

TEACHING OF PUBLIC HEALTH IN A UNIVERSITY

RESPONSIBILITIES OF A SCHOOL OF PUBLIC HEALTH¹

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The teaching of public health in the university is considered from the viewpoint of the types of students who are to receive instruction (all students, those who have some relation to public health, and students of the public health career as such). In all cases, if public health is to enjoy the respect it deserves and the student is to appreciate the personal and community benefit to be derived from health measures, this subject must be taught by persons who have a thorough background of scientific training in the basic disciplines of medicine as well as an understanding of community health programs.

Basic Concepts of Public Health

Public health may conveniently be defined as an organized community program designed to prolong efficient human life. As such it embraces the activities of all elements of the community that are specifically organized for the promotion and continuation of both personal and community health. This includes not only official governmental agencies but all nonofficial or voluntary agencies, many of which probably contribute as much to the control of certain specific health problems as do the official agencies.

To define public health as an organized community program is not necessarily to minimize the highly important contributions that come from other forces in the community, such as the standard of living, the general level of education, and the agricultural economy. Unquestionably many of these contribute immeasurably to better health, as,

for example, the availability of food, improvement of housing and the economic capacity of the community and of the individual to afford the benefits of medical and health care. The significant contributions of these various forces must never be overlooked or minimized, but they cannot be thought of as part of the public health program inasmuch as the health benefits are purely secondary. Public health must be thought of as those forces that are specifically organized for the express purpose of promoting health even though at times these forces may be of less importance than the broad economic and social forces from which health benefits secondarily derive.

The foregoing definition likewise emphasizes the importance of prolonging efficient life, not simply the postponement of death. While postponement of death is obviously a desirable goal and while public health has a definite interest in reducing the toll of avoidable premature deaths, this in itself cannot be considered a complete goal, for it fails to take into consideration the tremendous economic loss and human suffering that goes with nonefficient human life. Many of the most important health problems, such

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as malnutrition, mental disease, and rheumatism, do not appear prominently in the bills of mortality yet exact an enormous toll of suffering and in many instances constitute an absolute economic burden upon society. The goal of public health as defined by the World Health Organization is a goal of physical, mental, and social well-being, not merely a prolongation of the heartbeat.

Functions of Public Health Instruction in a University

If we accept the foregoing concepts, which are fundamental to any discussion of public health teaching in a university, we may well inquire to which groups within the university such teaching should be directed. A university by mere definition implies unity and universality, encompassing a vast and comprehensive array of interests as well as scientific disciplines. Within the university there are logically varied groupings of interests, some directed to the field of physical science, others to biological science, and still others to the social sciences and humanities. Added to this is a vast array of professional interests, each of which to a varying degree draws upon the physical, biological, and social disciplines. One may thus think of the university as representing a very broad and comprehensive array of all the interests of the community and of the public, thus serving as a focal point for not only comprehensive teaching but also research. If the teaching of public health, however it may be carried on within the university, is to achieve its maximum potential it must be prepared and so organized as to meet the needs of these many groups of diverse interests. It is well, therefore, to examine what may be the needs of these several groups.

General Education of University Students and Community Education Programs

First and foremost is the need for general education of students throughout the univer-

sity. As educated persons, university graduates should have not only knowledge of personal health as it affects themselves and their families but also an understanding of community programs that they as the taxpayers of tomorrow will have to support if these programs are to be continued and expanded to meet the new problems of tomorrow. It would be nice to believe that by the time the student has reached the level of university education he will have learned in primary and secondary school the fundamentals of personal health care. Unfortunately, such is not the case; almost without exception the primary and secondary schools have failed miserably to provide sound and authoritative instruction on personal and community health. In the United States of America much of the difficulty has come from the fact that responsibility for health instruction has been relegated in the school system to the physical education group, which is basically more interested in competitive athletics than in the physiological basis of good health. This group too often fails to distinguish between health and physical endurance, between health and muscular prowess. Experience shows that, however desirable endurance and prowess may be and however essential for short-time military operations, they bear little relationship to continued health over a period of years and in no way help to prolong efficient human life. At the same time they completely overlook the many hazards of life with which the human being is surrounded and which operate to impair efficient human life even during the period of maximum prowess and physical stamina.

