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PLANNING THE HEALTH SCIENCES WITHIN A UNIVERSITY CONTEXT: THE HEALTH SCIENCES CENTER AT STONY BROOK

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INTRODUCTION

There is a serious discontinuity in values today between professional education and social purpose. A major academic challenge in all the health sciences is to diminish this discontinuity by the design of programs which are based in science and technology but are also responsive to human values and social needs. All of its deficiencies notwithstanding, the university is our major social instrument for the resolution of this dilemma, and it is only within this context that the health sciences can elaborate their particular solutions.

A new institution like ours has the special responsibility of selecting from the large array of unanswered questions before the health professions those which seem most urgently in need of new solutions. It is my purpose to describe, in general terms,—since our development state is still embryonic—the physiognomy of the choices we are making at Stony Brook. The specific subject of this symposium, Education in the Health Related Professions, will be addressed by describing the academic environment within which these professions will exist at our institution.

The Health Sciences Center at Stony Brook is being developed on the new campus of the State University of New York at Stony Brook on Long Island, some 50 miles from New York City. The university campus is one of four university centers in the 64-campus system which comprises the State University of New York, itself a newcomer to the field of public higher education.

The New Health Sciences Center will be fourth in the SUNY system, but the first that the State of New York has established de novo. The Health Sciences Centers at Buffalo, Upstate (Syracuse) and Downstate (Brooklyn) were functioning institutions under private auspices before the State assumed responsibility for their operation.

The decision to develop a new Health Sciences Center in New York State derived from a report to Governor Rockefeller made in 1963 under the chairmanship of Malcolm Muir.[1] This report assessed the health needs of the immediate future in New York State, and made a series of recommendations pertinent to planning to meet those needs.

The Health Sciences Center at Stony Brook was conceived as an early and essential step in meeting the need for comprehensive health care. The Muir Report is not a detailed blueprint, but a statement of the relevant principles which should characterize a new center. It places considerable emphasis on the teaching and practice of a comprehensive approach to health care. This docu-

ment serves our planning staff as a general outline of the mandate before us. It is our task to design a comprehensive center which will implement this mandate in specific programs of patient care, teaching and research.

As presently conceived, the Health Sciences Center will consist of Colleges of Medicine, Dentistry, Nursing, Allied Health, Social Work, a Biomedical Library, University Hospital and Veterans Administration Hospital. These units are to be integrated administratively, academically and architecturally. Academic programs will cover the full range of basic and professional studies from graduate programs in the biological sciences to professional and postdoctoral and advanced clinical training and social and community medicine. At full operation three to four thousand full-time students will be enrolled, and perhaps an equal number in continuing education. The first classes will be initiated in 1971 or 1972, depending upon the availability of physical facilities. Bachelor, master and doctoral degrees will be conferred. All programs will be closely interdigitated with the associate degree programs already underway in the health professions in the community colleges in the SUNY system.

Each of the five component colleges in the Health Sciences Center will be guided by a set of common commitments, although each will express those commitments in terms most relevant to its mission. These commitments are the skeletal framework underpinning the design of all academic programs as well as the architectural expression of those programs. They constitute our responses to the crucial problems in the health sciences. They define a set of priorities which we hope will create a unity of perspective for each program.

Some Academic Commitments

Health Sciences and The University

A unique feature at Stony Brook is the fact that the Health Sciences Center will come into being concurrently with the development of its parent university and on the same campus. A ready-made commitment, therefore, is to capitalize on this fortuitous event to the mutual advantage of both the Health Sciences and the University.

An oft-repeated truism in the rhetoric of medical educators is that all the health professions should be developed as integral parts of the university. This may in actuality be mostly an instance of wish fulfillment by free assertion. For, in reality the geographic, cultural and intellectual lack of cohesion between a parent university and its medical center are often enormous. In this country it is more accurate to describe the relationship as a nascent one, urgently in need of conscious cultivation and made up largely of unfulfilled possibilities.

The medical school, it is true, has for some time been included in the university family, though still uneasily. The other health professions are as yet only approaching academic acceptance. Dentistry, pharmacy and nursing are still too often enclaves outside the pale of academic acceptability, despite being formally under university aegis. Schools of the health-related professions as the most recent newcomers to the university scene are, however, the most difficult for university faculties to comprehend.

