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ABSTRACT

This speech, given by the director of the Federal Bureau of Health Manpower Education, reviews current major problems in education and training for the allied health manpower professions, possible solutions, and implications of these developments for training programs in these areas. Background information precedes a discussion of six specific health manpower objectives, focusing on: (1) manpower supply, (2) work force quality, (3) educational efficiency, (4) opportunities for career advancement, (5) medical care costs, and (6) manpower distribution. The role of the disadvantaged in health occupations training programs is discussed. (AG)

# Allied Health Manpower: Education and Training for New Demands

Thomas D. Hatch, L.H.D.*



## Introduction

Two years ago, in June of 1970, Dr. John Zapp on behalf of Dr. Egeberg, Assistant Secretary for Health and Scientific Affairs, spoke to this Committee on meeting the demands for personnel in the allied health occupations. At that time he traced the development of allied health occupations and presented trends in their supply and utilization. Recruitment, testing, continuing education and retraining were identified as areas in which much of current practice was not well thought out or well executed. He observed that the allied health field offered major opportunities for the disadvantaged, including employment in new types of jobs and careers -- provided that obstacles to career advancement could be overcome.

Problems associated with credentialing allied health manpower were discussed; in particular, the lack of uniformity in licensing was noted. Dr. Zapp also commented upon economic factors affecting allied health manpower, including the impact of the 1966 amendment to the Fair Labor Standards Act and its potential for raising wages in the health industry

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to adequate levels. Most of this background need not be repeated, since by now it is fairly well known.

At the meeting two years ago, Dr. Zapp posed some questions which we thought would be most helpful to have this Committee consider; points on which we would appreciate your advice. Among the most important of those questions were:

1. What types of pressures can be exerted on institutions, State governments, and professional associations which will increase recognition and transferability of previous experience?
2. What can be done to promote access to the education that is required to enter a health occupation or to advance to higher skilled work?
3. What mechanisms can be developed to free the health care institutions of the burden of educational costs?
4. What mechanisms can be developed to initiate needed changes in State licensing laws and regulatory mechanisms for allied health manpower?

Since then, the answers to some of these questions have begun to emerge. It is now appropriate to review the current aspect of major allied health manpower problems, the solutions that appear to be desirable (or at least worthy of trial), and the implications of these developments for continuing programs in support of allied health manpower.

Background

Years ago the development and utilization of allied health manpower was not a national concern. The health system grew slowly; changing in an evolutionary manner and at a deliberate pace from a cottage industry to a more highly organized system. Public expectations of improved medical care were much less than they are today. Technological advancements in the field, while impressive at the time, were in retrospect bringing only mild pressures to bear for the utilization of new types of manpower and for the delivery of health care in new ways.

The past twenty years have seen this slow pace of change immeasurably speeded up. New knowledge, generated by research efforts of previously unheard of magnitude, has brought about substantial changes in the delivery of health services and is expected to bring more.

Public attention has been focused upon the inadequacies of our health system. Intelligent criticism by consumers, and their determination to find solutions to these inadequacies, is now the rule. The lay public is aware for the first time of the importance of community and environmental health, those large areas of responsibility of the health system which are beyond the provision of personal health services.

The burgeoning of demand for health services which we have witnessed over the past few years, and which continues, has not only strained the capacities of the system but called into question assumptions of long standing as to how medical services shall be delivered in this country.

The initial reaction to health manpower problems was to increase the supply of physicians. This reaction was an extension of the belief that medical care could and should be provided almost exclusively by the private medical practitioner, operating out of his office and personally carrying out most procedures necessary for diagnosis and treatment. It has become apparent, however, that regardless of our ability to produce more physicians this model of the health system is not one that will prove workable in the future. There can be no widespread return of the classic picture of a lone practitioner of medicine if we are to profit fully from the medical research of the past two decades. The fruits of modern medicine can only be harvested on a large scale by an organized and largely institutionalized approach to the delivery of health care. In this approach the physician must be so highly skilled and bear such responsibilities that it is impractical, as well as uneconomical, to require him to perform services that can be performed by others.

These changing circumstances have led to more institutional and group medical practice, where economies of scale can be practiced. They have also led to the increasing use of allied health workers. The many new allied health occupations reflect the inevitable progress towards specialization of manpower that occurs in any industry which is forced to adopt a more highly organized approach toward reaching its goals.

