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**Abstract**: Economic, social, and professional factors that influence where health professionals locate their practices are noted, and strategies to reduce maldistribution are discussed. Many strategies to influence the distribution of physicians and other health professionals are directed to recruitment, selection, and training of students. Other strategies concern fiscal incentives and community recruitment of practitioners who are already trained. The policies of special recruitment and preferential admissions have been used to locate rural students, minority applicants, and women who desire to work in underserved areas or specialties, including rural and inner-city areas and such specialties as family practice, psychiatry, and geriatrics, as well as public service programs. Other strategies that might be coordinated by states include: offering students loans or work-study contracts that are forgiven for service in needed areas, but that require severe penalties for defaults; providing strong academic instruction and clinical and residency training in needed specialties/settings; offering role models and counseling for practice in needed settings; involving communities in practitioner recruitment and aid; assuring reasonable income for work in need areas; and changing regulations and laws, such as licensure laws. (SW)
Influencing the Distribution of Physicians
And Other Health Professionals

For the past two decades, Southern states have dramatically increased the supply of health professionals on the assumption that expanding their numbers would lead to improved health services for all citizens.

The South's success in overcoming the severe shortages that existed as late as the 1960s is a matter of record.

† The number of students graduating from the region's health professions schools has doubled and, in some cases, tripled.
† Fifteen new medical schools and seven new dental schools have opened their doors, and programs and enrollments in existing health professions schools have expanded.
† During the next 10 years as many physicians will graduate from Southern medical schools as did during the preceding 25 years.
† In addition, increasing numbers of professionals who received their training in other parts of the country are locating in the region.

Physicians moving to the South each year account for the equivalent of the graduates of four average-sized medical schools.

Comparable growth has occurred in every health profession—medicine, dentistry, nursing, allied health, pharmacy, osteopathic medicine, optometry, and public health.

Granting that the population of the South continues to grow, projections indicate a more than adequate total supply of physicians and other health professionals within the region by 1990.

In spite of this expansion of professional education in the health fields, the situation in underserved areas continues to be a problem. Shortages still exist—in rural and inner-city areas, in specialties such as family practice, psychiatry, and geriatrics, and in many public service programs.

The South also has an inadequate proportion of minority health professionals. The region's population is 19 percent black, yet the percentages in the major professions fall far short of that mark—2.5 percent for physicians, 3.5 percent for dentists, and 7.5 percent for registered nurses.

Developing methods to assure distribution of practitioners to areas of need deserves the kind of attention that increasing health manpower numbers has received for the past two decades.

The region's growth in the supply of health professionals has helped with some of the distribution problems, but the trends strongly suggest that more is needed to significantly improve the situation.

There have been modest increases in the numbers of physicians and other professionals in the rural areas, but the increases have been far greater in urban/suburban locations. In the South, the 38 percent increase of the last decade in the number of active non-federal physicians per 100,000 population in urban counties was more than double the 16 percent rate of increase in rural counties. In addition, even in the metropolitan areas, health practitioners have located in the prestigious health centers and affluent suburbs—not in the inner cities.

A recent Rand Corporation report shows that there has been a marked increase in the numbers of specialists in smaller cities so that there is now a physician within 25 miles of virtually all of the population. But, these are specialists rather than the general practitioners or family physicians who are most needed. This still leaves many rural areas and small towns without a physician who can conveniently provide medical care for everyday illness, early diagnosis, and reassurance. While some areas may be so sparsely populated or so economically depressed that they will never be able to support physicians in independent practice, many of the rural and inner-city areas that could support a physician are still without one.

Factors Influencing the Distribution of Physicians

Many economic, social, and professional factors influence where health professionals decide to locate their practices (see Table I).

Because physicians are more likely to locate in areas that are growing economically, the South is gaining practitioners at the expense of the North, and the number of practitioners locating in the urban/suburban areas con-
continues to expand. Hence, economic factors tend to aggravate the maldistribution problems because many of the underserved areas are economically poor. Above all, health professionals avoid areas in which there are disincentives, such as locations with low reimbursement rates of third-party payers or neighborhoods having high crime rates.

