas only</td>
<td>79</td>
<td>84</td>
<td></td>
</tr>
<tr>
<td>Licensed in 1 other state</td>
<td>16</td>
<td>13</td>
<td>71</td>
</tr>
<tr>
<td>Licensed in 2 other states</td>
<td>4</td>
<td>2</td>
<td>24</td>
</tr>
<tr>
<td>Licensed in 3 or more other states</td>
<td>1</td>
<td>1</td>
<td>5</td>
</tr>
</tbody>
</table>

Civilian Dentists in Texas

Sources of Supply

Dental schools.--Graduates of 50 dental schools are represented among Texas dentists, including graduates of one Canadian school and of six dental schools which are no longer in existence. However, the great majority of Texas dentists, respondents and nonrespondents alike, are graduates of the dental schools at Baylor University and the University of Texas. These two Texas schools have contributed 79 percent of the state's total dentist supply (Table 3). About 89 percent of those graduating within the past 10 years are from these two schools, as compared with 64 percent of those who were graduated prior to World War II. Practically all of the increase, though, has taken place among graduates of the University of Texas, which has supplied 51 percent of the state's dentists graduating since 1955. In contrast, the proportion of University of Texas graduates among those who completed dental school prior to World War II is 27 percent.
Table 3.--Schools Awarding Dental Degrees, by Year Awarded

<table>
<thead>
<tr>
<th>Dental school attended</th>
<th>Number of dentists</th>
<th>Year of graduation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>All</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1955</td>
</tr>
<tr>
<td>Total number</td>
<td>3,610²/</td>
<td>1,107</td>
</tr>
</tbody>
</table>

(Percent distribution by school)

<table>
<thead>
<tr>
<th>Dental school attended</th>
<th>Number of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baylor</td>
<td>1,423</td>
</tr>
<tr>
<td>Texas</td>
<td>1,384</td>
</tr>
<tr>
<td>Missouri at Kansas City</td>
<td>78</td>
</tr>
<tr>
<td>Meharry</td>
<td>63</td>
</tr>
<tr>
<td>Loyola (New Orleans)</td>
<td>56</td>
</tr>
<tr>
<td>St. Louis University</td>
<td>52</td>
</tr>
<tr>
<td>44 other schools</td>
<td>489</td>
</tr>
</tbody>
</table>

¹/ Includes data obtainable for nonresponding dentists.

²/ Individual items in this and succeeding tables may not add to the totals shown due to the failure of some responding dentists to reply to all items on the questionnaire, or, in the case of nonrespondents, due to the data not being obtainable for all dentists. For each item where percentages are shown, they are based on the number of dentists for whom the data are known. (See Appendix Table A)

* Less than one-half of one percent.

The two dental schools in Texas and 15 other schools in the South have together contributed 88 percent of the state's dentist supply. Eighteen schools in the North Central States account for 10 percent of all dentists. However, the proportion of the state's dentists graduating from these schools has declined substantially in recent years, from a high of 15 percent of the graduates prior to 1941 to a low of 6 percent among those who completed their dental education during the last 10 years. Fourteen dental schools in the Western and Northeastern States combined account for only 2 percent of the state's dentist supply.

Dentists relocating in Texas.--Texas has relatively few active dentists migrating into the state. Only 4 percent of the responding dentists currently located in Texas report previous professional locations as civilians in other states. About one dentist in every four who has moved to Texas came from one of the four adjacent states. The remainder came from 21 other states or abroad. Approximately one-half of the dentists reporting migration into Texas relocated prior to 1950, and about 30 percent moved to the state during the 1960's.
Personal Characteristics

Age.--Texas dentists, on the average, are relatively young, with a median age in 1965 of 43.0 years. The distribution of dentists by age groups indicated that one fourth were under the age of 35, a third were between the ages of 35 and 44, and a fifth were aged 45 to 54 years (Table 4). Even though only 9 percent of the dentists were 65 years old or over, this group represented a substantial number, 319 dentists, including 107 who were 70 to 74 years old and 65 who had reached 75 years of age.

Table 4.--Age Distribution1/

<table>
<thead>
<tr>
<th>Age in 1965</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>3,610</td>
<td>100</td>
</tr>
<tr>
<td>Under 30</td>
<td>226</td>
<td>7</td>
</tr>
<tr>
<td>30 - 34</td>
<td>596</td>
<td>18</td>
</tr>
<tr>
<td>35 - 39</td>
<td>525</td>
<td>15</td>
</tr>
<tr>
<td>40 - 44</td>
<td>615</td>
<td>18</td>
</tr>
<tr>
<td>45 - 49</td>
<td>423</td>
<td>12</td>
</tr>
<tr>
<td>50 - 54</td>
<td>252</td>
<td>7</td>
</tr>
<tr>
<td>55 - 59</td>
<td>241</td>
<td>7</td>
</tr>
<tr>
<td>60 - 64</td>
<td>228</td>
<td>7</td>
</tr>
<tr>
<td>65 - 69</td>
<td>147</td>
<td>4</td>
</tr>
<tr>
<td>70 - 74</td>
<td>107</td>
<td>3</td>
</tr>
<tr>
<td>75 and over</td>
<td>65</td>
<td>2</td>
</tr>
</tbody>
</table>

1/ Includes data obtainable for nonresponding dentists.

The age distribution of dentists responding to the survey was similar to that of all dentists. The median age of respondents was only slightly lower--42.0 years as compared to 43.0 for all dentists. This difference is probably due to the likelihood that nonresponse was more frequent among the older, less active dentists.

Advanced training.--Of the survey respondents, 424 dentists, or 17 percent, reported completion of a year or more of advanced training (Table 5). Nine percent have taken advanced clinical training as compared with 11 percent who have completed at least one year of advanced academic training, including 5 percent who have earned a master's degree since leaving dental school. There are 15 dentists who reported they have earned a second doctorate.
Table 5.--Advanced Training

<table>
<thead>
<tr>
<th>Highest level of training completed</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>2,518</td>
<td>100</td>
</tr>
<tr>
<td>With advanced training</td>
<td>424</td>
<td>17</td>
</tr>
<tr>
<td>Clinical training only</td>
<td>143</td>
<td>6</td>
</tr>
<tr>
<td>Academic training only</td>
<td>197</td>
<td>8</td>
</tr>
<tr>
<td>Both clinical and academic</td>
<td>84</td>
<td>3</td>
</tr>
<tr>
<td>Clinical training</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residency completed</td>
<td>78</td>
<td>3</td>
</tr>
<tr>
<td>Internship completed</td>
<td>149</td>
<td>6</td>
</tr>
<tr>
<td>Academic training</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ph.D., M.D., or other doctor's degree</td>
<td>15</td>
<td>1</td>
</tr>
<tr>
<td>M.A., M.S., or other master's degree</td>
<td>124</td>
<td>5</td>
</tr>
<tr>
<td>Postgraduate 1 year or more (no degree)</td>
<td>142</td>
<td>5</td>
</tr>
</tbody>
</table>

The growing tendency for dentists to seek training beyond receipt of their dental degree is especially apparent with regard to academic training. Thirteen percent of the dentists under 40 reported completion of a year or more of graduate or postgraduate study, compared with 11 percent of the dentists between 40 and 54, and only 5 percent of those 55 and over. Residencies show the same pattern by age. The trend does not hold true with respect to internships, but chiefly because many dentists in the younger age groups are still in the process of training.

Distribution and Current Status

Distribution of dentists.--The dentists in Texas are concentrated in the more densely populated areas of the state. More than three of every four civilian dentists are located in only 35 of the state's 254 counties. These 35 counties make up the 21 metropolitan areas in Texas. However, even among the metropolitan areas, the number of dentists varies considerably--from well over 700 dentists in the Houston area to fewer than 10 dentists in the Laredo area (Table 6). The four largest metropolitan areas--the Houston, Dallas, Fort Worth and San Antonio areas--have more than one-half of the state's total dentist supply. The Houston area alone has more than one-fifth of the dentists. The Dallas area contains 16 percent of the dentists, while the Fort Worth and San Antonio areas each contains 7 percent. While another
27 percent of the dentists in Texas are scattered among the remaining 17 metropolitan areas in the state, relatively large numbers of dentists are located in the Beaumont-Port Arthur, Austin, Corpus Christi and El Paso areas as compared with the other 13 areas.

Table 6.--Distribution of Dentists by Metropolitan Area

<table>
<thead>
<tr>
<th>Area</th>
<th>Number of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>All counties</td>
<td>3,610</td>
</tr>
<tr>
<td>In metropolitan areas</td>
<td>2,810</td>
</tr>
<tr>
<td>Houston</td>
<td>759</td>
</tr>
<tr>
<td>Dallas</td>
<td>596</td>
</tr>
<tr>
<td>Fort Worth</td>
<td>234</td>
</tr>
<tr>
<td>San Antonio</td>
<td>245</td>
</tr>
<tr>
<td>Beaumont-Port Arthur</td>
<td>123</td>
</tr>
<tr>
<td>Austin</td>
<td>120</td>
</tr>
<tr>
<td>Corpus Christi</td>
<td>96</td>
</tr>
<tr>
<td>El Paso</td>
<td>93</td>
</tr>
<tr>
<td>Amarillo</td>
<td>67</td>
</tr>
<tr>
<td>Lubbock</td>
<td>63</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Area</th>
<th>Number of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Galveston-Texas City</td>
<td>54</td>
</tr>
<tr>
<td>Wichita Falls</td>
<td>54</td>
</tr>
<tr>
<td>Abilene</td>
<td>53</td>
</tr>
<tr>
<td>Waco</td>
<td>51</td>
</tr>
<tr>
<td>Tyler</td>
<td>47</td>
</tr>
<tr>
<td>San Angelo</td>
<td>31</td>
</tr>
<tr>
<td>Odessa</td>
<td>27</td>
</tr>
<tr>
<td>Midland</td>
<td>26</td>
</tr>
<tr>
<td>Brownsville-Harlingen</td>
<td>23</td>
</tr>
<tr>
<td>Texarkana</td>
<td>22</td>
</tr>
<tr>
<td>Laredo</td>
<td>6</td>
</tr>
<tr>
<td>Nonmetropolitan counties</td>
<td>800</td>
</tr>
</tbody>
</table>

1/ Includes nonresponding dentists.

Dentists are rather sparsely distributed in the nonmetropolitan areas of the state. Altogether the 219 nonmetropolitan counties in Texas have only 27 percent of the state's dentist supply. By comparison, the Houston metropolitan area alone has nearly as many dentists as all of the nonmetropolitan counties combined. There are very few dentists in almost every one of these counties. For example, at least seven in every ten nonmetropolitan counties have fewer than five dentists, including 2 in every ten which apparently have no dentists at all. However, there are a few nonmetropolitan counties which have fairly sizeable numbers of dentists when compared with some counties included in metropolitan areas.

Because of the large number of counties and metropolitan areas in Texas, the state has been divided into four regions to permit a more detailed examination of the geographical distribution of dentists within the state. The regional distribution of civilian dentists responding to the survey was substantially the same as that for all civilian dentists in the state. The map on the following page outlines the boundaries of each of the regions and indicates
the metropolitan areas and nonmetropolitan counties contained in each. Regional variations in dentist supply and selected dentist characteristics are presented tabularly in Appendix Table B and are discussed on the following pages. Similar data for individual counties are presented in Appendix Table C.

When the geographical distribution of dentists in Texas is viewed regionally it becomes apparent that the dentists are concentrated in the more populous regions of East and North Central Texas. Sixty-nine percent of the state's dentists are located in the 105 counties which make up these two regions--56 percent in the 9 metropolitan areas and 13 percent in the 87 nonmetropolitan counties. The other 31 percent of the state's dentists are located in one of the 149 counties which make up West or South Texas--22 percent in the 12 metropolitan areas and only 9 percent in the 132 nonmetropolitan counties.

Primarily because of the concentration of dentists in the Houston metropolitan area, East Texas has the largest share, 36 percent, of the state's dentist supply. In addition to the Houston area, the Beaumont-Port Arthur, Galveston-Texas City, Tyler and Texarkana areas are also included in East Texas and these four areas together contain 7 percent of the total dentist supply. The region's 56 nonmetropolitan counties, about one-fourth of all the counties so classified, contain another 8 percent of the state's dentists. One-half of the region's nonmetropolitan counties have five or more dentists. Gregg County has the largest nonmetropolitan dental force in the region.

The location of the Dallas and Fort Worth metropolitan areas in North Central Texas contributes to the substantial number of dentists in this region, which has the second largest dentist supply in the state. One-third of the state's dentists are located in this region, including 23 percent who are located in either the Dallas or Fort Worth area. Another five percent of the state's dentists are in the Austin and Waco metropolitan areas. Even though only 31 of the state's 219 nonmetropolitan counties are included in North Central Texas, the dentists located in these counties account for another 5 percent of the total dentist supply. Almost one-half of these counties have five or more dentists, including Bell and Grayson counties which have dental forces larger than either Collin, Denton or Ellis counties in the Dallas metropolitan area, or Johnson County in the Fort Worth area.

Another 19 percent of the state's dentists are located in West Texas. By far the majority of these dentists are in one of the region's eight metropolitan areas. The El Paso area has the largest number of dentists. The Amarillo, Lubbock, Wichita Falls and Abilene areas each have substantially more dentists than do either the San Angelo, Odessa or Midland areas. Almost one-half (107 counties) of the state's nonmetropolitan counties are in West Texas, but over two-thirds of the state's 46 nonmetropolitan counties which apparently have no dentists are in this region. However, there are in total
a relatively large number of dentists in the region's 76 nonmetropolitan counties which have dentists and these account for 7 percent of the state's total dentist supply. Nevertheless, only 13 of these nonmetropolitan counties have as many as 5 dentists.

South Texas has the smallest share, only 12 percent, of the state's supply of dentists. Over one-half of the region's dentists are located in the San Antonio area. The Corpus Christi area also has a substantial number of dentists as compared with the Brownsville-Harlingen-San Benito area. The Laredo area, which has fewer dentists than any of the other metropolitan areas in the state, is also located in this region. Only four of the region's 25 nonmetropolitan counties have as many as 5 dentists, including Hidalgo County which has the largest supply of dentists. (Since the tabulation of these survey data Hidalgo County has been designated the McAllen-Pharr-Edinburg metropolitan area.)

About 8 percent of the dentists who responded to the survey reported that they maintain a second office location. Of these dentists, about 4 out of 10 maintain their second office in a county different from the one in which their primary office is located. Almost one-half of the reported second offices are located in one of the four largest metropolitan areas--Houston, Dallas, Fort Worth and San Antonio.

Geographical differences in age.--On the average dentists in the metropolitan areas of Texas are slightly younger than those located in nonmetropolitan counties. There are marked differences in the average ages of dentists in each of the 21 metropolitan areas. The Amarillo area has the youngest dentists. Their median age is 40.0 years, compared to the state average of 43.0 (Table 7). Almost one-third of the dentists in this area are under 35 years old (Appendix Table B). The average dentist in three of the four largest metropolitan areas--Dallas, Fort Worth and Houston--is also younger than the average dentist in the state. At the other extreme, dentists in the San Angelo area are the oldest, with a median age of 49.2 years, and only 19 percent under 35. The median age of dentists in the Laredo and Waco areas also considerably exceeds that of the state as a whole.
Table 7.--Median Age by Metropolitan Area

<table>
<thead>
<tr>
<th>Area</th>
<th>Median age</th>
</tr>
</thead>
<tbody>
<tr>
<td>All counties</td>
<td>43.0</td>
</tr>
<tr>
<td>In metropolitan areas</td>
<td>42.6</td>
</tr>
<tr>
<td>Amarillo</td>
<td>40.0</td>
</tr>
<tr>
<td>Midland</td>
<td>41.0</td>
</tr>
<tr>
<td>Dallas</td>
<td>41.6</td>
</tr>
<tr>
<td>Brownsville-Harlingen</td>
<td>41.7</td>
</tr>
<tr>
<td>Odessa</td>
<td>41.8</td>
</tr>
<tr>
<td>Fort Worth</td>
<td>42.1</td>
</tr>
<tr>
<td>Houston</td>
<td>42.2</td>
</tr>
<tr>
<td>Beaumont-Port Arthur</td>
<td>43.1</td>
</tr>
<tr>
<td>Lubbock</td>
<td>43.1</td>
</tr>
<tr>
<td>Texarkana</td>
<td>43.1</td>
</tr>
<tr>
<td>Abilene</td>
<td>43.2</td>
</tr>
<tr>
<td>Austin</td>
<td>43.4</td>
</tr>
<tr>
<td>Tyler</td>
<td>43.6</td>
</tr>
<tr>
<td>El Paso</td>
<td>43.7</td>
</tr>
<tr>
<td>San Antonio</td>
<td>43.8</td>
</tr>
<tr>
<td>Wichita Falls</td>
<td>43.9</td>
</tr>
<tr>
<td>Galveston-Texas City</td>
<td>44.4</td>
</tr>
<tr>
<td>Corpus Christi</td>
<td>44.5</td>
</tr>
<tr>
<td>Laredo</td>
<td>45.0</td>
</tr>
<tr>
<td>Waco</td>
<td>45.0</td>
</tr>
<tr>
<td>San Angelo</td>
<td>49.2</td>
</tr>
<tr>
<td>Nonmetropolitan counties</td>
<td>44.3</td>
</tr>
</tbody>
</table>

1/ Includes data obtainable for nonresponding dentists.

East and North Central Texas not only have disproportionately large shares of the dentist supply, but they also have the youngest dentists. The median ages in 1965 of dentists located in these two regions were 42.6 and 42.5 years, respectively. Dentists in West Texas were on the average a full year older—43.6—and those in South Texas approximately two years older—44.4. Twenty-five percent of the dentists in East Texas were under 35 years of age, while only 22 percent were 55 or older. On the other hand, in South Texas only 21 percent were under 35, and 27 percent had reached the age of 55. Within each of the four regions, dentists located in the nonmetropolitan counties were on the average older than those in metropolitan areas. This difference was most pronounced among dentists in South and North Central Texas.

Professional status.—Nearly all (96 percent) of the dentists in Texas are known to be active in their profession. One percent either reported themselves retired or engaged in nondental employment, or in the case of nonrespondents were classified as professionally inactive on the basis of information available to the State Board. The professional status was not obtainable for the remaining 3 percent of the dentists (28 respondents and 94 nonrespondents). However, since there are indications that the percentage of older dentists is relatively high among the nonrespondents, this group may include a proportionately greater number of retirees than the respondents.
Almost all of the dentists who are known to be retired are in the older age groups. Even so, relatively few of the 292 dentists 65 years old and over, for whom professional status was obtainable, were retired. Of these dentists only 5 percent considered themselves as fully retired. Among those 75 and over, 90 percent are still active in the profession.

Active dentists in relation to population.--There was one professionally active dentist for every 3,034 persons in Texas in 1965, based on the count of dentists who are known to be active in the state (Table 8). In general, the dentist supply in relation to the population is more favorable in the metropolitan areas of the state than in the nonmetropolitan areas. On the average, there are 2,668 persons for every active dentist in the metropolitan areas as compared with an average ratio of 4,321 for nonmetropolitan counties.

Table 8.--Persons per Dentist by Metropolitan Area

<table>
<thead>
<tr>
<th>Area</th>
<th>Persons per dentist</th>
<th>Area</th>
<th>Persons per dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td>All counties</td>
<td>3,034</td>
<td>Midland</td>
<td>2,946</td>
</tr>
<tr>
<td>In metropolitan areas</td>
<td>2,668</td>
<td>Galveston-Texas City</td>
<td>2,996</td>
</tr>
<tr>
<td>Tyler</td>
<td>1,955</td>
<td>Corpus Christi</td>
<td>3,004</td>
</tr>
<tr>
<td>Austin</td>
<td>2,083</td>
<td>Amarillo</td>
<td>3,013</td>
</tr>
<tr>
<td>Dallas</td>
<td>2,287</td>
<td>Texarkana</td>
<td>3,130</td>
</tr>
<tr>
<td>San Angelo</td>
<td>2,303</td>
<td>Waco</td>
<td>3,180</td>
</tr>
<tr>
<td>Houston</td>
<td>2,315</td>
<td>San Antonio</td>
<td>3,423</td>
</tr>
<tr>
<td>Fort Worth</td>
<td>2,516</td>
<td>Odessa</td>
<td>3,522</td>
</tr>
<tr>
<td>Abilene</td>
<td>2,680</td>
<td>El Paso</td>
<td>3,863</td>
</tr>
<tr>
<td>Wichita Falls</td>
<td>2,712</td>
<td>Brownsville-Harlingen</td>
<td>6,796</td>
</tr>
<tr>
<td>Beaumont-Port Arthur</td>
<td>2,751</td>
<td>Laredo</td>
<td>11,350</td>
</tr>
<tr>
<td>Lubbock</td>
<td>2,921</td>
<td>Nonmetropolitan counties</td>
<td>4,321</td>
</tr>
</tbody>
</table>

1/ Includes data obtainable for nonresponding dentists.

The persons-per-dentist ratios for individual metropolitan areas and nonmetropolitan counties differ sharply. In the 21 metropolitan areas these ratios range from 1,955 in the Tyler area to a high 11,350 in the Laredo area. Even so, 14 of the 21 areas have ratios more favorable than the state average of 3,034. Among the nonmetropolitan counties which are known to have active dentists, the persons-per-dentist ratios range from a very favorable 1,750 in Shackelford County in West Texas to a most unfavorable 16,900 in South Texas' Maverick County. Only 30 of the 171 nonmetropolitan counties with active dentists have fewer than 3,000 persons per dentist.
Not only are the majority of the state's dentists located in East and North Central Texas, but there are also, on the average, more dentists in relation to the population in these two regions than in either West or South Texas. East and North Central Texas, which have almost the same number of dentists, average almost the same number of persons in the population per active dentist—2,726 and 2,643, respectively. For every active dentist in West Texas there are about 3,542 persons. South Texas with 4,236 persons per dentist has the least favorable regional ratio.

To varying degrees within each of the four regions the persons in metropolitan areas are served by relatively more dentists than are those in the nonmetropolitan counties. For example, in West Texas there are, on the average, 3,091 persons per dentist in the metropolitan areas as compared with a ratio of 4,312 for the nonmetropolitan counties, a difference of only 1,221 persons per dentist (Appendix Table 8). The difference between the metropolitan and nonmetropolitan ratios is not too much greater in East and North Central Texas—1,379 and 1,694, respectively. However, in South Texas there are 3,345 more persons for each active dentist in the nonmetropolitan counties than in the metropolitan areas.

There is also considerable variation among the regions in the proportion of individual counties which have favorable persons-per-active dentist ratios. If the state ratio of 3,034 is used as a standard for determining the favorability of the ratio for each Texas county, 45 of the 254 counties in the state have relatively favorable ratios, that is, less than 3,000 persons per active dentist. In addition to these 45 counties, the map on the following page also identifies the 160 counties with less favorable ratios, as well as the 49 counties which, according to available information, have no active dentists.

Among the four regions North Central Texas has the highest proportion of counties (26 percent) with less than 3,000 persons per dentist. One-half of this region's metropolitan counties have favorable ratios. However, only two counties, Dallas and Denton, in the 4-county Dallas metropolitan area and only Tarrant County in the 2-county Fort Worth area are in this category. West Texas and East Texas have about the same proportion of counties with favorable ratios, 19 and 15 percent respectively. Only 4 of the 10 counties in East Texas' metropolitan areas are included in this group. Of the 5 counties in the Houston area of East Texas only Harris County has fewer than 3,000 persons per dentist. In West Texas 6 of the 11 metropolitan counties and 17 of the 107 nonmetropolitan counties are included in the group of counties with favorable ratios. Only 2 of the 31 South Texas counties have persons-per-active dentist ratios more favorable than the state average.
Professional Activity

Current employment.—Of the 2,473 responding dentists who reported that they were professionally active at the time of the survey, 96 percent are primarily engaged in private practice; 95 percent are self-employed and one percent are employed by another dentist (Table 9). Another one percent of the state's dentists are on the staffs of the dental schools at Baylor University and the University of Texas. The remaining 3 percent are either employed by Federal, state or local government agencies, or are engaged in other dental employment.

Table 9.—Current Employment of Professionally Active Dentists

<table>
<thead>
<tr>
<th>Type of principal employment</th>
<th>Number employed</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>2,473</td>
<td>100</td>
</tr>
<tr>
<td>Self-employed</td>
<td>2,342</td>
<td>95</td>
</tr>
<tr>
<td>Employed by other dentists</td>
<td>21</td>
<td>1</td>
</tr>
<tr>
<td>On staff of dental schools</td>
<td>34</td>
<td>1</td>
</tr>
<tr>
<td>Employed by state or local government</td>
<td>22</td>
<td>1</td>
</tr>
<tr>
<td>Employed by Federal Government</td>
<td>7</td>
<td>*</td>
</tr>
<tr>
<td>Other dental employment</td>
<td>47</td>
<td>2</td>
</tr>
</tbody>
</table>

* Less than one-half of one percent.

