ABSTRACT

The document reports the major problems faced by school administrators in dealing with the handicap of hearing impairment in children, with the intent to stimulate improvements in methods of assessing the needs of this population and in systems of delivery of services. The first section on the problem of misunderstanding hearing impairment in children, covers the importance of language acquisition, severity of the language learning problem, differences in behavioral characteristics of hearing impaired children, and audiological terminology in relation to educational needs of children. Presented in the second section on identification services are statistical information on the magnitude of hearing impairment problems (including numbers and needs of the population by state) and descriptions of some current programs. The third section covers the problem of educational evaluation services and reports some model programs in evaluation and services as well as the role of the regional resource centers. Additional areas discussed are the training of needed personnel and the need for educational reform, with examples of regional programming and a description of the components necessary in a regional program. (IM)
2.5 Million Children: The Invisible Handicap of Hearing Impairment

The Council for Exceptional Children
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Preface

This document is by no means a research study. It is an attempt to focus on the major problems faced by school administrators in dealing with this obscure and greatly misunderstood handicap of hearing impairment in children.

There is a conviction among educators of the deaf that the education of the deaf child who must learn his native language without hearing it spoken is the most difficult of all educational handicaps and very different from the education of other children. There is no growing concern that the impact of almost any hearing loss on the young child has been grossly underestimated.

The problems are acute. The scope and severity of the situation was best described at a national conference on the education of the deaf in Colorado Springs, which emphasized that the problem of hearing impairment in children must be viewed by the public with the same critical concern as we now view heart disease and cancer (Silverman, 1967).

It is the intent of this report to stimulate action within states to uncover the needs of hearing impaired children, and to unite in a national effort to close all gaps in our present systems of delivery of services which perpetuate this tragic and unnecessary waste of the learning potential of the nation's children.

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Introduction

This presentation is both a plea and a challenge to school administrators, teachers, parents, special educators, diagnosticians, medical personnel, and concerned citizens to help identify the problem of hearing impairment in children. The premise of this paper is that hearing is the basic sensory avenue for the learning of a child's first language and all related communication systems, and that the invisible handicap of hearing impairment can cause serious damage to learning processes in children. The severity and scope of this damage is little recognized or understood either by the public or many professionals.

Hearing impairment cuts across all handicapping conditions and takes its silent toll of the learning potential, not only of children with known hearing loss but also among the retarded, the learning disabled, the child who cannot read, the gifted, the school dropout, the emotionally disturbed, the physically handicapped, and others. This damage could be prevented.

One attempt to focus attention on this problem was through the Babbridge report on The Education of the Deaf published by the Advisory Council to the Secretary of Health, Education, and Welfare (1965). Two of the major recommendations of this national Advisory Committee were specifically directed to state departments of education, stating that:

1. The federal government be requested to allocate planning grants to states for the hearing impaired similar to the planning grants previously allocated for the mentally retarded.
2. A national conference be convened of local, state, and federal government officials and professional personnel to formulate necessary plans for state action.

Since that time, the federal government has carried out an intensive campaign of program stimulation and development through special workshops, national conferences, development of media research, data collection, regional and national program services, demonstration centers, teacher preparation, and special financing. Despite these types of federal support, there have been only minimal attempts within states to grapple with this complex problem on a statewide basis. There is now a growing concern that the actual service to hearing impaired children has worsened.

The National Research Conference on Day Programs for the Hearing Impaired summarily stated:

Today our nation faces a crisis in the education of its hearing impaired children. . . . The proliferation of scattered day classes, frequently supervised by educators who are not knowledgeable in the field of deafness, staffed by poorly qualified teachers, and limited in their educational opportunities has aroused educators and parents alike. Few states have recognized the problem of educating hearing impaired children beyond narrow limits and still fewer have developed comprehensive state plans. (Mulholland & Feldendorf, 1968, p. 3)

Concern is now heightened among educators of the deaf by new trends in integration (mainstreaming), noncategorical grouping of children, and mandatory special education laws, some stipulating preferential placement of all handicapped children, including the deaf, in local special education programs. This trend "threatens to erode the education of the deaf still further" (Turecheck, 1972, p. 1).

These issues are of great concern. In a state where many of these problems have been and still are tragically familiar, and where provisions for mandatory legislation were passed in 1965, it is now evident that these laws themselves did not jeopardize the education of the hearing impaired. In fact, quite the opposite occurred. The laws forced the professionals to unite their efforts in a common cause; to take a long hard look at the total problem of hearing impairment in children; to seek help from the state's most powerful statutory agency serving children, the Illinois Commission on Children; and to engage in an intensive struggle to develop a coordinated interagency plan of comprehensive programs and services. Because of the mutual needs expressed by other states in this respect, information from the Illinois study, as well as studies and survey reports from other states, will be presented throughout this document.

The fundamental issue today is the effective delivery of services to children, to make certain (a) that the hearing of all 51 million of the nation's children is in the best condition possible for learning and (b) that appropriate programs and services are provided for all those with identified hearing loss. Major problem areas limiting the effective delivery of service include the following:

1. Misunderstanding of the severity of the problem of hearing impairment in children.
2. Fragmenting of identification services.
3. Shortages of adequate evaluation services.
4. Training of personnel to meet the needs of states.
5. Need for educational reform.

Problem I: Misunderstanding of Hearing Impairment in Children

The recommendation of the recent National Study on Current Practices in the Education of Hearing Impaired Children was "to wage an intensive campaign to inform persons in responsible positions with children about the problem of hearing impairment" (Fricke & Murray, 1969, p. 22). The concept emerging in today's education is a
new focus on this auditory learning process in children and a new understanding of what happens to children throughout their school years when this process is thwarted.

**IMPORTANCE OF FIRST LANGUAGE ACQUISITION**

Experiences of most of the general public and public school personnel seem to have been with the hearing impaired adult, whose hearing decreased after a lifetime of normal learning and living. It seems virtually impossible to grasp the concept that when hearing impairment strikes the young child, it is an entirely different matter, since this child is still deeply engrossed in his first language learning process. Although we seldom think of it, the young child spends most of his first year of life in learning through listening. Through sound, he begins to learn direction, distance, speed, intensity, and meaning; he learns to sleep through some sounds and attend to others; and, most importantly of all, he begins to learn his native language. This he does through hearing the emotional tones of the human voice, spending endless hours in enjoyable, effortless practice; listening to his own babbling and perfecting the production of what we commonly term vowels, consonants, rhythm patterns, inflections, and words; progressing to a complex language system, which becomes the basis of all future communication skills for learning and living (Tervoort, 1953; Myklebust, 1960; McNeill, 1966).

The impact of hearing impairment on the young child is almost beyond comprehension. References to the encompassing effects, extrapolated from comprehensive publications on hearing impairment, appear below.

The most serious effect of deafness in young children is its interference with the normal development of language which is the vehicle of all human thought and learning. (Illinois Commission on Children, 1969, p. 6)

Hearing is mandatory. We cannot cease hearing even while asleep. . . . Nature provided for one of the distance senses to be functionally constant and the advantages to self-preservation are obvious. (Myklebust, 1960, p. 373) For the general public and for many parents of deaf children, it is the speech aspects of the problem that command major attention. The child cannot talk; therefore, the mistaken conclusion is reached that deafness is a speech problem and this is followed by the even more mistaken assumption that a hearing aid and speech lessons will make everything right. (Levine, 1960, p. 30)

It is the belief of many educators that without early auditory stimulation, many moderately hearing impaired children would, by the age of six or seven, be behaviorally undistinguishable from profoundly deaf children. (Levitt & Nye, 1971, p. 83)

School personnel must be helped to understand, then be held accountable for, alienating misconceptions contributing to mismanagement of hearing impaired children in regard to (a) the severity of the language learning problem, (b) the differences in behavioral characteristics, and (c) the meaning of auditory terminology related to educational needs of hearing impaired children.

**SEVERITY OF THE LANGUAGE LEARNING PROBLEM**

To demonstrate the severity of language deprivation, and the difficulty of learning one's first language primarily through visual systems, samples of the written language of deaf children of various age levels are given below:

**Age 7 years:** I see ball
**Age 9 years:** He has a doll's many
**Age 11 years:** I see a chair to school
**Age 13 years:** A little baby doll sit in a chair and they will go for walking

Age 15 years: He needs to show another your home, family.

Age 17 years: The boy's wondering to put some furniture on the table.

(Northwestern University, 1965)

From these samples, the "interference" of deafness with normal development of language becomes clear. Also clear is the breakdown in the educational processes of the language of reading, writing, thinking, speaking, concept formation, and acquiring knowledge, a situation that may exist for the rest of the child's life. Some deaf youth do achieve high levels of language acquisition and reading skill, but the majority have reading scores far below their intellectual abilities (Wrightstone, Aronow, & Muckowitz, 1963; Reis, 1971).

In referring specifically to deaf children, linguist McNeill (1966) emphasized that language learning should begin as early as possible in order to maximize the normal capacity for learning one's first language, a process which peaks at 2 to 4 years and declines steadily thereafter, possibly disappearing altogether as a special capacity by adolescence. These statements seem to have equally grave implications for a large number of hard of hearing children (those with partial hearing) who may also manifest serious gaps and confusions in the language learning processes and who, often experience years of delay before receiving critically needed special education assistance (Young & McConnell, 1957; Goetzinger, Harrison, & Baer, 1964; Kodman, 1963; Berg, 1970).