Concurrent with this new conception of the role of allied health manpower is an overdue movement to abandon our treatment of salaried health workers as a commodity, subject only to the marketplace laws of

supply and demand. Increasingly, the health industry is being looked to to provide meaningful and rewarding careers for ever growing numbers of people. The many dead-ends in career development for health workers become less and less acceptable as we examine the deficiencies of our society.

There is, therefore, good reason to be concerned with the supply, quality, and utilization of allied health manpower. They are an essential part of the health work force. The nature and quality of their training, which determines the extent to which they can relieve physicians of excessive workload, is an issue of increasing importance.

Objectives

The Bureau of Health Manpower Education, together with other health agencies, works to attain two national goals -- good quality health services readily available to everyone, and rewarding careers in health occupations. While the first of these goals has captured most public attention, the second is also important.

Good health services cannot be delivered by assembly line procedures. Health workers at all levels, like teachers, must bring to their jobs an ability and dedication of the highest order. They work with people, not machines, and if they are not adequate to the task the cost is great. Whether physician, nurse, laboratory technician, or community health aide, their work is demanding and to perform it well they must find it rewarding. The creation and maintenance of a high quality health work force, therefore, becomes a vital matter in providing good health services for all.

To achieve these goals, we must turn our attention to six specific health manpower objectives.

The first of these is to expand and maintain the supply of health manpower, commensurate with the demands of the health system for trained personnel.

The second is to improve the quality of the health manpower work force, as necessary to ensure a good quality of care for the entire population.

Third, we must increase the efficiency of the education and training of health manpower, both to decrease the time and cost necessary to prepare for a health occupation and to ensure that this preparation is complete.

The fourth is to increase opportunities for the career advancement of health workers, and to increase employment opportunities in the health industry, especially for minority groups and the disadvantaged.

The fifth is to minimize the costs of health manpower services.

Finally, we must attempt to optimize the geographical and institutional distribution of health manpower, to ensure equal access to health services for all persons.

These are the problems toward which a health manpower strategy must be directed if the broad national goals for health services are to be reached. Much progress is still needed to achieve these objectives.

Manpower Supply

With respect to the supply of health manpower, there are chronic national shortages for some types of highly skilled workers. These shortages have accumulated over many years and it will take many more years to overcome them.

For most types of health manpower, however, national gross shortages are episodic, occurring when a rapid period of growth in demand for health services outstrips the capacity of training programs to provide additional workers. We have just experienced a period of acute shortage of nearly all types of health manpower, associated with the stimulation of demand for medical care by the Medicare and Medicaid programs. We have now reached a point at which, in some localities, shortages of many types of workers are no longer of concern. This is especially true in areas where the general economy has suffered a downturn.

The current situation, of course, may not persist. Either a period of rapid economic growth or additional governmental funds for health services can initiate another period of acute shortages of all types of workers, an eventuality for which we must prepare as best we can.

Dr. Zapp presented this Committee with some data on supply and requirements of allied health manpower. This data showed that between 1950 and 1967, baccalaureate level allied health workers had grown from 64,000 to 230,000, while allied health workers at less than the baccalaureate level had grown from 222,000 to 577,000. In both categories, but especially at the baccalaureate level, allied health manpower had been

growing at a faster rate than employment in all health occupations combined. He also ventured some predictions of employment levels for allied health manpower in 1975 and 1980. Those predictions are essentially unchanged. For all types of allied health manpower who have collegiate training or its equivalent (and excluding nurses and nursing auxiliaries) employment in 1970 was 932,000 out of a total health work force of 3,921,000. In 1980 we expect it to be at least 1,388,000 out of a work force of 5,620,000. This represents about 45,000 new jobs per year over the next ten years, not including the effects of attrition which will provide an additional 60,000 or so new job opportunities every year.

These are projections of actual employment, based upon an appreciation of the performance of the economy. They are not, and are not intended as, indications of the number of allied health workers necessary to achieve any particular level of health care for the nation.

To fill these 100,000 or more jobs in 1971, colleges provided 30,000 new health workers. Where did the rest come from?