Almost one in every ten active dentists reported one or more secondary dental activities in addition to his principal professional engagement. Part-time teaching in a dental school was the most frequently reported secondary employment. Over two-fifths of those with secondary employment reported a faculty appointment. About one in every seven of these dentists, most of whom are primarily in practice for themselves, are employed in the private practices of other dentists on a part-time basis. A variety of other secondary dental activities were reported, such as serving as consultants to the Veterans Administration or the Armed Forces, and providing dental care for patients in hospitals, handicapped persons or children in orphan homes.

Activity last year.—Among dentists responding to the survey, 2,331 reported on their professional activity in Texas last year. Of these, 98 percent said they provided care to patients (Table 10). The time spent by these dentists accounted for 95 percent of all time devoted to professional activities in Texas for the year. Six percent of the dentists reported they spent some time in teaching, but only 2 percent of
total professional time was spent at this activity. While 2 percent of the dentists were engaged in research activities and 3 percent spent time in some other dental activity, such as taking additional training, only 3 percent of the total reported professional time was spent in these two types of activities.

Table 10.--Professional Activity Last Year

<table>
<thead>
<tr>
<th>Type of activity</th>
<th>Dentists reporting activity last year</th>
<th>Percent of total professional time</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percent</td>
</tr>
<tr>
<td>Total</td>
<td>2,331(^1/)</td>
<td>100(^1/)</td>
</tr>
<tr>
<td>Patient care</td>
<td>2,276</td>
<td>98</td>
</tr>
<tr>
<td>Teaching</td>
<td>135</td>
<td>6</td>
</tr>
<tr>
<td>Research</td>
<td>38</td>
<td>2</td>
</tr>
<tr>
<td>Other</td>
<td>73</td>
<td>3</td>
</tr>
</tbody>
</table>

\(^1/\) Individual items add to more than total because some dentists spent time in more than one activity.

Dentists reporting on time spent last year in providing patient care devoted an average of 47.2 weeks to this activity and worked an average of 40.6 hours per week. Three-fifths of these dentists spent 40 hours or more a week at this activity for at least 48 weeks of the year (Table 11). Only 16 percent devoted under 35 hours per week or worked less than 40 weeks at this activity during the course of the year. Exceptionally long hours were devoted to the treatment of patients by 15 percent of the dentists, who spent the equivalent of 8 hours a day, 6 days a week at this activity for 48 weeks or more during the year.

Table 11.--Time Spent in Patient Care Last Year

<table>
<thead>
<tr>
<th>Weeks spent in patient care</th>
<th>Percent of dentists providing care</th>
<th>Percent distribution by work week</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>48 hours 41-47 hours 40 hours 35-39 Under</td>
</tr>
<tr>
<td></td>
<td></td>
<td>or more hours hours hours 35 hrs.</td>
</tr>
<tr>
<td>Total reporting time spent</td>
<td>100</td>
<td>17 20 34 17 12</td>
</tr>
<tr>
<td>50 weeks or more</td>
<td>52</td>
<td>11 11 18 7 5</td>
</tr>
<tr>
<td>48 - 49 weeks</td>
<td>29</td>
<td>4 6 10 6 3</td>
</tr>
<tr>
<td>40 - 47 weeks</td>
<td>14</td>
<td>1 2 5 3 3</td>
</tr>
<tr>
<td>Less than 40 weeks</td>
<td>5</td>
<td>1 1 1 1 1</td>
</tr>
</tbody>
</table>
Practice Characteristics

Limited practices.--Dentists reporting that they limit their practices to a dental specialty number 372, or approximately 16 percent of the respondents. Over two-thirds of these dentists reported limiting their practices to one of two specialty areas--43 percent in orthodontics and 25 percent in oral surgery.

More than 9 of every 10 dentists who reported that their practices are limited are located in one of the state's metropolitan areas. Nineteen percent of the dentists in the metropolitan areas reported limited practices, whereas only 6 percent of the dentists in the nonmetropolitan counties limit their practices. Among the metropolitan areas, Lubbock and Wichita Falls have the largest proportions of practitioners with limited practices. One quarter of the dentists in these areas reported limiting their practices. Even though proportionately fewer dentists in the four largest metropolitan areas are specialists, there are large numbers of specialists in the Houston Dallas, Fort Worth and San Antonio areas.

Use of auxiliaries.--About 89 percent of the dental practitioners in Texas (i.e., responding dentists who reported they spend any time working at the chair) say that they employ auxiliary personnel (Table 12). The vast majority, 83 percent, of the practitioners employ at least one auxiliary full time, while only 6 percent employ part-time auxiliaries exclusively. Of the various types of personnel, dental assistants are those most frequently employed. Approximately 84 percent of the practitioners employ an assistant, including 78 percent who use one full time. Almost one-third of all practitioners employ secretaries or receptionists, and the majority employ at least one on a full-time basis. Dental hygienists and laboratory technicians are much less frequently utilized by dentists in Texas, and they are more likely to be employed on a part-time basis than are assistants and secretaries.

Table 12.--Dental Practitioners Employing Auxiliaries, by Type of Auxiliary

<table>
<thead>
<tr>
<th>Type of auxiliary</th>
<th>Percent of dental practitioners</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Dental practitioners</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>2,467</td>
</tr>
<tr>
<td>With no auxiliary</td>
<td>273</td>
</tr>
<tr>
<td>With one or more auxiliaries</td>
<td>2,194</td>
</tr>
<tr>
<td>With assistant</td>
<td>2,075</td>
</tr>
<tr>
<td>With hygienist</td>
<td>357</td>
</tr>
<tr>
<td>With laboratory technician</td>
<td>217</td>
</tr>
<tr>
<td>With secretary or receptionist</td>
<td>777</td>
</tr>
<tr>
<td>With other type of personnel</td>
<td>101</td>
</tr>
</tbody>
</table>
The use of auxiliaries varies with the age of the dentist (Table 13). Well over 90 percent of the dental practitioners between the ages of 30 and 44 employ some type of auxiliary. Among dentists 65 years old and over, the proportion using auxiliaries drops to 60 percent. Dental practitioners reach peak utilization of assistants between the ages of 30 and 44, but they are between the ages of 35 and 54 before maximum utilization of hygienists is attained.

Table 13.--Dental Practitioners Employing Auxiliaries, by Age

<table>
<thead>
<tr>
<th>Age</th>
<th>With auxiliaries</th>
<th>With assistants</th>
<th>With hygienists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 30</td>
<td>86</td>
<td>84</td>
<td>8</td>
</tr>
<tr>
<td>30 - 34</td>
<td>95</td>
<td>91</td>
<td>13</td>
</tr>
<tr>
<td>35 - 44</td>
<td>95</td>
<td>92</td>
<td>17</td>
</tr>
<tr>
<td>45 - 54</td>
<td>91</td>
<td>87</td>
<td>16</td>
</tr>
<tr>
<td>55 - 64</td>
<td>79</td>
<td>69</td>
<td>14</td>
</tr>
<tr>
<td>65 &amp; over</td>
<td>60</td>
<td>49</td>
<td>7</td>
</tr>
</tbody>
</table>

Dentists in metropolitan areas employ auxiliaries only slightly more frequently than do those in nonmetropolitan counties. On the average, 90 percent of the dental practitioners in the metropolitan areas employ some type of auxiliary personnel. Moreover, in each of the individual 21 metropolitan areas at least four-fifths of the dentists utilize auxiliaries. On the average, 86 percent of the practitioners in the nonmetropolitan counties utilize auxiliaries. In most of the individual nonmetropolitan counties the employment of dental auxiliaries is quite frequent.

Practitioners in metropolitan areas and in nonmetropolitan counties employ assistants and laboratory technicians at about the same rate. In metropolitan areas 85 percent of the dentists employ assistants and 9 percent employ technicians, while in nonmetropolitan counties 81 percent employ assistants and 7 percent employ technicians. The most pronounced difference is in the utilization of hygienists—16 percent of the practitioners in the metropolitan areas employ these auxiliaries, compared to only 8 percent of the dentists located in nonmetropolitan counties.

About 14 percent of the responding dentists in Texas reported one or more vacant positions for auxiliary personnel. Of those reporting vacancies, about 35 percent indicated a need for full-time hygienists and 33 percent stated a desire for full-time dental assistants. Nine of every 10 dentists reporting a vacancy already employ an auxiliary.
Weeks and hours worked. — Although 88 percent of all responding dentists who were in private practice reported on the amount of time they had spent in their practices in the previous year, the percentage reporting is low for dentists 55 years old and over. Since those not responding are likely to be those who are least active, the estimates on time worked by dentists in this age group are probably high. Even so, the figures in Table 14 demonstrate the greatly reduced activity among older dentists. Thus, about 64 percent of the dentists under 45 report working at least 48 weeks and at least 40 hours per week. In comparison 52 percent of the dentists between 55 and 64, and only 35 percent of those 65 and over, report working this amount of time.

<table>
<thead>
<tr>
<th>Age</th>
<th>Dentists reporting time spent in practice</th>
<th>Percent working</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percent of total</td>
</tr>
<tr>
<td>Total</td>
<td>1,952</td>
<td>88</td>
</tr>
<tr>
<td>Under 35</td>
<td>459</td>
<td>93</td>
</tr>
<tr>
<td>35 - 44</td>
<td>738</td>
<td>92</td>
</tr>
<tr>
<td>45 - 54</td>
<td>394</td>
<td>89</td>
</tr>
<tr>
<td>55 - 64</td>
<td>219</td>
<td>83</td>
</tr>
<tr>
<td>65 &amp; over</td>
<td>94</td>
<td>64</td>
</tr>
</tbody>
</table>

Out-of-state Civilian Dentists

Texas licenses are maintained by at least 227 civilian dentists located in 33 states, the District of Columbia, and in foreign countries. Thirty-five percent of these out-of-state dentists are located in the four adjacent states, primarily in Oklahoma (Table 15). Missouri, California, and Illinois are the only more distant states in which more than 10 of the out-of-state dentists are currently located. Approximately 42 percent of the out-of-state dentists are graduates of Baylor University or the University of Texas.
Table 15.--Out-of-State Civilian Dentists, by Present Location

<table>
<thead>
<tr>
<th>Present location</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>227</td>
<td>100</td>
</tr>
<tr>
<td>Adjacent states</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oklahoma</td>
<td>42</td>
<td>19</td>
</tr>
<tr>
<td>New Mexico</td>
<td>16</td>
<td>7</td>
</tr>
<tr>
<td>Louisiana</td>
<td>12</td>
<td>5</td>
</tr>
<tr>
<td>Arkansas</td>
<td>10</td>
<td>4</td>
</tr>
<tr>
<td>Nonadjacent states</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Missouri</td>
<td>14</td>
<td>6</td>
</tr>
<tr>
<td>California</td>
<td>13</td>
<td>6</td>
</tr>
<tr>
<td>Illinois</td>
<td>12</td>
<td>5</td>
</tr>
<tr>
<td>Ohio</td>
<td>10</td>
<td>4</td>
</tr>
<tr>
<td>26 other states and abroad</td>
<td>98</td>
<td>44</td>
</tr>
</tbody>
</table>

1/ Includes nonresponding dentists.

The out-of-state dentists are younger than those presently in Texas. While only 25 percent of the dentists located in Texas were under 35 years of age in 1965, 37 percent of the out-of-state dentists were in this young age group. Furthermore, only 16 percent of the out-of-state dentists were 55 years old or over, as compared with 23 percent of the in-state dentists.

Of the 227 out-of-state dentists, 154, or 68 percent, responded to the survey. Ninety-eight percent of these respondents reported that they are professionally active. The majority, 80 percent, are in private practice. About 9 percent are employed by governmental agencies, 3 percent are on the staffs of dental schools and the remaining 6 percent are engaged in other dental activities, such as taking advanced training.

About one of every five out-of-state respondents reported they had formerly been professionally active in Texas immediately prior to assuming their present location in another state. Almost one-third of the 32 reporting out-migrant dentists are now located in one of the four adjacent states--Arkansas, Louisiana, Oklahoma and New Mexico--and the remaining two-thirds are scattered in 16 other states across the Nation.
Appendix Table A.---Summary Statistics for Texas

<table>
<thead>
<tr>
<th>Description</th>
<th>Total Dentists</th>
<th>Responding Dentists</th>
<th>Nonresponding Dentists</th>
</tr>
</thead>
</table>
| Total dentists licensed in Texas | 4,160 | 2,923 | 1,257
e
| Civilian dentists in Texas\(^2\) (designated simply as "dentists" in text tables) | 3,610 | 2,518 | 1,092 |
| Professionally active dentists\(^3\) | 3,454 | 2,473 | 981 |
| Dental practitioners\(^4\) | - | 2,467 | - |
| In limited practice\(^5\) | - | 377 | - |
| Located in Texas last year: | | | |
| Reported professional activity\(^6\) | - | 2,331 | - |
| Dentists providing patient care\(^7\) | - | 2,276 | - |
| Reported time spent in patient care\(^8\) | - | 2,022 | - |
| Dentists in private practice\(^9\) | - | 2,212 | - |
| Reported time spent in practice\(^10\) | - | 1,952 | - |
| Civilian dentists in another State | 227 | 154 | 73 |
| Dentists on active duty in Armed Forces | 279 | 187 | 92 |

\(^1\) Data for nonresponding dentists were obtained from the Texas State Board of Dental Examiners, and from the 1965 American Dental Directory published by the American Dental Association.

\(^2\) All dentists who currently work in Texas (excluding those in the Armed Forces) or who are retired and currently live in the State. Data are not available for the following: year of graduation - 122, age - 185, dental school attended - 65.

\(^3\) All active civilian dentists currently in Texas--excludes 25 dentists who are fully retired, 9 who are engaged principally in nondental activity, and 122 whose principal current activity is unknown.

\(^4\) All responding dentists practicing at the chair, that is, dentists who work as clinicians either as primary or secondary activity.

\(^5\) Dentists who reported they limited their practice to a dental specialty.

\(^6\) Dentists located in Texas last year who indicated type(s) of activity in which they engaged.

\(^7\) All responding dentists who engaged in patient care last year, either as a primary or secondary activity.

\(^8\) Dentists reporting both hours and weeks spent in patient care last year.

\(^9\) Dentists who reported they were primarily self-employed both currently and last year.

\(^10\) Dentists reporting both hours and weeks spent last year as a self-employed dentist.
Appendix Table B.--Selected Data for Metropolitan Areas, by Region

<table>
<thead>
<tr>
<th>Region and metropolitan area</th>
<th>Number of counties</th>
<th>Number of Civilian dentists</th>
<th>Percent distribution by age professionally active per active dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Number</td>
<td>Percent</td>
</tr>
<tr>
<td>All counties</td>
<td>254</td>
<td>3,610</td>
<td>100</td>
</tr>
<tr>
<td>East Texas</td>
<td>66</td>
<td>1,306</td>
<td>36</td>
</tr>
<tr>
<td>Metropolitan areas</td>
<td>10</td>
<td>1,075</td>
<td>28</td>
</tr>
<tr>
<td>Houston</td>
<td>5</td>
<td>759</td>
<td>21</td>
</tr>
<tr>
<td>Beaumont-Port Arthur</td>
<td>2</td>
<td>123</td>
<td>3</td>
</tr>
<tr>
<td>Galveston-Texas City</td>
<td>1</td>
<td>54</td>
<td>2</td>
</tr>
<tr>
<td>Tyler</td>
<td>1</td>
<td>47</td>
<td>1</td>
</tr>
<tr>
<td>Texarkana</td>
<td>1</td>
<td>22</td>
<td>1</td>
</tr>
<tr>
<td>Nonmetropolitan counties</td>
<td>56</td>
<td>301</td>
<td>8</td>
</tr>
<tr>
<td>North Central Texas</td>
<td>39</td>
<td>1,200</td>
<td>33</td>
</tr>
<tr>
<td>Metropolitan areas</td>
<td>8</td>
<td>1,021</td>
<td>28</td>
</tr>
<tr>
<td>Dallas</td>
<td>4</td>
<td>596</td>
<td>16</td>
</tr>
<tr>
<td>Fort Worth</td>
<td>2</td>
<td>254</td>
<td>7</td>
</tr>
<tr>
<td>Austin</td>
<td>1</td>
<td>120</td>
<td>3</td>
</tr>
<tr>
<td>Waco</td>
<td>1</td>
<td>51</td>
<td>2</td>
</tr>
<tr>
<td>Nonmetropolitan counties</td>
<td>31</td>
<td>179</td>
<td>5</td>
</tr>
<tr>
<td>South Texas</td>
<td>31</td>
<td>444</td>
<td>12</td>
</tr>
<tr>
<td>Metropolitan areas</td>
<td>6</td>
<td>370</td>
<td>10</td>
</tr>
<tr>
<td>San Antonio</td>
<td>2</td>
<td>245</td>
<td>7</td>
</tr>
<tr>
<td>Corpus Christi</td>
<td>2</td>
<td>96</td>
<td>2</td>
</tr>
<tr>
<td>Brownsville-Harlingen-San Benito</td>
<td>1</td>
<td>23</td>
<td>1</td>
</tr>
<tr>
<td>Laredo</td>
<td>1</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>Nonmetropolitan counties</td>
<td>25</td>
<td>74</td>
<td>2</td>
</tr>
<tr>
<td>Region and metropolitan area</td>
<td>Number of counties</td>
<td>Civilian dentists/</td>
<td>Percent distribution by age</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>--------------------</td>
<td>-------------------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Number</td>
<td>Percent</td>
</tr>
<tr>
<td>West Texas</td>
<td>118</td>
<td>660</td>
<td>19</td>
</tr>
<tr>
<td>Metropolitan areas</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>El Paso</td>
<td>1</td>
<td>93</td>
<td>3</td>
</tr>
<tr>
<td>Amarillo</td>
<td>2</td>
<td>67</td>
<td>2</td>
</tr>
<tr>
<td>Lubbock</td>
<td>1</td>
<td>63</td>
<td>2</td>
</tr>
<tr>
<td>Wichita Falls</td>
<td>2</td>
<td>54</td>
<td>1</td>
</tr>
<tr>
<td>Abilene</td>
<td>2</td>
<td>53</td>
<td>1</td>
</tr>
<tr>
<td>Midland</td>
<td>1</td>
<td>27</td>
<td>1</td>
</tr>
<tr>
<td>San Angelo</td>
<td>1</td>
<td>31</td>
<td>1</td>
</tr>
<tr>
<td>Nonmetropolitan counties</td>
<td>107</td>
<td>246</td>
<td>7</td>
</tr>
</tbody>
</table>

* Less than one-half of one percent.

/ Includes respondents and nonrespondents.
### Appendix Table C.--County Data by Region and Metropolitan Area

<table>
<thead>
<tr>
<th>Region, metropolitan area and county</th>
<th>Civilian dentists</th>
<th>Professionally active dentists</th>
<th>Population (in 000's)</th>
<th>Persons per active dentist</th>
</tr>
</thead>
<tbody>
<tr>
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1/ Includes dentists in practice, private practice in partnership, and in dental schools.
2/ Population figures are from the 1980 Census of Population.
## Appendix Table C.--County Data by Region and Metropolitan Area (continued)

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<tr>
<td>Real</td>
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<td>Reeves</td>
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<td>Runnels</td>
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<td>San Saba</td>
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<tr>
<td>Schleicher</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<tr>
<td>Scurry</td>
<td>4</td>
<td>4</td>
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<tr>
<td>Shackelford</td>
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<td>1</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Sherman</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<tr>
<td>Stephens</td>
<td>3</td>
<td>2</td>
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<td>2</td>
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<tr>
<td>Sterling</td>
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<td>Stonewall</td>
<td>-</td>
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</tr>
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</table>
### Appendix Table C.--County Data by Region and Metropolitan Area (continued)

<table>
<thead>
<tr>
<th>Region, metropolitan area and county</th>
<th>Civilian dentists (^1/)</th>
<th>Professional active dentists</th>
<th>Population (^2/)</th>
<th>Persons per active dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total Respondents</td>
<td>Non-respondents</td>
<td>Total Respondents</td>
<td>Non-respondents</td>
</tr>
<tr>
<td>West Texas (cont'd.)</td>
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<td></td>
</tr>
<tr>
<td>Nonmetropolitan counties (cont'd.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sutton</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
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<td>Swisher</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Terrell</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Terry</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Throckmorton</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Upton</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Uvalde</td>
<td>4</td>
<td>1</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Val Verde</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Ward</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Wheeler</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Wilbarger</td>
<td>6</td>
<td>4</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Winkler</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Yoakum</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Young</td>
<td>7</td>
<td>5</td>
<td>7</td>
<td>5</td>
</tr>
</tbody>
</table>

\(^1/\) The number of dentists indicates: for each county includes responding dentists reporting location in that county and nonresponding dentists who according to obtainable information were located in that county. Based on this information 47 counties apparently had no civilian dentists in 1965.

\(^2/\) Copyright 1963. Sales Management Survey of Buying Power; further reproduction is forbidden.
DENTISTS LICENSED IN UTAH

During the 1966 registration period, 1,094 dentists registered with the Utah Department of Registration. Fifty-five percent of these dentists are civilians located in Utah, 42 percent are civilians located in other States, and 3 percent are on active duty with the Armed Forces.

The survey questionnaire was completed by 882 dentists, 81 percent of the total registered. Information provided by the survey respondents has been supplemented, when possible, by data on location, age, dental school attended, and year of graduation for dentists not responding to the survey. This information was obtained either from records maintained by the Utah Department of Registration or from the 1967 American Dental Directory published by the American Dental Association.

### Location and Military Status of Dentists Licensed in Utah

<table>
<thead>
<tr>
<th>Location and military status</th>
<th>All dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total licensed</td>
<td>1,094</td>
<td>100</td>
</tr>
<tr>
<td>Respondents</td>
<td>882</td>
<td>81</td>
</tr>
<tr>
<td>Nonrespondents</td>
<td>212</td>
<td>19</td>
</tr>
<tr>
<td>Total licensed</td>
<td>1,094</td>
<td>100</td>
</tr>
<tr>
<td>Civilians in Utah</td>
<td>598</td>
<td>55</td>
</tr>
<tr>
<td>Respondents</td>
<td>480</td>
<td>-</td>
</tr>
<tr>
<td>Nonrespondents</td>
<td>118</td>
<td>-</td>
</tr>
<tr>
<td>Civilians in another State</td>
<td>466</td>
<td>42</td>
</tr>
<tr>
<td>On active duty with Armed Forces</td>
<td>30</td>
<td>3</td>
</tr>
</tbody>
</table>

Approximately three-fourths of the survey respondents hold licenses to practice dentistry in one or more other States. Of the responding dentists located in Utah, over one-half have more than one license, with 42 percent licensed in one other State and 11 percent licensed in at least two other States. Multiple licensure is considerably more common among out-of-State dentists. Three in every ten (31 percent) hold two or more licenses in addition to their Utah license.

Survey respondents hold a total of 1,755 licenses, an average of almost two per dentist. Almost one-half of the licenses held outside of Utah were issued by the State of California. The remainder are held in 26 other States across the Nation.
Approximately three-fifths (57 percent) of the 598 dentists in Utah obtained their dental degrees from 14 schools located in the North Central States. Northwestern University, the major contributor, has provided one-fifth (21 percent) of the State's dentists. The University of Missouri has trained 12 percent, while Loyola University of Chicago and Washington University at St. Louis have each provided 6 percent. Case Western Reserve University is the only other school in the North Central States to have provided as many as 20 of Utah's dentists.

### Dental School Attended and Year of Graduation for Dentists in Utah

<table>
<thead>
<tr>
<th>Dental school attended</th>
<th>Number of dentists</th>
<th>Year of graduation</th>
<th>All</th>
<th>After 1941-1940</th>
<th>1955</th>
<th>1955 or earlier</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number</td>
<td>598</td>
<td></td>
<td>211</td>
<td>222</td>
<td>161</td>
<td></td>
</tr>
<tr>
<td>Schools in North Central States</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Northwestern</td>
<td>126</td>
<td>21</td>
<td>24</td>
<td>21</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>Missouri</td>
<td>65</td>
<td>12</td>
<td>13</td>
<td>12</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Loyola (Chicago)</td>
<td>37</td>
<td>6</td>
<td>6</td>
<td>3</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Washington (St. Louis)</td>
<td>37</td>
<td>6</td>
<td>9</td>
<td>6</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>10 other schools</td>
<td>70</td>
<td>12</td>
<td>17</td>
<td>9</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Schools in Western States</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Southern California</td>
<td>82</td>
<td>14</td>
<td>4</td>
<td>18</td>
<td>21</td>
<td></td>
</tr>
<tr>
<td>Oregon</td>
<td>54</td>
<td>9</td>
<td>5</td>
<td>14</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>5 other schools</td>
<td>78</td>
<td>13</td>
<td>13</td>
<td>12</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>11 schools in other States</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>44</td>
<td>7</td>
<td>9</td>
<td>5</td>
<td>8</td>
<td></td>
</tr>
</tbody>
</table>

1/ Dental school attended not available for 1 dentist and year of graduation for 4 dentists. Percents based on known totals.