**DIFFERENCES IN BEHAVIORAL CHARACTERISTICS OF HEARING IMPAIRED CHILDREN**

It is commonly believed that if one but speaks loud enough the hearing impaired child should both hear and understand what is said. This is an erroneous assumption. Behavioral characteristics of hearing impaired children differ greatly depending upon many factors. One of the most misunderstood relates to the type of hearing impairment. Lack of knowledge in this respect by professionals may be responsible for serious injustices to many children. Yet, in general, such
There are three principal types of auditory impairment—which may coexist and which influence hearing function: One results in reduced loudness of sounds; another, in reduced clarity; the other, in inability to perceive or interpret sounds (Hiett & Stewart, 1968).

Reduced loudness resulting from damage to the outer or middle ear is termed conductive hearing loss. Greatest difficulties arise when the loss restricts the loudness of speech reception; failure to hear environmental sounds adds to the child’s confusion. Such a hearing loss may cause the child to be under a constant strain to hear; he may hear only accented parts of words and miss much of what is said except under ideal situations. He may have fragmented, underdeveloped language, poor speech, faulty concepts, and frequently be labeled inattentive or stupid. While this type of hearing loss is widespread among school children, often it is not even suspected; or if suspected, there is frequently no one at the local level to give proper guidance. Yet, with early intervention through medical care, audiological evaluation; consideration of a hearing aid, and necessary supportive educational assistance, the child’s ability to learn might be greatly improved or, in some cases, even restored.

Reduced clarity of speech reception, resulting from damage to the inner ear or nerve pathway, is termed sensori-neural or nerve impairment. A child with this type of hearing loss appears to hear well enough, but not to understand; again, hearing loss may be unsuspected. To this child, voice and certain other tones may actually be heard reasonably well, but speech reception may be greatly distorted or even unintelligible. This high frequency hearing loss is caused when the hearing loss damages very specific high frequencies within the speech range, blocking out certain speech components (usually sibilant sounds), while low frequencies controlling voiced vowel tones may be less affected and sometimes sound near normal. Thus, this selectivity factor may permit the child to recognize the low tone of the school bell perfectly, but it may prevent him from understanding or developing language because of the garbled speech pattern he hears. This seemingly inconsistent response of the child to sound obscures the hearing loss and may result in serious misdiagnosis and mismanagement even by otherwise competent diagnosticians. This child may be the most misunderstood of all handicapped children (Hartford, 1964).

Inability to perceive or interpret sounds is said to result from dysfunction along pathways of the brain, including the cerebral cortex. It is termed central impairment or central deafness. Relatively little factual information is known regarding this disorder, but it is particularly disabling when it affects the reception of speech. Loss of loudness of sound is not generally significant, and thus central impairment is not a hearing loss problem in the sense of the previous two definitions. Since reduced loudness is not a primary factor, the value of a hearing aid remains controversial, but the value of early education cannot be overemphasized (Hiett & Stewart, 1968).

That all of these conditions have long been known to cause confusion seems substantiated by a report from a New York clinic, which found that 60% of a group of hearing impaired children had been previously diagnosed and referred as mentally retarded, aphasic, or emotionally disturbed (Darley, 1961). The same confusion exists today.

AUDIOLeGICAL TERMINOLOGY IN RELATION To EDUCATIONAL NEEDS OF CHILDREN

Another deterrent in providing service for children is caused by the misconceptions regarding audiological terminology. Standard-audiometric terminology, which probably was applied originally to classify degree of hearing loss primarily in adults, tends to minimize the educational needs when applied to children. Yet, use of this terminology seems in common use in describing hearing impaired children. These classifications of “slight,” “mild,” “moderate,” “severe,” and “profound” are confusing. A clarification of these terms, such as in Figure 1, is called for. For example, to say a child has a “mild” hearing loss does not cause alarm for the child’s educational needs. Yet some children within this “group” might be hearing face to face conversational speech from a distance of only 3 to 5 feet and may miss up to 50% of classroom instruction. Children with a hearing loss termed “moderate” may hear speech only from a distance of one foot (Davis & Silverman, 1970).

The hearing impaired child runs the double risk of an educational handicap because of the increased need for a new balance between auditory and visual systems of learning with the breakdown in the auditory system. The ability of a child to develop lipreading skills and to integrate this learned process into his total educational system is not a simple matter, considering that more than a third of spoken language is invisible on the lips and many speech elements and words look identical when spoken inaudibly. Note the same lip and mouth movements in juice and shoes, white and one; the similarity of bye-bye, baby, and mama; or the invisible nature of a sentence such as “He sat at his seat and studied.”

It should also be realized that learning to use amplification and to understand the meaning of sounds and language is a difficult process requiring education and auditory training. And while great advances have been made in individual hearing aids and group equipment; amplification does not make hearing sound normal. For some children, amplification is not needed; for others, it may have great advantages; for still others, the benefits are less effective. A hearing aid in itself is not a cure-all for long term educational deprivation; habilitation, or rehabilitation may sometimes be a laborious, life-long process.

Thus the child with impaired hearing may experience many changes and difficulties in his ability to use sound and vision to the fullest advantage; these changes may affect his educational, environmental and emotional life. The child runs the risk of experiencing a syndrome of handicaps, including (a) interference with the learning process and emotional well being through a breakdown in the entire human communications system, (b) deprivation in utilizing environmental sounds which alert one to events, regulate one's...
The amelioration of the effects of deafness is a goal worthy of the best talents and efforts our country has to offer. A major key to effective action lies in the hearing impaired child himself, who has the potential in most cases for self supporting adulthood if his condition is diagnosed, he is provided with an appropriate hearing aid, and he is given the necessary training at an early age.

In the United States we are far from providing such services to hearing impaired children. Hearing testing services, for early identification and referral for necessary followup services of evaluation, medical, and audiological treatment and education for hearing impaired children of all ages, are being conducted in many community health and school programs—at a cost of millions of dollars. These services are excellent in some areas, but national statistics now available seem to document the extreme need for a plan of coordination among these three basic disciplines of medicine, audiology and education. The question is, where are the nation’s hearing impaired children and what is happening to them?

**Problem II. Identification Services: The Need for a Three Dimensional Program**

The magnitude of the problem of hearing impairment in children has been difficult to identify, according to data collection studies, because its invisible nature obscures the extent of the problem and minimizes the needs. Statistical information important to state and national planning includes the following:

1. Approximately 8.5 million persons in the United States have auditory handicaps, causing a loss in earning power of $1.5 billion annually (Davis & Silverman, 1970; National Conference on Sensory Training Aids, 1971).

**MAGNITUDE OF HEARING IMPAIRMENT PROBLEMS**
2. Approximately 2.5 million of this total are school children with hearing loss outside the normal range. This is 5% of the 51 million school children enrolled according to statistics of the US. Department of Health (Davis & Silverman, 1970).

3. Approximately 3% are expected to need medical referral, either for clearance that no "medical help" is needed, or for recommendations for further treatment (Hiett & Stewart, 1968).

4. From 50 to 80% of permanent hearing damage in children is reported to be preventable if children are identified early and receive prompt referral and effective medical service (Harford, 1964).

5. Approximately, 1.7% of the school population being screened is expected to have hearing loss in the speech range (Eagles & Doerfler, 1964). The children need audiological and educational clearance or further audiological and/or educational services.

6. Between 255,000 (Davis & Silverman, 1970) and 500,000 children (Berg, 1970; Moore, 1971) are said to need educational scrutiny and/or service.

The target is therefore the 2.5 million children identified through screening as having any degree of hearing loss outside the normal range, and to determine the effectiveness of the present delivery system of clearance or services to them.

EDUCATIONAL PROBLEM AREAS

A serious point of breakdown in services to children is the gap between case finding and educational referral. The need for Educational Referral observed by Illinois was emphasized by a series of studies revealing both inadequate hearing testing services and inadequate educational referral and followup of children. This resulted in state legislation and policy reform through the Child Hearing Test Act, 1969; The Rules and Regulations of the Illinois Department of Public Health, 1972; and the Rules and Regulations of Special Education, Office of the Superintendent of Public Instruction, 1973.

1. A state questionnaire to determine the extent of coverage, and the quality of hearing testing service (1962) revealed that over 50% of the school districts did not have regular programs; there were no statewide standards for regularity or methods of testing; testing was done by persons representing 10 different occupations; of those administering tests, 21% had no training; 10% did not notify parents or physicians regarding the child who failed; two-thirds of the test equipment was not calibrated; and only half of the persons making educational recommendations were in the field of education. In no case did an educator of the hearing impaired participle in making educational recommendations.

2. Neglect in educational followup of elementary children was revealed by the director of special education (Elgin, 1967) who checked existing school records and found 121 children with significant hearing loss in the speech range (either unilaterally or bilaterally), none of whom had ever been referred for educational followup. Only 11 of these children were rated as participating members of their classes; 28 had failed one or more grades; and the remainder were rated by teacher questionnaire as underachievers, withdrawn, having social problems, etc.; only 9 wore hearing aids; IQ of some children were reported to be well above average, yet no child was above average in any subject; only 15 were in high school (Blesing, 1968).

3. Some effects of hearing loss on educational achievement were revealed by Quigley (1968) in a resear study of 150 elementary school children whose hearing loss had been identified through screening. Results showed many children to be retarded in language beginning at the level of hearing screening and increasing with the severity of loss. Also, for every subtest in every hearing level category actual performance was lower than expected performance. Statistics on grades retarded in language are quoted in Table 1 (Quigley, 1968, pp. 12-13).

4. Educational referral of preschool children with hearing loss was noted in a Maternal, Infant, and Preschool Child Health Survey. A total of 17,115 children were screened for hearing impairment; the "number of defects" reported was 943 (Golperin, 1969). Of this group in Cook County, Illinois, only one of the 943 identified suspects was known to have been referred for special educational followup.

