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ABSTRACT

This report concerns the restructuring of educational programs to meet the nation's need for a more adequate system of delivery of health care. The principal perspective is that of a concerned administrator in higher education not that of one in the health professions. Objectives of the report include a discussion and definition of health; an examination of the changing nature of health care; a study of the role of medicine as compared to that of health; consideration of the nature of medical education and its consequent relation to the university; questions about what constitutes the health professions in the University; suggestions of ways in which the University can provide leadership for the health professions; and indications of the organization and structuring of the various components of the health professions in the university. (MJM)

THE UNIVERSITY AND THE HEALTH PROFESSIONS

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> Health is the second largest single industry in the United States. (Rosenfeld, 1972, p. 15.)
>
> The most serious shortages of professional personnel in any major occupation group in the United States are in the health services. (Carnegie Commission, 1970, p. 13.)
>
> Career choices [of 307,656 entering freshmen] in the health professions continue to increase not only for doctors and dentists, 5.5 percent [from 3.7 in 1968], but also for nurses, 4.7 percent [from 2.7 in 1968], and for other health professions, 7.3 percent [from 4.1 in 1968]. (Higher Education, 1973, p. 4.)

These statements epitomize the enormity of the health professions both as an occupational area and as an increasing major of students in higher education. The responsibility for providing qualified personnel is matter-of-factly assigned to higher education by the Carnegie Commission:

> The Commission believes that the provision of highly skilled health manpower is a special responsibility of higher education. Thus, one of the greatest challenges to higher education in the 1970s is to mobilize its resources to meet the need for expanding the education of professional health manpower. To accomplish this task the nation's medical and dental schools, along with educational institutions training allied health personnel, will need greatly augmented public financial support, but they will also need to give sustained attention to restructuring their educational and service programs to meet the nation's need for a more adequate system of delivery of health care. (Carnegie Commission, 1970, pp. 1, 13.)

This report will concern itself primarily with the latter problem - the restructuring of educational programs to meet this need. The principal perspective is that of a concerned administrator in higher education not that of one in the health professions. For this reason, some of the suggestions

offered below and some of the questions raised may miss the exact mark. But the endeavor is necessary since the responsibility of education, even health education, is larger than that of individual professions. It falls to the educational community at large and more specifically to academic administrators who must fall back on their own understanding of highly complex problems. The objectives of this report are:

To discuss and define health.

To examine the changing nature of health care.

To relate the role of medicine to health.

To consider the nature of medical education and its consequent relation to the University.

To raise questions about what constitutes the "health professions" in the University.

To suggest ways in which the University can provide leadership for the health professions.

To indicate the organization and structuring of the various components of the "health professions" in the University.

These objectives are clearly each and every one the topic of considerable independent study. However, the ultimate goal of this report is to raise questions about approaches and areas for further research, both of which are presented in a somewhat different frame of reference than is usually found. (I plan to comment briefly on the nature of much research currently being produced in these areas by way of comparison.)

Health and Health Care

Without devoting too much space to a definition of health, it is necessary to at least agree upon some broadly defined concept. Perhaps the

best suited to this is that of the World Health Organization: "a state of physical, mental and social well-being." Different groups will tend to be persuaded by their more specific attitudes or approaches but WHO sets the tone. Gerald Besson further elaborates: "Optimal health . . . [derives from] decreasing the threat of the environment or by raising the capability of the host to defend himself." (Besson, 1967, p. 1904.) If we allow Besson to continue, he expands upon this conception -

> In the framework of this definition the profession changes its emphasis. We deal more with people and less with patients. We deal more with health and less with disease. We deal more with human condition and less with formal and fixed pathology. We deal more with sociocultural hazards than with biological ones. We deal more with a continuance of care, less with the episode of sickness. (Besson, 1967, p. 1904.)

As early as 1910, Abraham Flexner, the man whose report on medical education set the model for all medical schools in the United States, wrote of the physician's preventative and health oriented function:

> The physician's function is fast becoming social and preventative, rather than individual and curative. Upon him the society relies to ascertain, and through measures essentially educational to enforce, the conditions that prevent disease and make positively for physical and moral well-being. It goes without saying that this type of doctor is first of all an educated man. (Flexner, 1910, p. 26.)