Seven schools located in the Western States have graduated 36 percent of the dentists in Utah. The University of Southern California has contributed the largest proportion of these dentists, 14 percent of the State total, and the University of Oregon has contributed 9 percent. Only two other schools in the West--the University of California at San Francisco and the University of Washington--have supplied as many as 20 of the State's dentists. The remaining 7 percent are graduates of 11 schools located in the Southern or the Northeastern States.
DISTRIBUTION OF DENTISTS

More than four-fifths (82 percent) of the 598 dentists in Utah are located in the three metropolitan areas of the State. The 2-county Salt Lake City area alone has 336 dentists, almost three-fifths of the total dental force. Nine of every ten (297) of these dentists are in Salt Lake County, with the remaining 39 in Davis County. The Ogden and Provo-Orem metropolitan areas have 14 percent and 11 percent of the State's dentist supply, respectively.

<table>
<thead>
<tr>
<th>County group</th>
<th>Number of counties</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>All counties</td>
<td>29</td>
<td>598</td>
<td>100</td>
</tr>
<tr>
<td>Metropolitan areas</td>
<td>4</td>
<td>486</td>
<td>82</td>
</tr>
<tr>
<td>Salt Lake City area</td>
<td>2</td>
<td>336</td>
<td>57</td>
</tr>
<tr>
<td>Ogden area</td>
<td>1</td>
<td>86</td>
<td>14</td>
</tr>
<tr>
<td>Provo-Orem area</td>
<td>1</td>
<td>64</td>
<td>11</td>
</tr>
<tr>
<td>Nonmetropolitan counties</td>
<td>25</td>
<td>112</td>
<td>18</td>
</tr>
<tr>
<td>Central city 10,000-24,999</td>
<td>2</td>
<td>42</td>
<td>7</td>
</tr>
<tr>
<td>Central city 5,000-9,999</td>
<td>4</td>
<td>31</td>
<td>5</td>
</tr>
<tr>
<td>Central city 2,500-4,999</td>
<td>5</td>
<td>19</td>
<td>3</td>
</tr>
<tr>
<td>Central city under 2,500</td>
<td>14</td>
<td>20</td>
<td>3</td>
</tr>
</tbody>
</table>

* See Appendix Table for definition of metropolitan areas and presentation of individual county data.

Only 18 percent of Utah's dentists are located in the 25 nonmetropolitan counties. Almost two-fifths of these dentists are located in the two counties--Cache and Box Elder--with central city populations between 10,000 and 24,999.

The 23 counties with fewer than 10,000 persons in their central cities have 11 percent of the State's supply of dentists. There are 50 dentists in the nine counties having between 2,500 and 9,999 persons in their central cities, while only 20 are scattered among the 14 counties with central city populations under 2,500. Only six of these 23 counties have as many as five dentists, while 11 have fewer than three, including five counties with no dentists, according to available information.
AGE DISTRIBUTION

Dentists in Utah are rather young as a group, with a median age of 42.3 years. About one-fourth (23 percent) of the dentists are under 35 years of age, and an almost equal proportion are 55 or older. Over one-half of the dentists (55 percent) are between 35 and 54 years of age, with 38 percent between 35 and 44. Approximately 13 percent, or 79 dentists, are 65 or older, including 48 who have reached age 70.

<table>
<thead>
<tr>
<th>Age in 1965</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
<th>Cumulative percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>598</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Under 30</td>
<td>37</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>30 - 34</td>
<td>100</td>
<td>17</td>
<td>23</td>
</tr>
<tr>
<td>35 - 39</td>
<td>104</td>
<td>18</td>
<td>41</td>
</tr>
<tr>
<td>40 - 44</td>
<td>121</td>
<td>20</td>
<td>61</td>
</tr>
<tr>
<td>45 - 49</td>
<td>74</td>
<td>13</td>
<td>74</td>
</tr>
<tr>
<td>50 - 54</td>
<td>25</td>
<td>4</td>
<td>78</td>
</tr>
<tr>
<td>55 - 59</td>
<td>16</td>
<td>3</td>
<td>81</td>
</tr>
<tr>
<td>60 - 64</td>
<td>36</td>
<td>6</td>
<td>87</td>
</tr>
<tr>
<td>65 - 69</td>
<td>31</td>
<td>5</td>
<td>92</td>
</tr>
<tr>
<td>70 - 74</td>
<td>28</td>
<td>5</td>
<td>97</td>
</tr>
<tr>
<td>75 &amp; over</td>
<td>20</td>
<td>3</td>
<td>100</td>
</tr>
</tbody>
</table>

1/ Age not available for 6 dentists. Percents based on total for whom age is known.

The overall median age of dentists in the metropolitan areas is about equal to the median age of those in the nonmetropolitan counties. Among metropolitan areas, dentists in the Salt Lake City area are slightly younger, on the average, than dentists in the Ogden and Provo-Orem areas.
ACTIVE DENTISTS IN RELATION TO POPULATION

Of 598 licensed dentists in Utah, 553, or 92 percent, are active in their profession, giving the State one professionally active dentist for every 1,805 persons. In the metropolitan areas, there is one dentist for every 1,676 persons, while the nonmetropolitan counties have a considerably higher ratio of 2,387 persons per dentist.

### Number of Persons Per Active Dentist in Utah

<table>
<thead>
<tr>
<th>County group*</th>
<th>Professionally active dentists</th>
<th>Population</th>
<th>Persons per dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td>All counties</td>
<td>553</td>
<td>998,000</td>
<td>1,805</td>
</tr>
<tr>
<td>Metropolitan areas</td>
<td>453</td>
<td>759,300</td>
<td>1,676</td>
</tr>
<tr>
<td>Salt Lake City area</td>
<td>312</td>
<td>519,700</td>
<td>1,666</td>
</tr>
<tr>
<td>Ogden area</td>
<td>82</td>
<td>121,600</td>
<td>1,483</td>
</tr>
<tr>
<td>Provo-Orem area</td>
<td>59</td>
<td>118,000</td>
<td>2,000</td>
</tr>
<tr>
<td>Nonmetropolitan counties</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Central city 10,000-24,999</td>
<td>100</td>
<td>238,700</td>
<td>2,387</td>
</tr>
<tr>
<td>Central city 5,000-9,999</td>
<td>38</td>
<td>75,400</td>
<td>1,984</td>
</tr>
<tr>
<td>Central city 2,500-4,999</td>
<td>28</td>
<td>60,600</td>
<td>2,164</td>
</tr>
<tr>
<td>Central city under 2,500</td>
<td>16</td>
<td>35,800</td>
<td>2,425</td>
</tr>
</tbody>
</table>

* See Appendix Table for individual county data.

Among the three metropolitan areas, Ogden has the best ratio with 1,483 persons per dentist. The 2-county Salt Lake City area has the next best ratio, 1,666, while the Provo-Orem area has 2,000 persons for every dentist.

Among the 25 nonmetropolitan counties, six have ratios under 2,000, while nine have more than 3,000 persons per dentist. When counties are grouped according to the size of their central city, the ratio of persons per dentist generally becomes less favorable as the size of the central city decreases. The group of counties with central city populations between 10,000 and 24,999 has an average of 1,984 persons per dentist, while counties with fewer than 2,500 inhabitants in their central cities average one active dentist for every 3,550 persons.
UTILIZATION OF AUXILIARIES

Slightly more than four-fifths of Utah's responding dental practitioners (i.e., dentists who spend any time working at the chair) reported that they employ some type of auxiliary personnel. Dental assistants, the most frequently employed auxiliary, are utilized by 76 percent of the dentists, with 70 percent employing full-time assistants. One in every six practitioners reported the employment of a secretary or receptionist, usually on a full-time basis. Dental hygienists are utilized by about 10 percent of the dentists, and laboratory technicians by 6 percent. Very few dentists have full-time hygienists or laboratory technicians.

<table>
<thead>
<tr>
<th>Type of auxiliary employed</th>
<th>Dental practitioners</th>
<th>Percent of dental practitioners</th>
<th>With one full-time employee</th>
<th>With only part-time employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>461</td>
<td>100</td>
<td>74</td>
<td>7</td>
</tr>
<tr>
<td>One or more auxiliaries</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assistant</td>
<td>364</td>
<td>81</td>
<td>74</td>
<td>7</td>
</tr>
<tr>
<td>Hygienist</td>
<td>343</td>
<td>76</td>
<td>70</td>
<td>6</td>
</tr>
<tr>
<td>Laboratory technician</td>
<td>45</td>
<td>10</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>Secretary or receptionist</td>
<td>28</td>
<td>6</td>
<td>*</td>
<td>6</td>
</tr>
<tr>
<td>Other type of personnel</td>
<td>72</td>
<td>16</td>
<td>10</td>
<td>6</td>
</tr>
<tr>
<td>No auxiliary</td>
<td>11</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

1/ Includes 11 dentists who did not report on auxiliary utilization.
* Less than one-half of 1 percent.

Utilization of auxiliaries varies with the age of the dentist and is less common among the older dentists. Approximately 86 percent of the dental practitioners under age 55 employ at least one auxiliary, as compared to 50 percent of those dentists 55 years of age or older. Young dentists just starting their practices do not reach peak utilization of assistants until they are at least 30 years of age, and of hygienists, until age 35.
OTHER SURVEY FINDINGS

Almost all (98 percent) of the responding professionally active dentists in Utah are engaged in private practice, with 97 percent self-employed and one percent employed by other dentists. The remaining 2 percent are employed by a governmental agency or are engaged in some other dental activity, such as taking advanced training.

Approximately 15 percent (71) of the survey respondents reported that they had completed one or more years of advanced training after receiving the dental degree. Fifty-four dentists reported the completion of a year or more of advanced academic training as graduate or postgraduate students, and 24 dentists had completed clinical training as interns or residents.

Dentists reporting on time spent in providing patient care during the year preceding the survey devoted an average of 43.2 hours per week to this activity for 48.0 weeks. One in every four dentists worked the equivalent of six days a week, 48 hours or more, for at least 48 weeks.

Ten percent of the responding dental practitioners reported that they limit their practice to a dental specialty, primarily to orthodontics. Practically all of the limited practitioners are located in the three metropolitan areas and in the two nonmetropolitan counties with central city populations between 10,000 and 24,999.

Of the responding dentists who are licensed in Utah but located in other States, more than three-fifths are located in California. The remaining out-of-State dentists are located in 25 other States, notably in Oregon, Idaho, Nevada and Arizona.

March 1969.
## APPENDIX TABLE

Selected Data on Dentists in Utah, By Location

<table>
<thead>
<tr>
<th>County group and county</th>
<th>Civilian dentists</th>
<th>Population1/ (in 000's)</th>
<th>Persons per active dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Respondents</td>
<td>Non-respondents</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>'1 counties</td>
<td>598</td>
<td>480</td>
<td>118</td>
</tr>
<tr>
<td>Metropolitan areas2/</td>
<td>486</td>
<td>387</td>
<td>99</td>
</tr>
<tr>
<td>Salt Lake City area</td>
<td>336</td>
<td>272</td>
<td>64</td>
</tr>
<tr>
<td>Davis</td>
<td>39</td>
<td>34</td>
<td>5</td>
</tr>
<tr>
<td>Salt Lake</td>
<td>797</td>
<td>238</td>
<td>59</td>
</tr>
<tr>
<td>Ogden area</td>
<td>86</td>
<td>65</td>
<td>21</td>
</tr>
<tr>
<td>Weber</td>
<td>86</td>
<td>65</td>
<td>21</td>
</tr>
<tr>
<td>Provo-Orem area</td>
<td>64</td>
<td>50</td>
<td>14</td>
</tr>
<tr>
<td>Utah</td>
<td>64</td>
<td>50</td>
<td>14</td>
</tr>
<tr>
<td>Nonmetropolitan counties3/112</td>
<td>93</td>
<td>19</td>
<td>28</td>
</tr>
<tr>
<td>Central city 10,000-24,999</td>
<td>42</td>
<td>34</td>
<td>8</td>
</tr>
<tr>
<td>Box Elder</td>
<td>17</td>
<td>15</td>
<td>2</td>
</tr>
<tr>
<td>Cache</td>
<td>25</td>
<td>19</td>
<td>6</td>
</tr>
</tbody>
</table>
### APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Utah, By Location

<table>
<thead>
<tr>
<th>County group and county</th>
<th>Civilian dentists</th>
<th>Population per active dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total respondents</td>
<td>Non-respondents</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nonmetropolitan counties</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Central city 5,000-9,999</td>
<td>31</td>
<td>26</td>
</tr>
<tr>
<td>Carbon</td>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td>Iron</td>
<td>8</td>
<td>7</td>
</tr>
<tr>
<td>Tooele</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Washington</td>
<td>11</td>
<td>8</td>
</tr>
<tr>
<td>Central city 2,500-4,999</td>
<td>19</td>
<td>17</td>
</tr>
<tr>
<td>Grand</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Juab</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Sevier</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Uintah</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Wasatch</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Central city under 2,500</td>
<td>20</td>
<td>16</td>
</tr>
<tr>
<td>Beaver</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Daggett</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Duchesne</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Emery</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Garfield</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Kane</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Millard</td>
<td>3</td>
<td>2</td>
</tr>
</tbody>
</table>
## Selected Data on Dentists in Utah, By Location

**APPENDIX TABLE (cont'd.)**

<table>
<thead>
<tr>
<th>County group and county</th>
<th>Civilian dentists</th>
<th>Persons per active dentist</th>
<th>Population in 000's</th>
<th>Age in 1965 Professionally active</th>
<th>Non-professionally active</th>
<th>Under 35</th>
<th>Over 55</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central city under 2,500 (cont'd.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Morgan</td>
<td>1</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>2.9</td>
</tr>
<tr>
<td>Piute</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1.3</td>
<td>-</td>
</tr>
<tr>
<td>Rich</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1.7</td>
<td>-</td>
</tr>
<tr>
<td>San Juan</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>10.8</td>
<td>3,600</td>
<td></td>
</tr>
<tr>
<td>Sanpete</td>
<td>4</td>
<td>4</td>
<td>1</td>
<td>1</td>
<td>4</td>
<td>9.9</td>
<td>2,475</td>
</tr>
<tr>
<td>Summit</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>5.2</td>
<td>5,200</td>
</tr>
<tr>
<td>Wayne</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1.5</td>
<td>-</td>
</tr>
</tbody>
</table>


2/ Utah counties included in the latest 1968 definition of Standard Metropolitan Statistical Areas, as established by the U.S. Bureau of the Budget, Office of Statistical Standards, have been grouped as metropolitan areas for presentation of the survey data.

3/ Counties not included within an SMSA, as defined by the U.S. Bureau of the Budget, have been grouped according to the latest 1960 population of the largest (central) city within each county.
DENTISTS LICENSED IN VERMONT

A total of 252 dentists registered with the Vermont Board of Dental Examiners in 1965 (Table 1). Of this total, 218 completed the questionnaire, for an overall response rate of 87 percent. The response rate for dentists actually located in Vermont was somewhat higher, since nonresponse was more frequent for those who were outside the State or on active duty with the Armed Forces.

Table 1.--Location and Military Status of Dentists Licensed in Vermont

<table>
<thead>
<tr>
<th>Location and military status</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>252</td>
<td>100</td>
</tr>
<tr>
<td>Respondents</td>
<td>218</td>
<td>87</td>
</tr>
<tr>
<td>Nonrespondents</td>
<td>34</td>
<td>13</td>
</tr>
<tr>
<td>Respondents</td>
<td>218</td>
<td>100</td>
</tr>
<tr>
<td>Civilians in Vermont</td>
<td>157</td>
<td>72</td>
</tr>
<tr>
<td>Civilians in another State</td>
<td>48</td>
<td>22</td>
</tr>
<tr>
<td>On active duty with Armed Forces</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>Not reported</td>
<td>3</td>
<td>1</td>
</tr>
</tbody>
</table>

As it was, more than a fourth of those responding are located outside the State. Nearly 50 are in another State or abroad and 10 dentists are on active duty with the Armed Forces. Of those located in another State, only five reported that they had formerly been located in Vermont.

Nearly 400 individual State licenses are held by dentists responding in the survey. About three-fifths of all licensed respondents hold licenses in one or more additional States. This total includes 12 percent who are licensed in two other States and 5 percent who hold licenses in three or more additional States.

Table 2.--Percent Holding Licenses in Other States

<table>
<thead>
<tr>
<th>Licenses held</th>
<th>Licensed dentists</th>
<th>Civilian dentists In Vermont</th>
<th>Civilian dentists Out-of-State</th>
<th>Armed Forces</th>
</tr>
</thead>
<tbody>
<tr>
<td>All respondents</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Vermont only</td>
<td>41</td>
<td>52</td>
<td>-</td>
<td>60</td>
</tr>
<tr>
<td>Licensed in 1 other State</td>
<td>42</td>
<td>38</td>
<td>56</td>
<td>30</td>
</tr>
<tr>
<td>Licensed in 2 other States</td>
<td>12</td>
<td>8</td>
<td>31</td>
<td>-</td>
</tr>
<tr>
<td>Licensed in 3 or more States</td>
<td>5</td>
<td>2</td>
<td>13</td>
<td>10</td>
</tr>
</tbody>
</table>
Although the majority of State licenses are held by dentists located outside the State, multiple licensure is very common among Vermont's own dentists as well. Nearly half of all dentists located in Vermont are licensed in one or more additional States--38 percent in one other State, 8 percent in two others, and 2 percent in three or more States.

Sources of Supply

Dental schools.--Graduates of 23 dental schools are represented among Vermont's dentists, including graduates of one Canadian school. Almost half of all dentists in the State, however, are graduates of Tufts (31 percent) or of Maryland (15 percent). Pennsylvania and McGill, with 11 graduates each, account for another 14 percent of the total. Of the remainder, 22 percent are accounted for by the five remaining schools--Georgetown, Temple, New York, Harvard and Nebraska--which have contributed 5 or more dentists to the State. In recent years Georgetown has joined Tufts and Maryland as one of the principal sources of the State's dentists. These three schools account for about 73 percent of all Vermont dentists who are graduates of the last 10 years.

Table 3.--School Awarding Dental Degree, by Year Awarded

<table>
<thead>
<tr>
<th>Dental school attended</th>
<th>Number of dentists</th>
<th>All years</th>
<th>Year of graduation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>After</td>
</tr>
<tr>
<td>Total number</td>
<td>157</td>
<td>-</td>
<td>32</td>
</tr>
</tbody>
</table>

(percentage distribution by school)

<table>
<thead>
<tr>
<th>Dental school attended</th>
<th>Number of dentists</th>
<th>All years</th>
<th>Year of graduation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>After</td>
</tr>
<tr>
<td>Tufts</td>
<td>48</td>
<td>31</td>
<td>44</td>
</tr>
<tr>
<td>Maryland</td>
<td>24</td>
<td>15</td>
<td>13</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>11</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>McGill</td>
<td>11</td>
<td>7</td>
<td>-</td>
</tr>
<tr>
<td>Georgetown</td>
<td>9</td>
<td>6</td>
<td>16</td>
</tr>
<tr>
<td>Temple</td>
<td>7</td>
<td>4</td>
<td>9</td>
</tr>
<tr>
<td>New York</td>
<td>7</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Harvard</td>
<td>6</td>
<td>4</td>
<td>-</td>
</tr>
<tr>
<td>Nebraska</td>
<td>6</td>
<td>4</td>
<td>-</td>
</tr>
<tr>
<td>Other schools</td>
<td>25</td>
<td>17</td>
<td>12</td>
</tr>
</tbody>
</table>

1/ Individual items in this and succeeding tables may not add to the totals shown due to the failure of some responding dentists to reply to all items on the questionnaire. Where percentages are shown, they are based on data supplied by dentists responding to the item.
Dentists relocating in Vermont.--Vermont has a relatively large number of dentists who have relocated from another State. About a fourth of all dentists currently located in Vermont report that they had previously been located elsewhere (Table 4). Nearly a third of these in-migrant dentists had moved from Massachusetts or other New England States. Among the 16 other States surrendering dentists to Vermont, only New York and New Jersey contributed a significant number.

Table 4.--In-migrant Dentists

<table>
<thead>
<tr>
<th>Last previous location</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>157</td>
<td>100</td>
</tr>
<tr>
<td>Previously located elsewhere</td>
<td>41</td>
<td>26</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>New Jersey</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>New York</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Other</td>
<td>25</td>
<td>16</td>
</tr>
<tr>
<td>Never located elsewhere</td>
<td>116</td>
<td>74</td>
</tr>
</tbody>
</table>

Personal Characteristics

Age and sex.--Vermont's dentists ranged in age from 27 to 86 in 1965. Their median age was 46.8. Approximately 30 percent of all dentists in Vermont were 55 years old or over (Table 5). Fifteen percent had

Table 5.--Sex and Age

<table>
<thead>
<tr>
<th>Sex and age</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>157</td>
<td>100</td>
</tr>
<tr>
<td>Male</td>
<td>154</td>
<td>99</td>
</tr>
<tr>
<td>Female</td>
<td>3</td>
<td>1</td>
</tr>
</tbody>
</table>

Age

<table>
<thead>
<tr>
<th>Age</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 30</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>30 - 34</td>
<td>15</td>
<td>10</td>
</tr>
<tr>
<td>35 - 39</td>
<td>24</td>
<td>16</td>
</tr>
<tr>
<td>40 - 44</td>
<td>26</td>
<td>17</td>
</tr>
<tr>
<td>45 - 49</td>
<td>24</td>
<td>16</td>
</tr>
<tr>
<td>50 - 54</td>
<td>12</td>
<td>8</td>
</tr>
<tr>
<td>55 - 59</td>
<td>17</td>
<td>11</td>
</tr>
<tr>
<td>60 - 64</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>65 - 69</td>
<td>13</td>
<td>8</td>
</tr>
<tr>
<td>70 - 74</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>75 &amp; over</td>
<td>7</td>
<td>4</td>
</tr>
</tbody>
</table>
reached 65 years of age. Included among the 24 dentists who made up the group were 11 dentists who were 70 years old or over, seven of whom had reached 75 years of age.

Only 3 of the 157 civilian dentists located in the State were women. Because they are so few in number, data are not presented separately by sex.

Advanced training.--Approximately 28 percent of Vermont's dentists have had some kind of advanced training (Table 6). Twenty-three percent have had advanced clinical training and 9 percent have completed at least one year of advanced academic training.

Table 6.--Advanced Training

<table>
<thead>
<tr>
<th>Highest level of training completed</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>157</td>
<td>100</td>
</tr>
<tr>
<td>With advanced training</td>
<td>44</td>
<td>28</td>
</tr>
<tr>
<td>With no advanced training</td>
<td>113</td>
<td>72</td>
</tr>
<tr>
<td>Clinical training</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residency completed</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Internship completed</td>
<td>31</td>
<td>20</td>
</tr>
<tr>
<td>Academic training</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ph.D., M.D., or other doctors</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>M.A., M.S., or other masters</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Postgraduate 1 year or more (no degree)</td>
<td>11</td>
<td>7</td>
</tr>
</tbody>
</table>

Distribution and Current Status

Distribution of dentists.--The largest concentration of dentists in Vermont is in Chittenden County, the largest county in the State (Table 7). Twenty-five percent of the State's dental force are located in this county, most of them in the city of Burlington.