5. Hearing loss among children with other handicaps was studied in 406 children already enrolled in special classes (Pahle, 1968). The following percentages of undetected hearing impairment were found: retarded children—31%; learning disabilities—20%; emotionally disturbed—32%; and unclassified—25%.

ILLINOIS SOLUTIONS

Three steps have now been taken in the State of Illinois to help coordinate the educational services to hearing impaired children with the identification program:

1. The Child Hearing Test Act (Senate Bill 324, 1969) mandates hearing testing services beginning as early as possible but no later than a child's first enrollment in any educational setting; administered by the State Department of Public Health in cooperation with the State Department of Education; and although not mandated, vision screening services are also being initiated at the same time.

<table>
<thead>
<tr>
<th>TABLE 1</th>
<th>Relationship of Degree of Hearing Loss to Grades Retarded in Language</th>
</tr>
</thead>
<tbody>
<tr>
<td>Better ear average in speech range 500-1000-2000</td>
<td>Grades retarded in language</td>
</tr>
<tr>
<td>(Minimal)</td>
<td>15 - 26 db</td>
</tr>
<tr>
<td>(Slight)</td>
<td>27 - 40 db</td>
</tr>
<tr>
<td>(Mild)</td>
<td>41 - 55 db</td>
</tr>
<tr>
<td>(Moderate or Marked)</td>
<td>56 - 70 db</td>
</tr>
</tbody>
</table>
2. The rules and regulations governing the implementation of the Child Hearing Act (1972) require that all children identified will be simultaneously referred to the doctor for medical clearance or treatment and to the director of special education for educational clearance or further educational service. The rules also specify standards, procedures, and the training of personnel including nurses and technicians engaged in hearing testing services.

3. The rules and regulations governing special education, the Illinois School Code, include a policy that hearing and vision testing services be administered prior to placement of any child in any special education program (1973). Provisions also mandate educational programs for children age 3 to 21 years. Permissive parent-infant programs (birth to age 3 years) are encouraged through additional financing. Thus the state is now committed to an organized plan of case finding and service; to make sure that the child's two most basic avenues of learning, hearing and vision, are in the best possible condition for learning and that necessary services are provided at the earliest point possible. An accountability procedure is now being pursued.

PROGRESS OF STATE PROVISIONS IN THE UNITED STATES

Provisions for identification and referral services in states across the nation show both progress and problems. The series of annual reports of the Demographic Studies on the Hearing Impaired provide a wealth of information on individual states pertinent to state planning. The following information is from the Annual Survey of State Identification Audiology Programs and Special Educational Services (Gentile & Reis, 1972):

1. Twenty-four states report some form of statutory provisions for hearing testing services for school children. This is an increase of states in the last 5 years.

2. Twenty-six states have no statutory provisions for hearing testing services.

3. Administration of hearing testing services show State Departments of Public Health and State Departments of Education, as coordinators in 20 states; the Department of Public Instruction as coordinator in 8 states; and Department of Public Health in 11 states.

4. Quality of services was reported to show a lack of statewide standards for the regularity or method of testing in 33% of the states; and the type of training and personnel involved varied considerably within states.

Fourteen states now have both mandatory hearing testing services and mandatory special education for children—as early as age 3. Ten states have neither mandatory testing nor special education. Whether with or without legislative provisions, there are wide gaps in coordination of services which reveal points of breakdown in hearing testing services and referral for medical, audiological, and educational followup.

Table 2 is a compilation of information from the Special Report of a National Survey of State Audiology Programs and Special Educational Programs, Office of Demographic Studies, Gallaudet College for the Deaf, Washington, DC (Gentile & Reis, 1972). For the purposes of this paper, the states selected were those reporting sequential information in regard to identification screening and medical, audiological, and educational followup. These statistics provide a glimpse into the magnitude of services needed; and the possible discrepancies between anticipated numbers of children needing medical, audiological, and educational services and the numbers reported to be receiving them. Many states reported less accountability.

THE NATIONWIDE EDUCATIONAL PROBLEM

The Directory of the American-Annals of the Deaf records 49,696 children enrolled in educational programs in 1973 which is approximately 80% of the total. This seems a large number; however, it is a cumulative figure encompassing an age span of 15 years, or in many states, an even wider span (ages 3 to 21). Annual increases in enrollment of deaf and hard of hearing children in schools and classes in the United States, reported in the Directory of Services for the Deaf, are as follows:

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Children</th>
</tr>
</thead>
<tbody>
<tr>
<td>1969-1970</td>
<td>44,020</td>
</tr>
<tr>
<td>1970-1971</td>
<td>45,125 (increase of 1,105)</td>
</tr>
<tr>
<td>1971-1972</td>
<td>46,075 (increase of 950)</td>
</tr>
<tr>
<td>1972-1973</td>
<td>49,696 (increase of 3,621)</td>
</tr>
<tr>
<td>1973-1974</td>
<td>51,837 (increase of 2,141)</td>
</tr>
</tbody>
</table>

In addition, itinerant special education programs were estimated to be serving 12,000 children (Gentile & Reis, 1969-70), and this figure has probably increased. There is no indication of the number of years children remain under this itinerant service. However, all of these increases, divided among 50 states, show a wide discrepancy on a national basis between predicted numbers of children needing service and the actual services being provided for hearing impaired children.

COORDINATION OF SERVICES

Coordination of services to children is basic to successful statewide programs of identification and followup. The recent document of Health, Education, and Welfare, Improving Services to Handicapped Children with Emphasis on Hearing and Vision (Kaklik, 1974) details the full range of identification and followup systems including services rendered, needs, coordination, responsibilities, costs, and federal programs. The publication's major emphasis is on hearing and vision as basic services to all children. Three of its important concepts are the following:

- Directive centers for hearing and vision in some form have been advocated in the HEW study (Kaklik, 1974) as a means of establishing a "one stop" coordinated service unit. Fragmented or splintered services are inefficient and costly. This report recommends a network of 150 to 200 Regional Directive Centers specifically for hearing and vision. Services derived from savings in lost time, inadequate and duplicated services, and transfer of records would equalize the costs of such a network and justify the service. If fully coordinated with state action, it should expedite professional service to children where resources are limited.

- Responsibility for the program of identification, either by state law or
<table>
<thead>
<tr>
<th>Educational Program</th>
<th>Total annual enrollment</th>
<th>Estimated average of new cases</th>
<th>Intermittent or speech correction</th>
</tr>
</thead>
<tbody>
<tr>
<td>5,289</td>
<td>352</td>
<td></td>
<td></td>
</tr>
<tr>
<td>201</td>
<td>13</td>
<td>90</td>
<td></td>
</tr>
<tr>
<td>612</td>
<td>40</td>
<td></td>
<td></td>
</tr>
<tr>
<td>840</td>
<td>167</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,965</td>
<td>77</td>
<td>1,397</td>
<td></td>
</tr>
<tr>
<td>340</td>
<td>22</td>
<td>44 speech</td>
<td></td>
</tr>
<tr>
<td>320</td>
<td>3</td>
<td>63</td>
<td></td>
</tr>
<tr>
<td>204</td>
<td>4</td>
<td>254</td>
<td></td>
</tr>
</tbody>
</table>

Note: Numbers may not add up due to rounding.
state policy, is imperative to an organized plan of service delivery. This responsibility varies from state to state. The majority seem to have placed the authority with the state's health agency since the doctor, usually the parents' first contact and since the need for medical care for all hearing impaired children is so great.

Most important however is the necessity for a family welded interest between health and educational personnel making authority well-defined.

Medical and educational personnel, and the local level of state and federal funds. At the local level the school health program is often fragmented, though it can be coordinated through cooperation on the part of health agencies. The development of coordinated services to provide a state service agency is important to a state plan of comprehensive services to hearing impaired children.

NUMBERS AND NEEDS OF HEARING IMPAIRED CHILDREN

The fragmented services in public, private and voluntary agencies as well as many other contributing factors make it difficult to base the collection of data on numbers and needs of hearing impaired children. In the U.S., the National Institutes of Health, National Institute of Deafness and Other Communication Disorders, and the National Institute of Child Health and Human Development, United States Public Health Service, have joint responsibility. (Refer to Table 3). This baseline grouping, (see Table 3) thus providing meaningful information on predicted numbers and needs of hearing impaired children is of significance to school administrators and other professional personnel.

The statistics of numbers and needs of hearing impaired children (Tables 3 and 4) may be controversial yet they evolved from studies by highly competent professional personnel and are quoted by leading authorities. Of the 7.5 million children with hearing loss outside the normal range, a million children have been given clearance by some system that no significant problems exist. Another million children with hearing loss in the speech range would be expected to need medical, audiological, and educational screening for decisions about further evaluation. Hearing aids may be needed by many children in groups C, or above under the Sten & Silverman 1976, An and other criteria (1976). Audiology and educational evaluation continue to be supportive of program planning. (Refer to Table 3 for this team approach to hearing at each child...
sequential management are inadequate at present.

Absent from the team involved in educational screening and followup has been the educator of the hearing impaired (National Research Conference on Day Programs for the Hearing Impaired 1967; Hight & Stewart 1968; Blessing 1968). It has been emphasized that the teacher educator of the hearing impaired must begin to assume greater responsibility for participating in the planning, making of all educational needs of hearing impaired children be assumed, that the education involved. The need exists for a meeting in the development and implement-ation of a plan of educational followup on the educational screening and educational individual teacher; parent involvement, the child, and support in their needs. The challenge is for the teacher as individual educator to work with those agencies involved and make the responsibility a joint one. It is the teacher's responsibility to assure that the education with the parents and for the parents to be involved in the education. The point is that the educational team involved with the child must include the teacher. The table below are the numbers of hard of hearing individuals less than 18 years of age in each of the 50 states of the United States based on the 1967 Preliminary Census Figure.