Besson's conception of optimal health and how to achieve and maintain it through professionals presents an opinion which broadens the role of health care from what has been traditionally espoused to one far more open to the perspective of the social scientist and far more amenible to the notions of

the newly developing allied health professions. The time has arrived for a new definition of health care, thus a reexamination of the health professions. "All health professions must voluntarily engage in a new relationship with each other and on a continuing basis. What is required is tantamount to a genuine interprofessional effort of ecumenic dimensions." (Pellegrino, 1972, p. 213.) Edmund Pellegrino, Vice-President for the Health Science at State University of New York, Stony Brook sees an even greater relationship between health care and education. "The high degrees of interprofessional cooperation and sharing of responsibilities required in modern health care will dictate greater efforts at interprofessional education. The organization of all health professional schools into university health sciences centers already provides settings for common or shared educational programs." (Italics mine) (Pellegrino, 1972, p. 218.) This interprofessional or ecumenic cooperation is even more vital when we note that in addition to medicine and dentistry there are 124 recognized health related fields. (Rosenfeld, 1972, p. 16.) Additionally, for each functioning M.D., we now need thirteen working health professionals with twice that many projected for the next decade. (McTernan, 1972, p. 28.) Clearly, what is required is a plan for an educational program to prepare personnel to function in revised health care systems.

Medicine and Health

Solutions to the production of additional health personnel cannot be offered by simply the addition of medical and dental schools. In his Study on Expanded Medical Education, Dr. Edgar Lee found that "physicians

could not be considered in isolation from dentists, nurses and other health professionals because the effective utilization of manpower in each of these fields affects the requirements of the others." (Lee, 1972, p. i-2.) In fact, while the literature makes it clear that the United States needs more doctors and no one would quibble with this finding however imperfect the methodology and however much the maldistribution of physicians is perceived simply as shortage of physicians, a real answer to the health care needs of the country encompasses a more complex solution than mere concentration on increasing medical schools. V. R. Fuchs finds that "the number of physicians per capita showed no relation at all to health levels." (Fuchs, 1965, p. 25.) Even given more precise and better indices of health, more physicians is not the total solution.

> While the total contribution of physicians to health is undoubtedly very large, it is possible that their marginal contribution is small. It may be that additional dollars spent for paramedical personnel, or education, or public health (broadly conceived), would do more to reduce mortality and infant mortality than would the expenditure of an equivalent sum to increase the supply of physicians. (Fuchs, 1965, p. 25.)

"The evidence, though neither complete nor conclusive, suggests that a rather thorough examination of medical education is in order. Perhaps medical doctors are not closely related to average health levels, and if so, it is time to adjust our thinking and spending accordingly." (Wing, 1972, p. 153.) The point being made is that medical education has always held the role of leadership in the health care delivery system. Whatever the changes in the new system, whatever the new emphases may be, medical education may still provide a role of leadership if it undergoes self-examination.

> Never, perhaps has there been as much need - and as much opportunity - for a rational examination of the total activities of medical schools . . . . That medical education is not the only part of the system being asked to reexamine itself is clear. That, as a major part of the system, it cannot adopt a limited perspective and consider itself to be uninvolved and exempt from examination is, however, also clear. (Fein and Weber, 1971, pp. 220-1.)

Every one of these studies recognizes and acknowledges implicitly or explicitly the major role of the physician in the history of health care. What is needed now is a more comprehensive view, keeping past systems in mind but looking toward tomorrow.

Additional research must be done on the future delivery systems of health care. Future care seems inevitably to be in the form of teams of health care personnel, rather than being based primarily on the physician. Just who and what will comprise these teams need to be determined. Studies need to be designed to investigate the staffing needs of health care teams. These results can then be translated back into "production quotas" for the health professions and more specifically into educational programs - effecting curricular changes, research needs, teaching goals, and development of particular schools such as medicine, or public health or nursing, etc.

Medical Education

As mentioned above, the 1910 report to the Carnegie Foundation by Abraham Flexner established the model adopted by medical schools in this country. Effectively Flexner's report precepitated and finally brought about the cessation of the "commercial medical school" and the development

of a new order of medical education within the "general system of schools of our nation." (Flexner, 1910, p. xvi.)

Clark Kerr describes the effect thus:

> Flexner minced no words . . . His scathing report aroused broad concern and inspired a revolution in the teaching of medicine in America. He recommended that 120 of the then existing medical schools [there were 155 in the United States and Canada] be closed as inadequate, and he identified them by name. As a matter of fact, nearly all of them did disappear, and in substantial part, because of his report. (Flexner, 1968, p. x.)