The four other counties in the State which contain a city of 10,000 or more residents--Rutland, Washington, Windham, and Bennington counties--account for 43 percent of the State's total dental force. About 26 percent are located in the five counties with central cities of from 5 to 10 thousand population. Only six percent are located in counties in which all towns have fewer than 5,000 residents. One of the four counties in this size category--Grand Isle--has no dentists reporting.
Table 7.--Distribution, by County Group

<table>
<thead>
<tr>
<th>County size category</th>
<th>Number of counties</th>
<th>Total dentists</th>
<th>Age distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Number</td>
<td>Percent</td>
</tr>
<tr>
<td>All counties</td>
<td>14</td>
<td>157</td>
<td>100</td>
</tr>
<tr>
<td>Central city 25,000-49,999</td>
<td>1</td>
<td>39</td>
<td>25</td>
</tr>
<tr>
<td>Central city 10,000-24,999</td>
<td>4</td>
<td>67</td>
<td>43</td>
</tr>
<tr>
<td>Central city 5,000-9,999</td>
<td>5</td>
<td>40</td>
<td>26</td>
</tr>
<tr>
<td>Central city under 5,000</td>
<td>4</td>
<td>10</td>
<td>5</td>
</tr>
</tbody>
</table>

Active dentists in relation to population.--Nearly all dentists in Vermont report that they are active in the profession. About 92 percent are engaged in private practice and one percent are in other dental employment. The remaining 7 percent are either fully retired or are engaged exclusively in some nondental employment. Overall, there was one professionally active dentist for every 2,695 persons in the State (Table 8).

Table 8.--Distribution of Active Dentists

<table>
<thead>
<tr>
<th>County size category</th>
<th>Active civilian dentists</th>
<th>Civilian population</th>
<th>Persons per dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>147</td>
<td>396,200</td>
<td>2,695</td>
</tr>
<tr>
<td>Central city 25,000-49,999</td>
<td>38</td>
<td>80,500</td>
<td>2,118</td>
</tr>
<tr>
<td>Central city 10,000-24,999</td>
<td>62</td>
<td>146,200</td>
<td>2,358</td>
</tr>
<tr>
<td>Central city under 10,000</td>
<td>47</td>
<td>169,500</td>
<td>3,606</td>
</tr>
</tbody>
</table>

There are four counties in the State with dentist-population ratios more favorable than the State average. By county size group, the ratios range from 2,118 in Chittenden County to an average of 2,358 for counties containing a city of 10,000 to 24,999 and to 3,606 for counties which lack a city of 10,000 or more.
Practice Characteristics

Use of auxiliaries.--Three in every 4 dentists in active practice report that they employ auxiliary personnel of some type (Table 9). Of the various types of personnel, dental assistants are those most frequently employed. About 63 percent of all practitioners employ an assistant. More than a fourth of all practitioners employ dental hygienists and about a fifth have a secretary or receptionist.

<table>
<thead>
<tr>
<th>Type of auxiliary</th>
<th>Active practitioners</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
</tr>
<tr>
<td>Total</td>
<td>147</td>
</tr>
<tr>
<td>With no auxiliary</td>
<td>35</td>
</tr>
<tr>
<td>With one or more auxiliary</td>
<td>112</td>
</tr>
</tbody>
</table>

Number of dentists

|                                         | 63   |
| With assistant                          |     |
| With hygienist                          | 28   |
| With laboratory technician              | 5    |
| With secretary or receptionist          | 19   |
| With other type of personnel            | 4    |

Laboratory technicians are much less frequently used in dental practice. Only 1 dentist in 20 has a laboratory technician.

The use of auxiliaries varies strikingly with the age of dentists (Table 10). The percent with an auxiliary of any type ranges from 40 percent

<table>
<thead>
<tr>
<th>Age</th>
<th>Percent of age group</th>
<th>With auxiliaries</th>
<th>With assistants</th>
<th>With hygienists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 40</td>
<td></td>
<td>93</td>
<td>81</td>
<td>42</td>
</tr>
<tr>
<td>40 - 49</td>
<td></td>
<td>84</td>
<td>76</td>
<td>35</td>
</tr>
<tr>
<td>50 - 59</td>
<td></td>
<td>67</td>
<td>48</td>
<td>19</td>
</tr>
<tr>
<td>60 &amp; over</td>
<td></td>
<td>40</td>
<td>23</td>
<td>5</td>
</tr>
</tbody>
</table>
for those 60 and over to 93 percent for dentists under 40 years old. The percent employing dental assistants ranges from 23 percent for the older group to 81 percent for those under 40. The comparable range for dental hygienists is from three percent for older dentists to 42 percent for the youngest group.

Weeks and hours worked.—Of all dentists in practice in Vermont in 1965 (either as self-employed practitioners or as employees of other practicing dentists) a total of 139 reported that they had provided patient care in Vermont in the previous year. Approximately 79 percent of this group (110 dentists) reported on the number of weeks and hours they had worked during that year. The percent reporting was relatively low, however, for those 55 years old and over and, since those not responding were likely to be those who are least active, the estimates on time worked by dentists in the upper age range are probably high. Even so, the figures presented in Table 11 show how activity tapers off among older dentists. Only about three-fifths of those 55 to 64 years old reported that they worked an average of 40 hours or more for 48 weeks or more out of the year, and for those 65 years and over, this fraction dropped to two-fifths.

Table 11.—Patient Care Activity Last Year, by Age

<table>
<thead>
<tr>
<th>Age group</th>
<th>Number reporting</th>
<th>Percent reporting</th>
<th>Percent of those reporting</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>48 weeks or more</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>40 hrs/wk or more</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Part year or less</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>than 40 hrs/wk</td>
</tr>
<tr>
<td>Total</td>
<td>110</td>
<td>79</td>
<td>63</td>
</tr>
<tr>
<td>Under 45</td>
<td>58</td>
<td>88</td>
<td>67</td>
</tr>
<tr>
<td>45 - 54</td>
<td>30</td>
<td>94</td>
<td>63</td>
</tr>
<tr>
<td>55 - 64</td>
<td>12</td>
<td>55</td>
<td>58</td>
</tr>
<tr>
<td>65 &amp; over</td>
<td>10</td>
<td>59</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>60</td>
</tr>
</tbody>
</table>

April 1966.
## Appendix Table A.--County Data

<table>
<thead>
<tr>
<th>County</th>
<th>Civilian population (in 000's)</th>
<th>Active civilian dentists</th>
<th>Persons per dentist</th>
<th>Percent of active dentists Under 40</th>
<th>Percent of active dentists 55 years or more</th>
<th>Using auxiliaries</th>
</tr>
</thead>
<tbody>
<tr>
<td>All counties</td>
<td>396.2</td>
<td>147</td>
<td>2,695</td>
<td>30</td>
<td>10</td>
<td>76</td>
</tr>
<tr>
<td>Addison</td>
<td>20.4</td>
<td>7</td>
<td>2,914</td>
<td>14</td>
<td>14</td>
<td>71</td>
</tr>
<tr>
<td>Bennington</td>
<td>25.5</td>
<td>11</td>
<td>2,318</td>
<td>36</td>
<td>18</td>
<td>73</td>
</tr>
<tr>
<td>Caledonia</td>
<td>22.1</td>
<td>4</td>
<td>5,525</td>
<td>25</td>
<td>-</td>
<td>75</td>
</tr>
<tr>
<td>Chittenden</td>
<td>80.5</td>
<td>38</td>
<td>2,118</td>
<td>37</td>
<td>5</td>
<td>79</td>
</tr>
<tr>
<td>Essex</td>
<td>5.9</td>
<td>2</td>
<td>2,950</td>
<td>-</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>Franklin</td>
<td>29.2</td>
<td>8</td>
<td>3,650</td>
<td>38</td>
<td>-</td>
<td>50</td>
</tr>
<tr>
<td>Grand Isle</td>
<td>2.7</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Lamoille</td>
<td>10.9</td>
<td>3</td>
<td>3,633</td>
<td>-</td>
<td>-</td>
<td>33</td>
</tr>
<tr>
<td>Orange</td>
<td>15.5</td>
<td>5</td>
<td>3,100</td>
<td>60</td>
<td>-</td>
<td>100</td>
</tr>
<tr>
<td>Orleans</td>
<td>19.6</td>
<td>3</td>
<td>6,533</td>
<td>-</td>
<td>33</td>
<td>33</td>
</tr>
<tr>
<td>Rutland</td>
<td>47.6</td>
<td>20</td>
<td>2,380</td>
<td>35</td>
<td>5</td>
<td>80</td>
</tr>
<tr>
<td>Washington</td>
<td>42.9</td>
<td>15</td>
<td>2,860</td>
<td>20</td>
<td>20</td>
<td>73</td>
</tr>
<tr>
<td>Windham</td>
<td>30.2</td>
<td>16</td>
<td>1,888</td>
<td>25</td>
<td>19</td>
<td>94</td>
</tr>
<tr>
<td>Windsor</td>
<td>43.2</td>
<td>15</td>
<td>2,880</td>
<td>27</td>
<td>-</td>
<td>80</td>
</tr>
</tbody>
</table>
DENTISTS LICENSED IN VIRGINIA

During the 1965 registration period, 2,325 dentists registered with the Virginia State Board of Dental Examiners (Table 1). Sixty-eight percent of the registrants are civilians located in Virginia, another 25 percent are civilians located in other States, and 7 percent are on active duty in the Armed Forces.

<table>
<thead>
<tr>
<th>Location and military status</th>
<th>All dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total licensed</td>
<td>2,325</td>
<td>100</td>
</tr>
<tr>
<td>Respondents</td>
<td>2,232</td>
<td>96</td>
</tr>
<tr>
<td>Nonrespondents</td>
<td>93</td>
<td>4</td>
</tr>
<tr>
<td>Total licensed</td>
<td>2,325</td>
<td>100</td>
</tr>
<tr>
<td>Civilians in Virginia</td>
<td>1,580</td>
<td>68</td>
</tr>
<tr>
<td>Respondents</td>
<td>1,527</td>
<td>-</td>
</tr>
<tr>
<td>Nonrespondents</td>
<td>53</td>
<td>-</td>
</tr>
<tr>
<td>Civilians in another State</td>
<td>572</td>
<td>25</td>
</tr>
<tr>
<td>On active duty with Armed Forces</td>
<td>168</td>
<td>7</td>
</tr>
<tr>
<td>Not reported</td>
<td>5</td>
<td>*</td>
</tr>
</tbody>
</table>

* Less than one-half of one percent.

The survey questionnaire was completed by 2,232 dentists, 96 percent of all those registered. The data provided by the survey respondents has been supplemented, when obtainable, by information on location, age, dental school attended and year of graduation for dentists not responding to the survey. Information on nonrespondents was obtained either from records maintained by the Virginia State Board of Dental Examiners or from the 1966 American Dental Directory published by the American Dental Association.

Of all dentists responding to the survey, about 48 percent hold a license to practice dentistry in one or more other States. Almost one-third of the dentists located in Virginia hold more than one license, with 24 percent licensed in one other State and only 7 percent licensed in two or more other States. The proportion of out-of-State respondents holding
multiple licenses is considerably greater; more than one-fourth hold two or more licenses in addition to their Virginia license.

Civilian Dentists in Virginia

Sources of Supply

Dental schools.--The great majority of Virginia's dentists, 63 percent, are graduates of the Medical College of Virginia (Table 2). Another 20 percent are graduates of 10 dental schools located in 5 adjacent states--Maryland, West Virginia, Kentucky, Tennessee, North Carolina--and the District of Columbia. Among these schools, Georgetown University, the University of Maryland and Howard University have made notable contributions to Virginia's dental force, having together supplied the state with 16 percent of its dentists. Other schools in these States contributing as many as 20 dentists to the Virginia supply are the University of Tennessee and Meharry Medical College. The remaining 15 percent of the state's dentists are graduates of 37 dental schools located in 17 more distant States and Canada. Emory and Northwestern Universities and the University of Pennsylvania are the largest contributors among these schools.

Table 2.--Dental School Attended

<table>
<thead>
<tr>
<th>Dental school attended</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical College of Virginia</td>
<td>986</td>
<td>6.0</td>
</tr>
<tr>
<td>Schools in surrounding area</td>
<td>343</td>
<td>22.0</td>
</tr>
<tr>
<td>Georgetown University</td>
<td>105</td>
<td>7.0</td>
</tr>
<tr>
<td>University of Maryland</td>
<td>80</td>
<td>5.0</td>
</tr>
<tr>
<td>Howard University</td>
<td>67</td>
<td>4.0</td>
</tr>
<tr>
<td>University of Tennessee</td>
<td>28</td>
<td>2.0</td>
</tr>
<tr>
<td>Meharry Medical College</td>
<td>25</td>
<td>2.0</td>
</tr>
<tr>
<td>5 other schools</td>
<td>38</td>
<td>2.0</td>
</tr>
<tr>
<td>37 more distant schools</td>
<td>243</td>
<td>15.0</td>
</tr>
</tbody>
</table>

1/ Individual items in this and succeeding tables may not add to the totals shown due to the failure of some responding dentists to reply to all items on the questionnaire, or, in the case of nonrespondents, due to the data not being obtainable for all dentists. For each item where percentages are shown, they are based on the number of dentists for whom the data are known. (See Appendix Table A.)
In recent years Virginia's dentists have tended to come increasingly from either the State's own dental school or other schools located nearby. The proportionate contribution of the Medical College of Virginia to the State's total supply has increased slightly from 60 percent of all dentists currently located in the State who graduated before World War II to 67 percent of those who graduated within the last 10 years. Similarly, there has been a modest increase in the contribution of dental schools in adjoining States and the District of Columbia. Conversely, the proportion of dentists who received their dental degrees from schools in more distant States or in Canada has declined from 21 percent among graduates during the period before World War II to only 10 percent among those completing their dental education during the past 10 years.

Dentists relocating in Virginia.—Six percent of the respondents practiced as civilian dentists in one of 25 other States, the District of Columbia or Puerto Rico immediately prior to assuming their present Virginia location. More than one-half of the 93 in-migrant dentists came from another Southern State, including one in every four who moved to Virginia from North Carolina or West Virginia and one in every seven who came from Maryland or the District of Columbia.

Personal Characteristics

Age.—Virginia's dentists are a relatively young group, with a median age of 42.4 years. Slightly over one-fourth of the dentists are under the age of 35, a third are between 35 and 44, and a fifth are 45 to 54 years of age (Table 3). Although only 9 percent of the dentists are 65 years old or over, this group of 142 dentists includes 44 who are 70 to 74 years old and 25 who have reached the age of 75.

Table 3.—Age Distribution

<table>
<thead>
<tr>
<th>Age in 1965</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>1,580</td>
<td>100</td>
</tr>
<tr>
<td>Under 35</td>
<td>412</td>
<td>26</td>
</tr>
<tr>
<td>35 - 44</td>
<td>513</td>
<td>33</td>
</tr>
<tr>
<td>45 - 54</td>
<td>310</td>
<td>20</td>
</tr>
<tr>
<td>55 - 64</td>
<td>183</td>
<td>12</td>
</tr>
<tr>
<td>65 &amp; over</td>
<td>142</td>
<td>9</td>
</tr>
</tbody>
</table>

A relatively large proportion of survey nonrespondents are in the older age groups. About 22 percent of the nonresponding dentists are 65 or over, more than twice the proportion of respondents in this age group. Moreover, the median age of dentists not responding to the survey is 45.0 years, almost 3 years higher than that of respondents.
Advanced training.--Twenty percent of the survey respondents, about 300 dentists, reported they had completed one year or more of advanced training beyond their dental degree. Of the 189 dentists with advanced clinical training, 60 completed a residency and 129 an internship. Among the 183 dentists who reported advanced academic training, 78 earned a master's or other advanced degree, and another 105 received no additional degrees but completed one or more years of postgraduate study. The preceding figures include 70 dentists who completed both clinical and academic training.

Distribution and Current Status

Distribution of dentists.--Virginia's dentists are unevenly distributed geographically, with two-thirds of the dental force concentrated in the six metropolitan areas of the State (Table 4). These metropolitan areas, which include 11 counties and 13 independent cities, are based on Standard Metropolitan Statistical areas as established by the U.S. Bureau of the Budget. For example, the Richmond area includes Henrico, Chesterfield and Hanover Counties and the independent cities of Richmond and Colonial Heights. Appendix Table B specifies the counties and independent cities included in each metropolitan area.

<table>
<thead>
<tr>
<th>Area</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
<th>Median age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>1,580</td>
<td>100</td>
<td>42.4</td>
</tr>
<tr>
<td>All metropolitan areas</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Northern Virginia area</td>
<td>1,048</td>
<td>66</td>
<td>41.8</td>
</tr>
<tr>
<td>Richmond area</td>
<td>289</td>
<td>18</td>
<td>43.4</td>
</tr>
<tr>
<td>Norfolk-Virginia area</td>
<td>216</td>
<td>14</td>
<td>42.7</td>
</tr>
<tr>
<td>Roanoke area</td>
<td>93</td>
<td>6</td>
<td>44.2</td>
</tr>
<tr>
<td>Newport News-Hampton area</td>
<td>87</td>
<td>5</td>
<td>40.6</td>
</tr>
<tr>
<td>Lynchburg area</td>
<td>49</td>
<td>3</td>
<td>45.3</td>
</tr>
<tr>
<td>All nonmetropolitan areas</td>
<td>532</td>
<td>34</td>
<td>43.5</td>
</tr>
<tr>
<td>Central city 10,000-49,999</td>
<td>258</td>
<td>16</td>
<td>43.4</td>
</tr>
<tr>
<td>Central city 2,500-9,999</td>
<td>153</td>
<td>10</td>
<td>42.9</td>
</tr>
<tr>
<td>Central city under 2,500</td>
<td>121</td>
<td>8</td>
<td>42.4</td>
</tr>
</tbody>
</table>

The greatest concentration of dentists, one-fifth of all those in the State, is in the Northern Virginia area, which comprises the Virginia part of the Washington, D.C. metropolitan area. The Richmond metropolitan area has the second largest dental force in the State.
18 percent of the total supply, and the Norfolk-Portsmouth area, with 14 percent of the total, has the third largest dentist supply. The three remaining metropolitan areas—Roanoke, Newport News-Hampton, and Lynchburg—account for another 14 percent of the State's dentists.

The remaining one-third of the State's dentists are located in the 85 counties and 21 independent cities not included within a Standard Metropolitan Statistical area. Because the independent city frequently is the center of health services for a county, each independent city has been combined with a county for presentation of the survey data. For example, Albemarle County and the independent city of Charlottesville have been combined to form one nonmetropolitan area. See Appendix Table B for combinations of counties and independent cities forming other nonmetropolitan areas. The 85 nonmetropolitan areas listed in the table consist of 19 counties combined with one or more independent cities and 66 single counties.

If the nonmetropolitan areas are grouped according to the population of the central (largest) city located within the area, the number of dentists in an area generally declines as the population of the central city decreases. Sixteen percent of the State's dentists are located in the group of 13 nonmetropolitan areas with central cities of at least 10,000 persons. Only one of these areas has less than 10 dentists, three areas have at least 30 dentists, and another four areas have 20 or more. Ten percent of the dentists are located in the group of 20 nonmetropolitan areas with central cities of 2,500-9,999 population. Among these areas, five have at least 10 dentists and only three have less than 5 dentists.

The remaining 8 percent of the State's dental force, or 121 dentists, are scattered among 52 single counties with less than 2,500 persons in their central cities. Only one county in this group has as many as 10 dentists, and 32 counties have no more than 2 dentists, including 9 counties—Amelia, Buckingham, Charles City, Craig, Cumberland, King and Queen, Rappahannock, Stafford and Surry—which have no dentists according to available information.

Geographical differences in age.—The median age of dentists in metropolitan areas is 41.8 years, almost two years younger than the median of 43.5 years for dentists in the nonmetropolitan areas (Table 4). Furthermore, there are even greater differences in age among the metropolitan areas. Northern Virginia has the youngest dentists, with a median age of 35.1 years. Almost one-third of the dentists in this area are under 35 years of age, and only 3 percent are 65 or over. Newport News-Hampton also has relatively young dentists, with a median age of 40.6 years. As a group, dentists in the Roanoke area are the oldest, with less than one-fourth under 35 and 12 percent having reached the age of 65.
Active dentists in relation to population.--Ninety-eight percent, or 1,551, of the licensed dentists in Virginia were active in their profession at the time of the survey. The remaining two percent includes 24 responding dentists who are retired or engaged principally in a nondental activity, and 5 nonresponding dentists known to be 70 years of age or older. Based on these data, Virginia had one professionally active dentist for every 2,799 persons in the State in 1965.

The six metropolitan areas in Virginia together have 66 percent of the State's active dentists, and only 57 percent of its population. This disproportionate distribution of dentists in relation to population results in a persons-per-active dentist ratio of 2,388 for the metropolitan areas, compared to an average of 3,614 for the nonmetropolitan areas (Table 5).

Among the metropolitan areas, Richmond has the most favorable persons-per-dentist ratio, 1,784. The Roanoke, Northern Virginia and Lynchburg areas also have fewer persons per dentist than the State average--1,999, 2,375, and 2,455, respectively. The remaining two metropolitan areas, Norfolk-Portsmouth and Newport News-Hampton, each have one dentist for approximately 3,100 persons.

Table 5.--Number of Persons Per Dentist

<table>
<thead>
<tr>
<th>Area</th>
<th>Professionally active dentists</th>
<th>Population</th>
<th>Persons per dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>1,551</td>
<td>4,241,600</td>
<td>2,799</td>
</tr>
<tr>
<td>Metropolitan areas</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Richmond area</td>
<td>1,031</td>
<td>2,462,300</td>
<td>2,388</td>
</tr>
<tr>
<td>Roanoke area</td>
<td>283</td>
<td>504,800</td>
<td>1,784</td>
</tr>
<tr>
<td>Northern Virginia area</td>
<td>312</td>
<td>740,900</td>
<td>2,375</td>
</tr>
<tr>
<td>Lynchburg area</td>
<td>49</td>
<td>120,300</td>
<td>2,455</td>
</tr>
<tr>
<td>Newport News-Hampton area</td>
<td>85</td>
<td>259,300</td>
<td>3,051</td>
</tr>
<tr>
<td>Norfolk-Portsmouth area</td>
<td>213</td>
<td>659,100</td>
<td>3,094</td>
</tr>
<tr>
<td>Nonmetropolitan areas</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Central city 10,000-49,999</td>
<td>520</td>
<td>1,879,300</td>
<td>3,614</td>
</tr>
<tr>
<td>Central city 2,500-9,999</td>
<td>253</td>
<td>710,000</td>
<td>2,806</td>
</tr>
<tr>
<td>Central city under 2,500</td>
<td>149</td>
<td>520,400</td>
<td>3,493</td>
</tr>
<tr>
<td></td>
<td>118</td>
<td>648,900</td>
<td>5,499</td>
</tr>
</tbody>
</table>

Among the nonmetropolitan areas with active dentists, the persons-per-dentist ratios range from 1,400 in Highland County to 15,200 in Patrick County. The average ratio for nonmetropolitan areas, when grouped according to size of central city, increases as the size of the central city decreases. The group of 13 nonmetropolitan areas with central cities of 10,000-49,999 population have a ratio of 2,806, a figure comparable to the average for the State. Frederick County combined with the Independent city
of Winchester, with one dentist for every 1,990 persons, is the only area in this group with a ratio under 2,000. In contrast, there are two areas having more than 4,000 persons per dentist, Pulaski County with a ratio of 4,650 and the combined area of Washington County and the independent city of Bristol with a ratio of 4,842. The 29 nonmetropolitan areas with 2,500 to 9,999 persons in their central cities together have a persons-per-dentist ratio of 3,433. Among these areas, only Warren County, with one dentist for every 1,611 persons, has a ratio less than 2,000. Three of the areas in this group, Mecklenburg, Page and Bedford Counties, have ratios in excess of 5,000 persons per dentist.

The remaining 52 nonmetropolitan areas in the State, consisting of single counties with central cities of less than 2,500 population, have the highest average ratio, 5,499. Only four of these counties have ratios under 2,000—Highland, Middlesex, Essex, and Northampton. Exclusive of 9 counties which apparently have no dentists, 24 counties have more than 5,000 persons per dentist, including 7 with ratios of 10,000 or more. In addition to Patrick, these counties are Floyd (10,000), Northumberland (10,200), Westmoreland (11,400), Louisa (13,600), Caroline (13,300), and Lunenburg (13,700).

Professional Activity

Current employment.—Ninety-three percent of the 1,503 responding dentists who reported that they were professionally active at the time of the survey are primarily engaged in private practice, with 92 percent self-employed and one percent employed by another dentist (Table 6). About two percent are on the staff of the dental school at the Medical College of Virginia and another three percent are employed by governmental agencies. The remaining two percent are engaged in some other dental activity, such as taking advanced training.