The recent substantial increases in the total health industry work force have been accomplished chiefly by hiring workers who had little or no previous training or experience in health occupations, plus large numbers of graduates from relatively short vocational training programs. This, we believe, has been possible only because significant numbers of more highly-trained personnel -- nurses and allied health professionals -- have been retained in the work force or recruited from inactive status.

These persons have provided the "cadre" necessary to train and supervise the influx of lower-level workers. A more favorable position for the health industry relative to the economy as a whole is seen as the chief factor leading to the retention or re-recruitment of these mid-level professionals.

Thus we have called upon the inactive reserves of health professionals to make possible the expansion of the work force at lower levels while retaining quality of service. Could we again use this device to make another "quantum jump" in employment?

There are no data that show the extent to which the reservoir of inactive allied health professionals is being exhausted nor the extent to which the professional life expectancy of active workers has increased. Probably we do not, at the moment, have the capacity to meet another rapid increase in demand for health services. In any event, as the health industry grows the maintenance of an adequate supply of well-qualified allied health professionals will continue to be a problem.

It has been contended that the existing medical care system cannot absorb additional large numbers of allied health personnel. In the case of physicians in solo practice, this is no doubt true. However, in institutionalized medicine, which will clearly be more popular in the future, increased use of supportive manpower is essential in finding remedies for those faults which most vex the public. These faults include the inability to assemble, summarize, and profitably use all existing medical records of a patient; poor communication between the

medically sophisticated physician and the unsophisticated patient; payment mechanisms that are needlessly complex or annoying to the patient; and similar ills of the health system. Remedies for these will require extended and more intelligent use of well-trained allied health manpower.

It appears from the evidence now available that there are no great difficulties in expanding the health industry work force as a whole, but that there will be problems in providing an adequate supply of well-trained allied health professionals who are capable of teaching, supervision, and administration as well as giving direct patient care.

If you assume, as I do, that the proper Federal role in manpower training is not merely to stimulate it at times when stimulation appears warranted, but to make it commensurate in quality and productivity with the demands of the times, you are left with two problems. What are the demands of the times, and how can government elicit the desired responses from educational and training institutions?

In considering problems of the supply of allied health manpower, we must ask ourselves how to stimulate, but not overstimulate, the production of trained health workers during periods of shortage, yet maintain a quality of education and training that will not only prepare workers quickly to provide health services, but also prepare them for enduring careers.

The Division of Allied Health Manpower, in supporting the education and training of health workers, is almost exclusively concerned with

programs at the collegiate level. The first specialized support of these programs was offered through Basic Improvement Grants, beginning in 1967. These (which were capitation or formula grants for the support of 21 types of allied health occupations programs in junior and senior colleges) greatly stimulated the development of these programs.

The Division has recently published a directory of junior college educational programs and is about to publish a directory of programs in senior colleges. For the first time we are able to follow the growth of collegiate programs over the last ten years. In 1960 all types of allied health occupations programs in colleges and universities graduated 5,800 individuals. By 1965 this had doubled to 10,800 but by 1971 the figure rose to 33,700. Of the latter, 3,000 were obtaining advanced training in their fields. Almost half of this growth occurred in junior colleges, where the number of graduates rose from 1,200 in 1960 to 12,000 in 1971.

This increase in collegiate programs has proceeded without orderly planning at any level above the individual educational institution, with results such as we might expect, including local over- and under-supplies of graduates, and surpluses in one occupation while there are shortages in another. Overall, however, it appears that there is sufficient interest by students in being trained for allied health occupations, and sufficient interest in educational institutions in training them in these fields, that we need not worry about <u>how</u> to stimulate the educational system to produce more graduates.

The Allied Health Professions Basic Improvement Grants, which contributed to the spurt in the growth of education programs over the last five years, were discontinued this year. We are now offering support to educational institutions principally through Special Improvement Grants. These grants provide funds for those collegiate training centers that develop a comprehensive plan to meet needs for allied health occupations education. This competitive project type of support (as opposed to capitation or formula grants) allows us to guide the development of educational programs, rather than blindly stimulate their growth. We plan to improve selectively the quality of the programs, with attention to the relevancy, efficiency and effectiveness of the educational experience.

To some authorities our health services problems indicate a compelling need to increase the numbers of existing health personnel, particularly physicians, dentists, and nurses, but also allied health professionals. When these authorities, as they sometimes do, set arbitrary goals for the quantities of manpower that should be engaged in a certain type of work, they are in reality saying that the volume of health services available in this country needs to be increased.