This relegation of health teaching to a group that is basically neither interested in nor adequately prepared for the teaching responsibilities means that the student reaching the university not only is uninformed but has too often developed a lack of respect for health, having been exposed to courses that were highly superficial and taught by persons

obviously deficient in fundamental knowledge. Unfortunately, the training of the physical education group contains very little of fundamental biological and physical science, an understanding of which is necessary for good teaching of health. The school system that would not entrust teaching of mathematics to a teacher inadequately grounded in fundamental mathematical theory or the teaching of chemistry to a person who had never been in a chemical laboratory does, however, delegate health instruction to persons without adequate background in human physiology, bacteriology, or pathology.

The lack of respect for health emanates basically from the student's realization of the superficial character of instruction that is given by inadequately trained individuals. In too many instances this has been carried over into the colleges and universities, where instruction in personal health has also been relegated to a physical education group or to instructors whose training was general biology but who lack an adequate background in human biology. The result in the United States of America has been that the teaching of health at the college as well as the secondary level has not been carried on with the same academic standards as are maintained in other subjects throughout the university, and has too often been thought of as an easy course in which the student almost automatically receives high grades without much if any studying. It is no wonder, therefore, that in more than one institution the health course carries no academic credit, further adding to the lack of student respect not only for personal health but for the whole program of public health.

If public health is to enjoy the respect it deserves and if the student is to appreciate the personal and community benefit and value derived from health measures, the subject must be presented with the same degree of academic background and standards as one would expect from a course in chemistry, calculus, or any of the foreign languages.

This means that the instructor must have a thorough background of scientific training in the basic disciplines of medicine and also an understanding of community health programs. With rare exceptions, this can only mean that the teaching must be done by a physician who has had either experience or postgraduate training in public health. The teacher must represent the same standard of academic achievement as is expected of the professors in other parts of the university and must demand of his students the same degree of academic achievement as is expected in other areas of knowledge. Then and only then can public health merit and receive the same level of respect from student and faculty colleagues as is accorded to other subjects. Instruction short of this level serves only to minimize the importance of health and even to create a lack of respect. The latter occurs in too many parts of the United States and, because of a lack of public understanding, has served as a handicap to the furtherance of sound community programs. To the extent that those who have had the benefit of higher education will serve as community leaders, one would expect the college graduate to have a far sounder understanding of both personal and community health than is possessed by those who have had to forgo the benefits of higher education. Unless the public health instruction of the university achieves this end it will have failed to accomplish its primary mission.

Closely allied with this responsibility for general education of the university student is the responsibility for diffusion of health knowledge throughout the community, especially if the university is a public institution. If, as has been indicated, the average university graduate is lacking in knowledge of personal and community health, the person who has never had the benefit of a college education is obviously even less informed on such vital matters. To the extent that a university is dedicated to the welfare of the people through diffusion of knowledge, so it must

within the limit of its resources avail itself of all opportunities to disseminate that knowledge to all the public. To this end the university must participate in the general community education program and not leave that function solely to the official public health agencies. To carry out that responsibility requires utilization of the existing media for the diffusion of knowledge, including programs directed to the adult public as well as to the school-age population, in an attempt to compensate in some measure for the deficiency of the formal school instruction. At the University of Minnesota, where such a program has been under way for more than 20 years, the weekly health broadcasts conducted by the School of Public Health reach more than one hundred thousand school-children each week and there is no way of estimating the large number of adults who are reached, many of them as regular listeners.

Technical Instruction in Health Required by Various Professional Groups

A second vital function of health instruction in the university is that of providing the technical knowledge that is a part of the required curriculum for various professional groups. For many of these groups instruction in the field of preventive medicine and public health is an absolute requirement. Such is the case with students in medicine, dentistry, veterinary medicine, nursing, pharmacy, and education. Each of these groups has to a varying degree a need for some knowledge of both personal and community health. While opinions differ as to the amount of instruction in health that should be required for these groups, there can be no uncertainty as to the fact that all of them, in the conduct of their respective professions, are in contact with personal and community health problems and that an understanding of these problems is essential for the competent pursuit of their professions.

While in past years professional concern

with health had been largely from the standpoint of the individual, the social, economic, and political trends of the last half century have emphasized a professional need not only for technical knowledge about the prevention of a specific disease condition but also an increased knowledge, understanding, and appreciation of community programs designed to provide the highest quality of medical and health care for all the public. Thus in the field of medicine, emphasis has been shifting from the strictly preventive-medicine point of view to the concept of public or community health. This concept embraces not only biological and physical science as applied to the human being but also consideration of the social and interpersonal relationships that have an important bearing upon the total health of the community. To an increasing degree, the public, acting collectively through its official and nonofficial agencies, is playing a far more active role in the provision of health care than was the case at the turn of the century. To all these groups, therefore, health must be presented as a mixture of biological, physical, and social forces.