Health professionals choose to practice the kinds of health care and in the kinds of settings in which they have been trained. They seek locations offering ready accessibility to hospitals with equipment like that they have known in their training. Physicians who have been trained in highly specialized urban medical centers tend to choose specialized urban practice, while those trained in rural preceptorships or in community health clinics tend to choose rural settings. Ready access to professional colleagues for consultation and continuing education is also important.

Physicians and other practitioners are also likely to choose sites that offer cultural and recreational opportunities of the kind they prefer. Because the majority of young health professionals come from urban/suburban backgrounds, they are attracted to practice sites that offer urban cultural opportunities. At the same time, practitioners who come from or have had life experiences in rural areas are inclined to seek locations that will permit them to pursue these interests.

**Strategies to Resolve Maldistribution**

Until recently, most policymakers gave little attention to special strategies for alleviating distribution problems since it was widely believed that increasing the overall supply of professionals would automatically take care of distribution problems. It has now become apparent that is not the case.

It is naive to assume that health practitioners will distribute themselves according to society's overall needs when there are so many influences pulling them in other directions. Most modern, tertiary care-oriented health professionals schools select the bulk of their students from white, middle-class, urban/suburban backgrounds, and train them in highly sophisticated and specialized academic health centers in urban locations. Consequently, most young graduates have no training or personal experience to prepare them to work in areas where they may be most needed. In addition, the economic pressures tend to lead them away from practice in the settings and specialties in which they are most needed.

The current situation is analogous to trying to heat a house from a fireplace located in one end of the house. If a large enough fire is maintained, some of the heat will drift into the other rooms where it is needed, but it is much more efficient to have a system of ducts and fans to distribute the heat throughout the house. In our society we avoid coercive strategies except in times of national emergencies when we draft physicians and other health professionals into the armed forces. On the other hand, we have made little use of coordinated strategies or incentives to address health manpower distribution problems. It is now time, however, for states to concentrate on resolving those problems rather than on further increasing the size of the manpower pool.

**Across the nation a number of strategies have been developed for influencing the distribution of health practitioners. Many are directed to the recruitment, selection, and training of students in the health professions. Others are directed to fiscal policies and community recruitment of practitioners who are already trained. Studies have shown that all are important, but success is greatest when several strategies are combined (see Table 2).**

Approaches directed to the selection and training of students are likely to have greater overall impact than those directed to practitioners who have already completed their training. States recruiting minority candidates or candidates from rural backgrounds and providing them with training and personal experience for work in those areas can increase the numbers of practitioners for need areas. Students entering the health professions have a motivation to serve people, and their high level of altruism can be molded through the experience and role models they are offered during their training years. Important career commitments are made at this time. After graduation the influences that affect career choices are likely to be more worldly and conventional (for example, working conditions, compensation levels).

Many of the strategies involve the use of money (for example, student scholarship/loans, changes in reimbursement rates), but studies show that financial incentives alone are relatively ineffective. They work much better when combined with changes in admissions policies, changes in training sites, faculty role models, personal counseling and assistance in locating positions, and, sometimes, changes in laws (for example, licensure laws).

Some strategies involve removal of such disincentives as lower reimbursement rates for rural practitioners. While this step alone may not influence practitioners to choose a rural practice site, it removes one of the impediments.

Many of the strategies involve the health professions schools and their facilities. Others require action by state policymakers or state and local health program administrators. A coordinated combination of strategies will be more effective than any strategy used by itself.

**Factors Influencing Physicians in Training**

Studies show that professional schools exert a considerable influence on the distribution of practitioners by their recruitment and selection policies, the kinds of training
Studies have shown that the location and type of practice which a physician chooses are most influenced by the location and type of residency training. This is to be expected because it is during this final stage of education that decisions about practice are made. Thus, personal contacts and experiences are most vivid and influential so it is important to locate more of the residency training in the areas that need practitioners.