Others maintain that the answer to health problems lies in better use of existing resources. These persons assert that educating patients to use professional services more efficiently, emphasizing prevention and health maintenance, and developing better organizations for the delivery of health care will go far toward totally alleviating so-called health manpower shortages.

Neither view is entirely correct, if a national objective is a reasonable degree of access to adequate health care services for all of the population.

The first view does not recognize that health manpower requirements are determined by money, by technology, and to some extent by how we organize to provide health services. Realistic quantitative manpower goals are based upon the expected number of persons for whom jobs will exist at any given time in the future. This figure is usually far less than the numbers of persons calculated by experts to be "needed" to achieve any particular improvement in the nation's health.

The second view does not recognize that shortages of specific types of manpower or of specific skills can develop rapidly. This happens because of technological changes and, sometimes, a sudden increase in the dollars available for health care. The high attrition rates in many allied health occupations are also a contributing factor.

This second view, that health manpower shortages are illusory, also fails to recognize that shortages of specific skills may not manifest themselves in the job vacancy rate but rather in a less efficient work force.

A closer analysis of quantitative health manpower requirements shows that the health industry, very sensibly, will employ whatever types of workers are available (within reason) in order to carry out its work. Increased and improved health manpower training programs, therefore, are

a way to remove constraints, not upon the total number of individuals providing health services, but upon the types which must be used to carry out health activities. Of course, since a large proportion of health manpower leaves the work force every year -- perhaps 10 percent of allied health workers -- the training establishment must also meet substantial requirements for producing new workers just to maintain the work force. Anticipating the types of workers which will be most in demand in the future poses very complex problems to the manpower analyst.

Work Force Quality

Our second objective is to improve the quality of the health manpower work force. It is difficult, of course, to state the extent of this problem or to measure our progress in achieving quality. Quality is an illusive concept; however, it is apparent even to the casual observer that the quality of much of our work force is below that which is desirable. Many workers are not well prepared for some of the jobs that they are called upon to do.

Some of these deficiencies will be overcome through formal or informal programs for continuing education, an area in which there is much that needs to be done, but in which the Division of Allied Health Manpower has been relatively inactive. What Federal assistance has been devoted to continuing education of allied health professionals has chiefly been channelled through Regional Medical Programs. The extent to which this assistance is meeting the need is not certain.

Perhaps more important, however, is ensuring that the programs for "basic occupational preparation" are well designed and reflect current thinking about the nature of the demands that will be placed upon their graduates. "What to teach" is a high priority subject among allied health educators. I might add that this is important for the general academic requirements of degree programs as well as for the technical subjects in these curricula, since these programs not only train students for entry level jobs but also prepare the teachers, supervisors, administrators, and research workers of tomorrow.

The Division supports many projects which are designed to produce answers to the question of what to teach. All of these, to a greater or lesser extent, are hampered by the fact that the future demands upon allied health workers are uncertain. For example, the role of a physical therapist five or ten years from now may vary greatly, depending upon what specific national health objectives we are attempting to reach, and how the health services delivery system is organized to reach them.

The Bureau exercises no regulatory functions over health manpower, although other organizations in the Department do, either directly or indirectly. The most influential Federal regulations affecting the quality of the allied health manpower work force are the manpower regulations embodied in Medicare and Medicaid assistance. These have the effect of increasing the demand for individuals who have certain credentials.

The subject of credentialing was thoroughly treated by the Department last year, in a report to Congress titled Report on Licensure and Related Health Personnel Credentialing.[1] Credentials are available for many but by no means all types of allied health manpower. By credentials, I mean some form of official recognition of professional competency. This recognition may take the form of licensure, certification by a professional association, or registration by an independent registry of the profession. In most cases credentials are difficult or impossible to obtain merely by demonstrating one's competence to do the work. Graduation from an accredited educational program is a usual prerequisite. Credentialing, therefore, acts as a barrier to career development for substantial numbers of persons, many of whom are presumed to be competent in their field.