In addition to the instruction that is a requisite part of various professional programs, the university community, with its highly diverse interests, has students who have a need for public health electives as a part of both undergraduate and graduate programs. Thus the student who is majoring in bacteriology has a need for and can profit from instruction in epidemiology, the physicist from instruction in the control of radiation hazards, the chemist from courses dealing with laboratory safety, the social worker and the political scientist from an understanding of public health administration. A broad program of health instruction within the university will inevitably provide many types of public health courses. The absence of such courses can only mean limitation upon the knowledge and training of students in other disciplines. The existence of them

in a university setting serves not only to help educate students but also to establish public health as one of the logical and important components of the total university community.

Professional Training in Public Health

The third function of public health in the university setting is the professional training of those students who are seeking to make a career in some aspect of public health practice. The day has long since passed when the solution of community health problems can be entrusted to persons lacking specialized professional knowledge. A mere medical degree no more qualifies the physician for public health responsibility than it does for specialization in surgery or ophthalmology. Similarly, an engineering degree does not imply competence in the control of environmental hazards, nor a nursing degree qualification in the handling of home situations. Public health is today a specialty and requires graduate training superimposed on prior professional education. The growing complexity of modern life means that the problems of today are more complicated than those of yesterday, and the solution of those of tomorrow will demand even greater professional skills than are needed today, except for a group of sub-professional employees engaged in simple routine tasks under professional direction. Professional education in public health at the graduate level has become today a *sine qua non* for effective public health employment. Universities therefore have the same responsibility for professional training for public health workers as they have for the training of physicians, dentists, engineers, or any other essential professional group.

If the definition of public health postulated above is accepted—an organized community program designed to help prolong efficient human life—it must follow that the development and conduct of such a program is dependent upon the contributions of persons

of highly diverse professional backgrounds. The modern public health program is in reality a synthesis of the contributions of very diverse disciplines, including medicine, dentistry, veterinary medicine, nursing, engineering, entomology, bacteriology, sociology, political science, education, and a vast array of other biological, physical, and social sciences. These various groups must work together in the development of a coordinated program. Working together as a team means that the members must have not only the technical knowledge requisite for their own potential contributions but also an understanding and an appreciation of the contributions that can be made by other members of the team. Without such an understanding, public health will degenerate into a series of disconnected and at times even conflicting programs, with a resultant lack of efficiency and harmony.

The proper training of these students further requires that they have the opportunity of benefiting from instruction available in other parts of the university, such areas varying according to the special interests of the student. Thus the engineer who is interested in the growing problem of control of air pollution needs an understanding of some of the technical problems of air sampling and the disposal of waste gases and fuels but must also have an appreciation of meteorology, analytical chemistry, and toxicology and must understand his relationship to the chemical engineering problem of industry. Similarly, the public health nurse or the nutritionist dealing with persons of diverse cultural backgrounds and faced with problems of family education must have some understanding of sociology, anthropology, psychology, and education as well as of technical nursing or nutrition. So diverse are the fields that contribute to a modern public health program that only through access to the total academic resources of a large university can one find the broad array of instruction necessary for proper professional development.

Mechanisms for Providing University Instruction in Health

There are three different and divergent philosophies with respect to the best mechanism for providing health instruction to the various groups in the university community. One maintains that instruction in health should be the responsibility of the faculty for whose students instruction is to be provided: that the medical faculty should assume complete responsibility for the health instruction of medical students, the pharmacy faculty for that of students in pharmacy, the dental faculty for that of dental students, and the liberal arts faculty for whatever instruction in personal and community health is desired as a part of the general cultural background of the student. On this basis the graduate-level training of personnel to be employed in public health can be thought of as a responsibility to be distributed among the various professional components of the academic community—the engineering school assuming responsibility for training of engineers to be employed in public health programs, the nursing school for the training of public health nurses, the medical school for the training of the health officer, and so forth.