### TABLE 4

<table>
<thead>
<tr>
<th>State</th>
<th>Farm Speech</th>
<th>Normal Speech</th>
<th>Loud Speech</th>
<th>Hard of Hearing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>20-45 db</td>
<td>40-75 db</td>
<td>56-100 db</td>
<td>11-90 db</td>
</tr>
<tr>
<td></td>
<td>20-45 db</td>
<td>40-75 db</td>
<td>56-100 db</td>
<td>11-90 db</td>
</tr>
<tr>
<td></td>
<td>20-45 db</td>
<td>40-75 db</td>
<td>56-100 db</td>
<td>11-90 db</td>
</tr>
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<td></td>
<td>20-45 db</td>
<td>40-75 db</td>
<td>56-100 db</td>
<td>11-90 db</td>
</tr>
</tbody>
</table>

Note: The table above is a simplified representation of the data presented in the document. The actual data includes more detailed information and may have additional columns and rows.
TABLE 4 (Cont.)

<table>
<thead>
<tr>
<th>Difficulty with</th>
<th>Severity of hard of hearing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faint speech</td>
<td>Normal speech</td>
</tr>
<tr>
<td>26-40 dB</td>
<td>41-55 dB</td>
</tr>
<tr>
<td>West Virginia</td>
<td>5,588</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>13,977</td>
</tr>
<tr>
<td>Wyoming</td>
<td>1,440</td>
</tr>
<tr>
<td>Washington</td>
<td>2,550</td>
</tr>
<tr>
<td>United States</td>
<td>6,697</td>
</tr>
</tbody>
</table>

Preschool Identification and Preventive Care

It is estimated that 25% of children born to alcoholics or drug users may have a degree of hearing loss which is either untreated or even unsuspected.

Hearing screening programs for preschool age children, if properly conducted, have long been proposed as a most effective means for the identification of children with hearing problems as well as the identification of children with other handicapping conditions (Darley, 1961). The child's abnormal response to the test situation is significant as his absence of response to sound.
needed educational services should soon be available. Fourteen states are
known to have both mandatory hearing testing services for "case finding" and
mandatory special education service beginning at age 3 and one (Michigan)
beginning at birth. Federally funded preschool models should encourage that
early intervention be an integral part of every state and have the potential
to extend knowledge about identification and intervention. Federally funded
preschool programs are available in every state and have the potential
to extend knowledge about identification and intervention.

Federally funded preschool models should encourage that early intervention be an integral part of every state and have the potential to extend knowledge about identification and intervention.
the school setting, they provide a means for interaction among the staff engaged in the evaluation process and hopefully result in a team approach to recommendations (Deno, 1972; Hiett & Stewart, 1968). Also important is the opportunity for the child's parents and teacher to participate in this coordinated evaluation process. The development of such extensive regional service demands new administrative and financial provisions often requiring legislative action (see section VI).

Cooperative programs

Schools for the deaf and public schools have many advantages. Interagency evaluation institutes are being conducted in some states. They are important improvements toward stress reduction and cooperation among concerned agencies. This is so in both the public and private sector. Parents and teachers need to be involved in the coordination and planning of evaluation activities. The entire school situation, from the classroom to the halls, should be examined for the needs of the child. Some parents have had success in forming cooperative groups at the local level to handle these problems. These activities may also at times be necessary to coordinate governmental efforts to provide adequate services to deaf children.

Anticipated about 13,000 were conducted at hospital and university speech and hearing clinics, about 10,000 at state schools for the deaf, and about 7,000 in other settings (Gentile & Reis, 1971). Information on children not enrolled in educational programs is not available at this time (Gentile & Reis, 1971).

A large number of children with hearing loss in the speech range would seem to need evaluation as potential hearing aid users (Davis & Silverman, 1970). See Table 5. There are approximately 10,000 to 20,000 audiologists and these persons are available in only six or seven states. For the majority of children and biological evaluators, assessments are completed in the home. Education programs in the field are beginning to see the need for educational programs that will identify children and parents for adequate services in a classroom program.

An educational institute that is a center for the training of children and adults with hearing impairments must provide a full range of educational, social, psychological, physical, and economic opportunities and services. This includes opportunities for remediation and enrichment and involvement with other educational programs and services both within and outside the school setting.

There is a growing concern for the number of hearing impaired children living in institutions and who are being reported that only 1 classroom out of 11 evaluated met minimum standards of this kind. The National Conference on Sensory Training Aids for the Hearing Impaired states that many classrooms provide such poor acoustical environment that a child capable of functioning within 60% efficiency under good conditions may have his efficiency reduced to zero (Levitt & Nye, 1971). With such conditions existing in our schools, children seem far removed from the modern technology described in the conference report.

Psychological and social work services by personnel with special training or experience who understand the problem of hearing impairment in children are rare outside of state schools for the deaf. Yet specialists in both of these fields who have had training or experience in working with hearing impaired children continually stress the need for special training in working with the hearing impaired and the need for adequate assessment tools and recommendations to be made (Levitt & Nye, 1971; Parks, 1966). There is a growing concern for the number of hearing impaired children living in institutions and who are being reported that only 1 classroom out of 11 evaluated met minimum standards of this kind. The National Conference on Sensory Training Aids for the Hearing Impaired states that many classrooms provide such poor acoustical environment that a child capable of functioning within 60% efficiency under good conditions may have his efficiency reduced to zero (Levitt & Nye, 1971). With such conditions existing in our schools, children seem far removed from the modern technology described in the conference report.

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specialist must be able to communicate in the language of the deaf child he serves. Implementation of such specialized services to hearing impaired children would necessitate some type of regional services within states.

The educator of the hearing impaired, as the originator of the educational laboratory is responsible both as a contributor to and as a recipient of the evaluation process educational psychologists are needed in language, speech, hearing, and audiology as well as guidance and counseling, to be brought together and utilized as a team in the educational and therapeutic program. Thus, what is needed is a joint, systematic administrative and legislative approach. (Levitt & Nye, 1970, p. 83)

There is a strong similarity between recent statements and those made in 1968. A half century ago the general approach of the educational psychologists and other professional educators towards children was in a part of the spectrum and not part of the program. In the past decade, the emphasis has changed that variety of children with the degree of hearing impairment, so well with handicapped children, in particular in the field of education, is of the utmost importance. (Levitt & Nye, 1970, p. 83)

The conference on Day Programs for the Hearing Impaired in 1968 also recognized the need to emphasize needs of hearing impaired children.

Dimensions of the model proposed at the conference included functional information on: (1) an anatomic assessment of (a) central nervous system function and (b) environmental factors of the child who need to be rated on a point scale. Differing from medical evaluation, if the focus was to be primarily on the educational alternatives needed by hearing impaired children. What differences in programming might occur if the needs of children were considered in addition to their individual educational abilities? An in-depth educational profile of the nature could provide flexibility to the needs of hearing impaired children in various educational programs. It could also provide more uniform, based curricula. In structured programs, it could also provide more uniform, based curricula for children and professionals responsible for the education of children and could focus on the need for creative program options. Perhaps comprehensive research is needed. (Levitt & Nye, 1970, p. 84)
<table>
<thead>
<tr>
<th>Academic Year Programs Funded Under P.L. 85-926, As Amended for 1970-71</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ongoing Unfunded Academic Year Programs</td>
</tr>
</tbody>
</table>
A national framework has been established between services of local districts and state agencies to promote coordination toward coordinated medical and educational in-depth services to the nation's children. It remains now for the national, state, and local educational agencies to prepare a diagnostic framework for comprehensive identification of the nation's children and, in accordance with the Family Education Law, to provide comprehensive medical and educational services to all children and their families. The national, state, and educational agencies to identify and to provide comprehensive medical and educational services to all children and their families, can be provided if problems of matching and delivering services are solved.
COORDINATION OF INTERDEPARTMENTAL PROGRAMS WITHIN UNIVERSITIES

One proposal toward a solution might be through joint programming with existing training centers among departments of general education, departments of special education, and departments of speech and hearing.

I-1

with rapid changes occurring in school programs, both day and residential. Public and private through mandatory legislation and the stimulation from state and federal funds, the public school teaching laboratory has become greatly improved. It can provide a means of valuable ongoing field between children and teachers. Away from the teacher's first year of training and sometimes continue through a post graduate interest. Such programs training is considered. Learning situations are real and current. Education is a natural part of the program. Equally important is that opportunity to schools and university engage in joint demonstrations, seminars, and educational research, and by working with the joint effort. These needs depend on research and joint effort for the teachers' professional and joint programming. It is important the level of the educational training and for the edu-

Coordinator of the National Technical Institute for the Deaf and The State University of New York at Buffalo. A recent issue of the journal of the National Association of the Deaf: a variety of articles and reports on the latest research in the field of deafness and hearing loss. The Special Education Law and Policy, The Journal of Special Education Law and Policy, and The Journal of Special Education Law and Policy, are all available at the University at Buffalo Library. The Special Education Law and Policy, the Journal of Special Education Law and Policy, and the Journal of Special Education Law and Policy, are all available at the University at Buffalo Library. The Special Education Law and Policy, the Journal of Special Education Law and Policy, and the Journal of Special Education Law and Policy, are all available at the University at Buffalo Library. The Special Education Law and Policy, the Journal of Special Education Law and Policy, and the Journal of Special Education Law and Policy, are all available at the University at Buffalo Library. The Special Education Law and Policy, the Journal of Special Education Law and Policy, and the Journal of Special Education Law and Policy, are all available at the University at Buffalo Library. The Special Education Law and Policy, the Journal of Special Education Law and Policy, and the Journal of Special Education Law and Policy, are all available at the University at Buffalo Library. The Special Education Law and Policy, the Journal of Special Education Law and Policy, and the Journal of Special Education Law and Policy, are all available at the University at Buffalo Library. The Special Education Law and Policy, the Journal of Special Education Law and Policy, and the Journal of Special Education Law and Policy, are all available at the University at Buffalo Library.
Among the Programs

Some of the recent programs on a interstate basis might improve the quality of training through joint plans. Immediate efforts are difficult to incorporate into the training programs at a single university yet might utilize the major strengths and resources of each in a cooperative manner.