The hanging of credentialing upon possession of a college degree, so common in the health field, is merely a reflection of the fact that the determination of what constitutes proficiency in a health occupation is extremely complex and difficult. The Manpower Administration of the Department of Labor has given substantial impetus to this task through their funding of the development of proficiency examinations in clinical laboratory fields. On our part, we are proceeding with the development of objective examinations for a number of types of allied health workers,

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[1] U.S. Department of Health, Education, and Welfare, DHEW Publication No. (HSM) 72-11, June 1971.

beginning with radiologic technologists, inhalation therapists, and occupational therapists. We intend these examinations to be a complete and sufficient basis for the issuance of professional "working papers" in the occupations involved. Construction of such an examination is necessarily preceded by agreement in detail on what constitutes adequate job knowledge. We anticipate that these examinations will come into use beginning in 1974 and that they will have a significant impact on the quality of the work force, as well as on removing barriers to the sensible and flexible use of allied health workers.

Educational Efficiency

The third objective is to increase the efficiency of the education and training of allied health manpower. In the broadest terms, this means that we are concerned with the quality of training, that is, with its relevance and effectiveness as well as simple efficiency.

The question of relevancy, or what, exactly, does constitute adequate training for allied health manpower is perplexing. It is not clear what roles and functions should be assumed by many occupations in the health system today. Even less clear is what they should be prepared to do in the system of tomorrow. Yet unless we can foresee the job knowledge requirements that today's students will encounter as their careers develop, we will build unnecessary obsolescence into the work force through inadequate programs for basic occupational preparation.

We are also much concerned with effectiveness at the present time. We cannot maintain a high quality work force with ineffective educational programs no matter how efficient they may be. Of course, eventually there will be much to be done in improving training methodologies and making education more efficient. Health occupations education has been slow to adopt modern training techniques. First, however, we need to fix on the objectives of training, especially clinical training, and find a way to determine when these objectives have been reached.

We also have the problem of programs which are operating with inadequate resources for quality education. Allied health education is relatively costly. Many programs cannot afford to provide the best in education and supervised clinical experience.

It is difficult to comprehend how poor quality training for these occupations has been tolerated for so long. However, prior to the establishment of the Division of Allied Health Manpower and its enabling legislation, there was essentially no Federal attention or support for the training of allied health manpower. Vocational training funds, from what data are available, apparently have supported little in the health occupations field except training in nursing arts. Indeed until recently, government at all levels has shown as much or more concern with the training, qualifications, or licensing of mechanics, beauticians, plumbers, welders, and other workers whose responsibilities are not nearly as great.

I do not mean to denigrate the role or value of other types of workers, but mistakes of X-ray technicians, laboratory technicians, nuclear medical technicians and other allied health workers are costly if not irreparable. Therefore, we owe to them (and ultimately to their patients) training which is, to say the least, adequate.

A recent study of the training programs supported by Allied Health Professions Basic Improvement Grants collected some information on the characteristics and problems of 14 types of collegiate educational programs. The data are suggestive of a need to improve and strengthen educational efforts, especially since they were obtained only from programs which had one to three years of Federal support; the majority of programs do not have such support.

The report of this study, prepared by a consulting firm for the Division of Allied Health Manpower, contains the following summary:

"The major impediments to program development at the

> baccalaureate and associate levels are all related to financial resources. Lack of sufficient operating funds was cited by more than 50 percent of the institutions as the major deterrent to development of all but one type of curriculum. Insufficient funds hinder the ability of institutions to fill faculty vacancies in four types of programs, due to restrictive salary structures. Moreover, the inability of the institutions to offer financial assistance or scholarships limits the intake of students to a level below capacity for a majority of the programs. The unavailability of classroom and clinical training facilities were the only other constraints on curriculum development cited by more than 50 percent of the institutions."

Federal support of these programs has not enabled them to greatly reduce student/faculty ratios. In baccalaureate programs, in fact, the ratio was more favorable in 1966 than in 1969. In order to gain insight into the faculty needs of the allied health programs, the study requested institutions to indicate their additional teaching staff requirements. The overall need for additional teaching staff was 13 percent above current levels.

The study report also states --

> "To deliver to its students the quality of education and training needed for successful employment, the programs must have available to them teaching staff with the

requisite backgrounds to provide quality training, and adequate facilities and training resources.

"Overall, the institutions needed about a ten percent increase in faculty adequately to accommodate current enrollment levels. Staffing growth rates at the level of 1966 through 1969 appear to be inadequate.