The second school of thought—to which many universities and public health leaders have subscribed—envisions professional graduate training in public health as a separate academic discipline and one therefore to be assigned to a separate unit of the university. Under this pedagogical philosophy, a school of public health is to limit its activities to the graduate education of certain professional groups to be employed in public health work. Such a school would have no responsibility for instruction in other parts of the university. Just as the medical faculty limits its teaching to the training of physicians, and the dental faculty to the training of dentists, so the school of public health operating under this philosophy confines its instruction to the preparation of the public

health worker. In the accomplishment of this task it relies solely upon its own resources, and does not draw upon the other parts of the university for instruction in the various disciplines of ancillary interest. Like the medical or dental school, the school of public health is a self-sufficient, somewhat isolated unit, and its students and faculty have little connection with other parts of the parent university, which must make independent provision for the health instruction they seek for their students.

A third philosophy somewhat similarly envisions public health as a distinct unit of the university but one that is university-wide in scope, not only carrying responsibility for the training of its own professional personnel but also providing such instruction as is desired or required to serve the needs of students in other parts of the university. This public health unit, usually identifiable as a school of public health, is an integral part of the total university, contributing its skills to a broad range of student interests and at the same time drawing upon the total resources of the institution to supplement its own contributions. Whether it be identified as a separate school or be merely a department within a larger college or faculty, the public health unit is as integral a part of the university as the department of history or of chemistry, each of which has its own complement of graduate students but at the same time provides instruction for students whose special interests lie elsewhere within the university.

Under the first pattern of organization, which for convenience can be referred to as one of educational isolationism, each unit of the university, through its own staff, provides that instruction which it considers essential or desirable for the development of its own students. This is done without regard to other parts of the university. Unquestionably, under this system there is a certain economy of time and effort; the instruction can be focused narrowly upon the interests and needs of the respective student body

and not be encumbered with course content that is not immediately relevant to their professional development. Each unit of the university can have its own staff chosen because of its concentration in the somewhat narrow field of interest of the particular faculty. The instruction of dental students can be focused solely upon problems pertaining to the maintenance of healthy conditions of the teeth and adjoining soft tissues, while the instruction of veterinary students can be sharply limited to aspects of public health of immediate concern to or influenced by animal health. Such problems as immunization against smallpox or diphtheria, the control of water-borne gastrointestinal infections, or the prevention of coronary heart disease can be omitted as of no immediate concern to either dentists or veterinarians, the former focusing solely on dental problems and the latter on zoonoses and the use of animal products as food for humans. There can be no doubt that this represents an economy of time, but equally certain is the fact that it provides a degree of provincialism hardly suited to prepare the student to assume a role of leadership within the community commensurate with the professional stature that he should enjoy.

Such a system has the further limitation that it provides grossly inadequate preparation for the graduate student who proposes to utilize his professional knowledge in the conduct of public health programs. The physician whose training has been confined to the resources of a medical school or the engineer whose background is limited to study of the physical sciences is ill prepared to deal with the community aspects of health. He may possess a high degree of competence within his narrow field of interest, but he is deprived of the opportunity of seeing this in relation to other disciplines that are of equal importance for the total program of community health. Training of this character leads to the development of uncoordinated and at times conflicting community programs in that the various professional groups fail

to see their respective programs as parts of a far broader community program.

The second pattern, which is one of only a slightly less degree of educational isolationism, envisions a clearly identifiable school of public health that is as separate and self-contained as a medical or dental school. Such a school, relatively isolated from the rest of the university and therefore not drawing upon the instructional resources of other parts of the institution, must provide within its own structure instruction in its own basic subject matter and also in the requisite ancillary disciplines. This means that the school must include in its faculty persons from a broad range of areas of learning, each of whom is expected to focus his interests quite sharply on application to public health.

Such a system has unquestioned advantages as well as disadvantages. It makes possible a significant economy of time in that various basic as well as ancillary topics can be discussed solely as they affect or are important for public health. Sociological or anthropological concepts need be presented only insofar as they have public health significance, immunological or parasitological concepts only as they affect the control of infectious diseases, and so forth. The student can omit basic concepts that have no real importance to his interests. Furthermore, an isolated, self-sufficient school of this character can adjust its schedule to suit its own convenience or needs, for it will not be receiving students from other parts of the university nor will its students be availing themselves of courses offered by other departments or schools. Conformity to an all-university schedule does not always provide the best possible utilization of student time.

There are, however, distinct disadvantages to this pattern. It is definitely more expensive, for the school must duplicate staff and facilities that are available in other parts of the university. Such staff tend to lose their contacts with professional colleagues elsewhere in the university and, if they remain too long within the school of public health,

tend to be professionally narrowed, isolated, and at times even forgotten. Equally significant is the loss to the student, who, because his contacts are limited to students of comparable public health interests, loses the association with students of different interests and points of view, students who more nearly represent the very public whose health is to be protected.