In order to be effective, residency training programs must be of high quality. Active affiliations with the medical schools will provide the quality that is essential to attract good applicants. A good example of an active program of collaboration to address the shortage of psychiatrists in state agencies is the agreement between the University of Maryland's Department of Psychiatry and the State Division of Mental Hygiene. Under this agreement, University of Maryland faculty conduct much of the psychiatric residency training program at the Springfield State Psychiatric Hospital with the result that more than 100 American-trained psychiatrists have been recruited into the public mental health programs of Maryland.

Several states of the South have established special support programs for graduate education in the primary care specialties.

In some states these funds are for the support of the training programs (faculty salaries, training facilities, etc.); in other states the funds are limited to student stipends. In some states the funds are given to the medical schools; in other states they are made available mainly to community hospitals which have a strong commitment to primary care and rural practice.

By providing funds the state is better able to influence the location and type of residency training programs in primary care, especially the number and location of spaces, and to affect the admissions policies. Thus, the likelihood that physicians will choose to practice in rural areas of their states is increased, particularly if the training emphasizes both primary care and rural practice.

Because state-supported residency training programs in primary care are relatively new, the results are difficult to judge, but generally they seem to be quite successful. Much depends, however, on how well other strategies have been coordinated with the residency training program. One problem experienced in many family practice residency plans is that a number of residents transfer to other specialties — particularly the subspecialties of internal medicine, such as cardiology and gastroenterology — after the first year of family medicine training. This problem requires further study.

Role Models and Counseling

Some medical schools are beginning to look for arrangements to provide faculty practitioners who can serve as role models for areas of need. These practitioners may be preceptors, full-time professors, or they may be part-time visiting professors. Particularly important is the need for minority faculty persons to serve as role models for black and other minority students.

Not only is it desirable that medical students and residents be able to observe role model practitioners, but they also need an opportunity to ask questions and to seek counsel about how to go about setting up practice in the need areas. This kind of practice counseling with persons who have firsthand experience is especially desirable as graduates are completing their training and making their decisions about practice.

Community Placement Services

Another important aspect of locating physicians in areas of need, especially for rural or inner-city areas, is the assistance given by local communities before young physicians complete residency training. Some programs in family medicine, such as that at the Medical University of South Carolina, begin to link residents to likely communities as early as the first or second year of residency training. The resident may begin by taking over a physician's practice while the regular physician goes on vacation, or it may begin with contacts with local leaders, such as hospital administrators, bankers, and other physicians. Following the initial contacts, there are likely to be further discussions regarding office space, staff privileges, personal living arrangements, and financing of a practice and a home. This kind of placement service may be offered by a state office of community development, as in North Carolina, or by the state health department, or by the state agency that administers the scholarship loans, or by the state medical society.

Some states, such as Tennessee and Georgia, offer a "medical fair," an annual event that brings together leaders from communities that are seeking physicians and residents in training who want to make contact with likely communities. These programs include workshops for both community representatives and the residents to sensitize them to the kinds of things they should look for in their interviews with each other. Some have referred to the fairs as a "dating game," but they offer valuable contacts for young physicians seeking practice positions.

Factors Influencing Physician Distribution After Graduation

Even after physicians complete their training, there are policies and incentives that influence where physicians will locate and the kinds of practice settings they seek.

Policies That Affect Income

Several policy options affect physicians' income. These include:

- Establishing fee schedules for reimbursement of services that differentially favor physicians who work in special need areas (for example, higher fees for rural practitioners);
- Guaranteeing physicians in need areas a certain minimum income (this might be done through part-time employment at a local health clinic);
- Supplementing the income of physicians beginning practice;
- Providing offices or homes at no cost or a reduced rates for some period of time.