"Better qualified teaching staff are needed at the assistant professor and instructor levels. Almost one-third of those needed would require a masters degree. About four percent require a medical or dental (M.D. or D.D.S.) degree. The principal subjects for which faculty are needed includes biochemistry, biomechanics, clinical training, blood banking, and bacteriology. About two-thirds of those needed are required full-time. Higher levels of academic preparation were desired than the educational levels achieved by the incumbent faculty members."

In summary, the study report states that:

"Programs in the allied health professions in most of the fields studied will continue to require external financial support and stimulation in order to consolidate gains toward providing quality educational programs. The support will be needed for a number of years to bring to bear the number and type of faculty members required to make for effective programs. Program support will be needed particularly to attract qualified staff members, to provide a better basis for expanding the

quality of curriculum offerings, practicum and clinical experience."

While the data from this study are not an indication of educational quality per se, they are consistent with claims that collegiate programs require improvements to be effective and efficient sources of well-trained allied health personnel.

In considering actions to improve the quality of training, we must remember that in the health field training and service are bound together. The quality of one affects the quality of the other. This has been recognized by the Joint Commission on Accreditation of Hospitals, whose new standards place increased emphasis on education and training activities. The Commission recommends that a total program of education and training "should be under the supervision and direction of a qualified person -- qualified meaning not only in the area of content, but also in the area of training." Dr. John D. Porterfield, III, M.D., Director of the Joint Commission, has stated that "it is incumbent on the hospital not only to be staffed by appropriately qualified and trained personnel in all areas and on all levels, but also to ensure that personnel keep up with the application of new knowledge and new techniques and procedures in the work that they do." The Commission recommends that the governing body should foster the education function of the hospital in cooperation with other health care and with educational institutions. The "Accreditation Manual for Hospitals," in interpreting the new standards, gives specific examples with reference to allied health training, mentioning among other types of workers medical record personnel, nuclear medicine personnel,

radiology personnel, dietetic personnel and workers on special care units.

This full realization of the education and training requirements for hospital staff comes at a time when the traditional source of funds for such activities -- patient care revenues -- are becoming less and less available for these purposes. New approaches to providing essential clinical education must be found, as well as new sources of revenue.

Opportunities for Career Advancement

The fourth objective is to increase opportunities for the career advancement of health workers, and to increase employment opportunities in the health industry -- especially for minority groups and the disadvantaged.

For this audience it is not necessary to dwell at great length upon the problems that health workers have in advancing from technicians to professionals. The credentialing of health workers, while highly desirable in order to maintain the quality of the work force, has inadvertently placed arbitrary barriers in the way of many who are capable of advancement. Also, it has been difficult for minorities to enter into the mainstream of health careers simply because there have been no concerted efforts to bring them in. As a result, minority groups are badly underrepresented among health professionals, even though it is obviously of great importance to have health workers drawn from, and able to relate to, all segments of our population.

The study of allied health professions educational programs referred to previously inquired into the number of Blacks in these programs. In

order to effectively serve inner-city populations, vastly increased numbers of Black health professionals are necessary at all levels. The study showed, however, that while 43% of the programs had enrolled one or more Black students in 1969, Blacks constituted only 3% of enrollees in that year.

Obviously, much needs to be done in this area, including strengthening these programs so that they can offer individualized instruction to persons who otherwise may be unable to matriculate or to complete the course of study.

Of course, the proficiency examinations we are developing are concerned with this objective as well as with improving the quality of the work force. These examinations are a first step leading to a possible national certification system for appropriate categories of health personnel. Inquiry into the feasibility of establishing such a system is a commitment made by the Department in connection with its Report to Congress on Licensure and Related Health Personnel Credentialing, in June 1971. It is our firm intention that such a system, if developed, offer the maximum opportunity for individuals to qualify as allied health professionals regardless of the methods by which they have obtained their knowledge and skill. This is an essential step in improving the health manpower system from the point of view of the individual who seeks employment or advancement, as well as better ensuring the capabilities of such personnel.

In addition, we are supporting projects to articulate the education and training of health manpower at all levels from high school through the post-graduate. This will minimize the requirement, now so prevalent,

of repetition of formal education in order to advance within a field, or to move to another field within the health family.