The Flexner model for medical education is based on the foundation of research.

> Educationally, then, research is required of the medical faculty because only research will keep teachers in condition. (Flexner, 1910, p. 56.)

The curriculum itself is divided into two, laboratory sciences and clinical practice. However, the need for both aspects of the curriculum to be closely related brought about the situation of the self-contained medical school in which duplication of science teaching is a major result.

> The study of medicine must center around disease in concrete, individual forms. The ease with which the clinics and laboratories may there illuminate each other is an uncontestable advantage to both. It is difficult to imagine effective teaching of pathology, for example, under conditions where the operating-room, the medical clinic, and the autopsy do not constantly contribute specimens and propound queries to the laboratory; and assuredly the teaching of medicine and surgery cannot proceed intelligently without constant intercourse with the laboratories. Any disintegration of hospitals and laboratories is harmful to both. . . . (Flexner, 1910, p. 72.)

Given this emphasis, the Flexner model produces two weaknesses: duplication of science efforts, concentration on and concern for health care within but avoidance of health care outside the university. The first problem is further intensified when we recognize that medical schools are no longer solely dedicated to the training of physicians. They also train post graduate students at all levels (masters, doctoral and post doctoral) in the basic science areas in substantial and increasing numbers. The "teaching responsibilities now include a substantial proportion (over 40 percent) of the education of interns and residents in the United States, primarily for subsequent specialty practice; the education of graduate academic students who are principally destined to receive Ph.D.'s in the basic medical sciences; the education of post-doctoral students who are allied to the two previous categories; the continuing education of practitioners; and the education of some students in other professional schools." (Wing, 1971, p. 76.) Additionally, preparation of personnel for medical management and medical education has enlarged medical education appreciably without enlarging the number of practicing physicians at an equal rate.

With fully developed science programs, medical schools turn toward the federal government as a source of funds for research. In 1964-65 medical schools received 342.9 millions for sponsored research (excluding overhead) accounting for "just over half of the total medical school expenditures in 1964-65." (Wing, 1971, pp. 85, 86.) Flexner's model has indeed created massive research centers out of many medical schools. At the same time that the basic sciences have been developed in the medical

school, they continue to have a part in the university as a whole. The relationship of the sponsored research to the program in the medical school has been examined by Wing and Blumberg. They find -

> Sponsored research does not seem to be tied to medical undergraduate programs in any specific way. . . . undergraduate program size is relatively independent of other educational and research programs at medical schools. . . . there are no medical schools which require original research of candidates for the M.D. degree, and the research-oriented schools already produce larger proportions of basic science students. . . . the ratio of basic science students to medical undergraduates is about 1.4 at the research-oriented (large) medical schools and about 1.7 at the non-research-oriented (small) schools. (Wing, 1971, pp. 87, 92, 94.)

Ultimately they found,

> a very marked positive correlation between sponsored research expenditures at medical schools and the proportion of alumni from these schools who subsequently became full-time researchers or medical school faculty . . . . it suggests that continued heavy support of sponsored research in medical schools may lead to a decrease in the number of M.D. graduates wishing to enter practice. (Wing, 1971, p. 97.)

The implications of these findings are clear. While research is necessary for science and for graduate students in medicine we still need to determine how much is needed to produce an M.D. or, more broadly, the question to ask is whether a closer relationship between the science program in medicine and the science program in the university would not benefit both at the same time it would not harm the undergraduate M.D. program.

In fact, coupling this with the newer programs developing in law and

medicine, engineering and medicine, sociology, economics, etc. and with the newer models of medical education developing, it becomes very significant that we reexamine the role of basic sciences in the medical school. The integrated science model is reported by the Carnegie Commission places all basic science and social science instruction on the Main Campus. This leaves the medical school with the task of clinical instruction (as in England where medical schools are basically teaching hospitals). Further, the divergence in curricula is clearly necessary between a course in anatomical techniques in veterinary medicine and the medical school; between a course in pharmacology in medicine and one in the school of pharmacy. But one wonders at the amount of core material being duplicated that could be adequately presented as just that - basic core material. Examples well beyond these two exist suggesting that concepts of core curriculum in all health areas be investigated as well as combination of some sciences with the Main Campus.