Setting higher fee schedules for practitioners in need areas may be difficult to achieve, and has the disadvantage of making the services more costly for the persons who require them. However, it is essential to correct the existing imbalance whereby reimbursement allowances are lowest for physicians who work in the areas of greatest need (rural areas and inner cities) and provide the most
recipients and higher penalties for non-fulfillment of contract, the National Health Services Corps recently has been experiencing better results.

The state loan forgiveness programs have had a better record, with over 40 percent of recipients actually providing service in a shortage area. This is probably because these programs have been more careful in their selection of recipients and have kept in closer touch with them. Loan forgiveness programs are sometimes operated by official state agencies and sometimes by private groups, such as state medical societies (Kentucky and Virginia).

There is evidence that the amount of the loans should be substantial enough to provide a significant portion of the cost of a student's professional education. And, payback penalties should be rather steep so that it becomes worthwhile for the graduate to work out the contract rather than simply paying off the loan. As the tuitions for medical schools and other health professions schools continue to increase, the effectiveness of loan forgiveness programs is also likely to grow.

It also helps to have reasonable choices of practice locations available to students.

It is especially desirable to combine preferential admissions and loans to students from rural or other special backgrounds. When a well-constructed loan forgiveness program is coordinated with preferential admissions and other strategies, it is likely that a significant number of graduates will choose to practice in the areas of need.

**Undergraduate Medical Curricula**

Changes in the basic undergraduate curricula of the medical schools also can influence the geographic and specialty distribution of physicians. As medical education has become more scientific and technological, and dependent on highly sophisticated and specialized medical centers, students have been influenced to concentrate in one of the subspecialties and practice in an urban area with readily available sophisticated support systems.

Practice in rural areas requires good grounding in primary care practice, such as family medicine, general medicine, obstetrics, and pediatrics. It has been recommended that the clinical portion of the medical school undergraduate curriculum be somewhat restructured to give a greater emphasis to primary care.

In the 1970s, several states authorized the development of new medical schools with the expectation that they would emphasize primary care training. In other states, legislatures have mandated that the public medical schools establish departments of family medicine. Many observers have suggested that medical schools should give greater focus to human values in the undergraduate curriculum so that practitioners are better able to counsel families on prevention and the behavioral aspects of health promotion and illness. These are skills that are particularly needed by family physicians and pediatricians, who are the first line of contact with families in health matters.

Adding these elements will involve some restructuring but not a total redesign of the curriculum. Because the medical curriculum is under constant pressure to add new scientific information based on biomedical research findings, the schools must be vigilant to assure that an emphasis on primary care content and values remains.

**Clinical Training in Rural Areas**

Studies show that one of the major factors influencing a practitioner's career choice is whether the student has had firsthand clinical experience in that kind of practice and in that kind of setting. A number of medical schools are making use of rural preceptorships and Area Health Education Centers to provide students with clinical training in rural practice.

With rural preceptorships, medical students or residents are assigned to selected rural community practitioners for some portion of their clinical training. Preceptorships provide students with personal experience in working with rural patients and community resources and offer close contact with a role model of the rural practitioner. The University of North Carolina at Chapel Hill has used rural preceptorships to broaden students' knowledge of the nature of rural practice. Studies of the effectiveness of rural preceptorships show mixed results, depending on how effectively this strategy is coordinated with other parts of the curriculum.

Area Health Education Centers (AHECs) link health service organizations, such as rural hospitals, to educational institutions in ways that serve to provide clinical training for students as well as continuing education and consultation for local practitioners. Thus, they expose students to practice in rural settings and ease the professional isolation that is one of the major drawbacks associated with rural practice. The AHEC program began with federal support, but most AHEC programs that have continued state-supported (Arkansas, Kentucky, North Carolina, South Carolina, Tennessee, Texas, and West Virginia). In other states medical schools have established other types of decentralized clinical training sites for their students, but not all schools have given a strong orientation to rural practice or to providing continuing education for local practitioners. An advantage of AHECs is that they can serve the practitioners from several health professions in the same structure. AHECs appear to be effective in influencing graduates who are inclined to choose rural practice but who may have misgivings about the professional isolation and the lack of opportunity to keep up with new developments.