It is not my purpose here to analyze the reasons for the unsettled state of

these relationships; I have done this elsewhere.[2] Rather, I will assert my thesis at the outset: The social, political and scientific demands made now, and to be made in the remainder of this century on the health professions, will impel them to develop as true university disciplines. Only two directions are open to a Health Sciences Center today: to become more integrally a part of the university, or to develop most of the university disciplines around the health sciences—to become a "medical university." Both alternatives are viable; both deserve the most vigorous exploration; both are probably essential to preparing the kinds of health professionals the 21st Century will demand.

At the State University of New York at Stony Brook we have deliberately chosen one of these paths, that of a comprehensive Health Sciences Center which will be an integral part of the general university, and which will use that relationship to enhance its own concentration on the totality of dimensions that comprise the word "health." We are convinced that the health sciences cannot flourish without the university disciplines. However, we believe equally that the university cannot fulfill its responsibilities to society or enrich its own life without those existential dimensions afforded it by the health sciences.

At Stony Brook we have the almost unique advantages of physical proximity, of concurrent growth and cooperative planning and of conscious efforts to interrelate the Health Sciences Center and a new University. Extensive planning is already underway to develop the interfaces between the Health Sciences Center and the Departments of Biology, Social Sciences and Humanities and the College of Engineering. Single university departments, joint appointments, joint graduate programs, availability of university courses to medical students and other mechanisms are already being established to facilitate this objective.

All departments administratively in the Health Sciences Center will have responsibilities for undergraduate as well as graduate and continuing education. Component colleges in the health sciences will depend upon university departments to provide the nonprofessional instruction requisite in their programs. Conversely, suitable courses in the health sciences that focus on practical experiences will be offered to university students.

Special efforts are being made to integrate the teaching and research programs of the health sciences with the university's Department of Biology. Here, too, physical proximity, a shared Biomedical Library, joint graduate programs, avoidance of duplication of departments, mutual participation in curricular development and preprofessional counseling are some mechanisms we are using to encourage a closer working relationship. The university Departments of Developmental Biology, Genetics, Biochemistry, and Ecology will participate in teaching of the health professions, although they are administratively responsible to a Provost for Biology. On the other hand, Physiology, Anatomical Sciences, Microbiology, and Pharmacology are organized administratively in the Health Sciences but carry responsibility for all university teaching in their disciplines. Moreover, the sciences basic to medicine are expected to serve all the health professions as well as medicine. To make this clear, they will be organized under a Dean for Basic Sciences with direct administrative responsibility to the Vice President for the Health Sciences.

The necessity for this close working relationship among the physical and biological sciences and the health sciences is accepted relatively easily. The equal dependence of the health sciences on the university departments in the social sciences is still largely unrecognized in most institutions. Yet, major developments in the health sciences as well as in the social sciences are not possible without equally viable cooperative efforts between them.

Because of the special needs of the health sciences for closer contact with the social sciences, we are developing a group of social scientists with primary appointments and commitments to the health sciences. They must first be well grounded in their own disciplines and acceptable to those disciplines for appointment and participation in graduate programs. This group will consist of sociologists, social psychologists, social and cultural anthropologists, political scientists and a social historian. They will participate in planning the medical curriculum and also develop courses and seminars designed to introduce all students in the health sciences to the principles of social science. A unique opportunity will thus be provided to influence the development of the philosophy of patient care and clinical teaching in our emergent institution.

Such a group will have a close identification with all programs in the Health Sciences Center but not with any particular college in the Center. They will use the patient care facilities of the Health Sciences Center as laboratories for their own studies, encourage interrelationships between medicine and the university departments in the social sciences. Graduate training programs for physicians and social scientists should provide a cadre of skilled professionals for the future who can work cooperatively on some of society's most urgent problems.

The interfaces between medicine and the humanities must be as well developed as those between the physical and biological sciences and the social sciences. This boundary might well be the most important of all for the future of medicine and the health professions. Future medicine will certainly be practiced within the framework of a highly organized, highly institutionalized complex system of institutions and persons. Such an organization is essential if the maximum benefits of scientific medicine are to be available to the largest number of people. It will of necessity emphasize specialization, the fragmentation and analysis if the patient's problem and the application of highly specific diagnostic and therapeutic techniques.