Training programs are areas of specialization for teachers such as infant programs, preschool, elementary school, secondary school, and postsecondary education. The Council on Education of the Deaf has revised and updated the standards for training programs in order to avoid duplication of effort and to avoid the teaching of audio/speech and other professional personnel in such areas. Training of personnel programs need to prepare their efforts with training programs. Many universities now have programs that are designed to improve the quality of training programs and to increase the availability of specialists in special education. The National Association of the Deaf has been involved in the development of programs for the training of teacher of the deaf and hard of hearing.

The National Standards for the Certification of Teachers of the Hearing Impaired were completed after long-term study and were formally adopted by the Council on Education of the Deaf in January 1972. These standards are unique in two important ways. First, they are the result of the joint efforts of three professional organizations with formerly diverse, incompatible views: the Alexander Graham Bell Association, the American Instructors of the Deaf, and the Conference of Executives of American Schools for the Deaf. Second, the standards have been broadened from the previous standard for teachers of the deaf to include the continuum of the hearing impaired "any deaf or hard of hearing individual who requires specialized education because of a hearing impairment" (Hoag, 1972).

The standards have many strong features. Training has been broadened to prepare teachers of the hearing impaired, the standards are competency-based and performance-oriented; they have basic and advanced certification components; they provide flexibility for increased emphasis on learning theories, language, auditory and visual learning, media and methods of specialized instruction, as well as prerequisites in general education. A component for advanced training provides for specialization by levels in early childhood, including infant, elementary, secondary, post-secondary, and also multiply handicapped children. No specific mention was made concerning the preparation of teachers who are themselves deaf—and attention should be given to their needs as professional workers.

Implementation of this quality training would require a strong commitment at several levels: Universities need to provide for adequate staff and expansion of present programs; state departments of education need to develop certification standards for the training of personnel and for model training centers, and boards of higher education and state accreditation agencies need to assess the quality of training programs for the preparation of teachers of the hearing impaired within training centers. Implementation of these standards by most states has yet to be accomplished.

Programs differ greatly at the present time. Some have a two year master's level program; others, four year undergraduate. Questions are continually being raised about the need for a five year program or a fifth year internship with possibly graduate credit, in order to provide the broad competencies needed by teachers working with deaf and hard of hearing children. There must also be decisions made as to the training of the itinerant teacher of the hearing impaired. Is this the same person or a combination teacher of the hearing impaired and speech and language specialist?

Inservice Training

Inservice training of supervisors, teachers, and auxiliary personnel seems more critical and extensive than the initial training of personnel; yet many universities seem unable to extend their programs to share these responsibilities with public schools. New knowledge about the education of hearing impaired children and youth, including audiological technologies, instructional equipment, media, linguistics, instructional methods such as fingerspelling and standardized signs, parent education, recreational needs, and assessments of children of all ages demand the implementation of inservice training and continuing professional education programs. In addition, joint consideration must be given to the training of paraprofessionals. Stimulation of inservice training might be initiated through joint planning by CED, universities with training programs, and state departments of education through a national program of summer training for teachers to meet the new standards. Such a plan would provide an opportunity for acceleration of professional advancement of teachers, and upgrading of needed areas of competency. Under such a plan, the new national credential could be granted to all teachers who complete the inservice training within a specified time span.

Because of the large numbers of children who will remain in the regular classroom, some type of inservice program is essential. To meet this need
Pennsylvania: developed Computer Assisted Renewal-Education (CARE) (Hall & Mitzell, 1973) to help teachers in Pennsylvania meet the 24 hours of post-baccalaureate credit required to advance from preliminary to permanent certificate. This traveling classroom spends enough time in regions for area teachers to complete a course. Over 30 lessons on special education have been prepared and teachers have responded enthusiastically regarding the increased knowledge and assistance it provides applicable to children in their classroom.

Federal projects and national demonstration centers could also enter into a coordinated plan with states in the preparation and training of personnel for leadership roles. An outstanding contribution by the federal government has been, the development of demonstration centers for various services to hearing handicapped children and youth. Resources such as the National Technical Institute (NTID); the Model High School and Gallaudet College, Washington, DC; the three Technical Vocational Institutes (TVI) in Seattle, New Orleans, and St. Paul; the Mental Health Centers, such as Langley Porter in California and New York University; and preschool programs such as those described in section 2, could now make tremendous contributions to the training of specialized personnel. Training programs could be instituted at the graduate or postgraduate levels. Parent education, pre-school, secondary; multiply handicapped, vocational areas, medical and dental, work, psychology, audiology, and speech are all areas which could benefit immeasurably from such professional affiliations. Also of great value would be the 13 new Regional Learning Resource Centers recently established in various parts of the country under provisions of Public Law 91-230 of Title VI for evaluative services to children with extreme handicaps.

TRAINING TO MEET NEW TRENDS
The training of personnel to meet new trends in special education is a challenge to all educators of handicapped. Issues have been presented by many educational leaders in an attempt to decategorize the handicapped child as much as possible yet provide necessary services by increased emphasis on instructional systems, environmental facilities, and teaching skills (Reynolds, 1979; Gallagher, 1972; & Deno, 1973). These new systems hold promise of improved programming for many children if the preparation of personnel can keep pace with proposed educational changes. There will still need to be “categorized” teachers for children with extreme educational problems such as the deaf and the blind (Reynolds, 1971).

Many educators of the deaf and hard of hearing children look upon current trends and policies of mainstreaming and noncategorical preschool programming with great concern in view of the scope and severity of the problem, and the cumulating evidence of lack of understanding of educational needs, and severe mismanagement of hearing impaired children of all ages (Turecheck, 1973; Research Conference on Day Programs for the Hearing Impaired, 1968).

The preparation of personnel to serve children with auditory handicaps ranging in severity from mild to profound, in age from birth to 21, and in a wide variety of educational settings will demand intensive evaluation of training programs by all disciplines. As long as serious concerns exist among educational leaders of the hearing impaired, dialogue must continue until the needs of hearing impaired children have been thoroughly explored and all training needs reexamined. There is every opportunity for national leaders in all fields of specialization to participate in the restructuring of educational concepts and standards for the preparation of personnel. One vehicle for such change already activated is the Professional Standards Project of The Council for Exceptional Children (Stevenson, 1973-74). It now seems timely and urgent for training centers and natural professional organizations involved in services to hearing impaired children to unify their efforts and to develop policies on priority needs of children; to reassess the problems based on current national statistics; and to pursue implementation of a system of training and in-service training of personnel that can meet the needs of hearing impaired children and youth with a new look at the needs of adults. Proposals for action could be developed and promoted by joint participation by the Division of Teacher Preparation and the Division for Children with Communication Disorders within The Council for Exceptional Children.

The Need for Educational Reform in States (Including Administration and Finance)
An increasing number of state legislatures and federal courts are mandating that special programs be provided for all handicapped children. The intent of this legislation means that all handicapped children in those states are entitled under the law to a free public school education, and parents have successfully tested its strength. For some handicapped children, however, such programs and services are unusually difficult to provide and the hearing impaired child is one of these (Research on Day Programs for the Hearing Impaired, 1971; Recommended Organizational Policies in the Education of the Deaf, 1973). How comprehensively these services are developed and how effectively these needs are met, enabling young people to become self confident and capable adults, would seem to be affected largely by the leadership of professional educators.

NEED FOR COMPREHENSIVE PROGRAMS
Comprehensive programs and services for hearing impaired children are not bound by any single arrangement. Problem areas in each state may differ—populations and transportation, personnel needs, local and state
resources, individual needs and numbers of children, and school financing—but the one consistent and obvious factor is the need for coordinated, comprehensive programs and services.

There is a strange dichotomy in present services. There are exciting, new, and creative developments in parent-infant home programs, early case finding, medical services, technology in hearing aids and amplification equipment, school architecture, room acoustics, and safety features. There are now national educational demonstration centers at all levels, for children with diverse needs. There are new auditory and visual instructional and technological media, interdisciplinary evaluation centers with ongoing services, skilled teachers, vocational education, creative extracurricular activities for students, and parent education programs. However, for the majority of hearing impaired children, these services are only a mirage.

In many states, despite considerable effort by concerned special educators, there are few comprehensive quality programs and services for hearing impaired children. For the most part, existing classes for deaf children lack continuity and are scattered, ungraded, unsupervised, and poorly equipped; evaluation services are limited. In the majority of states, there are no educational supervisors of the hearing impaired either, at local or state levels, to assist parents and child or administrators with these serious problems (Mulholland & Fellendorf, 1969; Blessing & Bothwell, 1968). Only in a few large city systems, some state schools for the deaf, and possibly one or two programs where statewide planning has taken place, are programs for the hearing impaired adequate, and no state provides what might be termed comprehensive services (Mulholland & Fellendorf, 1969; Kopp, 1971; Harrington, 1973).