**Residency Training**

Residency training is the postgraduate education of physicians in a specialty. The primary care specialities are family medicine, general internal medicine, pediatrics, and obstetrics. These four specialties provide the first line of contact with the health care system for most families and individuals. Primary care specialists are usually community-based, and are especially needed in rural and small town areas. They are, however, also needed in urban/suburban areas so the residency training programs must emphasize rural practice if many of the graduates are to be influenced to choose rural practice.

Virtually all medical school graduates (98 percent) go into postgraduate residency training in some specialty, and most specialty residency training takes place in highly technological academic health centers. However, a considerable portion of residency training — especially in the primary care specialties — is based in community hospitals.
they provide, the locations in which the training is provided, the faculty role models they offer, and the kinds of career counseling and assistance they give to graduates in setting up practices. Yet, the medical schools have tended to underestimate the influence of their academic policies and educational programs. Publicly supported health professions schools have a particular obligation to address the unique manpower needs of the state that supports them. Some of the specific approaches that may be used to improve the distribution of health professionals follow.

Special Recruitment and Preferential Admissions

The policy of preferential admissions has long been followed in many state-supported medical schools where in-state residents are given preference. More recently, the same strategy is being used for minority applicants, women, and applicants from rural areas. The premise underlying preference for rural students and persons with public service experience is that students who have some personal life experience in a special need area are more likely to choose to practice in such an area. This conclusion has been supported by research studies.

Much of the special recruitment— which in most cases has been conducted by individual medical schools or academic health centers— has been directed to minority, especially black, applicants. Activities include working with counselors and students in high schools and predominantly black colleges to provide better information about careers in medicine and other health professions and the kinds of subjects and preprofessional courses the schools require. Some professional schools have helped establish "future physician" or "future nurse" clubs that encourage high school and college students to plan for careers in these professions. The club members get a feel for the profession through volunteer work in local hospitals or other health settings.

Some medical schools operate faculty exchange programs with predominantly black colleges. Several medical schools have special summer sessions for minority students that offer opportunities for taking courses to prepare them as medical students and for meeting medical school faculty and medical students on campus. North Carolina has a statewide program, administered by the University of North Carolina, to reach out to minority students and inform and counsel them about careers in medicine. This program is combined with summer work opportunities and stipends to assist those students who elect to study medicine. This financial assistance is especially important to minority students since their family incomes are likely to be far less than those of white students and they are less able to borrow from traditional sources.

The Kentucky Professional Education Program, administered by the Kentucky Council on Higher Education, uses the same kind of strategies to recruit rural students. This program is designed to identify high school seniors and college students from rural areas who are willing to study medicine and return home to practice. Each year, about 80 students spend a month during the summer at one of the medical schools developing study skills, test-taking strategies, and an understanding of the premedical subjects that will increase their chances of admission into medical schools. Students are also encouraged (and assisted) to find part-time or summer jobs in hospitals or other health care programs in their home towns.

Medical schools and statewide recruiting programs should give special attention to rural students attending the state's regional colleges and universities. The faculties of the medical schools can assist the regional institutions' premedical faculty to strengthen their curricula and counseling so that graduates are more successful in achieving high scores on the Medical College Admission Test. Personal contacts with medical school faculty will help and encourage promising students in the admissions process.

Similar approaches to preferential recruitment and selection of students with motivations to work in other special need areas, such as geriatrics and psychiatry, are also possible. In all cases, it is essential to carefully assess the motivations of individual candidates to return and work in a particular area of need. It is not sufficient to rely on the candidate's simple statement of interest if he or she has no experience or any demonstrated motivation for that specific area of work. If the candidate is married, attention also must be given to the background and aspirations of the spouse.