To balance these trends, there must be the concomitant development of a high regard for personal and human values on the part of all those involved in future health professions and institutions. Simple exposure to courses in the humanities is not in itself a sufficient condition for producing compassionate or socially responsive physicians or students. Nonetheless, the possibility of achieving these ends through inculcation of the attitudes of mind fostered by certain of the humanities is much in need of exploration. Such attitudes are most effective if interwoven with clinical education at the bedside and in the clinic, those points at which the student sees the concrete problem and is himself involved in its resolution.

The members of the humanities group, like those in the social sciences, should carry appointments in their own university disciplines. They would, however, be paid from the Health Sciences Center budget, and constitute a division within the Health Sciences working with all of its component colleges and faculties. This group would include, at a minimum, philosophers, theologians, ethicians and historians of medicine and science. In addition, the participation of lawyers and architects would be highly desirable.

The social sciences and humanities groups I have just described would have several clear responsibilities arising out of their commitment to students and problems in the health sciences: (1) They should use the specific clinical experiences of students in the health sciences and professions as a basis for consideration of larger questions of ethics, philosophy and history. In this way, health sciences students can be exposed to a liberal attitude of mind toward

their own work and enlarge their appreciation of the larger implications of their professional acts. (2) They should participate with the faculty of the Health Sciences in developing policies on such broad issues as human experimentation, the social responsibilities of the health professions, the moral problems of medical practice, definition of value systems, the relations of cultural and medical history, etc. (3) They should serve as a point of contact with the social sciences and humanities faculties in the university to allow a freer interchange of students and faculty than is ordinarily encouraged in a Health Sciences Center. (4) They should stimulate graduate studies and programs in which philosophical, ethical, theological, social and other questions can be investigated in the context of the existential laboratory of a Health Sciences Center.

Personal experiences in attempting to draw upon the presumed liberal education of medical students have convinced me that, for the majority, a premedical liberal education has few lasting effects. It must be reinforced in the context of the specific problems of daily life in hospital and clinic. When this is done, a liberal education can be more securely founded, will prove more relevant and will more surely affect the physician's behavior and style of life. We look to our social sciences and humanities group as well as to the main university departments to assist in this liberal education which can occur concurrently with medical education.

The Health Sciences Center as a Viable Entity

A second major commitment at Stony Brook is to develop a viable conception of the Health Sciences Center as a cooperative enterprise from the outset. There are many medical centers, but in few of them have all the health sciences and professions been developed in a genuinely unified and cooperative way. In fact, a major deterrent to the delivery of optimal medical care today is a failure of communication and lack of precise definition of functions among the steadily increasing numbers of health professions. Characteristically, these professions carry out their educational programs in isolation from each other. It is essential that medicine, dentistry, nursing and the allied health professions develop their programs in close collaboration from the outset. The Health Sciences Center is the only instrument whereby our health professions can jointly examine the health needs of patients and society, determine what roles must be developed to meet those needs, and devise new and more effective ways to do so. Public interest in health is too high to permit dalliance or blind defenses of professional prerogatives to interfere with needed cooperative efforts.

In achieving this objective of cooperative teaching, research and service, the Health Sciences Center must be so organized that each health profession has an equal opportunity to participate in policy making and implementation. Accordingly, the deans of each of the Colleges—Medicine, Nursing, Dentistry, Social Welfare, and Allied Health Professions—will report directly to the Vice President for the Health Sciences on all matters of budget, academic program and policy.

The Director of the University Hospital will also have the status of a dean and report to the Vice President for the Health Sciences. The University

Hospital is thus conceived as a centerwide facility, not limited to the use of the College of Medicine but essential to all the health professions.

The design and implementation of the curriculum in each of the component colleges will, of course, be the prerogative of the deans of the component colleges and their faculties. Each college will, however, participate in the curriculum development of the other, and common experiences for students in each of the health sciences will be planned jointly.

The deans of the five component colleges, the Director of the University Hospial and the Director of the Biomedical Library and Medical Communications will constitute the Health Sciences Center Council. This group will be responsible for policy matters relating to the academic operation and administration of the various units of the Health Sciences Center.

Most importantly, the genesis of the health sciences in the context of a cooperative organization will permit the joint development of a philosophy of comprehensive health care in which no one profession dominates. Since the team concept is already characteristic of emergent health care patterns, it is mandatory that we define the functions, composition and direction of this team cooperatively. The precise alignment of functions among the members of the health care team requires the most critical examination today. Models of patient care delivery must be given experimental trial to study the relationships of functions. By working as an entity from the outset, we should be able to allow for maximal participation of all the major health professions in the design and testing of such models.