Adequate programing in public schools is often hampered by the need for a regional administrative framework and the expense of this program. Yet reports indicate that hearing impairment costs the nation $1.5 billion annually in loss of earning power. This makes it necessary to look at the problem not only as a humanitarian one or as one of legal rights of school children, but as an economic waste of human potential and dollars, which the nation can ill afford.

Financing of school programs within states varies widely. With the exception of Nevada and Alaska, all states have one or more residential schools for deaf children. At one time these schools could serve all known deaf children. Today, they serve about half of the total, with the other half in public school programs and a relatively small number in private facilities. With the increase in identification of hearing impaired children, state schools have expanded their programs to full capacity and have also assisted in evaluations of children where no services existed. In most states, these services are financed at 100% of the costs for all programs, services, staff, facilities, and residential living. For the 50% of children in public schools, financing has not kept pace with their needs, and consequently, the development of quality programs in public schools has been extremely limited.

The problem today is twofold: First, it is necessary to provide equally comprehensive educational programs and services to all deaf children whether they are in special education programs in public schools or in state schools for the deaf, and to provide adequate funding to make such services possible. Second, it is also necessary to look at the total scope and severity of hearing impairment in all children and to initiate task forces to deal with this problem.

ACCOUNTABILITY OF HEARING IMPAIRED CHILDREN

Tables and data are included on (a) distribution of school enrollments, and (b) information specific to preschool children. Priority points are as follows:

- Day and residential services. Services to children as indicated by enrollment in types of facilities show relatively equal numbers of children in residential facilities (mainly state schools, for the deaf) and various types of day facilities, with reported division of 20,807 and 31,030 respectively. Missing are numbers of children in residential institutions for retarded children or in facilities for the emotionally disturbed or mentally ill. Any plan for comprehensive services would necessitate a firm agreement on coordination among all major services within all agencies.

- Enrollment. Increases in total enrollments of known hearing impaired children are small in relation to need. Of the 46,075 children reported in 1971–72, about half—51% (or 23,489)—were said to be "deaf" children with a hearing loss of 85 db ISO or greater in the speech range (Gentile & Reis, 1972). Applying the same percentages to the updated enrollments of 1973–74 (51% of 51,937), it is evident that services are lacking for those with profound hearing losses—based on the prediction of 2,000 to 3,000 annual births of deaf children, assuming the same baseline for deafness is used.

Hard of hearing children are largely unaccounted for. Those accounted for total fewer than 25,000 using 49% of total enrollments plus some 12,000 enrolled in itinerant services (Reis, 1972). These combined totals are less than the expected numbers of hard of hearing children needing programming. Some children may be enrolled in programs for other types of handicapped children, but it is evident that there is only limited accountability in our school systems for educational services provided to children with hearing handicaps. The difficulties of providing instructional programs and services to the hard of hearing must not be minimized. Research shows that these children have unmet needs, causing educational, environmental, and societal retardation. (Berg, 1972; Quigley, 1968; Fricke & Murray, 1969).

- Multiply handicapped. Statistics show a marked increase in numbers of deaf multiply, handicapped children enrolled in special programs. The increase in multiply handicapped children places heavy demands on departments of education to identify their needs and develop meaningful programs for parents and children. Public Law 90–247 of Title VI, Part C, of the Elementary and Secondary Education Act, specific to deaf-blind children, has been of great assistance in this respect.
not only in service to deaf-blind children, but also in calling attention to the multiply handicapped child. It should also be noted again that deaf retarded children in institutions are not included in these statistics. The American Speech and Hearing Association, in its 1974 study, Understanding Their World, estimated this figure to be as high as 18% of the institutional enrollment.

- Secondary. Statistics reveal serious discrepancies between anticipated needs of high school age youths, i.e., college and noncollege bound. They suggest a heavy dropout rate which should challenge schools to mobilize resources to serve the young adult. Statistics reveal that greatest school attendance occurs at 12 years of age, with a consistent decrease every year thereafter (Reis, 1971). In many states, special education is provided under state law from ages 3 to 21; yet enrollments at the upper levels are negligible.

- Vocational Rehabilitation. Vocational rehabilitation is a major problem and one which needs joint action by service agencies. Vocational rehabilitation conferences have demonstrated the needs of hearing impaired youth across the country, and have been instrumental in the development of regional rehabilitation centers. It appears that over 14,000 youths were rehabilitated to jobs in 1973 according to Statistical Notes, of the Rehabilitation Services Administration (1973). With less than 2,000 students leaving special education programs annually, one can assume that for many students special education services were not provided during their school years, and needed services were delayed until their separation from school and eligibility for rehabilitation. Even in states where there are mandatory special education laws covering youth to age 21, the issuance of a certificate for completion of a course of study permits dismissal despite the fact that the youth is not prepared to assume responsibilities. This gap between education and rehabilitation is serious.

The magnitude of the problem is impossible to decipher, but Schein (1974), in the comprehensive publication The Deaf Population in the United States, estimated the number of 19 year old prevocationally deaf youth alone to be approximately 8,000. The report also noted that young deaf adults aged 16 to 24 have the greatest problem obtaining jobs.

Williams and Vernon (1971), in a study on the rehabilitation of multiply handicapped youth with impaired hearing, reported that 15 to 35% of this group had either been excluded from school admission entirely or had been dropped from school before the age of 16; yet, many were later able to be rehabilitated to jobs. Williams and Vernon further predicted, based on job opportunities, that less than 20% of students gain marketable skills; of the remainder, 70% may be unemployed within the next 10 years; and the other 30% underemployed and frozen in various unskilled and menial jobs (Davis & Silverman, 1971).

Educational and rehabilitation facilities for these young adults are not adequate (Schein, 1974). At present, educators seem satisfied with meeting superficial needs, using the main national centers for college bound students or technical training, but leaving the greater problem of rehabilitation training and retraining almost untouched.

Current opportunities exist for coordination of joint programing and the use of state and federal funding among vocational rehabilitation and education services, state employment agencies, junior colleges, colleges of higher education, and adult education. In view of present economic conditions, some type of permanent task force seems needed among high offices of state governmental agencies and state and federal departments of rehabilitation and labor.

- Enrollments for preschool children. Young children ages 1 to 6 years are receiving services, but these services are fragmented and little current educational information is available. Strong agreement seems to exist on the need for educational programs for infants, preschool children, and their parents. All national conferences recommend the development of such services. In addition, information from some foreign countries with various forms of health plans (particularly Sweden, Denmark, and The Netherlands) attest to the values of coordinated early medical and educational intervention to minimize the handicap of deafness (Kakalik, 1974).

Deaf infants, 2,000 of which are born annually, must also be served. Their educational need surpasses those of almost all other children by their lack of an auditory language learning system. Emphasis on service to this age group (birth to 3 years) and their parents would require the federal government to provide enabling funds specifically directed to this level, with a description from the Bureau of Education for the Handicapped of range of services to be provided.

The report also indicated that the average age for the enrollment of deaf children was age 3 years, and the average age for the enrollment of hard of hearing children was age 5 years. Other significant trends were that 79% of all preschool children were in some type of day program with about 50% of the parents included in an educational or guidance program. There is no doubt that recent expansion has taken place, but statistics on preschool enrollment for 1974 are not given here in the following characteristics of hearing impaired children under six years of age (Demographic Studies, Gentile and Reis, 1970):

1. Total Preschool Enrollment Reported: 6,378
   Under age 3 years  336
   Age 3 and under  4  699
   Age 4 and under  5  1,865
   Age 5 and under  6  3,476

2. Type of Educational Program
   Day Classes  49.3%
   Residential School  21.9%
   Day School  18.2%
   Speech & Hearing Clinic  8.0%
   Other  2.7%

3. Degree of Loss and % of Preschool Enrollment
   30-45dB  3.5%
DELIVERY OF SERVICES THROUGH COMPREHENSIVE REGIONAL PROGRAMS

Several of the large states are now struggling to develop a statewide plan of comprehensive, coordinated services. Regional programs are being planned within some states to provide an efficient network of comprehensive services, in order to utilize to the maximum the resources of the child's home, school, and community and yet not compromise quality education. This concept was discussed in the 1964 Babbidge report on the education of the deaf, but at that time such planning was not extensive. In the intervening decade, several states have made notable progress.

Components of comprehensive programs and services have been well described in various state and national reports, and these can serve as excellent guidelines for state planning. Major reports pertinent to state planning include: The National Research Conference on Day Programs for the Hearing Impaired (1968), A Comprehensive Plan for Hearing Impaired Children in Illinois (1968), The Charge and the Challenge (1970), Recommended Organizational Policies in Education of the Deaf (1973), Under Standing Our World (1974), The Sound and the Sign (1973), The Deaf Population of the US (1974), and Improving Services for the Handicapped with Emphasis on Hearing and Vision (1974).

In the past, services for the education of the hearing impaired have been fragmented among local schools, various day programs, and residential schools, with divided interests among various organizations and agencies. There now appears to be increased unity among these organizations to provide comprehensive, sound education for hearing handicapped children and youth and a recognition that such education of children is a joint venture by parents and schools. This unified effort may result in the development of statewide coordinated programming. In addition, state mandatory legislation has stimulated constructive action by strengthening the authority of state departments of education as responsible agents for handicapped children.