Loan Forgiveness and Scholarship Programs

Loan forgiveness and scholarship programs, used by both federal and state governments for a number of years, have met with mixed success. In general, the loans are given to students who agree to serve for a specified number of years in a designated shortage area as defined by some official agency. The loan is forgiven for graduates who fulfill the contract; those who do not complete the agreed-upon services must pay back the loan with interest.

Many of the federal loan forgiveness programs have had poor success—only about one out of seven National Health Service Corps loan recipients actually served in a shortage area. However, with more careful selection of

| Table 2 |
| State Coordinated Programs to Influence the Distribution of Health Professionals |

- Recruit students with experience or high desire to work in settings or specialties where professionals are needed
- Give those students loans or work-study contracts which can function for students in needed areas, but require students remain for a specified period
- Provide on-the-job training in medical specialties and new services
- Provide residency training in needed specialties and new services
- Other role models and counseling for practice in needed areas
- Have communities assist medical school programs in setting up these services
- Develop reasonable financial packages for work in need areas
- Modify laws and regulations to allow practitioners to practice as effectively as possible
needed services (primary and geriatric care). Current reimbursement schedules often provide 25 percent lower fees for practitioners in need areas. The entire reimbursement system needs revamping so that the rewards for preventive primary care are equitable to those for the technical surgery and procedures performed by tertiary care specialists. Work is underway to start this change, but it needs support from policymakers at many levels.

Work-Study Contracts

The federal government and several states have made use of a variety of work-study contract arrangements whereby medical students receive support for their education in return for serving a period of time in a specific service. The contracts of the military services and the Veterans Administration are examples. The National Health Service Corps (NHSC) is a federal program designed to help locate physicians and other health professionals into "health manpower shortage areas" as designated by the federal government. The military program contracts, which have a strong element of coercion, have been quite successful in providing young physicians for the armed services, but the retention rate has been less than desired.

Individual states also have had work-study contract programs for specialties, such as residency training to work in the public mental health and public health services and family medicine to serve rural areas. Where these programs have been actively coordinated and flexibly administered, the results have been good; but, where the contracts have been offered as an isolated strategy, the results have been poor.

State Regulation

State regulation, particularly licensure laws and their related administration, can influence the location and types of practice of professionals. At the present time there is considerable discussion on tightening requirements for foreign-trained physicians who want to practice in this country. There is also discussion of limiting the licensure of additional physicians to those areas in which physicians are truly needed (rural areas, primary care) although no state has yet enacted such a "certificate of need" program.

Another aspect of licensure that affects professionals is that of physician assistants, nurse practitioners, and dental aides who can extend the delivery of health care services in some of the areas of need. Current state laws often restrict the utilization of such personnel on the ground that they might lower the quality of care. Studies have shown, however, that these professionals are very productive, both in the number of families and patients they serve and in revenues they generate.

Community Efforts

A major factor in whether a practitioner chooses to locate in a community, and especially whether he or she chooses to remain in that location, is the attitude and support of that community. Communities have used many strategies to attract and retain health professionals, ranging from simple advertising in journals to providing loans and support for an office and, perhaps, a home, or helping establish bank credit and assisting in the establishment of staff privileges in nearby hospitals during the early phases of the new professional's practice. Income supplements are often critical, especially in areas that have a low population base of families who are able to pay full medical fees. These are often special problems for minority practitioners.

Some states, such as North Carolina, have a state office that works with local communities to help them develop the resources that are appealing for physicians and other health professionals. In other places, this role is played by the medical society or the state economic development agency.

Cooperation between economic development interests and medical placement interests is helpful to both — industry wants adequate health programs in the community in which it locates, and the better economic base of new industry will make the community more attractive to practitioners. The quality of schools and recreational and cultural opportunities also are influential. Communities should give attention to all of these aspects in their efforts to recruit health professionals.

This edition of Issues in Higher Education was prepared by Harold L. McPheeters, SREB Director of Health and Human Services.