Finally, the second alternative to the Flexner research model is the health care delivery model,

> Where the medical school, in addition to training, does research in health care delivery, advises local hospitals and health authorities, works with community colleges and comprehensive colleges on the training of allied health personnel, carries on continuing education for health personnel, and generally orients itself to external service. (Carnegie Commission, 1970, p. 4.)

This alternative moves in the direction of the combined or integrated medical approach with its emphases on health care delivery.

Whatever the outcome of research on new models and patterns for

medical education, one thing is evident - a diversity is necessary. The need which once existed for the Flexner approach no longer prevails. New developments in health care delivery, in the health sciences, in the quality of science education in the university have made integrated, ecumenic approaches not only desirable but necessary both for the betterment of health care service and for the conceptual expansion of medical education.

Health Professions

Traditionally certain schools have subsumed under the rubric "health professions": Medicine, dentistry, nursing, pharmacy, optometry, and osteopathy. The latter three have been accepted more slowly and old school thinking in medicine still finds some difficulty in accepting optometry and osteopathy as legitimate health sciences. But by and large, these six are clustered together as health sciences in universities which offer them. Without question, the new schools of public health with their emphases on environment, industry, community, and preventive medicine are included as part of the health professions. Because of its closeness in kind to the educational experience of medicine, veterinary medicine is included whenever present. This leaves the entire field often collectively labelled allied health.

The allied health professions need some discussion on their own. When we speak of health professions, we do not mean all workers in health care; rather we include those workers whose positions require technical training and possibly a four year college degree. (Some health occupations require a two year associate degree.) Further, when we speak of allied

health professions, we include by some counts as many as 124 health related fields requiring technical training and some post secondary education of a more general nature. This group of allied health or health related professions include the more well known fields of physical and occupational therapy, industrial hygiene, hospital administration, medical technology, medical record librarians, x-ray technology, dietetics, nutrition, oral hygiene, dental assisting, as well as some very new specialties in renal technology, para-medical and physician assisting programs, laboratory research technologists, hemetologists, therapists in areas besides physical or occupational, such as radiation, hospital attendants. Secondary areas which are supportive of the various health professions but do not yet require health education have grown rapidly with various needs and new discoveries: Animal handling (for both veterinary and medical schools), general laboratory assistants, atomic energy and radiation specialists, etc. These occupations are necessary to but not included in the health professions. Thus allied health is more directly related to health care delivery and patient care or to directly assisting the primary health professional in his/her research or patient care.

If as the suggestion has been made we begin to look at the object of the health care delivery system as less of a formal "patient" and more as a total person who is helped to better and more constructively cope with the existing environment, we might want to consider other programs as having an integral relationship to the health care delivery system. A patient-oriented

system far more than a disease-oriented system will be amenable to the inclusion in the health care team of those professions whose background is less science centered and more sociologically and pyschologically centered. Thus, significant participation on the health team must be accorded clinicaly psychology, speech and hearing therapy, psychiatric social work, and medical social work. These professions are not accorded the same status as any of those, including allied health fields, in primary health care professions. This is obviously the result of the stronghold held by medicine with its heavy science orientation. However, census figures for 1960 show that one percent of health care workers fall into these categories. This represents 23,744 jobs. The numbers may have more meaning when viewed in comparison to other health occupations. Dentists account for 4.3 percent or 86,887 positions; optometrists .6 percent or 16,205; psychiatrists and neurologists .6 percent or 11, 185; physicians and surgeons (M.D. and D.O.) only 11.0 percent, 222,567. (Weiss, 1968, pp. 48-64.) These professions then include a substantial number of persons working within a total health care delivery system. Their contribution cannot be slighted. In fact, their incorporation into the health professions as accepted members of the team is dependent upon a broadened and more encompassing view of the future of health care.

> Although there is a disagreement about the precise nature of the changes that are likely to occur, there is agreement that change is inevitable and imperative, and there is some consensus about its general outlines. There will be much greater empahses on achieving effective functioning of true health care teams. . . . There will be a shift to greater emphasis on care outside the hospital in a wider variety of health care facilities than has been available . . . . greater attention will be paid to preventive epidemiology, population problems, control of water and air

> pollution, environmental sound levels, and related problems. [Note that this means a greater connection to Engineering fields.] New therapeutic techniques will require new technologies, new kinds of trained personnel, and cooperation of many individuals as a closely integrated unit. [Italics mine] The education, service and research functions of medical and dental schools will become more effectively oriented to the shift from a nonsystem to a system of health care delivery. (Carnegie Commission, 1970, pp. 31-33.)