Medical Care Costs

The importance of controlling the cost of medical care is also a subject that needs no new emphasis. The principal long-term inflationary pressure is not from rising wage scales, but from increased ability to provide very intensive and sophisticated medical care in situations which, a few years ago, would have been termed hopeless. It is obviously important, however, to try to control medical care costs by any suitable means. For manpower, this means the substitution, wherever possible, of low cost personnel for highly paid professionals.

No one advocates a return to the commodity theory of labor in the health industry. Individuals should be fairly paid for the duties and responsibilities that they assume. However, it is obviously wasteful to require a physician to perform a laboratory test if someone less highly trained (and perhaps with more ability to do the test) is available instead. It is impractical as well as uneconomical for physicians in institutional practice, having made their essential contribution to the medical care of a patient, to take further time to explain to him the intricacies of therapy, diet, or hygiene. Vigorous efforts to provide lesser trained (and less costly) people to perform such tasks will not only assist in containing medical care costs, but will also provide new employment opportunities within the health industry.

Manpower Distribution

Finally, we must attempt to optimize the geographical and institutional

distribution of health manpower to ensure equal access to health services for all persons. This, of course, is not entirely a problem of health manpower although it has its manpower aspects. In both ghettos and rural backwaters we find insufficient medical services. Both of these are areas which individuals, given freedom of choice, gravitate from and not to. This is as true of health professionals as it is of other types of workers. Solutions to the problem of maldistribution of health resources are not easily found, nor are they apt to come from policies governing the education and training of manpower. Nevertheless, as we attempt further to eliminate inequities in health services we must explore all possible means.

The location of an allied health professions training program probably has little effect on our ability to provide services in the general area, assuming that the overall regional supply of such health workers is good. Of course, the existence of a clinical training program tends to upgrade the quality of services in that institution, if only by virtue of the fact that the attracted faculty are usually also engaged in providing patient care.

It may be, however, that the conscious or unconscious processes by which individuals are selected to attend allied health professions schools also select types who are least likely to locate in underserved areas. We do not, however, know enough at the moment about the geographic mobility of allied health workers, or about those characteristics that would lead them to locate in underserved areas, to be able to say that better student selection techniques are a potential solution to this problem.

Other Observations

The six objectives presented here represent major problems for a health manpower organization. It is apparent that progress in some of these areas will be quite difficult. Furthermore, progress toward one objective is often made at some cost in progress toward another; the objectives sometimes can conflict. For example, some things that we might do to lower manpower costs would reduce career opportunities for health workers. A sound Federal health manpower program, therefore, must represent a carefully sought balance between conflicting aims.

There are, in addition, some other issues that should be mentioned. For example, how much general higher education is enough for a health technician? Can there be too much? If so, how much is too much? Can we effectively make the distinction in these occupations between professional competence and acquisition of education that may only indicate that the individual has completed, in addition to technical training, some vocationally irrelevant -- but perhaps socially desirable -- courses of study? If we can, then perhaps we can create a health manpower system that will be fair to the individual who must base his career on technical knowledge only.

The movement of health occupations programs from on-the-job training into a collegiate setting is making colleges face these questions.

On the one hand, there are great pressures to train students in the most expeditious fashion possible for jobs which we are reasonably certain will be available when they graduate. On the other hand. an important mission of a college, which distinguishes it from a vocational

training institution, is providing higher education in the "pure" sense. The essentials of this higher education are the ability to communicate, the ability to think logically and creatively, and a general appreciation of man and his environment. If you succeed in so educating a student, you may make him dissatisfied with a merely technical role in society.

Here is the difficulty, for many of those trained in allied health occupations will have to be content with a technical role. In addition, students so trained will be competing for a long time to come with others of equal technical competence but with less general education. The latter will offer the employer a distinct price advantage. It may prove, then, that for some allied health occupations colleges will be educating their students to be dissatisfied with the work they are able to obtain.

There is no clear way through this dilemma which, of course, is not a problem of health manpower education exclusively. However, we can and must watch closely to see that inappropriate educational patterns are not institutionalized to the point that they cannot be changed. We must obtain more insight into what, for the health industry, constitutes a suitable mix of professional, technical, and semi-skilled labor. We must watch for any trend to require an uncommon and unnecessarily high level of general education as a prerequisite for credentialing, as well as for any trend to employ the less motivated, the less perceptive, and the less empathetic type of individual (who may also be less well educated) simply because of price advantage.