Table 6.--Current Employment of Professionally Active Dentists

<table>
<thead>
<tr>
<th>Type of employment</th>
<th>Principal employment</th>
<th>Secondary employment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number employed</td>
<td>Percent</td>
</tr>
<tr>
<td>Total</td>
<td>1,503</td>
<td>100</td>
</tr>
<tr>
<td>Self-employed</td>
<td>1,379</td>
<td>92</td>
</tr>
<tr>
<td>Employed by other dentist</td>
<td>20</td>
<td>1</td>
</tr>
<tr>
<td>Staff of dental school</td>
<td>28</td>
<td>2</td>
</tr>
<tr>
<td>State or local government</td>
<td>46</td>
<td>3</td>
</tr>
<tr>
<td>Federal government</td>
<td>8</td>
<td>*</td>
</tr>
<tr>
<td>Voluntary agency</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Other dental employment</td>
<td>30</td>
<td>2</td>
</tr>
</tbody>
</table>

1/ Individual items add to more than total because some dentists reported more than one type of secondary employment.

* Less than one-half of one percent.
At least one part-time dental activity in addition to their principal employment was reported by 155 dentists. Sixty-eight of these dentists said they were employed part-time on the staff of the dental school. The number of dentists so engaged is more than twice the number reporting their principal activity as a faculty appointment. Another 35 dentists reported working part-time for a State or local government agency, which almost equals the number reporting government employment as their principal activity. Other secondary activities less frequently reported include employment by another dentist and working for a voluntary agency.

Activity last year.—Of all dentists reporting their professional activity in Virginia last year, 96 percent said they provided care for patients. An equal percentage of total professional time was spent in providing patient care. Seven percent of the dentists reported they spent some time in teaching and one percent reported some time in research, but only 2 percent of total professional time was spent in these activities. While 5 percent of the dentists spent time in some other dental activity, such as taking additional training, only 2 percent of the total professional time was spent in these activities.

Dentists reporting on time spent last year in providing patient care devoted an average of 47.7 weeks to this activity and worked an average of 59.7 hours per week. Dentists who worked all year spent longer hours providing patient care than did those who worked only part of the year. Almost 70 percent of the dentists spending 48 weeks or more in patient care worked 40 or more hours per week, while only a little over one-half of those working less than 48 weeks spent as many hours each week providing care.

The amount of time worked last year by dentists in private practice declined sharply with age. Over 60 percent of the dentists under 40 years of age reported they worked at least 40 hours per week for 48 weeks or more. The proportion working this amount of time declines to 55 percent for dentists between 40 and 54 years old, and to only 38 percent for those 55 and over.

Practice Characteristics

Limited practices.—Among dentists reporting type of practice, 179, or about one in every seven, limit their practices to a dental specialty. Two-thirds of these dentists reported limiting their practices to one of two specialty areas—40 percent to orthodontics and 27 percent to oral surgery.

The metropolitan areas have a large share—over four-fifths—of the dentists who limit their practices. One in every 6 dentists practicing in a metropolitan area limits his practice, whereas in nonmetropolitan areas, only one in every 17 dentists does so. In both the Northern Virginia and Richmond areas, one dentist in every five limits his practice to a
specialty. These two metropolitan areas taken together have over one-half of the State's limited practitioners and over three times as many as all nonmetropolitan areas combined.

Use of auxiliaries.—About 88 percent of the dental practitioners (i.e., dentists who spend any time working at the chair) report that they employ auxiliary personnel (Table 7). The vast majority, 81 percent, of the practitioners employ at least one auxiliary full time, while only 7 percent employ part-time auxiliaries exclusively. Dental assistants are the most frequently employed auxiliary, usually on a full-time basis. Approximately 80 percent of the practitioners employ an assistant, including 73 percent who do so full time. Secretaries or receptionists are employed by 31 percent of the dentists, and a majority of these dentists employ at least one of them full time. Dental hygienists and laboratory technicians are much less frequently employed than are assistants and secretaries, and they are more likely to be employed on a part-time basis compared to other auxiliary personnel. While 12 percent of all dentists employ dental hygienists and 5 percent employ dental technicians, about three-fifths and two-fifths, respectively, of the dentists employing these auxiliaries do so on a part-time basis.

Table 7.—Dental Practitioners Employing Auxiliaries, by Type of Auxiliary

<table>
<thead>
<tr>
<th>Type of auxiliary</th>
<th>Percent of dental practitioners</th>
<th>With one full-time employee</th>
<th>With only part-time personnel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>1,465</td>
<td>160</td>
<td>81</td>
</tr>
<tr>
<td>With one or more auxiliaries</td>
<td>1,242</td>
<td>88</td>
<td>81</td>
</tr>
<tr>
<td>With assistant</td>
<td>1,136</td>
<td>80</td>
<td>73</td>
</tr>
<tr>
<td>With hygienist</td>
<td>174</td>
<td>12</td>
<td>5</td>
</tr>
<tr>
<td>With laboratory technician</td>
<td>69</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>With secretary or receptionist</td>
<td>440</td>
<td>31</td>
<td>22</td>
</tr>
<tr>
<td>With other type personnel</td>
<td>41</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>With no auxiliary</td>
<td>172</td>
<td>12</td>
<td>-</td>
</tr>
</tbody>
</table>

The use of auxiliaries varies with the age of the dentist and is more frequent among young practitioners. Ninety-three percent of the dental practitioners between the ages of 30 and 44 employ some type of auxiliary. However, the proportion of practitioners utilizing auxiliaries decreases to 87 percent among dentists 45 to 64 years old and drops to 60 percent among dentists 65 and over.

Although dentists in the nonmetropolitan areas are almost as likely to employ auxiliaries as are those located in the metropolitan areas, the use of dental hygienists is considerably more common in the metropolitan areas.
than in the remainder of the State. About 18 percent of the dentists in the metropolitan areas report the employment of a hygienist, compared to only 4 percent of dentists located elsewhere. There are also considerable differences among the metropolitan areas in the frequency with which hygienists are employed. In the Northern Virginia area, more than one-third of the practitioners employ at least one hygienist, compared to only 11 percent of the dentists in the Norfolk-Portsmouth area and 8 percent of those in the Richmond area.

Out-of-State Civilian Dentists

Virginia licenses are maintained by at least 572 dentists located in 35 other States, the District of Columbia or Puerto Rico. Approximately one-half of the out-of-State dentists are located in adjacent States and the District of Columbia, including 23 percent who are currently located in North Carolina and 12 percent located in the District. An additional one-fourth of these dentists are located in other Southern States, the largest number in Florida. Forty-three percent of the out-of-State dentists completed their dental education at the Medical College of Virginia, and another 17 percent are graduates of dental schools in the District of Columbia.

About one in every seven out-of-State respondents reported that they had been professionally active in Virginia immediately prior to assuming their present location in one of 24 other States or the District of Columbia, most frequently North Carolina, the District, or West Virginia.
Appendix Table A.—Summary Statistics for Virginia

<table>
<thead>
<tr>
<th></th>
<th>Total dentists</th>
<th>Responding dentists</th>
<th>Nonresponding dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total dentists licensed in Virginia</strong> (1/)</td>
<td>2,325  (1/)</td>
<td>2,232  (1/)</td>
<td>93  (1/)</td>
</tr>
<tr>
<td><strong>Civilian dentists in Virginia</strong> (3/)  (2/) (designated simply as “dentists” in text tables)</td>
<td>1,580</td>
<td>1,577</td>
<td>53</td>
</tr>
<tr>
<td>Professionally active dentists (4/)</td>
<td>1,551</td>
<td>1,503</td>
<td>48</td>
</tr>
<tr>
<td>Dental practitioners (5/)</td>
<td>-</td>
<td>1,465</td>
<td>-</td>
</tr>
<tr>
<td>In limited practice (6/)</td>
<td>-</td>
<td>179</td>
<td>-</td>
</tr>
<tr>
<td><strong>Located in Virginia last year:</strong></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Reported professional activity (7/)</td>
<td>-</td>
<td>1,372</td>
<td>-</td>
</tr>
<tr>
<td>Dentists providing patient care (8/)</td>
<td>-</td>
<td>1,320</td>
<td>-</td>
</tr>
<tr>
<td>Reported time spent in patient care (8/)</td>
<td>-</td>
<td>1,094</td>
<td>-</td>
</tr>
<tr>
<td>Dentists in private practice (9/)</td>
<td>-</td>
<td>1,238</td>
<td>-</td>
</tr>
<tr>
<td>Reported time spent in practice (10/)</td>
<td>-</td>
<td>1,204</td>
<td>-</td>
</tr>
<tr>
<td><strong>Civilian dentists in another State</strong></td>
<td>572</td>
<td>539</td>
<td>33</td>
</tr>
<tr>
<td>Dentists on active duty in Armed Forces</td>
<td>168</td>
<td>161</td>
<td>7</td>
</tr>
</tbody>
</table>

1/ Includes 5 dentists not reporting current location or military status.
2/ Data for nonresponding dentists were obtained from the Virginia Board of Dental Examiners, and from the 1966 American Dental Directory published by the American Dental Association.
3/ All dentists who currently work in Virginia (excluding those in the Armed Forces) or who are retired and currently live in the State. Data are not available for the following: year of graduation - 47, age - 10, dental school attended - 8.
4/ Includes all responding dentists who reported they were professionally active in Virginia at the time of the survey and all nonrespondents known to be under 70 years of age.
5/ All responding dentists practicing at the chair, that is, dentists who work as clinicians either as primary or secondary activity.
6/ Dentists who reported they limited their practice to a dental specialty.
7/ Dentists located in Virginia last year who indicated type(s) of activity in which they engaged.
8/ All responding dentists who engaged in patient care last year, either as a primary or a secondary activity.
9/ Dentists reporting both hours and weeks spent in patient care last year.
10/ Dentists who reported they were primarily self-employed both currently and last year.
11/ Dentists reporting both hours and weeks spent last year as a self-employed dentist.
<table>
<thead>
<tr>
<th>Area group and area</th>
<th>Civilian dentists</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>All areas</td>
<td></td>
<td>Total</td>
<td>Respondents</td>
<td>Non-respondents</td>
<td>Age in 1965</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Under 35</td>
</tr>
<tr>
<td>Metropolitan areas</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1/</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Northern Virginia area</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Arlington, Fairfax, Prince William and Loudoun Counties and Alexandria*, Falls Church* and Fairfax*)</td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>All areas</td>
<td>1,580</td>
<td>1,527</td>
<td>53</td>
<td>412</td>
<td>325</td>
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<tr>
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<td>1,012</td>
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<td>193</td>
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<td>307</td>
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<tr>
<td>Richmond area</td>
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<td>273</td>
<td>16</td>
<td>76</td>
<td>65</td>
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<tr>
<td>(Henrico, Chesterfield and Hanover Counties and Richmond* and Colonial Heights*)</td>
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<tr>
<td>Norfolk-Portsmouth area</td>
<td>216</td>
<td>213</td>
<td>3</td>
<td>52</td>
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<tr>
<td>(Norfolk*, Portsmouth*, Chesapeake* and Virginia Beach*)</td>
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<td>Newport News-Hampton area</td>
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<td>82</td>
<td>5</td>
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<tr>
<td>(York County and Newport News* and Hampton*)</td>
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<tr>
<td>Roanoke area</td>
<td>93</td>
<td>88</td>
<td>5</td>
<td>21</td>
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<tr>
<td>(Roanoke County and Roanoke*)</td>
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<tr>
<td>Lynchburg area</td>
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<td>-</td>
<td>9</td>
<td>10</td>
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<tr>
<td>(Campbell and Amherst Counties and Lynchburg*)</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

* Independent city.
Appendix Table B.--Selected Data on Dentists in Virginia, by Location (cont'd.)

<table>
<thead>
<tr>
<th>Area group and area</th>
<th>Area group and area</th>
<th>Total Respondents</th>
<th>Non-respondents</th>
<th>Age in 1965</th>
<th>Professionals</th>
<th>Population</th>
<th>Persons per active dentist</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Under 35</td>
<td>35 or more</td>
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<tr>
<td>Nonmetropolitan areas</td>
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<td></td>
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<td>1.29</td>
<td>1.32</td>
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<td></td>
<td></td>
<td>515</td>
<td>20</td>
<td>90</td>
<td>235.7</td>
</tr>
<tr>
<td>Albemarle County and Charlottesville*</td>
<td></td>
<td></td>
<td></td>
<td>515</td>
<td>20</td>
<td>90</td>
<td>235.7</td>
</tr>
<tr>
<td>Dinwiddie County and Petersburg*</td>
<td></td>
<td></td>
<td></td>
<td>515</td>
<td>20</td>
<td>90</td>
<td>235.7</td>
</tr>
<tr>
<td>Pittsylvania County and Danville*</td>
<td></td>
<td></td>
<td></td>
<td>515</td>
<td>20</td>
<td>90</td>
<td>235.7</td>
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<tr>
<td>Central city 10,000-24,999</td>
<td></td>
<td></td>
<td></td>
<td>3,614</td>
<td>2,619</td>
<td>2,173</td>
<td>2,173</td>
</tr>
<tr>
<td>Allegany County and Covington* and Clifton Forge*</td>
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<td></td>
<td></td>
<td>3,614</td>
<td>2,619</td>
<td>2,173</td>
<td>2,173</td>
</tr>
<tr>
<td>Augusta County and Waynesboro* and Staunton*</td>
<td></td>
<td></td>
<td></td>
<td>3,614</td>
<td>2,619</td>
<td>2,173</td>
<td>2,173</td>
</tr>
<tr>
<td>Frederick County and Winchester*</td>
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<td></td>
<td></td>
<td>3,614</td>
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<td>2,173</td>
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<tr>
<td>Henry County and Martinsville*</td>
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<td></td>
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<td>2,619</td>
<td>2,173</td>
<td>2,173</td>
</tr>
<tr>
<td>Nansemond County and Suffolk*</td>
<td></td>
<td></td>
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<td>2,619</td>
<td>2,173</td>
<td>2,173</td>
</tr>
<tr>
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<tr>
<td>Pulaski County</td>
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<tr>
<td>Rockingham County and Harrisonburg*</td>
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<td>2,619</td>
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<td>Spotsylvania County and Fredericksburg*</td>
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<td></td>
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<td>2,619</td>
<td>2,173</td>
<td>2,173</td>
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* Independent city.
### Appendix Table B.—Selected Data on Dentists in Virginia, by Location (cont’d.)

<table>
<thead>
<tr>
<th>Area group and area</th>
<th>Civilian dentists</th>
<th>Population (in 000's)</th>
<th>Persons per active dentist</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Total Respondents</td>
<td>Non-respondents</td>
<td>Age in 1965</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Under 35</td>
<td>55 years or more</td>
</tr>
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<td>Central city 5,000-9,999 (cont’d.)</td>
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</tr>
<tr>
<td>Greensville County</td>
<td>5</td>
<td>5</td>
<td>-</td>
</tr>
<tr>
<td>Halifax County and South Boston*</td>
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<td>8</td>
<td>2</td>
</tr>
<tr>
<td>James City County and Williamsburg*</td>
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<td>8</td>
<td>-</td>
</tr>
<tr>
<td>Montgomery County and Radford-</td>
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<td>13</td>
<td>1</td>
</tr>
<tr>
<td>Rockbridge County and Buena Vist-*</td>
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<td>9</td>
<td>-</td>
</tr>
<tr>
<td>Smyth County</td>
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<td>8</td>
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</tr>
<tr>
<td>Southampton County and Franklin*</td>
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<td>9</td>
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<td>-</td>
</tr>
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<td>Wise County and Norton*</td>
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<tr>
<td>Central city under 2,500</td>
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<tr>
<td>Amelia County</td>
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<td>-</td>
</tr>
<tr>
<td>Appomattox County</td>
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</tr>
<tr>
<td>Bath County</td>
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</tr>
<tr>
<td>Bland County</td>
<td>1</td>
<td>1</td>
<td>-</td>
</tr>
</tbody>
</table>

* Independent city.
## Appendix Table B.--Selected Data on Dentists in Virginia, by Location (cont'd.)

<table>
<thead>
<tr>
<th>Area group</th>
<th>Civilian dentists</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total respondents</td>
<td>Non-respondents</td>
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<td>Respondents</td>
<td>Respondents</td>
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<tr>
<td>Craig County</td>
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<td>-</td>
</tr>
<tr>
<td>Culpeper County</td>
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<td>5</td>
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<tr>
<td>Cumberland County</td>
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</tr>
<tr>
<td>Dickenson County</td>
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<td>Fluvanna County</td>
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<td>Franklin County</td>
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<td>Goochland County</td>
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<td>Greene County</td>
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<tr>
<td>Highland County</td>
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<td>Isle of Wight County</td>
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<tr>
<td>King and Queen County</td>
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<td>-</td>
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<tr>
<td>King William County</td>
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<td>2</td>
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<tr>
<td>Lancaster County</td>
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</tr>
<tr>
<td>Lee County</td>
<td>3</td>
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<td>Louisa County</td>
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<td>1</td>
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<td>Lunenburg County</td>
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<td>Madison County</td>
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<tr>
<td>Mathews County</td>
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<td>1</td>
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<tr>
<td>Area group and area</td>
<td>Civilian dentists</td>
<td></td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>-------------------</td>
<td>--------------</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>Respondents</td>
</tr>
<tr>
<td>Central city under 2,500 (cont'd.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Middlesex County</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Nelson County</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>New Kent County</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Northampton County</td>
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<td>10</td>
</tr>
<tr>
<td>Northumberland County</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Patrick County</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Powhatan County</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Rappahannock County</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Richmond County</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Russell County</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Scott County</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Shenandoah County</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>Stafford County</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Surry County</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Sussex County</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Westmoreland County</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>


2/ Virginia counties and independent cities included in the latest 1967 definition of Standard Metropolitan Statistical areas, as established by the U.S. Bureau of the Budget, Office of Statistical Standards, have been grouped as metropolitan areas for the presentation of the survey data. Statistics are presented only for dentists located in the Virginia portion of the Washington, D.C. SMSA.

3/ Nonmetropolitan areas have been grouped according to the 1960 population of the largest (central) city in each area. Independent cities have been combined with the counties in which they are located or, in the case of those bordering two counties, with an adjacent county. These combinations are based on those used in Sales Management and other publications.
During the 1965 registration period, 2,760 dentists registered with the Washington State Board of Dental Examiners. About 71 percent of the registered dentists were civilians located in Washington, 27 percent were civilians located in other states and 2 percent were on active duty with the armed services. Of the 734 dentists licensed in Washington but located in other states at the time of the survey, more than one-third were in California and another one-fourth were located in Oregon.

### Location and Military Status of Dentists Licensed in Washington

<table>
<thead>
<tr>
<th>Location and military status</th>
<th>All dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total licensed</td>
<td>2,760</td>
<td>100</td>
</tr>
<tr>
<td>Respondents</td>
<td>2,085</td>
<td>76</td>
</tr>
<tr>
<td>Nonrespondents</td>
<td>675</td>
<td>24</td>
</tr>
<tr>
<td>Civilians in Washington</td>
<td>1,968</td>
<td>71</td>
</tr>
<tr>
<td>Respondents</td>
<td>1,531</td>
<td>-</td>
</tr>
<tr>
<td>Nonrespondents</td>
<td>437</td>
<td>-</td>
</tr>
<tr>
<td>Civilians in other states</td>
<td>734</td>
<td>27</td>
</tr>
<tr>
<td>On active duty with armed services</td>
<td>48</td>
<td>2</td>
</tr>
<tr>
<td>Not reported</td>
<td>10</td>
<td>*</td>
</tr>
</tbody>
</table>

* Less than one-half of one percent.

The survey questionnaire was completed by 2,085 dentists, 76 percent of all those registered. The data provided by the survey respondents has been supplemented, when obtainable, by information on location as well as age, dental school attended and year of graduation for dentists not responding to the survey. Information on nonrespondents was obtained either from records maintained by the Washington State Board of Dental Examiners or from the 1966 American Dental Directory published by the American Dental Association.
PROFESSIONAL TRAINING

More than two-thirds of the 1,968 dentists in Washington are graduates of the dental schools located at the University of Washington and the University of Oregon, each school having contributed approximately one-third of the dental force. Since 1950, however, when the University of Washington graduated its first class, this school has become the primary source of dentists, accounting for two of every three dentists in the State who completed their dental education during the ensuing years. In contrast, the University of Oregon's contribution has declined sharply from 64 percent of Washington dentists graduating prior to 1950 to 10 percent of those graduating since that time. Dentists who graduated from other schools located in the West account for only four percent of the State supply.

Almost one-fourth of Washington's dentists are graduates of 18 schools in the North Central States. Among these schools, Northwestern University and the University of Minnesota have been the principal contributors, each supplying approximately 4 percent of the total dental force. The relative contribution of schools in the North Central States has decreased somewhat since Washington's own dental school began providing dentists for the State.

### Dental School Attended and Year of Graduation of Dentists in Washington

<table>
<thead>
<tr>
<th>Dental school attended</th>
<th>Number of dentists</th>
<th>Year of graduation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>All 1950 and</td>
</tr>
<tr>
<td></td>
<td></td>
<td>years later</td>
</tr>
<tr>
<td>Total number</td>
<td>1,968</td>
<td>1,904</td>
</tr>
<tr>
<td>(Percent distribution by school)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>West</td>
<td></td>
<td></td>
</tr>
<tr>
<td>University of Washington</td>
<td>1,409</td>
<td>73</td>
</tr>
<tr>
<td>University of Oregon</td>
<td>700</td>
<td>36</td>
</tr>
<tr>
<td>7 other schools</td>
<td>73</td>
<td>4</td>
</tr>
<tr>
<td>North Central</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Northwestern University</td>
<td>432</td>
<td>23</td>
</tr>
<tr>
<td>University of Minnesota</td>
<td>77</td>
<td>4</td>
</tr>
<tr>
<td>Marquette University</td>
<td>76</td>
<td>4</td>
</tr>
<tr>
<td>15 other schools</td>
<td>50</td>
<td>3</td>
</tr>
<tr>
<td>Other regions (26 schools)</td>
<td>81</td>
<td>12</td>
</tr>
</tbody>
</table>

1/ Dental school attended not available for 45 dentists and year of graduation for 26 dentists. Percents are based on known totals.

About 15 percent of the survey respondents, or 232 dentists, reported they had completed one year or more of advanced training beyond receipt of their dental degree. A total of 125 dentists have received advanced clinical training as interns or residents and 150 have completed at least one year of advanced academic work as graduate or postgraduate students. These figures include 43 dentists who completed both academic and clinical training.
DISTRIBUTION OF DENTISTS

More than seven-tenths of all licensed dentists in Washington are located in the four metropolitan areas of the State. The Seattle-Everett area alone has one-half of the dental force, 974 dentists, with the vast majority (863) located in King County, which contains Seattle, and the remainder (111) located in Snohomish County, containing the city of Everett. The adjacent Tacoma area and the more distant Spokane area have the next largest dental forces, each accounting for about one-tenth of the State's dentists. The Vancouver area (Clark County), which is part of the larger interstate Portland metropolitan area, accounts for 3 percent of Washington's dentist supply.

<table>
<thead>
<tr>
<th>County group</th>
<th>Number of counties</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>All counties</td>
<td>39</td>
<td>1,968</td>
<td>100</td>
</tr>
<tr>
<td>All metropolitan areas</td>
<td>5</td>
<td>1,411</td>
<td>72</td>
</tr>
<tr>
<td>Seattle-Everett area</td>
<td>2</td>
<td>974</td>
<td>50</td>
</tr>
<tr>
<td>Spokane area</td>
<td>1</td>
<td>201</td>
<td>10</td>
</tr>
<tr>
<td>Tacoma area</td>
<td>1</td>
<td>181</td>
<td>9</td>
</tr>
<tr>
<td>Vancouver area</td>
<td>1</td>
<td>55</td>
<td>3</td>
</tr>
<tr>
<td>All nonmetropolitan counties</td>
<td>34</td>
<td>550</td>
<td>28</td>
</tr>
<tr>
<td>Central city 10,000-49,999</td>
<td>13</td>
<td>401</td>
<td>20</td>
</tr>
<tr>
<td>Central city under 10,000</td>
<td>21</td>
<td>149</td>
<td>8</td>
</tr>
</tbody>
</table>

1/ See Appendix Table for definition of metropolitan areas and presentation of individual county data.

2/ County location not available for 7 dentists.

Some 28 percent of the State's dentists are located in the 34 nonmetropolitan counties. Almost three-fourths of these dentists are concentrated in the 13 counties with at least 10,000 persons in their central cities. Some of these counties have fairly substantial dental forces. Yakima County, for example, has 70 dentists, and three other counties—Whatcom, Thurston and Kitsap—each have more than 40 dentists. Only 3 of the remaining counties in this group have less than 20 dentists. The 21 counties with central cities of less than 10,000 population have only 8 percent of the State's dentists. Among these counties, only 2 have more than 20 dentists, while 15 have less than 10, including 7 counties with fewer than 3 dentists.
AGE OF DENTISTS

With more than one-half of the dentists under 45 years of age, the median age of dentists in Washington is 44.0 years. One-fifth of the State's dentists are under 35, yet over one-fourth are 55 years of age or older. Fifteen percent, or 272 dentists, are at least 65 years old, including 145 who have reached the age of 76. Slightly more than one-half of all dentists in the State are in the age group 35 through 54, with one-third between the ages of 35 and 44.