University Leadership

The thrust of all the above remarks, suggestions, and questions is to place the responsibility for leadership in the hands of higher education. Now, when manpower needs are growing (evidenced in all studies on needs) in all areas of the health professions, there is an opportunity for effective, creative leadership to take hold.

> The university medical centers have become loci of sophisticated diagnosis and treatment. Their influence extends to the practioners of the surrounding communities, resulting in a general increase in the quality of health care in some areas. But the centers' effect on the quality of care in their communities is far less significant than it could be if an effective health care delivery system became a primary element of medical center concern. (Carnegie Commission, 1970, p. 25.)

Some suggestions have already been made about what needs to be done. These fall into the area of research and careful revision of curricula. As Edmund Pellegrino notes, "the time is propitious for a continuing, cooperative and mutually acceptable realignment of tasks existing among health professions, and a definition of new professions is needed." (Pellegrino, 1972, p. 217.) Following from this will be a new design for educational programs. The increased demand for delivery in teams will coerce greater interprofessional

cooperation and greater interprofessional education which will in turn necessitate closer relationship among various professions at the training level.

More sharing of curricula, classrooms and lectures could provide a start at this cooperation. Of necessity it will effect curricula revision allowing for a reexamination of programs and hopefully even a financial saving.

Greater flexibility in educational programs without destruction of program quality will enhance opportunities for women and minorities to enter the more traditionally hostile but higher prestige fields. Thus health education can become responsive to societal needs on more than one level.

Greater curricular flexibility (often coming only after considered thought and possibly some research) should be designed also with a goal for professional mobility. As long as a hierarchical relationship exists among the various health care personnel, there will always be those who want to move.

Considerable continuing education programs need to be created and sustained - to keep professionals up to date with the latest technological developments and techniques and to bring back those who have taken time out of their careers.

Close cooperation by the health center of the university and health programs in other post-secondary institutions, including possible sharing of faculty and physical resources should be explored and maintained, especially

in associate and technical programs of allied health.

"Careful integration of instruction in the biomedical sciences and social sciences between university health science centers and departments on major university campuses should be achieved." (Carnegie Commission, 1970, p. 93.)

Extensive research into alternative systems of health care delivery should be conducted. This research should be approached by teams from various disciplines within the university-sociology, economics, administration, engineering, psychology, etc. in cooperation with teams from the various health areas to insure rich perspectives.

Greater involvement between the university health care delivery system and the various community agencies (including the obvious traditional ones such as hospitals) should be explored as a means for clinical experiences for the entire range of health students. This involvement can also pursue a strong emphasis on public education for preventive medicine. It will also serve to bring community, university and health sciences into a closer relationship of cooperative effort.

Different modes of training physicians ought to be explored as was suggested under Medical Education especially with regard to biomedical sciences, basic sciences and even clinical experiences before necessary expansion and development of medical schools occurs. Possibilities of apprenticeship periods for interns and residents might be investigated with physicians in private practice and community agencies rather than strictly teaching hospitals.

Greater concentration on the teaching in expanded undergraduate health programs might encourage more students to enter clinical practice without sacrificing any physicians interested in research.

Deliberately left untouched has been financing. This is a complete area of research in and of itself and the university might well serve itself by utilizing its talents to work out plans for new methods of financing health education.

Finally, universities should serve in a major role to help determine the location of new health education centers, whatever their nature be: Regional centers, area health education centers, university health science centers, district health education centers, etc.

These are but a few recommendations that university health science areas could adopt to provide aggressive and meaningful leadership. They cover both societal needs and innovation within the university structure itself. Scattered throughout the Carnegie Commission Report of 1970 are many other recommendations which if adopted would also bring about a leadership role for the health sciences. They are recommendations which should be given due consideration and cover additional areas not treated here, as well as provide greater depth not possible in this report.