Coordinating Mechanisms

A clear role for the Federal government lies in coordinating efforts

to provide education and training for allied health manpower. For many occupations, there are relatively few programs in the country. This, combined with the high geographic mobility that is typical in these occupations, makes these schools a national, rather than a local, resource. Effective coordination and planning of education and training cannot, therefore, be entirely carried out at the State or Regional level.

Perhaps as many as 8,000 different organizations -- schools, hospitals, and public agencies -- are engaged in some aspect of allied health manpower education and training. Their activities have arisen as a result of institutional needs, student interests, requirements of the community (often imperfectly perceived), or the availability of categorical funds. Until recently, the activities of any one of these organizations were planned with little information about what others were doing. Even today, few States or communities demand the coordinated planning which is necessary for efficient use of the health training dollar.

The legislation that created Regional Medical Programs and Comprehensive Health Planning has expressed the concern for improved planning for health services and for health manpower education. This planning must be coordinated, so that changes in health technology and knowledge, the emergence of new health occupations specialties, and the emergence of new ways of providing health services are reflected in training. A few States have established, in one form or another, "health manpower councils" to deal with this problem. The Bureau of Health Manpower Education has encouraged this development, and in a few cases has been able to offer limited financial support for development

or demonstrations. We see such coordinating bodies in the health field as valuable supplements to broader efforts to coordinate education and training, such as the CAMPS program.

There seems to be an almost inexhaustible demand for new allied health manpower specialists. Formal and informal training programs spring up to train such specialties as genito-urinary technician, extra-corporeal circulation specialist, therapeutic recreator, and medical communication specialist. Many of these programs, even at the collegiate level, appear to be a response to a few employer's difficulties in providing a specific service. The programs are created to fill what will be, in the final analysis, very few jobs. Specialization, carried too far, makes for inefficiencies in utilization of the work force and for too little job mobility. Considerable study and planning must be done to strike a balance between too much occupational specialization and not enough. This appears to need strong stimulation by the Federal government. Through professional associations, we are examining this question in detail in some allied health fields. We also contemplate, in the forthcoming year, more application of task analyses to the question of specialization.

The future form of the health system has been the subject of much debate. Obviously, substantial changes in the methods of delivery of medical care are going to be necessary if adequate service is to be provided all of the population. More effective ways of delivering services must be forthcoming regardless of what methods are pursued to

provide the necessary economic foundation. No one doubts that eventually there will be profound changes in how health services are delivered, although what the new style will be, and at what rate the change will take place, cannot be clearly foreseen. Experimentation with changes in the health system, however, can be retarded or even aborted if we do not have an adequate supply of manpower which can be used flexibly.

Conclusion

If these remarks give the impression that there are many unanswered questions and unresolved problems in allied health manpower, please bear in mind that until quite recently there was no organized concern about the education, training or utilization of these persons. We are, in fact, only now finding out the full extent of collegiate endeavors in this field. There is as yet no inventory of vocational training efforts which would enable us to say whether or not these have declined as collegiate programs have expanded, or what we may expect of them in the future.

A principal question for both the Department of Labor and the Department of Health, Education, and Welfare is -- what is the proper role to be assigned to vocational training programs on the one hand, and collegiate educational prograns on the other, in contributing to the maintenance of our allied health work force?

Perhaps, for the many allied health occupations which may be trained at either level, there is no significant difference, and we need not be concerned with trends toward or away from collegiate preparation in these

fields. I doubt, however, that this is the case. Some proportion of the allied health work force undoubtedly should be trained in non-academic and relatively short-term programs, if only to provide job opportunities for the many persons who will not matriculate at a college.

What this proportion is, however, I am at a loss to say. It does appear, however, that we are rapidly approaching an equilibrium and that neither vocational training nor collegiate programs should be further stimulated at the expense of the other. It is clear that both will require additional support and additional attention to the quality of training provided in future years.

The Bureau of Health Manpower Education has welcomed this opportunity to present its views on allied health manpower, and the concerns that we hope to address successfully in the coming years. Time has not permitted listing the many types of projects in which we are engaged, nor even of the ones in which we and the Department of Labor have the most common interest. The two Departments share objectives for health manpower. As proper courses of action become clear, we must work together to achieve them.