Age Distribution of Washington Dentists

<table>
<thead>
<tr>
<th>Age in 1965</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
<th>Cumulative percent distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>1,968(^1)</td>
<td>100</td>
<td>-</td>
</tr>
<tr>
<td>Under 30</td>
<td>116</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>30 - 34</td>
<td>273</td>
<td>14</td>
<td>20</td>
</tr>
<tr>
<td>35 - 39</td>
<td>293</td>
<td>16</td>
<td>36</td>
</tr>
<tr>
<td>40 - 44</td>
<td>332</td>
<td>18</td>
<td>54</td>
</tr>
<tr>
<td>45 - 49</td>
<td>214</td>
<td>11</td>
<td>65</td>
</tr>
<tr>
<td>50 - 54</td>
<td>144</td>
<td>8</td>
<td>73</td>
</tr>
<tr>
<td>55 - 59</td>
<td>119</td>
<td>6</td>
<td>79</td>
</tr>
<tr>
<td>60 - 64</td>
<td>116</td>
<td>6</td>
<td>85</td>
</tr>
<tr>
<td>65 - 69</td>
<td>127</td>
<td>7</td>
<td>92</td>
</tr>
<tr>
<td>70 - 74</td>
<td>90</td>
<td>5</td>
<td>97</td>
</tr>
<tr>
<td>75 &amp; over</td>
<td>55</td>
<td>3</td>
<td>100</td>
</tr>
</tbody>
</table>

\(^1\) Age not available for 9 dentists. Percents based on known totals.

Median age and proportion of dentists in each age group are almost identical in the metropolitan and nonmetropolitan areas. There is more variation in age, however, among the individual counties.
**ACTIVE DENTISTS IN RELATION TO POPULATION**

Of the 1,968 dentists in Washington, 1,858, or 94 percent, are active in their profession, giving Washington one professionally active dentist for every 1,645 persons. There is one dentist for every 1,471 persons in the metropolitan areas, while the remainder of the State has a less favorable ratio of 2,115 persons per active dentist.

<table>
<thead>
<tr>
<th>County group</th>
<th>Professionally active dentists</th>
<th>Population</th>
<th>Persons per dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td>All counties</td>
<td>1,858</td>
<td>3,055,900</td>
<td>1,645</td>
</tr>
<tr>
<td>All metropolitan areas</td>
<td>1,338</td>
<td>1,968,600</td>
<td>1,471</td>
</tr>
<tr>
<td>Seattle-Everett area</td>
<td>926</td>
<td>1,223,000</td>
<td>1,321</td>
</tr>
<tr>
<td>Spokane area</td>
<td>189</td>
<td>293,400</td>
<td>1,552</td>
</tr>
<tr>
<td>Tacoma area</td>
<td>171</td>
<td>348,900</td>
<td>2,040</td>
</tr>
<tr>
<td>Vancouver area</td>
<td>52</td>
<td>103,300</td>
<td>1,987</td>
</tr>
<tr>
<td>Nonmetropolitan county group</td>
<td>514</td>
<td>1,087,300</td>
<td>2,115</td>
</tr>
<tr>
<td>Central city 10,000-49,999</td>
<td>375</td>
<td>770,800</td>
<td>2,055</td>
</tr>
<tr>
<td>Central city under 10,000</td>
<td>139</td>
<td>316,500</td>
<td>2,277</td>
</tr>
</tbody>
</table>

1/ See Appendix Table for individual county data.
2/ County location data not available for 6 dentists.

The Seattle-Everett metropolitan area has a ratio of one dentist for every 1,321 persons, with King County having the best ratio in the State—1,242 persons per dentist—while Snohomish County has a less favorable ratio of 1,938. The nearby Tacoma area (Pierce County) has one dentist for every 2,040 persons, a ratio similar to that of Snohomish County. The Spokane area has a somewhat better ratio, 1,552 persons per dentist, which compares favorably with the State average.

Among the nonmetropolitan counties of the State, the group of 13 counties with central cities of 10,000 or more population has an average of 2,055 persons per dentist, a ratio slightly more favorable than the average of 2,277 persons per dentist found in the group of 21 counties with central cities of less than 10,000 population. The range in individual county ratios is considerably greater; 12 counties have persons-per-dentist ratios under 2,000, yet 7 counties have ratios exceeding 3,000 persons per dentist, including 3 counties with ratios over 4,000 and 1 county with no dentist.
UTILIZATION OF AUXILIARIES

Eighty-eight percent of the responding dental practitioners in Washington (i.e., dentists who spend any time working at the chair) reported they employ auxiliary personnel. Dental assistants, the most frequently employed auxiliary, are utilized by 83 percent of all practitioners, including 75 percent who employ at least one assistant on a full-time basis. Secretaries or receptionists are employed by 28 percent of the dentists with about three-fifths of these dentists utilizing such personnel full time. Twenty-one percent of the dentists employ dental hygienists and 14 percent employ dental technicians. A majority of the dentists who employ hygienists or technicians do so only part time.

Washington Dentists Employing Auxiliaries, by Type of Auxiliary

<table>
<thead>
<tr>
<th>Type of auxiliary employed by dentists</th>
<th>Percent of dental practitioners</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Dental practitioners</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1,447**</td>
</tr>
<tr>
<td>One or more auxiliaries</td>
<td>1,223</td>
</tr>
<tr>
<td>Assistant</td>
<td>1,149</td>
</tr>
<tr>
<td>Hygienist</td>
<td>286</td>
</tr>
<tr>
<td>Laboratory technician</td>
<td>185</td>
</tr>
<tr>
<td>Secretary or receptionist</td>
<td>395</td>
</tr>
<tr>
<td>Other type of personnel</td>
<td>58</td>
</tr>
<tr>
<td>No auxiliary</td>
<td>166</td>
</tr>
</tbody>
</table>

** Includes 58 dentists who did not report on auxiliary utilization.

Employment of auxiliaries varies with the age of the dentist, becoming less frequent among dentists in the older age groups. Approximately 95 percent of Washington dentists between the ages of 30 and 44 employ some type of auxiliary. The proportion using auxiliaries decreases to 85 percent among dentists 45 to 64 years of age, and to 58 percent among dentists 65 and over.

Although dentists in metropolitan areas are no more likely to employ auxiliary personnel than are those located in nonmetropolitan counties, the use of hygienists is much more common in metropolitan areas than in the remainder of the State. About 24 percent of the dentists in metropolitan areas report the employment of hygienists, compared to only 11 percent of those in nonmetropolitan counties.
OTHER SURVEY FINDINGS

*** Ninety-six percent of the professionally active dentists in Washington are primarily engaged in private practice. Another two percent are teaching in a dental school, and the remaining 2 percent are either employed by government agencies or are engaged in other dental activities, such as taking advanced training.

*** At least one part-time dental activity in addition to their principal employment was reported by 11 percent of the dentists. Nearly one-half of these dentists are on the faculty of a dental school on a part-time basis. The remainder reported a variety of secondary activities, such as part-time employment by a governmental agency, employment in the private practice of another dentist and assistance to a voluntary agency.

*** Dentists reporting time spent in providing patient care devoted an average of 39.5 hours per week to this activity for 47.9 weeks during the year preceding the survey. About one dentist in seven worked the equivalent of six days a week, 48 hours or more, for at least 48 weeks.

*** About 13 percent of the practitioners reported that they limit their practices to a dental specialty, most frequently orthodontics, with pedodontics and prosthodontics the next most frequent area. Dentists in the metropolitan areas are somewhat more likely to limit their practices to a dental specialty than are those in the nonmetropolitan counties.

*** Sixteen percent of the respondents, 244 dentists, practiced as civilian dentists in one of 40 other states immediately prior to assuming their present Washington location. More than one-third of these dentists moved to Washington from California or Oregon, and another 22 percent came from the North Central States.

*** Almost 40 percent of the dentists located in Washington are also licensed to practice dentistry in other states. One-third of all out-of-state licenses are held in Oregon and another one-fifth are held in California. Washington dentists are also licensed in 36 other states, primarily the North Central States of Minnesota, Illinois and Iowa.
### APPENDIX TABLE

Selected Data on Dentists in Washington, by Location

<table>
<thead>
<tr>
<th>County group and County</th>
<th>Civilian dentists</th>
<th>Non-respondents</th>
<th>Age in 1965</th>
<th>Professionally active</th>
<th>Population (in 000's)</th>
<th>Persons per active dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total respondents</td>
<td></td>
<td>Under 35</td>
<td>55 years or more</td>
<td></td>
<td></td>
</tr>
<tr>
<td>All counties</td>
<td>1,968</td>
<td>1,531</td>
<td>437</td>
<td>308</td>
<td>1,858</td>
<td>3,055.9</td>
</tr>
<tr>
<td>Metropolitan areas</td>
<td>1,111</td>
<td>1,100</td>
<td>311</td>
<td>218</td>
<td>1,133</td>
<td>1,968.6</td>
</tr>
<tr>
<td>Seattle-Everett area</td>
<td>974</td>
<td>745</td>
<td>229</td>
<td>154</td>
<td>926</td>
<td>1,223.0</td>
</tr>
<tr>
<td>King</td>
<td>863</td>
<td>660</td>
<td>203</td>
<td>131</td>
<td>82</td>
<td>1,019.5</td>
</tr>
<tr>
<td>Snohomish</td>
<td>111</td>
<td>82</td>
<td>26</td>
<td>23</td>
<td>105</td>
<td>203.5</td>
</tr>
<tr>
<td>Tacoma area</td>
<td>181</td>
<td>155</td>
<td>26</td>
<td>30</td>
<td>171</td>
<td>348.9</td>
</tr>
<tr>
<td>Pierce</td>
<td>181</td>
<td>155</td>
<td>26</td>
<td>30</td>
<td>171</td>
<td>348.9</td>
</tr>
<tr>
<td>Spokane area</td>
<td>201</td>
<td>152</td>
<td>49</td>
<td>24</td>
<td>189</td>
<td>293.4</td>
</tr>
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<td>7</td>
<td>10</td>
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<tr>
<td>Nonmetropolitan counties</td>
<td>550</td>
<td>424</td>
<td>126</td>
<td>85</td>
<td>514</td>
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<tr>
<td>Central city 25,000-49,999</td>
<td>157</td>
<td>130</td>
<td>27</td>
<td>32</td>
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<td>Whatcom</td>
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<td>8</td>
<td>9</td>
<td>43</td>
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<tr>
<td>Yakima</td>
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<td>12</td>
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<td>61</td>
<td>33</td>
<td>227</td>
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<td>Benton</td>
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<td>2</td>
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<td>4</td>
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<td>31.8</td>
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<td>5</td>
<td>4</td>
<td>3</td>
<td>9</td>
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<td>3</td>
<td>6</td>
<td>2</td>
<td>19</td>
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## APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Washington, by Location

<table>
<thead>
<tr>
<th>County group and county</th>
<th>Total</th>
<th>Respondents</th>
<th>Non-respondents</th>
<th>Age in 1965</th>
<th>Professionally active</th>
<th>Population (in 000's)</th>
<th>Persons per active dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central city 10,000-24,999 (cont'd.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>7</td>
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<td>55.3</td>
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<td>9</td>
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<td>12</td>
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<td>22</td>
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<td>2</td>
<td>4</td>
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<td>Central city 5,000-9,999</td>
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<tr>
<td>Asotin</td>
<td>6</td>
<td>5</td>
<td>1</td>
<td>2</td>
<td>-</td>
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<td>13.9</td>
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<tr>
<td>Jefferson</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td>-</td>
<td>1</td>
<td>4</td>
<td>9.7</td>
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<tr>
<td>Kittitas</td>
<td>11</td>
<td>8</td>
<td>3</td>
<td>1</td>
<td>2</td>
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<td>21.9</td>
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<tr>
<td>Lewis</td>
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<td>2</td>
<td>7</td>
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<td>42.0</td>
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<tr>
<td>Mason</td>
<td>8</td>
<td>3</td>
<td>5</td>
<td>-</td>
<td>1</td>
<td>6</td>
<td>16.8</td>
</tr>
<tr>
<td>Skagit</td>
<td>29</td>
<td>23</td>
<td>6</td>
<td>-</td>
<td>7</td>
<td>28</td>
<td>33.4</td>
</tr>
<tr>
<td>Central city 2,500-4,999</td>
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<td>Adams</td>
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<tr>
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<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>4.4</td>
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<tr>
<td>Island</td>
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<td>2</td>
<td>4</td>
<td>2</td>
<td>9</td>
<td>27.8</td>
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<td>1</td>
<td>3</td>
<td>4</td>
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<tr>
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<td>3</td>
<td>2</td>
<td>1</td>
<td>13</td>
<td>25.0</td>
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<tr>
<td>Pacific</td>
<td>10</td>
<td>9</td>
<td>1</td>
<td>4</td>
<td>4</td>
<td>9</td>
<td>13.7</td>
</tr>
<tr>
<td>Stevens</td>
<td>6</td>
<td>3</td>
<td>3</td>
<td>-</td>
<td>1</td>
<td>6</td>
<td>17.4</td>
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<tr>
<td>Central city under 2,500</td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Douglas</td>
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<td>-</td>
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<td>Ferry</td>
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<td>-</td>
<td>-</td>
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<td>3.8</td>
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<td>1</td>
<td>-</td>
<td>-</td>
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<td>2.8</td>
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<td>Lincoln</td>
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<td>3</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>4</td>
<td>10.8</td>
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</table>
### APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Washington, by Location

<table>
<thead>
<tr>
<th>County group and county</th>
<th>Civilian dentists</th>
<th>Population (in 000's)</th>
<th>Persons per active dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total respondents</td>
<td>Non-respondents</td>
<td>Age in 1905</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Under 35</td>
</tr>
</tbody>
</table>

#### Nonmetropolitan counties (cont'd.)

**Central city under 2,500 (cont'd.)**

<table>
<thead>
<tr>
<th>County</th>
<th>Total</th>
<th>Non-respondents</th>
<th>Age in 1905</th>
<th>Professionally active</th>
<th>Population (in 000's)</th>
<th>Persons per active dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pend Oreille</td>
<td>2</td>
<td>2</td>
<td>-</td>
<td>2</td>
<td>6.7</td>
<td>3,350</td>
</tr>
<tr>
<td>San Juan</td>
<td>2</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>2.7</td>
<td>1,350</td>
</tr>
<tr>
<td>Skamania</td>
<td>2</td>
<td>2</td>
<td>-</td>
<td>1</td>
<td>5.3</td>
<td>5,300</td>
</tr>
<tr>
<td>Wahkiakum</td>
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<td>1</td>
<td>-</td>
<td>-</td>
<td>3.2</td>
<td>3,200</td>
</tr>
</tbody>
</table>

---


2/ Washington counties included in the latest 1967 definition of Standard Metropolitan Statistical areas, as established by the U.S. Bureau of the Budget, Office of Statistical Standards, have been grouped as metropolitan areas for presentation of the survey data.

3/ For the interstate Portland SMSA, statistics are presented only for dentists located in the Washington portion (Clark County), herein designated as the Vancouver area.

4/ Counties not included within a SMSA, as defined by the U.S. Bureau of the Budget, have been grouped according to the 1960 population of the largest (central) city within each county.
DENTISTS LICENSED IN WEST VIRGINIA

A total of 822 dentists registered with the West Virginia Board of Dental Examiners during the 1965 reregistration period (Table 1). The survey questionnaire was completed by 759 dentists, or 92 percent of all those registering. However, among those responding, only 556 dentists, or 73 percent, are actually located in West Virginia. Another

<table>
<thead>
<tr>
<th>Location and military status</th>
<th>All dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total licensed</td>
<td>822</td>
<td>100</td>
</tr>
<tr>
<td>Respondents</td>
<td>759</td>
<td>92</td>
</tr>
<tr>
<td>Nonrespondents</td>
<td>63</td>
<td>8</td>
</tr>
<tr>
<td>Respondents</td>
<td>759</td>
<td>100</td>
</tr>
<tr>
<td>Civilians in West Virginia</td>
<td>556</td>
<td>73</td>
</tr>
<tr>
<td>Civilians in another State</td>
<td>158</td>
<td>21</td>
</tr>
<tr>
<td>On active duty with Armed Forces</td>
<td>45</td>
<td>6</td>
</tr>
</tbody>
</table>

21 percent of the respondents are civilian dentists located in another State or abroad and the remaining 6 percent are on active duty with the Armed Forces.

The 759 responding dentists hold a total of more than 1,250 licenses in all States. A relatively large proportion, three-fifths, of the dentists located in West Virginia hold only the one State license (Table 2). The proportion of dentists on active duty in the Armed Forces who are licensed only in West Virginia is almost as large. Multiple licensure occurs most frequently among the civilian dentists who are located in other States. While licenses are held in 2 or more other States by only 4 percent of the civilian in-State dentists and 13 percent of the dentists in the Armed Forces, licenses are held in 2 or more additional States by 29 percent of the civilian dentists who are located outside the State.
Table 2.—Percent of Dentists Holding Licenses in Other States

<table>
<thead>
<tr>
<th>Licenses held</th>
<th>All respondents</th>
<th>Civilian dentists</th>
<th>Armed Forces</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>In West Virginia</td>
<td>Out-of-State</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>West Virginia license only</td>
<td>46</td>
<td>58</td>
<td>-</td>
</tr>
<tr>
<td>Licensed in 1 other State</td>
<td>44</td>
<td>38</td>
<td>71</td>
</tr>
<tr>
<td>Licensed in 2 other States</td>
<td>9</td>
<td>3</td>
<td>25</td>
</tr>
<tr>
<td>Licensed in 3 or more other States</td>
<td>1</td>
<td>1</td>
<td>4</td>
</tr>
</tbody>
</table>

Civilian Dentists in West Virginia

Sources of Supply

Dental schools.—West Virginia's dentists are graduates of 30 dental schools. More than three-fourths of all dentists in the State were graduated from 10 dental schools located in adjacent States—Kentucky, Maryland, Ohio, Pennsylvania, and Virginia—including two schools (the Cincinnati College of Dental Surgery and the Ohio College of Dental Surgery) which are no longer in existence.

The dental school at the University of Maryland, which has graduated one-fourth of the dentists in West Virginia, has long been the primary source of the State's dentist supply (Table 3). However, the proportion of the State's dentists graduating from Maryland has declined substantially in recent years, and chiefly because of the growing role of West Virginia's new school of dentistry in supplying dentists for the State.

Although the first class at West Virginia was not graduated until 1961, graduates of this school account for 3 percent of all dentists located in the State. In fact, the new school is rapidly becoming West Virginia's primary source of dentist supply. Its graduates account for three of every five dentists in the State who have completed their dental education in the years since West Virginia produced its first graduating class. However, because many graduating dentists seek advanced training or enter the Armed Forces prior to establishing their practices, the contribution of these first few graduating classes to the State's dentist supply will not be fully determined for a few more years.
Table 3.--School Awarding Dental Degree, by Year Awarded

<table>
<thead>
<tr>
<th>Dental school attended</th>
<th>Number of dentists</th>
<th>Year of graduation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>All 1941-</td>
</tr>
<tr>
<td>Total number</td>
<td>556</td>
<td>556</td>
</tr>
<tr>
<td>(Percent distribution by school)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maryland</td>
<td>139</td>
<td>25</td>
</tr>
<tr>
<td>Pittsburgh</td>
<td>95</td>
<td>17</td>
</tr>
<tr>
<td>Louisville</td>
<td>74</td>
<td>13</td>
</tr>
<tr>
<td>Ohio College (extinct)</td>
<td>37</td>
<td>7</td>
</tr>
<tr>
<td>Northwestern</td>
<td>33</td>
<td>6</td>
</tr>
<tr>
<td>Virginia</td>
<td>27</td>
<td>5</td>
</tr>
<tr>
<td>Ohio State</td>
<td>20</td>
<td>4</td>
</tr>
<tr>
<td>West Virginia</td>
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<td>3</td>
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<tr>
<td>Indiana</td>
<td>14</td>
<td>3</td>
</tr>
<tr>
<td>Emory</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>20 other schools</td>
<td>84</td>
<td>15</td>
</tr>
</tbody>
</table>

1/ Individual items in this and succeeding tables may not add to the totals shown due to the failure of some responding dentists to reply to all items on the questionnaire. Where percentages are shown, they are based on data supplied by dentists responding to the item (see Appendix Table A).

The dental schools of the Universities of Pittsburgh and Louisville have also been major contributors of dentists to West Virginia, and their proportionate contribution has remained relatively constant through the years. One other school--the College of Dentistry of The Medical College of Virginia--has also become a relatively important source of dentists in recent years.

The remainder of the State's dentists--about a fifth in all--are graduates of 12 dental schools located in 12 more distant States and the District of Columbia. Northwestern, Indiana, and Emory Universities have contributed the greatest number of these dentists.

Dentists relocating in West Virginia.--One in every 8 dentists currently in West Virginia was located as a civilian in another State or abroad immediately prior to assuming his present West Virginia location. Of the 67 immigrant dentists, 28, or 42 percent, moved to West Virginia from one of the 5 adjacent States. The remainder came from 24 other States, the District of Columbia or abroad. More than one-half of the immigrant dentists located in West Virginia during the 1950's, and about a quarter moved to the State in 1960 or more recently.
Personal Characteristics

Age and sex.--West Virginia's dentists, as a group, are not very young. The median age in 1965 of reporting dentists was 47.6 years. Less than one-fourth of the dentists were under 40 years of age, while slightly over one-third were at least 55 years old, including one-fifth who were aged 65 and over (Table 4). There are only 5 women dentists included among the respondents. For this reason, data for women will not be shown separately in this report.

Table 4.--Age Distribution

<table>
<thead>
<tr>
<th>Age</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>556</td>
<td>100</td>
</tr>
<tr>
<td>Under 30</td>
<td>18</td>
<td>3</td>
</tr>
<tr>
<td>30 - 34</td>
<td>47</td>
<td>8</td>
</tr>
<tr>
<td>35 - 39</td>
<td>65</td>
<td>12</td>
</tr>
<tr>
<td>40 - 44</td>
<td>116</td>
<td>21</td>
</tr>
<tr>
<td>45 - 49</td>
<td>62</td>
<td>11</td>
</tr>
<tr>
<td>50 - 54</td>
<td>61</td>
<td>11</td>
</tr>
<tr>
<td>55 - 59</td>
<td>34</td>
<td>6</td>
</tr>
<tr>
<td>60 - 64</td>
<td>46</td>
<td>8</td>
</tr>
<tr>
<td>65 - 69</td>
<td>50</td>
<td>9</td>
</tr>
<tr>
<td>70 - 74</td>
<td>36</td>
<td>7</td>
</tr>
<tr>
<td>75 &amp; over</td>
<td>21</td>
<td>4</td>
</tr>
</tbody>
</table>

Advanced training.--About 15 percent of all dentists in the State have completed one year or more of advanced training. The majority--11 percent of the total--have had advanced clinical training as interns or residents (Table 5).

Although advanced academic education is somewhat less common, more than half of those who have advanced training (8 percent of the State's dental force:) have completed at least one year of academic work beyond their dental degree. Four percent of all dentists in the State have had both advanced clinical training and a year or more of graduate or postgraduate academic work.
Table 5.--Advanced Training

<table>
<thead>
<tr>
<th>Highest level of training completed</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>With advanced training</td>
<td>82</td>
<td>15</td>
</tr>
<tr>
<td>Clinical training only</td>
<td>38</td>
<td>7</td>
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<tr>
<td>Academic training only</td>
<td>23</td>
<td>4</td>
</tr>
<tr>
<td>Both clinical and academic</td>
<td>21</td>
<td>4</td>
</tr>
<tr>
<td>Clinical training</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residency completed</td>
<td>20</td>
<td>4</td>
</tr>
<tr>
<td>Internship completed</td>
<td>39</td>
<td>7</td>
</tr>
<tr>
<td>Academic training</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ph.D., M.D., or other doctor's degree</td>
<td>1</td>
<td>*</td>
</tr>
<tr>
<td>M.A., M.S., or other master's degree</td>
<td>18</td>
<td>3</td>
</tr>
<tr>
<td>Postgraduate 1 year or more (no degree)</td>
<td>25</td>
<td>4</td>
</tr>
</tbody>
</table>

*Less than one-half of one percent.