Components of a Regional Program

Major components of programs for the hearing handicapped child are basically twofold: (a) they should include the same services of the educational program that are provided for all children, and (b) they should include all of the specialized services and programs to meet their needs as hearing handicapped children. Regional program models vary, but regional programs within a public school setting appear to have certain advantages, primarily (a) the use of public school facilities wherever possible thus avoiding duplication and increased costs, and (b) the close proximity to the child's home, school, and community, permitting increased opportunity for on-going child-parent involvement, interaction with peers and participation in community experiences. Most of all, educators must not overlook the emotional and social needs of children's lives. Every effort should be made to reduce the isolation caused by deafness no matter what the educational setting.

An adequate system of services to meet the special needs of the hearing handicapped would require a functional framework of interdisciplinary and ongoing evaluation as early as possible, a wide range of flexible program options from birth, an adequate number of competent teachers and support staff, an environment suited to auditory and visual needs of students and program continuity supervised and coordinated by experienced educators of the hearing impaired.

The size of a program base for deaf children was well described in Recommended Policies in Education of the Deaf (Brill, 1973) as follows: For every 10,000 children with hearing enrolled in public schools, there are approximately 7.5 deaf children requiring special education to meet their needs. These 7 or 8 children with severe and profound hearing loss might range in age from approximately 5 to 18 years—the same age span of primary and secondary education. Since approximately two-thirds of the children enrolled in public school systems are on an elementary level, and the other third on a secondary level, one might expect to find in this hypothetical school population of 10,000 hearing children about 5 deaf children in elementary programs and 2 or 3 in secondary programs.

In applying the criteria outlined above to elementary and secondary programs, an important consideration is the level of the content fields, a quality high school program can rarely be provided for deaf youth with less than 15 qualified high school teachers. To justify the employment of 15 such secondary teachers, there would have to be 150 deaf pupils if, according to the criteria, each secondary class was held to a maximum enrollment of 10 students (Brill, 1973).

Maximum educational opportunities for hard of hearing and deaf children in a least restrictive environment will range from full participation in the standard public school program with appropriate support, to a segregated instructional program with guarded integration for most deaf children. Children mainstreamed into standard programs will be those able to use the auditory channel as their primary mode of instruction; through the use of amplification equipment or individual hearing aids, children for whom vision is the primary mode of instruction will receive primarily segregated instruction for specific subjects and for selected children. Deaf youth with substantial understanding of language may be able to effectively use an appropriate amplification system within these classrooms, or for some deaf youth at grade level, interpreters may be beneficial.

Variables to placement and instruction depend on many individual differences of children, functional aspects of degree of loss, age at onset of the handicap with prelingual deafness being a significant educational aspect, time factor between the occurrence of the loss and the time instruction was instituted, and a time factor of "prevalent deafness," which assumes a youth is deprived of basic learning in...
varying degrees if the hearing handicap occurs any time during his educational life (Schein, 1974).

Mainstreaming, the new educational concept of standard class placement with supportive services, requires rethinking of present concepts for the instruction of children and youth capable of successful integration. The value of integration must be assessed for each student. There is no way of assuring success or failure; for some, integration is beneficial, and for others it is not (Kopp, 1971). Successful integration or mainstreaming for any hearing impaired child would also necessitate increased attention to school construction dealing with acoustic, visual, and safety features (Stepp, 1972). An outline of guidelines for integration of students has been prepared for school districts by the Conference of Executives of American Schools for the Deaf in Recommended Organizational Policies in the Education of the Deaf (Brill, 1973).

Examples of Regional Programming

In several states comprehensive programs and services for the hearing impaired are emerging as a priority. Among these states are New York, California, Massachusetts, North Carolina, Texas, and Illinois. While the types-of programs differ widely and have different types of administrative structures, all are attempting to provide programs and services on a regional or statewide basis. As previously stated, the objective of regionalization is to maximize the resources of the child’s home, school, and community and coordinate regional and state services with those of general education.

New York operates the New York School for the Deaf at Rome and supports eight private schools located geographically under provisions established by law and operated by the commissioner of education (Hehir, 1973). Also, New York City now has a commission for the hearing impaired (Harrington, 1973) to assist in the planning and implementation of needed programs and services.

California maintains two residential schools for the deaf and a number of well-established day schools and area programs. All public facilities, day and residential, preschool through junior college, are under the direction of the state department of education and the state board of education. Each district having a child enrolled in a state residential school is billed annually for an amount per child equal to the taxes allocated for a normal child. All facilities must meet the same standards for education and service (National Research Conference on Day Programs for Hearing Impaired Children, 1968).

Texas passed Senate Bill 805 in 1973, amending the Texas Education Code by providing for “apportionment of the State into areas furnishing Regional Day School Programs for the Deaf; vesting authority in the Central Education Agency to conduct such school programs, providing for financing, cooperation of school districts and institutions of higher learning and declaring an emergency.”

The bill briefly outlines the provisions of operation, children to be served, coordination between regional schools and state residential schools, provisions for both oral and total communication, instructional programs, and an estimate of the cost per child (about $2,700). It also provides for the employment of regional school superintendents and for the Central Education Agency to employ a director of deaf education and other essential personnel (Senate Bill 805, State of Texas General Assembly, 1973).

Illinois is implementing comprehensive regional programs and services within the framework of the public school program. These were first initiated under the 1964 revisions of the State Department Rules and Regulations of Special Education which established a six class minimum standard for program size, evaluations and supervision; and then progressed to ‘comprehensive regional planning’ through the 2 1/2 year study reported in A Comprehensive Plan for Hearing Impaired Children in Illinois (Hiett & Stewart, 1968).

There are now 12 regional programs each with an approximate population base of 150,000 children who range in age from birth to 21 years. In addition, Chicago serves as a region with a child population of about a million children. Regional programs serve a statewide total of about 3,000 children; every program now has an educational coordi-
action to establish, through the Bartley-Daly Act of 1972, comprehensive special education laws.

An important and unusual feature is the requirement that the laws be jointly promulgated by the Department of Education, Mental Health, Public Health, and Youth Services. The Rules and Regulations, among its other provisions, outlines procedures for identification, referral, and evaluation, as well as specific provisions for programs and a framework for administration of regional programs for children with severe disabilities. Specific to administration is a design for regional advisory councils, regional review boards, a state review board, and a state commission on the handicapped. Membership in the councils is approved by the state school board. The regional council has 17 members, of which 8 are parents from different educational areas, and 9 are professionals and community leaders, with one member from the Massachusetts Council for Exceptional Children. The Rules and Regulations outline programs, training of personnel, duties, and responsibilities.

A DELIVERY SYSTEM FOR CONTINUUM OF EDUCATIONAL PROGRAMS AND SERVICES

Basically this continuum of services includes the same programs and services desired for all children plus services to meet the specialized needs of hearing handicapped children and (a) a system of early case finding of children with special needs, and (b) appropriate environment educational opportunities, in the least restrictive educational program. Most of all, educators must not overlook the emotional and social needs of children's lives.

Comprehensive regional programs and services would require a continuum of program options providing a network of teaching environments with up to date technology, equipment, and staff to meet the wide range of differential needs of children in the region, ranging from mild to profound.

Regional programs and services (Figure 3) would include provisions for hearing impaired children with a wide range of mental abilities as well as children with other handicapping conditions. Team teaching and other programs can take place in an integrated or modified classroom or in a variety of other settings if the environment is adequate, if children are compatible, and if teachers are knowledgeable. Many children formerly attending residential schools might well be educated in regional programs if comprehensive services could be developed. A network of programs would be needed, including modified classrooms and supportive services, home teaching, various types of itinerant programs, resource rooms, teach teaching situations, clustered units, and centralized programs, keeping in mind the need for specialized auditory and visual materials, equipment, suitable environment, and experienced personnel. For some children, residential schools for the deaf or other types of programs are more suitable. The main point is that regional and state facilities and services must be coordinated.

Note: Adapted from:
Deno Model (1973)
Illinois Low Incidence Study (1973)

FIGURE 3. Guidelines for a Continuum of Regional Programs and Services
Program continuity and supervision are of utmost importance.

Sparsely populated states will have greater difficulties in providing regional type services. Some such as Wisconsin or Wyoming may be able to develop services around population centers on an interstate basis through boarding home service during the school week; others may need full time residential placement.

**INSTRUCTIONAL METHODS**

For many years there have been conflicting philosophies on the best methods of teaching deaf children in order to close the wide educational gap between deaf and hearing children by (a) developing an effective language learning system as early as possible, and (b) developing an effective communication system having the least possible isolation from the deaf and hearing community. Methods now in use including both oral, and manual systems are described as oral-aural, acoupedic, simultaneous, oral combined, cued speech, and total communication. There has been more open discussion of these divergent views by professional organizations and joint participation in professional activities and concerns of mental health, such as those emphasized at the National Convention of the Alexander Graham Bell Association Chicago, 1971; The Council for Exceptional Children, Division for Children with Communication Disorders 1971 and 1972; and the joint participation in the national standards for teachers of the hearing impaired by the three organizations within the Council on Education of the Deaf, 1972.

The most recent national research of a combined system of instruction (speech and finger spelling) Quigley (1968), indicated that the research "did not represent what might be termed a significant breakthrough that could lead to the elimination of this gap. Rather, the use of fingerspelling emerged in the study as a tool that could be utilized in making substantial advances in the education of children who are deaf." Now in progress through HEW is an extensive study of preschool children in programs utilizing different instructional systems (Moore, 1970).