University Organization

Assuming for the moment that only a minimal number of the above changes are approached, I find that major attitudinal change will nonetheless be necessary within universities. Additionally, structural or administrative

changes will have to be effected. The focus of many of these suggestions is toward greater planning in existing as well as emerging and unborn programs. The combined effect of these suggestions is to greatly emphasize the public service role of the university, increase the research on health delivery systems and involve the university more actively in the future of the national health delivery systems. Internal change will be major given curricular changes, development of educational programs for new health professions, and the interrelations of these to each other and the university at large. All of this implies the need for a responsive administration. The first recommendation then would be the creation of a position within the health sciences which would provide for the integration within the health sciences and for community planning functions noted above. Such a position could exist only at the top level of administrative hierarchy. Thus, it is probably quite necessary to appoint a vice-president for the health sciences.

> This . . . [appointment] could improve integration of academic programs, permit better program planning and budgeting and help foster a closer integration of undergraduate and professional programs in the health sciences. (P.R. Lee, 1972, p. 28.)

This position is endorsed by those few reports which consider the administrative structure of the health sciences however minimally - the Carnegie Commission Report of 1970 and the Josiah Macy Jr. Foundation Report of 1971. The Macy Foundation notes "the principal roles of the vice-president are those of coordinator, arbitrator, long range planner, director of public relations, and innovator and guardian of center wide policies." (p.23.) Clearly, differences of perception exist regarding this position. But

clearly too a concensus of opinion regarding the need for a centralized, all encompassing position dealing with internal and external planning exists. The extent of consensus is clear in the 1971 survey of chief administrative officers of university medical centers. The first administrative element necessary to the operation of a university medical center of the near future (1980) is: "A chief administrative office of the UMC [University Medical Center] directly acccuntable to the university president with immediate line authority over the units comprising the UMC." (Elder, 1971, p. 37.) The basic assumption here, of course, is that the health sciences should be an integral part of the university in their functioning.

The line of authority from the vice-president to the rest of the university needs some discussion. Since a single direct line to the president carries with it the deep potential for divisiveness in that it effectively severs the health sciences from the rest of the university and creates a mini-health professions institution of higher education, this alternative should be avoided. All prior discussion has been toward integration rather than separatism, especially with academic programs. Thus, while it is necessary to have a line of authority from the vice-president directly to the president, it is also necessary to have a line directly to the provost or vice-president for Academic Affairs. A necessarily close cooperation must exist between these two officials. However, to preserve the academic integrity of the university as a whole and to add stature to the health professions academically, the chief academic officer of the university must retain final authority on academic matters including: Program/curriculum change, appointment and tenure of

faculty, educational requirements for students. Again, without close cooperation, the potential for division can emerge as a reality and split the university. With cooperative effort, more and more can be effected to create an integrated academic approach to the education of health professionals and to the production of valuable research.

The lines of authority reaching upward to the vice-president have to be dependent upon what school or colleges (used here interchangeably) are contained within the health areas. However, each area reporting should be autonomous and reporting through its own dean. Thus, allied health should be represented by a dean, equal to medicine, nursing, dentistry, public health, etc. Although a major force of this report has been toward integration, there is a difference between integration and submission. Any structure less than a school/college with its own dean reporting directly to the vice-president will create animosities and negative productivity as is evident in existing situations. The degree of independence necessary to promote positive and constructive negotiations towards cooperative integration comes from a self-perception of equality. While somewhat artificial, the equal treatment of administrative units by equal appointments of deans goes a long way toward creating an internal and an external sense of equality.

As mentioned above, the school of social work can be viewed as an important part of the health sciences. Without making this school directly responsible to the vice-president for health, it is possible to have direct and serious communication take place. This is especially necessary when the hospital situation is under consideration. Clinical psychology, itself a subunit of the department of psychology, has as strong a need to be involved in

the hospital though in its relationship to the other schools of the health professions it is in a rather tenuous position. Possibly most comparable in size and functioning to an individual allied health profession, this area definitely ought to have some lines of communication open to the vice-president, but they could be less formal than those of a total school.