A university containing a school of public health that is so completely isolated and self-sufficient is further faced with the problem of making completely separate provision for that instruction in preventive medicine and public health that is required for various professional groups or for cultural development. This means inevitably either neglect of the subject or the creation of small separate and highly specialized teaching units in each of the component colleges where such instruction is desired. The consequences of this latter alternative have been discussed already.

The third system, which may be labeled one of true university philosophy, envisions a separate unit, namely a school of public health, which is, however, responsible for instruction in health throughout the entire university. Under this pattern of organization, essentially a table of organization based on academic disciplines, the school of public health is responsible not only for training its own students for employment within the area of public health but for instruction in public health for other professional groups within the university and also for instruction in personal and community health for those students for whom such knowledge is a part of cultural rather than professional development.

If this pattern of organization is carried to its logical conclusion, it means that the school of public health can limit itself to courses of instruction in health and must turn to other parts of the university for collateral courses of value to the public health students but without strictly public health content. Thus the school of public health,

in its training of public health personnel, would turn to university departments of anthropology and social work for whatever instruction in those areas seemed desirable. It would not expect the department of anthropology or of social work to develop special courses for the public health students alone. Rather, it would expect to place its public health students in courses of general interest in the fields of anthropology and social work, courses in which the public health student would mix with and come to understand the point of view of students not primarily interested in public health but concentrating in or having a collateral interest in anthropology or social work. The presence of these public health students would serve for better orientation and intellectual stimulus for these other students and for the instructional staff as well, thus providing a broader point of view and understanding on the part of the public health student and a better appreciation of public health points of view by students and faculty in other fields of intellectual endeavor. At the same time, the various courses developed in the school of public health become available for students from other disciplines within the university, thus enriching their respective programs and providing them with a better understanding of public health and its relationship to their interests. The ability of the school to utilize courses from other departments adds immeasurably to the value of the training it can provide its students. A university is an institution of vast intellectual resources that should be available to all students regardless of their school or college registration. By the free utilization of these resources as elective courses, it is possible to develop for each student a far better program of study than is possible if he is confined to the offerings of a school of public health.

The creation of a public health school of this character, serving as a focal point for the training of its own professional group but at the same time providing instruction

throughout the entire university, not only is economical in that it avoids duplication of staff and facilities, but has the advantage of helping to establish health as a subject worthy of academic respect and recognition. Reference has already been made to the lack of respect engendered by the substandard teaching of health in the elementary and secondary schools and in many colleges. These latter are the institutions lacking a strong professionally staffed department or school of public health.

While it must be recognized that, just as many universities do not maintain a medical or a dental school, so many of them will not possess a comprehensive school of public health, this does not preclude the establishment of a health teaching unit that will provide throughout the university whatever instruction in health is needed. Where real schools of public health exist, they constitute the logical unit to provide this comprehensive "across-the-board" instruction. Many universities lacking a school of public health but supporting a medical school can provide therein a department or division of public health to provide instruction to students in other colleges as well as for the medical students. This will provide some assurance of technical competence of staff and at the same time eliminate the need for duplication that would exist if each of the colleges of the university made separate provision for its own needs. The university that lacks a medical school as well as a school of public health will obviously be less adequately served in that it will be less likely to be able to attract and afford competent personnel.

Even here, however, there is real benefit from the creation of a department or unit clearly recognizable as concerned with health and offering whatever instruction in health may be required in various parts of the university. It is a rare and certainly a crippled university that does not have a need for some instruction in a matter of such vital importance to mankind.

Summary

University instruction in health must be provided for three groups of students: (1) those who should have some knowledge of personal and community health as a part of their broad cultural development, compensating in part for the gross inadequacies of their earlier education; (2) those who are enrolled in various professional curricula that require some knowledge of health; and (3) those with prior professional education which must be supplemented with graduate-level instruction to prepare them for public health employment.

Provision for university instruction in health can be made by: (1) assigning to each component of the university responsibility for such instruction for its own students, including graduate instruction of the various professional groups being trained for public health employment; (2) creation of a school of public health which will limit its instruction to graduate instruction of various professional groups to be employed in community health programs, leaving instruction of all other students to their respective colleges as under (1) above; and (3) creation of a school or department of public health responsible for instruction in health for all parts of the university. While each system has its advantages and disadvantages, the third pattern appears to be best suited to the needs of most universities and to possess advantages that far outweigh the disadvantages. □