It is the intent of comprehensive programs to provide children with the proper combination of auditory-visual instruction according to their individual needs. Major auditory-visual components of all instructional programs include: oral, speech reading, auditory with amplification, fingerspelling and the language of signs, graphics, reading, auditory-visual technology and instructional media. Comprehensive instruction for all hearing impaired children will range from a strong auditory approach with visual supplement to a strong visual approach with auditory supplement (see Figure 3). States are attempting to meet this need in different ways. The comprehensive plan for regional programs in Illinois (Hiett & Stewart, 1968) describes its instructional plan as follows: For the majority of hearing impaired children the auditory channel, even though defective, will be the primary modality for learning, and full use should be made of special media, amplification, and training of residual hearing at home and at school. For other children the primary avenue of learning will be visual, and combined visual methods of instruction should be considered using both oral and manual communication systems of fingerspelling and signs, at home and at school.

It would be expected that a comprehensive program would have a continuum of services and full range of effective instructional options. Evaluation of children must be on-going, interdisciplinary, and with a commitment to parent education. Parents may become more confident of recommendations for their children if both auditory and visual systems of instruction are available within the same program. One thing is certain: There can be no effective instructional program for children by any method as long as other critical inadequacies continue to exist. This means a new commitment by professionals and organizations to comprehensive state planning for all hearing impaired children and a certainty that all components are included from the earliest age possible that can maximize children's learning potential, and their communication skills and environmental competence with both deaf and hearing individuals.

**Recent Developments**

Other factors of teaching and learning are now receiving attention, such as the fact that learning theories can be applied (Kopp, 1971). There is attention to classroom teaching through teacher competencies and teaching skills (Hammermeister & Baldwin, 1973), to curriculum as a sequentially developed learning experience (Kopp et al., 1970), and to the language curriculum of Blackwell (1971). Also of interest is the preschool research now in progress (Moore, 1971) which identified the common denominator of child progress to be a "well structured curriculum," and most recently, the thrust in career awareness and career education from kindergarten thru secondary age level as set forth in 1973 by the US Office of Education (Marland, 1973).

Instructional technology has been greatly accelerated through the use of captioned films promoted by the federal government. However, other materials specific to the hearing impaired are on the market but slow to reach classrooms (Gallagher, 1972). An example specific to the deaf is Project LIFE (Language Instruction to Facilitate Education) prepared in part by the federal government and using specialists from across the country. Purchases were made primarily by large city schools through the use of Title I funds and by state schools for the deaf, as reported by General Electric in 1972. Smaller districts seemed unable to make purchases because of limited funds (Harrington, 1971).

Speech laboratories and specially trained communications personnel seem universally absent from educational programs for the deaf—even though some training aids are available (Pickett, 1971; Ling, 1971). Despite the severe problems of hearing handicapped students in speech intelligibility, only very minimal services are provided on a consistent basis by skilled personnel. This applies to both deaf and hard of hearing children.

The learning environment is being considered as an integral part of the educational program. This includes up to date group amplification systems and individual aids; the acoustic treatment of school facilities, both in classrooms and in integrated areas; and attention to electric safety features, both acoustic and light systems (Stepp, 1969; Wadley, 1969; Matkin, 1970;
Mann, 1971). Thus, if hearing impaired children are to be successfully integrated into school systems, new regulatory provisions for auditory, visual, and safety features of schools must be written into states' school codes.

**ADMINISTRATION AND FINANCE**

The effective delivery of services to hearing impaired students by any type of plan will necessitate major changes in administration and finance in most states to maximize administrative responsibility and the use of state and federal funds.

The four main administration problems are as follows: First, there is an extreme shortage of educators of the hearing impaired in key positions; only 13 state departments employ educators of the deaf. In 18 states, the education of hearing impaired children is administered by the speech and hearing clinician; 10 states have neither of these; and few states have local or regional coverage by educational supervisors.

Second, administration between public and state school programs is sometimes separated. There are 23 state schools for the deaf administered by state departments of education and 27 administered by other agencies. This separation creates problems in coordinating services for children. Even where mandatory laws exist, the law usually applies only to those services under state departments of education.

Third, coordination of educational services is lacking among other state governmental agencies and organizations. In Illinois, for example, five different state agencies or organizations (other than the state department of education) are dealing independently in the education of the hearing impaired, and planned coordination among them is difficult (Mulholland, 1968) (see Figure 4).

Fourth, a regional administrative and financial framework for comprehensive services within states needs to be established to authorize responsibilities and provide for disbursement of

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**A Problem in Coordination.** (To this figure might be added the private day and residential schools)

![Diagram of Illinois State Agencies Offering Educational Services Other than the State Dept. of Education](National Research Conference on Day Programs for the Hearing Impaired, 1968, Mulholland & Fellendorf)

**FIGURE 4.** Illinois State Agencies Offering Educational Services Other than the State Dept. of Education
funds. School districts are unable to serve children with severe low incidence handicaps without a sizable population base necessitating a different organizational structure, which is nonexistent in most states. Also needed are legislative changes between states for joint programming at population points on state boundaries so that programs can be established across state lines.

There are three main financial problems. First, insufficient and unequal funding patterns of both day and residential schools cause inequities in necessary educational services. A New York study of 35 day and state supported schools reported that present state and federal funds were sufficient (Harrington, 1971). City schools reported that funds were insufficient especially for construction, equipment, and instructional technology. Smaller schools reported insufficient funds for all services.

Second, funding patterns of state residential schools show wide variations and inequities in necessary educational services. Annual per capita costs ranged from $2,261 to $7,412 with 23 states spending between $4,500 and $5,500. These expenses are funded in most states at 100% of the costs, in addition to funding of building costs (Directory, American Annals of the Deaf, 1972). Federal funding per state school ranged from $6,097 to $503,273 as reported in the Directory of Programs and Services, American Annals of the Deaf, 1973.

Third, funding patterns for special education programs reflect a wide variation in regional programming for the hearing impaired for transportation, construction, evaluation services, equipment, instructional media, personnel, and ongoing program costs. The following brief summaries point up important differences among states. These were obtained from the Directory of Programs for the Deaf, American Annals of the Deaf, 1972, from state bulletins, and from personal contacts with state departments of special education.

- **California**
  Day programs under special education: Reimbursement formula totaling about $17,000 per special education class (6 to 8 students) for teacher, equipment, media, and school aid; $1,300 for home and hospital tutoring; $1,018 for hard of hearing in regular classrooms, transportation up to $389 annually per child. State residential schools: Annual per capita costs $6,909 and $7,364, including residential living, 100% state support with local support in amount of tax effort for normal child; federal funds, 2 schools $140,000 and $130,000.

- **Wisconsin**
  Day programs under special education: 70% of teacher salary; 70% equipment and media; 100% boarding home; 0% transportation. State residential schools: State support 100%; annual per capita costs $5,700 including residential living; federal funds $103,725.

- **Michigan**
  Day programs under special education: 75% teacher salary to $8,100; 75% of equipment and media; transportation 75% to $200. State residential schools: State support 100%; annual per capita costs $7,934, including residential living; federal funds $284,580.

- **Indiana**
  Day programs under special education: 50% teacher salary; 0% equipment and media; transportation 80% up to $2.00 daily. State residential schools: State support 100%; annual per capita costs $4,200, including residential living; federal funds of $152,993, plus $61,850 other.

- **Nevada**
  Day programs under special education: State reimbursement formula of about $600 per child. State has no residential school; pays the out of state tuition.

- **Illinois**
  Day programs under special education: $6,250 per teacher; 0% for equipment and media; transportation 80%. Regional evaluation centers: About 80% of ongoing costs from state reimbursements and Title VI money. State residential schools: State support 100%; annual per capita costs $8,545, including residential living; federal funds $202,247; other $74,108.

**RECOMMENDATIONS OF THE NATIONAL ADVISORY COMMITTEE TO HEW**

The National Advisory Committee to the Secretary of Health, Education, and Welfare emphasized in its annual report, Basic Education Rights for the Hearing Impaired, 1973, the following recommendations:

1. An individualized program of instruction and services at whatever age and in whatever educational setting to decrease the possibility of isolation from society and maximize a sense of personal well-being, good citizenship, and economic usefulness of deaf individuals.

2. Early educational programs for deaf infants and their families as soon as a hearing loss is identified.

3. Proper placement of a deaf child including neighborhood school, special schools, special classes, and/or residential schools.

4. The opportunity to develop a comprehensive range of communication skills, which allows the deaf child to operate as a citizen with maximum efficiency.

5. A program of career education, from the earliest age, which emphasizes the work ethic and independence. All deaf children or youth leaving school should be prepared to enter the work force or continue advanced preparation.

6. Informational and cultural avenues which are fully available to the deaf as well as the hearing population. Telecommunication devices should be accessible to the deaf at the same cost as telephones are to the hearing person. Captioned television and motion pictures should be expanded to include at least 80% of those available to the general public.

7. Special public or private institutions, schools, or agencies that provide preschool, primary, secondary, and postsecondary education which allows deaf youth to develop their maximum academic and technical skills through the following services: (a) service to the student's teachers (regular classes), (b) supplementary instruction and therapy, (c) part-time special classes: resource rooms, full-time
special classes, (d) day or residential schools, and (e) home and hospital instruction.

The committee is concerned that all the deaf be included in the educational program, i.e., the deaf-retarded, deaf-blind, and multiply handicapped, and that deafness itself must be viewed as the primary handicap in all respects. The committee further recommends that "all state education agencies develop comprehensive state-wide plans for education of all deaf children and adults. No deaf person in the United States of America should be forgotten."

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