Among dentists under 40 years of age, 21 percent report having received a year or more of advanced training. In contrast, only 16 percent of those aged 40 to 54, and 9 percent of those 55 years or older report having had this much advanced education. The tendency for younger dentists to seek more training is especially marked in the case of advanced academic work. One in every 6 dentists under 40 years of age has had a year or more of graduate or postgraduate study as compared with one in every 30 of those 55 years old or more.

Distribution and Current Status

Distribution of dentists.—West Virginia’s dentists are unevenly distributed geographically, with 71 percent of the reporting dentists located in only 13 of the State’s 55 counties. Four of these 13 counties, each of which has 10 or more dentists, are located in metropolitan areas. The remaining nine are nonmetropolitan counties, i.e., they have central cities of less than 50,000 population, and they are not part of a multi-county grouping with a central city of 50,000 or more. (Appendix Table B lists individual counties by size of central city and shows the number of reporting dentists in each county.)

More than two-fifths of all responding dentists are located in the four metropolitan areas of West Virginia (Table 6). The greatest concentration of dentists, 18 percent of all respondents, is in Kanawha County, which comprises the Charleston metropolitan area. The Huntington, Wheeling and
Table 6.--Distribution by County Group

<table>
<thead>
<tr>
<th>County group</th>
<th>Number of counties</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>All counties</td>
<td>55</td>
<td>556</td>
<td>100</td>
</tr>
<tr>
<td>All metropolitan areas</td>
<td>7</td>
<td>232</td>
<td>42</td>
</tr>
<tr>
<td>Charleston area</td>
<td>1</td>
<td>99</td>
<td>18</td>
</tr>
<tr>
<td>Huntington area</td>
<td>2</td>
<td>68</td>
<td>12</td>
</tr>
<tr>
<td>Wheeling area</td>
<td>2</td>
<td>46</td>
<td>8</td>
</tr>
<tr>
<td>Weirton area</td>
<td>2</td>
<td>19</td>
<td>4</td>
</tr>
<tr>
<td>Nonmetropolitan county groups</td>
<td>46</td>
<td>324</td>
<td>58</td>
</tr>
<tr>
<td>Central city 25,000-49,999</td>
<td>3</td>
<td>77</td>
<td>14</td>
</tr>
<tr>
<td>Central city 10,000-24,999</td>
<td>4</td>
<td>82</td>
<td>15</td>
</tr>
<tr>
<td>Central city 5,000-9,999</td>
<td>10</td>
<td>60</td>
<td>11</td>
</tr>
<tr>
<td>Central city 2,500-4,999</td>
<td>8</td>
<td>58</td>
<td>10</td>
</tr>
<tr>
<td>Central city under 2,500</td>
<td>23</td>
<td>47</td>
<td>8</td>
</tr>
</tbody>
</table>

Note: See Appendix Table B for a listing of counties within each county group and the number of dentists located in each county.

Weirton areas--each of which is a part of a larger interstate metropolitan area--account for 24 percent of the state's dentist supply. Cabell County, one of the two counties constituting the Huntington area, has the second largest dental force in the state, and Ohio County, in the Wheeling area, has the third largest.

Many of the nonmetropolitan counties in the state also have fairly sizable numbers of dentists. Each of the three counties with central cities of 25,000-49,999 persons--Harrison, Wood and Marion--has a larger dental force than the Weirton area, for example. And, Monongalia County, one of the state's 4 nonmetropolitan counties with central cities of 10,000-24,999 population, has the fourth largest number of dentists of any county in the state. The fact that this county is the site of the dental school contributes, at least in part, to the large number of reporting dentists located there.

Among counties containing a city of 10,000 or more people, only Berkeley County has fewer than 10 responding dentists. By contrast, only 3 of the 41 counties without a city of this size--(McDowell, Fayette, and Greenbrier) have as many as 10 reporting dentists. Among the 23 counties with fewer than 2,500 persons in their central cities, three--Calhoun, Clay and Monroe--have no reporting dentists. None of the remaining 20 counties in this group has more than 6 reporting dentists.
There are marked differences in the age distribution of reporting dentists in the various county groups and also among the individual counties. On the average, dentists are younger in the Charleston area, in the two groups of nonmetropolitan counties with central cities of 10,000 or more population, and in counties with central cities of less than 2,500 persons (Table 7).

Of the 52 counties with reporting dentists, 24 have no dentists under 35 years of age. Furthermore, 17 of these counties have no dentists under 40 years old and 7 have none under 45. At least one half of the dentists in 19 counties reported they were 55 years of age or older.

Table 7.--Median Age and Age Distribution, by County Group

<table>
<thead>
<tr>
<th>County group</th>
<th>Median age</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Under 35</td>
</tr>
<tr>
<td>All counties</td>
<td>47.6</td>
<td>12</td>
</tr>
<tr>
<td>All metropolitan areas</td>
<td>47.5</td>
<td>10</td>
</tr>
<tr>
<td>Charleston area</td>
<td>45.6</td>
<td>12</td>
</tr>
<tr>
<td>Huntington area</td>
<td>48.0</td>
<td>10</td>
</tr>
<tr>
<td>Wheeling area</td>
<td>49.2</td>
<td>7</td>
</tr>
<tr>
<td>Weirton area</td>
<td>50.8</td>
<td>10</td>
</tr>
</tbody>
</table>

Nonmetropolitan county groups

| Central city 25,000-49,999   | 47.2       | 12 | 32 | 17 | 18 | 21 |
| Central city 10,000-24,999   | 45.0       | 9  | 40 | 27 | 11 | 13 |
| Central city 5,000–9,999     | 51.4       | 15 | 22 | 26 | 12 | 25 |
| Central city 2,500–4,999     | 50.0       | 14 | 26 | 17 | 19 | 24 |
| Central city under 2,500     | 45.8       | 15 | 34 | 15 | 13 | 17 |

The counties making up the Weirton area have the largest concentration of older dentists, with almost a third of all dentists in this area reporting that they were 65 years old or over in 1965. Counties with central cities ranging from 2,500 to 10,000 also have relatively large numbers of dentists who are 65 years old or over. In these counties, one in every four dentists reported having reached this age.

Professional status.--Of the 556 civilian dentists in West Virginia, 538, or 97 percent, reported that they were professionally active at the time of the survey. Fourteen dentists regard themselves as fully retired, 2 are engaged in non dental employment and the remaining 2 did not report their current status. Even though almost all of the retired dentists are in the older age groups, relatively few of the older dentists who responded to the survey consider themselves retired. Of the 106 dentists 65 years and over, only 10 percent reported themselves as fully retired.
Active dentists in relation to population.--In general, there are fewer persons per active dentist in the metropolitan areas than in the nonmetropolitan county groups—the persons-per-dentist ratios range from 2,151 in the Huntington area to 5,730 for the group of counties with less than 2,500 persons in their central cities (Table 8).

Table 8.—Number of Persons per Active Dentist

<table>
<thead>
<tr>
<th>County group</th>
<th>Professionally active dentists</th>
<th>Civilian population</th>
<th>Persons per active dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td>All counties</td>
<td>538</td>
<td>1,780,800</td>
<td>3,310</td>
</tr>
<tr>
<td>All metropolitan areas</td>
<td>221</td>
<td>572,400</td>
<td>2,590</td>
</tr>
<tr>
<td>Charleston area</td>
<td>93</td>
<td>251,600</td>
<td>2,705</td>
</tr>
<tr>
<td>Huntington area</td>
<td>68</td>
<td>146,300</td>
<td>2,151</td>
</tr>
<tr>
<td>Wheeling area</td>
<td>43</td>
<td>102,300</td>
<td>2,379</td>
</tr>
<tr>
<td>Weirton area</td>
<td>17</td>
<td>72,200</td>
<td>4,247</td>
</tr>
<tr>
<td>Nonmetropolitan county groups</td>
<td>317</td>
<td>1,208,400</td>
<td>3,812</td>
</tr>
<tr>
<td>Central city 25,000-49,999</td>
<td>75</td>
<td>211,200</td>
<td>2,816</td>
</tr>
<tr>
<td>Central city 10,000-24,999</td>
<td>81</td>
<td>223,800</td>
<td>2,763</td>
</tr>
<tr>
<td>Central city 5,000-9,999</td>
<td>59</td>
<td>255,700</td>
<td>4,334</td>
</tr>
<tr>
<td>Central city 2,500-4,999</td>
<td>56</td>
<td>234,100</td>
<td>4,538</td>
</tr>
<tr>
<td>Central city under 2,500</td>
<td>46</td>
<td>263,600</td>
<td>5,730</td>
</tr>
</tbody>
</table>

The ratios of the 52 counties with professionally active reporting dentists vary considerably more than the data for county groups indicate. Monongalia County has the most favorable ratio with one professionally active dentist for every 1,531 persons, while Putnam County with 12,400 persons for every responding dentist has the least favorable ratio (see Appendix Table C for individual county data). However, if the dentists who reported they are primarily associated with the West Virginia University, School of Dentistry are excluded, the relationship of population to dentists in Monongalia County becomes less favorable, with an adjusted ratio of one dentist to every 2,755 persons. On this basis, Ohio and Cabell Counties have the most favorable ratios, with 1,727 and 1,759 persons, respectively, for every active dentist. In addition to these 3 counties, there are only 15 other counties with fewer persons per dentist than the State average of one professionally active respondent for every 3,310 persons in West Virginia.

In many of the remaining 34 counties with reporting active dentists, the persons-per-dentist ratio is considerably less favorable than the State average. In addition to Putnam County, there are 19 counties with ratios in excess of 5,000 persons per active dentist, including 6 counties with more than 8,000 persons per dentist—Boone (8,267), Morgan (8,300), Gilmer (8,900), Lewis (10,050), Lincoln (10,100) and Ritchie (10,200).
Professional Activity

Current employment.--Almost all of the professionally active dentists in West Virginia are primarily engaged in private practice: 94 percent are self-employed and 1 percent are employed by another dentist (Table 9). About 3 percent of the State's dentists are on the staff of the dental school at the University of West Virginia and the remaining 2 percent are either employed by federal, State or local government agencies, or are engaged in other dental employment.

Table 9.--Current Employment of Professionally Active Dentists

<table>
<thead>
<tr>
<th>Type of principal employment</th>
<th>Principal employment</th>
<th>Secondary employment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number employed</td>
<td>Percent</td>
</tr>
<tr>
<td>Total</td>
<td>538</td>
<td>100</td>
</tr>
<tr>
<td>Self-employed</td>
<td>502</td>
<td>94</td>
</tr>
<tr>
<td>Employed by other dentists</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>On staff of dental schools</td>
<td>17</td>
<td>3</td>
</tr>
<tr>
<td>Employed by State or local government</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Other dental employment</td>
<td>8</td>
<td>1</td>
</tr>
</tbody>
</table>

*Less than one-half of one percent.

A small proportion of the active dentists, 7 percent, reported that they were employed in a part-time dental activity in addition to their primary professional employment. Most of these dentists who engaged in part-time secondary employment are private practitioners. Even though they are few in number, these dentists reported a variety of secondary dental activities. For instance, about one-half reported part-time employment in a governmental health agency providing such services as dental consultation to the Veterans Administration hospitals and patient care in local health clinics. Other dentists reported that they teach part-time at the dental school or in one of the State's dental hygiene training programs. A few are employed by private organizations, primarily voluntary agencies.

Activity last year.--Of all dentists reporting on their professional activity in West Virginia last year, 97 percent said they provided care to patients (Table 10). These dentists spent 95 percent of the total reported professional time in providing patient care. Six percent of the dentists reported they spent some time in teaching, but only 3 percent of total professional time was spent at this activity. While two percent of the dentists were engaged in research activities and three percent spent time in some other dental activity, such as taking additional training, only two percent of the total reported professional time was spent in these two types of activities.
Table 10.--Professional Activity Last Year

<table>
<thead>
<tr>
<th>Type of activity</th>
<th>Dentists reporting activity last year</th>
<th>Percent of total professional time</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percent</td>
</tr>
<tr>
<td>Total</td>
<td>5001/</td>
<td>1001/</td>
</tr>
<tr>
<td>Patient care</td>
<td>485</td>
<td>97</td>
</tr>
<tr>
<td>Teaching</td>
<td>29</td>
<td>6</td>
</tr>
<tr>
<td>Research</td>
<td>11</td>
<td>2</td>
</tr>
<tr>
<td>Other</td>
<td>15</td>
<td>3</td>
</tr>
</tbody>
</table>

1/ Individual items add to more than total because some dentists spent time in more than one type of activity.

Of the dentists who provided patient care, slightly more than four-fifths reported having spent 48 weeks or more at this activity in the previous year (Table 11). Dentists who worked all year (48-52 weeks) spent longer hours providing patient care than did those who worked only part of the year. Seven of every 10 dentists spending 48 weeks or more in patient care worked 40 or more hours per week, while only 5 in every 10 working less than 43 weeks spent as much time providing care.

Table 11.--Time Spent in Patient Care Last Year

<table>
<thead>
<tr>
<th>Weeks spent in patient care</th>
<th>Percent of dentists providing patient care</th>
<th>Percent distribution by work week</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>100</td>
<td>48 hours or more 41-47 hours 40 hours 35-39 hours Under 35 hours</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>16 16 35 18 15</td>
</tr>
<tr>
<td>50 weeks or more</td>
<td>48</td>
<td>8 8 18 8 6</td>
</tr>
<tr>
<td>48-49 weeks</td>
<td>33</td>
<td>6 6 11 7 3</td>
</tr>
<tr>
<td>40-47 weeks</td>
<td>14</td>
<td>2 2 4 2 4</td>
</tr>
<tr>
<td>Less than 40 weeks</td>
<td>5</td>
<td>* * 2 1 2</td>
</tr>
</tbody>
</table>

*Less than one-half of one percent.

Practice Characteristics

Limited practices.--Only one in every ten dentists in West Virginia reported that they limit their practices to a dental specialty. Over two-thirds of these dentists reported their practices are limited to one of two specialty areas--38 percent in oral surgery and 30 percent in orthodontics. Specialization is more common in the metropolitan areas where 14 percent of the dentists reported limited practices than in the nonmetropolitan areas where only 6 percent of the dentists limited their practices.
Use of auxiliaries.—Almost three-fourths of the dental practitioners in West Virginia (i.e., dentists who spend any time working at the chair) report that they employ auxiliary personnel (Table 12). The majority of the practitioners, 64 percent, employ dental assistants, while the next most frequently employed personnel, secretaries and receptionists, are employed by only 21 percent. Both types of auxiliaries are employed on a full-time basis by most of the dentists. Dental hygienists and laboratory technicians are much less frequently utilized by practitioners in West Virginia. Not only are these auxiliaries employed by proportionately fewer dentists, but they are more frequently employed on a part-time basis than are assistants and secretaries.

Table 12.—Auxiliary Utilization by Dental Practitioners

<table>
<thead>
<tr>
<th>Type of auxiliary</th>
<th>Number of practitioners</th>
<th>Percent of practitioners</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>524</td>
<td>100</td>
</tr>
<tr>
<td>With one or more auxiliaries</td>
<td>381  73  1/</td>
<td>73  1/</td>
</tr>
<tr>
<td>With assistant</td>
<td>336</td>
<td>64</td>
</tr>
<tr>
<td>With hygienist</td>
<td>64</td>
<td>12</td>
</tr>
<tr>
<td>With laboratory technician</td>
<td>20</td>
<td>4</td>
</tr>
<tr>
<td>With secretary or receptionist</td>
<td>110</td>
<td>21</td>
</tr>
<tr>
<td>With other type of personnel</td>
<td>18</td>
<td>3</td>
</tr>
<tr>
<td>With no auxiliary</td>
<td>143</td>
<td>27</td>
</tr>
</tbody>
</table>

1/ Individual items add to more than total because some dentists employ more than one type of auxiliary.

Auxiliary utilization varies according to the age of the dentist and is greatest among the young dentists. About 85 percent of the dental practitioners between the ages of 35 and 44 employ auxiliaries. In contrast, auxiliaries are utilized by only 46 percent of the practitioners 65 years or older.

In general, the location of the dentist does not greatly influence the degree of auxiliary utilization. Among the county groups, the percent of practitioners employing auxiliaries ranges only from 76 percent of those in metropolitan areas to 68 percent of those in the nonmetropolitan county group with central cities of 25,000-49,999. As the data in Appendix Table C indicate, a proportionately large number of dentists in most counties utilize auxiliary personnel.

About 13 percent of the dental practitioners in West Virginia reported one or more vacant positions for auxiliary personnel. About 37 percent of the dentists reported vacancies for full-time hygienists and 36 percent reported vacancies for full-time dental assistants. Four of every five dentists reporting a vacancy already employ an auxiliary.
Out-of-state Civilian Dentists

State Location

West Virginia licenses are maintained by at least 158 civilian dentists located in 23 States, the District of Columbia and Puerto Rico (Table 13). About three-fifths of these out-of-State dentists are located in the five adjacent States, primarily in Virginia and Maryland. Florida is the only more distant State in which at least ten percent of the out-of-State dentists are currently located.

Table 13.—Out-of-State Civilian Dentists, by Present Location

<table>
<thead>
<tr>
<th>Present location</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>158</td>
<td>100</td>
</tr>
<tr>
<td>Adjacent States</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kentucky</td>
<td>9</td>
<td>6</td>
</tr>
<tr>
<td>Maryland</td>
<td>23</td>
<td>15</td>
</tr>
<tr>
<td>Ohio</td>
<td>18</td>
<td>11</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>16</td>
<td>10</td>
</tr>
<tr>
<td>Virginia</td>
<td>28</td>
<td>18</td>
</tr>
<tr>
<td>Nonadjacent States</td>
<td></td>
<td></td>
</tr>
<tr>
<td>California</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>Florida</td>
<td>16</td>
<td>10</td>
</tr>
<tr>
<td>North Carolina</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td>16 other States</td>
<td>33</td>
<td>21</td>
</tr>
</tbody>
</table>

A large proportion of the out-of-State dentists are graduates of dental schools at the Universities of Maryland and Pittsburgh (24 percent and 17 percent, respectively). However, 14 percent of all out-of-State civilian dentists are graduates of the West Virginia University, School of Dentistry, and these dentists account for almost all of the out-of-State dentists who have completed their dental education in the last few years.

Age and Professional Status

As a group, the out-of-State civilian dentists are younger than those presently in West Virginia. While only 23 percent of the dentists located in West Virginia were under 40 years of age in 1965, 52 percent of the out-of-State civilian dentists were in this young age group. Furthermore, only 5 percent of the out-of-State dentists were 65 years old or over, as compared with
20 percent of the in-State dentists. However, the relatively low proportion of older out-of-State dentists may be attributed, at least in part, to the fact that as a dentist becomes more established he is less likely to maintain a license in a State in which he is not practicing.

Ninety-nine percent of the out-of-State dentists report that they are professionally active. The majority, 78 percent, are in private practice. About 12 percent are employed in governmental agencies, 3 percent are on the staffs of dental schools and the remaining 5 percent are engaged in other dental activities, such as taking advanced training.

Outmigrant Dentists

Almost three of every ten out-of-State respondents reported that they had formerly been located in West Virginia. (Because these figures include only civilian dentists who were professionally active in West Virginia immediately prior to assuming their present location in another State, they do not reflect those residents of West Virginia who chose to establish their practices in other States immediately following completion of their dental education.) About three-fifths of the 44 reporting outmigrant dentists are now located in five States--Virginia, Florida, Ohio, Pennsylvania and California--and the remaining two-fifths are scattered in 11 other States and the District of Columbia.
Appendix Table A.--Summary Statistics for West Virginia

<table>
<thead>
<tr>
<th>Description</th>
<th>Number of Dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>All licensed dentists</td>
<td>822</td>
</tr>
<tr>
<td>Respondents -- total dentists participating in survey</td>
<td>759</td>
</tr>
<tr>
<td>Civilian dentists in West Virginia[^1] -- civilian respondents designated simply as &quot;dentists&quot; in text tables</td>
<td>556</td>
</tr>
<tr>
<td>(number not reporting: principal current employment - 4, year of graduation - 1, school of graduation - 4)</td>
<td></td>
</tr>
<tr>
<td>Professionally active dentists[^2]</td>
<td>538</td>
</tr>
<tr>
<td>In limited practice[^3]</td>
<td>50</td>
</tr>
<tr>
<td>Dental practitioners[^4]</td>
<td>524</td>
</tr>
<tr>
<td>Located in West Virginia last year:</td>
<td></td>
</tr>
<tr>
<td>Reported professional activity[^5]</td>
<td>500</td>
</tr>
<tr>
<td>Reported time spent in patient care[^7]</td>
<td>374</td>
</tr>
<tr>
<td>Out-of-State dentists -- civilian respondents not located in West Virginia</td>
<td>158</td>
</tr>
<tr>
<td>Dentists on active duty in Armed Forces</td>
<td>45</td>
</tr>
<tr>
<td>Nonrespondents -- licensed dentists not participating in survey</td>
<td>63</td>
</tr>
</tbody>
</table>

[^1]: All responding dentists who currently work in West Virginia (excluding those in the Armed Forces) or who are retired and currently live in the State.

[^2]: All active civilian dentists currently in West Virginia--excludes 14 dentists who are fully retired and 4 who did not report their principal current activity.

[^3]: Dentists who reported they limited their practice to a dental specialty.

[^4]: All dentists practicing at the chair, that is, dentists who work as clinicians either as primary or secondary activity.

[^5]: Dentists located in West Virginia last year who indicated type(s) of activity in which they engaged.

[^6]: All dentists who engaged in patient care last year, either as a primary or secondary activity.

[^7]: Dentists reporting both hours and weeks spent in patient care last year.

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Appendix Table B.--West Virginia Counties by County Group

Metropolitan Areas

<table>
<thead>
<tr>
<th>County group</th>
<th>Number of responding civilian dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Charleston area</td>
<td></td>
</tr>
<tr>
<td>Kanawha</td>
<td>99</td>
</tr>
<tr>
<td>Huntington area</td>
<td></td>
</tr>
<tr>
<td>Cabell</td>
<td>61</td>
</tr>
<tr>
<td>Wayne</td>
<td>7</td>
</tr>
<tr>
<td>Wheeling area</td>
<td></td>
</tr>
<tr>
<td>Ohio</td>
<td>40</td>
</tr>
<tr>
<td>Marshall</td>
<td>6</td>
</tr>
<tr>
<td>Weirton area</td>
<td></td>
</tr>
<tr>
<td>Hancock</td>
<td>14</td>
</tr>
<tr>
<td>Brooke</td>
<td>5</td>
</tr>
</tbody>
</table>

Nonmetropolitan Counties

<table>
<thead>
<tr>
<th>County group</th>
<th>Central City</th>
<th>Number of responding civilian dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central city 25,000-49,999</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Harrison</td>
<td>Clarksburg</td>
<td>29</td>
</tr>
<tr>
<td>Marion</td>
<td>Fairmont</td>
<td>22</td>
</tr>
<tr>
<td>Wood</td>
<td>Parkersburg</td>
<td>26</td>
</tr>
<tr>
<td>Central city 10,000-24,999</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Berkeley</td>
<td>Marion's Jrg</td>
<td>8</td>
</tr>
<tr>
<td>Mercer</td>
<td>Bluefield</td>
<td>16</td>
</tr>
<tr>
<td>Monongalia</td>
<td>Morgantown</td>
<td>36</td>
</tr>
<tr>
<td>Raleigh</td>
<td>Beckley</td>
<td>22</td>
</tr>
<tr>
<td>Central city 5,000-9,999</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lewis</td>
<td>Weston</td>
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Appendix Table B.--West Virginia Counties by County Group (continued)

**Nonmetropolitan Counties**

<table>
<thead>
<tr>
<th>County group</th>
<th>Central City</th>
<th>Number of responding civilian dentists</th>
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<tr>
<td>Central city 2,500-4,530</td>
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<td>Preston Kingwood</td>
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<td></td>
<td>Roane Spencer</td>
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<td>Wyoming Mullens</td>
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<td>Central city under 2,500</td>
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<td>Boone Mason</td>
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<tr>
<td></td>
<td>Braxton Cassaway</td>
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</tr>
<tr>
<td></td>
<td>Calhoun Grantstown</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Clay Clay</td>
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<td>Gilmer Glenville</td>
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<tr>
<td></td>
<td>Grant Petersburg</td>
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<td></td>
<td>Hampshire Romney</td>
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<td></td>
<td>Lincoln Hamlin</td>
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<tr>
<td></td>
<td>Monroe Petrosburg</td>
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<tr>
<td></td>
<td>Morgan Bath</td>
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<tr>
<td></td>
<td>Pendleton Franklin</td>
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<tr>
<td></td>
<td>Pleasants St. Marys</td>
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<td>Pocahontas Marlinton</td>
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<tr>
<td></td>
<td>Putnam Hurricane</td>
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<tr>
<td></td>
<td>Ritchie Pennsboro</td>
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<td></td>
<td>Tyler Sistersville</td>
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<td></td>
<td>Webster Alderson</td>
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<tr>
<td></td>
<td>Wirt Elizabeth</td>
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</tbody>
</table>

1/ West Virginia counties included in the latest 1966 definition of Standard Metropolitan Statistical Areas, as established by the U.S. Bureau of the Budget, Office of Statistical Standards, have been grouped as metropolitan areas for the presentation of the survey data. For interstate SMSA's, statistics are presented only for dentists reporting their location in the West Virginia portion of the Huntington-Ashland SMSA, Wheeling ..., and Steubenville-Weirton SMSA.