A final major consideration of this report is the relationship of the university hospital(s) to the health sciences. A short paragraph cannot do justice to this problem. But, certain problem areas can be pointed out. An obvious and basic function of the hospital is to provide a clinical setting for students in the health complex. (This description in no way intends casualness with regard to the patient care provided.) Traditionally, the dean of the school of medicine has had direct supervision over this function of the hospital; in fact, many have had direct control of the hospital itself. Even today there are deans of medicine who feel strongly that university hospitals should report directly to them. Actually, "Today three out of four hospital directors report to a vice president." (Macy, 1971, p. 25.) Since the hospital director has the direct responsibility for the business management of the hospital the vice-president is probably the best office to which the hospital can report. But this answers only part of the question. Every school within the health sciences has need for a clinical outlet. While the university hospital is far too small to provide that service to all students, this need is one that must be determined by all participants, not just the medical school. Thus, one solution which presents itself as a potential is the creation of an integrated coordinating board or board of

trustees. This board would contain representatives from all areas (including social work and clinical psychology) and would be responsible for coordinating the teaching role of the hospital with the needs of the schools. Another group, also comprised of representatives from all areas might be appointed with the express purpose of planning for the clinical needs of all students. This would provide a plan for the vice-president in establishing community affiliations. The point is though that there must be equal access to planning the use of the hospital. Clinical experience is a need which is shared by all areas. To relegate this to the school of medicine has a patronizing effect on other schools which might be prevented from the start by means of a coordinating board.

Available Literature

Beginning this report with an idea of discussing the relationship between the university and the health professions, I sought literature on that topic. Almost nothing has been published discussing either this relationship directly or the ways in which the health professions might best be organized within a university. The Carnegie Commission and Josiah Macy, Jr. Foundation reports are probably the only two with anything direct to say. The Flder Dissertation on Missions and Administration provides substantial corrorborating and sometimes explanatory data in presenting the self-perceptions of university medical centers. (See Appendices A and B.)

The most extensive literature, though only indirectly profitable for this study turned out to be that discussing human power needs in health areas. The basic literature in this area establishes the shortage of

physicians and other professionals and emphasizes the need for developing new schools and centers. This literature pointed out that the future of health care would have to lie with developing of systems of delivery which in turn would affect the product of schools which, of course, places the burden back on education. Finally, the most interesting and most useful literature, again indirectly so, was that devoted to cost-benefit analysis. From this literature came useful insights otherwise obscured by present practice. Selective materials on systems, systems analysis, planning, and planning models served as background material to direct my perspective. Ultimately, the most valuable resource was direct conversations with deans, faculty, university administrators, and students in the health professions.

APPENDIX A

University Medical Center Missions for 1980

In 1968 University Medical Center Administrators formed the Organization of University Health Center Administrators, Inc. (OUHCA). The membership for September 1970 ranged throughout the United States (including Puerto Rico) and Canada and numbered seventy-one. This organization subsequently changed its name in August 1971 to Association of Academic Health Centers (AAHC).

In May 1971, Owen Elder, Jr. undertook a survey of the U. S. members of OUCHA to determine "the missions of the university medical center of 1980" (p. 51). (A university medical center, UMC, is defined as "the unit of the university which includes a College of Medicine and at least one additional college for the education of health professionals." (Elder, 1971, p. 1.) Since the fourteen missions presented for ranking on the questionnaire were culled from available literature, and since only eight other missions were added by informants, the list represents a rather comprehensive as well as accurate description of the missions medical center see themselves fulfilling in 1980. Of the fourteen presented, three were rejected as not being the missions of the UMC in 1980.

Fifty-one of sixty-six U.S. members answered this questionnaire. These missions are included below (in descending order of importance) to indicate the self-perceptions of UMCs and for comparison with material

included in the body of this report.

1. Train physicians and dentists to meet the needs of a given area.

2. Deliver patient care of the types needed in the teaching programs of the UMC schools.

3. Train all types of health manpower to meet the needs of a given area.

4. Conduct basic research in the bio-medical sciences.

5. Conduct applied research in the delivery of health care.

6. Utilize the highly specialized expertise of the UMC faculty to provide health care to referral patients.

7. Provide continuing education programs for physicians and dentists to meet the needs of a given area.

8. Provide consultation service to health care facilities, community health organizations, comprehensive health planning agencies, and institutions which train health manpower in a given area.

9. Provide multi-level, inter-school clinical team training for students in UMC schools in those combinations in which they will later work in actual practice.

10. Conduct applied research on the methods of training health manpower.

11. Provide continuing education programs for all types of health manpower to meet the needs of a given area.

The following three were rejected:

1. Maintain a balance of racial, ethnic and social-economic backgrounds in the student populations of UMC schools representative of that of the area served by the UMC.

2. Deliver comprehensive health care to meet the needs of the community immediately surrounding the UMC.

3. Perform general social service, not directly related to health care, to meet the needs of the community immediately surrounding the UMC.

(Elder, 1971, pp. 36-37.)

However, note that the first in the list of rejections conflicts to some extent with the fifteenth element in Appendix B.

APPENDIX B

Administration of UMC in 1980

In July 1971, Owen Elder, Jr. undertook a second survey of the OUHCA. This time his questionnaire included twenty-two statements. This questionnaire was designed to determine what administrative elements were important in order to accomplish the eleven missions established by the first questionnaire. The twenty are listed below in descending order of importance as established by the survey:

1. A chief administrative officer of the UMC directly accountable to the university president with immediate line authority over the units comprising the UMC.

2. A mechanism for deriving a clearly understood statement of the costs of each of the programs of the UMC and their means of financial support.

3. A medical center council composed of the deans of the UMC schools and directors of patient care units to advise the chief administrative officer of the UMC.

4. Organizational and procedural arrangements that will provide an interface between the administrative and the instructional, research, and clinical aspects of problem solving in the UMC.

5. Organization and administration of the UMC based on a comprehensive philosophy of management.

6. Active participation by the governing body and administration of the UMC in the development of public policy at the national, regional, state and local levels.

7. Broadly representative, medical center wide planning committees to review periodically the instruction, research and service programs of the UMC in relation to its missions as well as those of the parent university.

8. Operation of the patient care and health service programs of the UMC to serve comprehensively all of the teaching programs.

9. A comprehensive public relations program for the UMC.

10. A UMC organizational structure based upon functions to be performed rather than on traditional disciplines.

11. A mechanism for conducting functional analyses of the various aspects of health care in order to redefine the roles of health professionals and practitioners.

12. A mechanism for exerting pressure upon federal, state and local governments, private foundations, corporations, and wealthy individuals to acquire financial support that is consistent with the missions performed by the UMC.

13. Utilization of experts available in the university (within and without the UMC) as interdisciplinary task forces to engage in research on the broad aspects of health.

14. A mechanism for determining the health manpower needs of the area served by the UMC.

15. Recruitment of students from lower socio-economic and minority group backgrounds for the UMC, especially for medical and dental schools.

16. Operation of clinical facilities to provide comprehensive health care to specified populations.

17. A management development program for administrators at all levels in the UMC.

18. Educational specialists at the UMC and school levels to advise on curriculum, methods, etc.

19. Utilization of operations research techniques for planning and control in the UMC.

20. Representation of the broad constituencies served by the university medical center (UMC) in the membership of its governing broad and visiting committees.

(Elder, 1971, pp. 37-38.)

Note that number fifteen is a variation of the totally rejected mission in Appendix A.

The organization and administration of the UMC of 1980 reflect many of the ideas presented in the body of this report. Chief among administrative elements is the top officer heading the entire UMC or health sciences. Elder points out that as late as the mid-1950's there were very few universities with a single head of an area designated health sciences or "medical center." This is a very recent and quite rapid development. In fact, the Macy Report of 1971 recommends (as does P. R. Lee and others) that a chief officer be so appointed. That this position is a necessity for accomplishing the missions of 1980 is even further proof of its significance, especially when we recognize that many of the eleven missions for 1980 are current missions of UMCs.

A 1969 survey of the membership of OUHCA reveals that of thirty-eight responses of members who are NOT also deans of their medical schools, 15 are vice president, 6 chancellor, 4 provost, 1 director, 1 vice-chancellor and 2 coordinator. (Eight are from non-university groups.) Of these, the bulk (twenty-six) assumed their positions in 1965 or later. (Elder, 1971, pp. 62-63.) So the concept of a chief administrator of the health sciences/professions or UMC is quite new but also very strong.

A new concept, one likely to emerge from the type of curriculum change and emphases on the team approach to health care delivery (see Mission 9,

Appendix A) is point 11: organizational structure along functional lines. This structure will also derive from functional analyses of the many aspects of health care. Such analyses will no doubt precipitate a redefinition of roles and functions of the professionals delivering health care which in turn points back to the education of new personnel and alternative means of educating personnel thus other organizational structures. The process may seem circular but more precisely it follows a spiral climb, never quite slipping back to the starting point, hopefully utilizing the past for growth and not mere repetition as in the circular process.

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