2/ Counties not included within a SMSA, as defined by the U.S. Bureau of the Budget, have been grouped according to the 1960 population of the largest (central) city within each county.
Appendix Table C.—Selected Data for West Virginia Counties

<table>
<thead>
<tr>
<th>Counties</th>
<th>Professionally active dentists</th>
<th>Civilian Persons (000)</th>
<th>Per active dentists</th>
<th>Number of active dentists</th>
<th>By age</th>
<th>Using</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>538</td>
<td>1,780.9</td>
<td>3,310</td>
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<td>Barbours</td>
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### Appendix Table C.—Selected Data for West Virginia Counties (continued)

<table>
<thead>
<tr>
<th>Counties</th>
<th>Professionally active dentists</th>
<th>Civilian population (000)</th>
<th>Persons per active dentist</th>
<th>Number of active dentists</th>
<th>By age</th>
<th>Using auxiliaries</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>with responding active dentists</td>
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<td>5,950</td>
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<td>6,720</td>
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<td>1</td>
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</tbody>
</table>

1/ Copyright 1965, Sales Management Survey of Buying Power; further reproduction is forbidden.

2/ Includes the 28,300 persons in Calhoun, Clay and Monroe Counties which have no responding dentists.
DENTISTS LICENSED IN WISCONSIN

During the 1966 registration period, 3,457 dentists registered with the Wisconsin Board of Dental Examiners. A total of 3,176 dentists responded to the survey, 92 percent of all those registered. Seventy-one percent of the respondents are civilian dentists located in Wisconsin, another 21 percent are civilians located in other States, and 8 percent are on active duty with the Armed Forces.

Location and Military Status of Dentists Licensed in Wisconsin

<table>
<thead>
<tr>
<th>Location and military status</th>
<th>All dentists</th>
<th>Percent of dentists</th>
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<tbody>
<tr>
<td>Total licensed</td>
<td>3,457</td>
<td>100</td>
</tr>
<tr>
<td>Respondents</td>
<td>3,176</td>
<td>92</td>
</tr>
<tr>
<td>Nonrespondents</td>
<td>281</td>
<td>8</td>
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<tr>
<td>Respondents</td>
<td>3,176</td>
<td>100</td>
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<tr>
<td>Civilians in Wisconsin</td>
<td>2,255</td>
<td>71</td>
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<tr>
<td>Civilians in another State</td>
<td>666</td>
<td>21</td>
</tr>
<tr>
<td>On active duty with Armed Forces</td>
<td>255</td>
<td>8</td>
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</tbody>
</table>

About 35 percent of the respondents hold licenses to practice dentistry in one or more other States. Only 16 percent of the dentists located in Wisconsin have more than one license, with 14 percent licensed in one other State and 2 percent licensed in two or more other States. The proportion of responding out-of-State dentists holding multiple licenses is considerably greater; approximately 22 percent hold two or more licenses in addition to their Wisconsin license.

Almost one-half (49 percent) of the licenses held outside of Wisconsin were issued by adjacent States, including 21 percent in Illinois, 13 percent in Minnesota, 11 percent in Michigan, and 4 percent in Iowa. The remaining out-of-State licenses are maintained in 41 other States, including 11 percent in California, and 4 percent each in Florida and Colorado.
Four-fifths of Wisconsin's 2,255 responding dentists graduated from the School of Dentistry at Marquette University. Another 15 percent are graduates of seven dental schools located in adjacent States, including 5 percent from Northwestern University, 4 percent from the University of Minnesota, and 3 percent from Loyola University of Chicago. Two other schools in adjacent States, the Universities of Illinois and Iowa, have together provided about 50 dentists, 2 percent of the State supply. The remaining 4 percent of Wisconsin's dentists obtained their dental degrees from 25 other schools located in more distant States. Among these, St. Louis and Creighton Universities are the only schools to have supplied as many as 10 dentists to the State's dental force.

### Dental School Attended and Year of Graduation for Dentists in Wisconsin

<table>
<thead>
<tr>
<th>Dental school attended</th>
<th>Number of dentists</th>
<th>Year of graduation</th>
<th>All</th>
<th>After 1941-1940 or earlier</th>
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<td>Total</td>
<td>2,255</td>
<td>477</td>
<td>781</td>
<td>986</td>
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<tr>
<td>Percent distribution by school</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Marquette University</td>
<td>1,826</td>
<td>81</td>
<td>83</td>
<td>81 80</td>
</tr>
<tr>
<td>Schools in adjacent States</td>
<td>349</td>
<td>15</td>
<td>13</td>
<td>14 18</td>
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<tr>
<td>Northwestern University</td>
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<td>3</td>
<td>5   6</td>
</tr>
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<td>University of Minnesota</td>
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<td>4</td>
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<td>4   5</td>
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<td>2   5</td>
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<td>4 other schools</td>
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<td>5</td>
<td>3   2</td>
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<tr>
<td>25 other schools</td>
<td>80</td>
<td>4</td>
<td>4</td>
<td>5 2</td>
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</tbody>
</table>

1/ Year of graduation not available for 11 dentists. Percents based on known totals.

About one-fifth (21 percent) of the State's dentists have graduated from dental school since 1955. In contrast, more than two-fifths (44 percent) received their dental degrees prior to World War II. There has been virtually no change over the years in the overall proportion of dentists graduating from Wisconsin's own dental school, or from out-of-State schools.

Approximately 11 percent of the survey respondents, 257 dentists, reported they had completed one or more years of advanced training after receiving the dental degree. Of 181 dentists taking advanced academic training, 98 received at least a master's degree, while another 83 received no additional degree but reported the completion of one or more years of advanced work at the postgraduate level. Of the 132 dentists with advanced clinical training, 83 had completed an internship, and 49 a residency. There are 56 dentists who have taken both academic and clinical training.
Over one-half (54 percent) of the dentists in Wisconsin are located in the six metropolitan areas of the State. The 4-county Milwaukee area alone has 838 dentists, 37 percent of the total dentist supply. More than four-fifths of these dentists (704) are concentrated in Milwaukee County, and another 92 dentists are located in Waukesha County. The Madison metropolitan area has the next largest dental force in the State, with 8 percent of the dentists. The areas of Racine and Green Bay each have 3 percent of the State's dentists, while the remaining two areas, Kenosha and Superior, have 2 percent and 1 percent, respectively.

### Distribution of Wisconsin Dentists, by County Group

<table>
<thead>
<tr>
<th>County group*</th>
<th>Number of counties</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
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<tbody>
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<td>Racine area</td>
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<td>72</td>
<td>3</td>
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<td>Green Bay area</td>
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<td>71</td>
<td>3</td>
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<tr>
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<td>1</td>
<td>53</td>
<td>2</td>
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<td>23</td>
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<td>236</td>
<td>10</td>
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<tr>
<td>Central city under 5,000</td>
<td>33</td>
<td>209</td>
<td>10</td>
</tr>
</tbody>
</table>

*See Appendix Table for definition of metropolitan areas and presentation of individual county data.

The 63 nonmetropolitan counties have a substantial share (46 percent) of the Wisconsin dentist supply. The 15 counties having 10,000 or more persons in their central cities have 582 dentists, about one-fourth of the total dental force. Five of these counties—Winnebago, Rock, Outagamie, La Crosse, and St. Croix—each have more than 50 dentists. The 48 counties with central city populations under 10,000 have one-fifth (445) of the State's supply of dentists. Among these 48 counties, 19 have 10 or more dentists, yet 11 have fewer than five dentists.
AGE OF DENTISTS BY AREA

The median age of dentists in Wisconsin is 47.4 years. Three of every ten (690 dentists) are under 40 years of age, and two-thirds of these are under age 35. An almost equal proportion, 32 percent, are between 45 and 54 years of age, while 37 percent are 55 or over. About 18 percent of the dentists (412) are at least 65 years of age, including 193 who have reached the age of 70.

<table>
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<th>County group</th>
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<th>Percent of dentists</th>
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<td>39</td>
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<tr>
<td>Nonmetropolitan counties</td>
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<td>Central city 10,000-49,999</td>
<td>47.4</td>
<td>29</td>
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<td>Central city 5,000-9,999</td>
<td>48.9</td>
<td>23</td>
</tr>
<tr>
<td>Central city under 5,000</td>
<td>53.6</td>
<td>25</td>
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</table>

Dentists in the metropolitan areas, with a median age of 46.9 years, are only slightly younger than dentists in the nonmetropolitan counties, where the median age is 48.0 years. Among the metropolitan areas, Milwaukee and Racine have the oldest dentists as a group, with median ages of 48.0 and 48.2, respectively. The youngest group of dentists is found in the Madison area where the median age is 43.7 years. Almost two-fifths of these dentists are under 40 years of age, while only one-fourth are 55 or over.

Among the nonmetropolitan counties, those with central cities of less than 5,000 persons have the oldest group of dentists, with a median age of 53.6 years--more than six years higher than the median for all dentists in the State. Only one-fourth of these dentists are under 40 years of age, while almost one-half are 55 and older.
ACTIVE DENTISTS IN RELATION TO POPULATION

Of the 2,255 dentists in Wisconsin, 2,100, or 93 percent, are active in their profession, giving the State one professionally active dentist for every 2,007 persons. In the metropolitan areas there are 1,841 persons per dentist, while the nonmetropolitan counties have a somewhat higher ratio of 2,210.

Number of Persons per Active Dentist in Wisconsin

<table>
<thead>
<tr>
<th>County group*</th>
<th>Professionally active dentists</th>
<th>Population</th>
<th>Persons per dentist</th>
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<td>164</td>
<td>261,000</td>
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<td>66</td>
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<td>2</td>
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<td>138,100</td>
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<tr>
<td>Superior area</td>
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</tr>
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<td>Central city under 5,000</td>
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<td>523,000</td>
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</table>

* See Appendix Table for individual county data.

Among the metropolitan areas, Madison has the best ratio of 1,591 persons per dentist, while Milwaukee has the next best, with 1,801 per two areas—Green Bay and Superior—have ratios slightly higher than the State average (2,061 and 2,095, respectively), while the Kenosha area has the least favorable of the metropolitan ratios.

Of the 63 nonmetropolitan counties, 16 have persons-per-dentist ratios below the average for the State, while 15 have more than 3,000 persons per every dentist, including three counties with ratios of 5,100 or more. Generally, persons-per-dentist ratios become less favorable as the size of the central city decreases. The counties with 10,000 or more inhabitants in their central cities have an average of 2,017 persons per dentist. In comparison, the counties with central cities of 5,000 average about one active dentist for every 2,763 persons.
Almost three out of every four dental practitioners in Wisconsin (i.e., dentists who spend any time working at the chair) reported that they employ auxiliary personnel. Dental assistants, the most frequently employed auxiliary, are utilized by 66 percent of the dentists, including 59 percent who employ at least one assistant on a full-time basis. Twenty-four percent of the dentists employ secretaries or receptionists, with about three-fifths of these dentists utilizing such personnel full time. Dental hygienists are employed by 20 percent of the practitioners, and laboratory technicians by 5 percent. The majority of the dentists who employ hygienists or technicians do so only part time.

Wisconsin Dentists Employing Auxiliaries, by Type of Auxiliary

<table>
<thead>
<tr>
<th>Type of auxiliary employed by dentists</th>
<th>Dental practitioners</th>
<th>Percent of dental practitioners</th>
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<tr>
<td></td>
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<tr>
<td>One or more auxiliaries</td>
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<tr>
<td>Assistant</td>
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<td>66</td>
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<tr>
<td>Hygienist</td>
<td>404</td>
<td>20</td>
</tr>
<tr>
<td>Laboratory technician</td>
<td>96</td>
<td>5</td>
</tr>
<tr>
<td>Secretary or receptionist</td>
<td>476</td>
<td>24</td>
</tr>
<tr>
<td>Other type of personnel</td>
<td>58</td>
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</tr>
<tr>
<td>No auxiliary</td>
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</tr>
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</table>

1/ Includes 107 dentists who did not report on auxiliary utilization.

Utilization of auxiliaries varies with the age of the dentist and tends to be more common among the younger dentists. More than 85 percent of the practitioners between the ages of 30 and 44 employ some type of auxiliary. The proportion utilizing auxiliaries decreases to 68 percent among dentists 45 to 64 years of age, and to 46 percent among dentists 65 and over.

About 16 percent of the Wisconsin practitioners reported one or more vacant positions for auxiliary personnel. Of these dentists, more than one-third had vacant positions for full-time hygienists, and one-fourth reported vacancies for full-time dental assistants.
OTHER SURVEY FINDINGS

- Ninety-five percent of the professionally active dentists in Wisconsin are primarily engaged in private practice, with 94 percent self-employed and 1 percent employed by another dentist. Two percent are employed by governmental agencies, another 1 percent are on the staff of a dental school, and the remaining 2 percent are engaged in some other dental activity, such as taking advanced training.

- About one dentist in nine reported at least one part-time dental activity in addition to his principal employment. Part-time teaching in a dental school was the most frequently reported secondary activity. Various other activities were reported, including employment by the State or local government and assistance to a voluntary agency.

- Dentists providing patient care during the year preceding the survey devoted an average of 40.2 hours a week to this activity for 47.6 weeks. About one dentist in eight worked the equivalent of six days a week, 48 hours or more, for at least 48 weeks during the year.

- Approximately 8 percent of the practitioners reported that they limit their practice to a dental specialty, primarily orthodontics. More than one in every ten dentists in metropolitan areas limits his practice as compared to only one in every twenty of the dentists in nonmetropolitan counties.

- One-fifth of the survey respondents (666 dentists) were located in another State at the time of the survey. About 35 percent of these out-of-State dentists were in adjacent States, primarily Illinois. The other out-of-State dentists were scattered among 43 more distant States, with the largest number located in California.

October 1968.
## APPENDIX TABLE

### Selected Data on Dentists in Wisconsin, by Location

<table>
<thead>
<tr>
<th>County group and county</th>
<th>Civilian dentists</th>
<th>Age in 1965</th>
<th>Professionally active</th>
<th>Population 1/ (in 000's)</th>
<th>Persons per active dentist</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Percent under 40</td>
<td>Percent 55 or more</td>
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<td></td>
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### APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Wisconsin, by Location

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<tr>
<th>County group and county</th>
<th>Civilian dentists</th>
<th>Population (in 000's)</th>
<th>Persons per active dentist</th>
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<td></td>
<td>Total</td>
<td>Age in 1965</td>
<td>Professionally active</td>
</tr>
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<td></td>
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<td>Percent under 40</td>
<td>Percent 55 or more</td>
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<tr>
<td>Nonmetropolitan counties</td>
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## APPENDIX TABLE (cont'd.)

Selected Dr.'s on Dentists in Wisconsin, by Location

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<th>Population 1/ per active dentist</th>
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### APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Wisconsin, by Location

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<th>Persons active dentist</th>
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<td>Total</td>
<td>Age in 1965</td>
<td>Professionally active</td>
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<td>Percent under 40</td>
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<td>(in 000's)</td>
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<tr>
<td>Vernon</td>
<td>11</td>
<td>27</td>
<td>55</td>
</tr>
<tr>
<td>Waupaca</td>
<td>19</td>
<td>37</td>
<td>47</td>
</tr>
<tr>
<td>Central city under 2,500</td>
<td>62</td>
<td>27</td>
<td>42</td>
</tr>
<tr>
<td>Adams</td>
<td>1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Bayfield</td>
<td>2</td>
<td>-</td>
<td>50</td>
</tr>
<tr>
<td>Buffalo</td>
<td>3</td>
<td>-</td>
<td>33</td>
</tr>
<tr>
<td>Burnett</td>
<td>2</td>
<td>-</td>
<td>50</td>
</tr>
<tr>
<td>Florence</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Forest</td>
<td>5</td>
<td>20</td>
<td>60</td>
</tr>
<tr>
<td>Lafayette</td>
<td>5</td>
<td>20</td>
<td>40</td>
</tr>
<tr>
<td>Marquette</td>
<td>1</td>
<td>-</td>
<td>100</td>
</tr>
<tr>
<td>Menomonee</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Pepin</td>
<td>4</td>
<td>25</td>
<td>75</td>
</tr>
<tr>
<td>Polk</td>
<td>15</td>
<td>40</td>
<td>27</td>
</tr>
<tr>
<td>Sawyer</td>
<td>5</td>
<td>20</td>
<td>60</td>
</tr>
<tr>
<td>Trempealeau</td>
<td>9</td>
<td>22</td>
<td>44</td>
</tr>
</tbody>
</table>
Selected Data on Dentists in Wisconsin, by Location

<table>
<thead>
<tr>
<th>County group and county</th>
<th>Civilian dentists</th>
<th>Population 1/ (in 000's)</th>
<th>Persons per active dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>under 40</td>
<td>55 or more</td>
</tr>
<tr>
<td>Nonmetropolitan counties 4/ (cont'd.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Central city under 2,500 (cont'd.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vilas</td>
<td>5</td>
<td>60</td>
<td>40</td>
</tr>
<tr>
<td>Washburn</td>
<td>2</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Waushara</td>
<td>1</td>
<td>67</td>
<td>33</td>
</tr>
</tbody>
</table>


2/ Wisconsin counties included in the latest 1968 definition of Standard Metropolitan Statistical Areas, as established by the U.S. Bureau of the Budget, Office of Statistical Standards, have been grouped as metropolitan areas for presentation of the survey data.

3/ Wisconsin part of the Duluth-Superior SMSA. Statistics are presented only for dentists located in the Wisconsin portion of the area.

4/ Counties not included within an SMSA, as defined by the U.S. Bureau of the Budget, have been grouped according to the 1960 population of the largest (central) city within each county.
DENTISTS LICENSED IN WYOMING

During the 1965 registration period, 265 dentists registered with the Wyoming Board of Dental Examiners. Fifty-seven percent of these dentists were civilians located in Wyoming, and another 37 percent were civilian dentists located in other States. Five percent of the registered dentists were on active duty with the Armed Forces, and the remaining one percent did not report their location or military status.

<table>
<thead>
<tr>
<th>Location and military status</th>
<th>All dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total licensed</td>
<td>265</td>
<td>100</td>
</tr>
<tr>
<td>Respondents</td>
<td>204</td>
<td>77</td>
</tr>
<tr>
<td>Nonrespondents</td>
<td>61</td>
<td>23</td>
</tr>
<tr>
<td>Total licensed</td>
<td>265</td>
<td>100</td>
</tr>
<tr>
<td>Civilians in Wyoming</td>
<td>153</td>
<td>57</td>
</tr>
<tr>
<td>Respondents</td>
<td>130</td>
<td>-</td>
</tr>
<tr>
<td>Nonrespondents</td>
<td>23</td>
<td>-</td>
</tr>
<tr>
<td>Civilians in another State</td>
<td>97</td>
<td>37</td>
</tr>
<tr>
<td>On active duty with Armed Forces</td>
<td>13</td>
<td>5</td>
</tr>
<tr>
<td>Not reported</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

The survey questionnaire was completed by a total of 204 dentists, for an overall response rate of 77 percent. However, the response rate of dentists actually located in Wyoming was somewhat higher, 85 percent, since nonresponse was more frequent among dentists located outside the State or on active duty with the Armed Forces.

The data provided by the survey respondents has been supplemented, when possible, by information on location, age, dental school attended, and year of graduation for dentists not responding to the survey. Information on nonrespondents was obtained from records maintained by the Wyoming Board of Dental Examiners and from the 1966 American Dental Directory published by the American Dental Association.
More than four-fifths (83 percent) of Wyoming's dentists are graduates of 12 dental schools located in the North Central States. Two dental schools in adjacent Nebraska—Creighton University and the University of Nebraska—have been the major contributors, providing 21 percent and 15 percent of the State's dentists, respectively. The next largest contributors—the University of Missouri, Northwestern University, and Washington University at St. Louis—have each provided 8 percent of Wyoming's dentists. Four other schools in these States—the Universities of Iowa and Minnesota, St. Louis University, and Loyola University of Chicago—have each provided 5 percent of the State's dental force.

Another 14 percent of the State's dentists graduated from five schools located in Western States. The dental school at the University of Denver, although closed since 1930, is the only one of these schools to have contributed as much as 5 percent of Wyoming's dentist supply.

### Dental School Attended and Year of Graduation for Dentists in Wyoming

<table>
<thead>
<tr>
<th>Dental school attended</th>
<th>Number of dentists</th>
<th>Year of graduation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>All</td>
</tr>
<tr>
<td>Total number</td>
<td>153/1/</td>
<td>-</td>
</tr>
<tr>
<td>(Percent distribution by school)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>North Central States</td>
<td>128</td>
<td>83</td>
</tr>
<tr>
<td>Creighton University</td>
<td>33</td>
<td>21</td>
</tr>
<tr>
<td>University of Nebraska</td>
<td>73</td>
<td>15</td>
</tr>
<tr>
<td>University of Missouri</td>
<td>13</td>
<td>8</td>
</tr>
<tr>
<td>Northwestern University</td>
<td>12</td>
<td>8</td>
</tr>
<tr>
<td>Washington University (St. Louis)</td>
<td>12</td>
<td>8</td>
</tr>
<tr>
<td>7 other schools</td>
<td>35</td>
<td>23</td>
</tr>
<tr>
<td>Western States (5 schools)</td>
<td>20</td>
<td>14</td>
</tr>
<tr>
<td>Other States (5 schools)</td>
<td>5</td>
<td>3</td>
</tr>
</tbody>
</table>

1/ Year of graduation not available for 2 dentists.

Some 13 percent of the survey respondents (17 dentists) reported that they had completed one or more years of advanced training after receiving their dental degree. Eleven dentists had received advanced clinical training as interns or residents and nine had completed at least one year of advanced academic work as graduate or postgraduate students. Three dentists had completed both academic and clinical training.
DISTRIBUTION OF DENTISTS

Approximately three-fifths, 89, of the 153 dentists in Wyoming are located in only five of the State's 24 counties. The two counties with the largest central cities--Laramie, which contains the city of Cheyenne, and Natrona, where Casper is located--have 18 and 19 percent of the dentist supply, respectively. Another 21 percent (32 dentists) are located in the three counties having central cities of 10,000-24,999 persons, including 8 percent each in Albany and Sheridan Counties and 5 percent in Sweetwater County.

Distribution of Wyoming Dentists, by County Group

<table>
<thead>
<tr>
<th>County group*</th>
<th>Number of counties</th>
<th>Number of dentists</th>
<th>Percent of dentists</th>
</tr>
</thead>
<tbody>
<tr>
<td>All counties</td>
<td>24</td>
<td>153</td>
<td>100</td>
</tr>
<tr>
<td>Central city 25,000-49,999</td>
<td>2</td>
<td>57</td>
<td>37</td>
</tr>
<tr>
<td>Laramie County</td>
<td>1</td>
<td>28</td>
<td>18</td>
</tr>
<tr>
<td>Natrona County</td>
<td>1</td>
<td>29</td>
<td>19</td>
</tr>
<tr>
<td>Central city 10,000-24,999</td>
<td>3</td>
<td>32</td>
<td>21</td>
</tr>
<tr>
<td>Central city 5,000-9,999</td>
<td>3</td>
<td>24</td>
<td>16</td>
</tr>
<tr>
<td>Central city 2,500-4,999</td>
<td>8</td>
<td>26</td>
<td>17</td>
</tr>
<tr>
<td>Central city under 2,500</td>
<td>8</td>
<td>14</td>
<td>9</td>
</tr>
</tbody>
</table>

* See Appendix Table for presentation of individual county data.

The 19 counties with central city populations under 10,000 have about two-fifths (42 percent) of the State's dentist supply. The 11 counties with central cities having between 2,500 and 9,999 inhabitants have one-third of Wyoming's dental force, while the eight counties with less than 2,500 persons in their central cities have only one-tenth of the dentist supply. Of these 19 counties, only Fremont has as many as 10 dentists, while 13 counties have fewer than five dentists.