Full Development of Social and Community Responsibilities

A third major commitment is to the fullest development of the interface with the Nassau-Suffolk community. All medical centers are now belatedly awakening to their responsibility to make their resources available to the communities they serve. A few have pioneered in this direction, but most medical centers are still seeking to reduce their isolation from the public and the institutions in their milieu.

In all aspects of our planning, we regard Nassau and Suffolk counties as a region with the Health Sciences Center as a central resource providing predominantly a tertiary level of medical care. The Center is also the education focus for the Nassau-Suffolk Regional Medical Program under Heart Disease, Cancer, and Stroke legislation. The Center is already participating in the bi-county plans for Comprehensive Health Planning. We plan to make the Univeristy Hospital the center of a network through which virtually every hospital in both counties will have some type of relationship to the University. Cooperative arrangements involving undergraduate education, postgraduate and continuing education sharing of certain facilities, computer hookups, etc., are under specific consideration.

A Department of Community Medicine will be one of the first to be established. A strong community orientation will be fostered in the Colleges of Dentistry and Nursing as well as in the Allied Health Professions. We have already developed a plan whereby every hospital in our region may in some way become a part of the university family. Five different patterns are offered, providing opportunities for participation in the instruction of students and

house staff in community medicine, continuing education, cooperative clinical data collation, research, and sharing of certain specialized facilities. Hospitals may choose the type of affiliation that best suits their individual needs and organizational structure.

Models of Health Care

A fourth and very important commitment is to contribute to community efforts on how best to deliver to every patient the knowledge and technology needed in contemporary health care. Here, too, medical centers have lagged. Much of the recent Federal legislation, e.g., Regional Medical Planning and Comprehensive Health Planning, reflects public awareness of the need for new patterns of medical care. This public awareness is running ahead of professional perceptions.

One effective way for the health sciences centers to wrestle more directly with this question is by designing and studying experimental models of patient care. Here, in the living laboratory of actual medical care we can examine such things as the optimal alignment of roles and functions between health professionals, optimal organizational patterns, the best use of computers and other technology. With such models, students in all the health professions can be taught to work together cooperatively and to examine their own effectiveness in objective ways and in relation to the contributions of others. These models must be based on the needs of the local community. They will, of necessity, emphasize team care and functional placement of the model in a total system of care.

Curricula Innovation

Every new health sciences center has the unique charge of reexamining educational methods and curricular design. Drastic changes in medical curricula are now in process in new and old schools, as tensions grow between the standardized efforts of the past fifty years and the interests, involvement and impatience of today's students. The curricula in all the schools of our Health Sciences Center are being designed with certain features in common that can only be outlined here: (1) A high degree of flexibility is being built into all curricula. Eventually, no two students will take precisely the same set of courses. The exact combination will depend upon the student's prior preparation, his point of entry into the curriculum and the path he chooses to his degree. (2) Multiple paths to the professional degree are being designed that are dependent upon the early selection of a field of specialization by the student. Each of the health professions is being called upon to designate these pathways within its own sphere of competence. In all the emphasis will be on competence in limited fields rather than superficial skill in a number of disciplines. In medicine, we envision at least the following paths to the MD degree: investigative medicine, the clinical specialties and subspecialties, community medicine and family medicine. Different interests, a different set of basic sciences and different personalities are needed to excel in these varied and useful roles. More concerted effort is needed to match the student and the

fields which best suit his individual abilities, if we are expeditiously to turn out the variety of physicians society now needs and to turn them out as competent practitioners. (3) Less emphasis is placed on detailed learning and more on a common curricular exposure for all students. The aim of many new curricula is toward perception and manipulation of a limited number of key concepts taught essentially as languages. (4) Fewer laboratory exercises and more demonstrations, a shortened common core of basic and clinical sciences, and later in-depth study of those basic sciences pertinent to the path a student chooses. (5) Extended experiences in communities and hospitals outside the medical school for most students who plan to follow a clinical route to their degree. (6) Reduced emphasis on lectures, and increased use of programmed and computer-assisted education in all new curricula. (7) "Drop-out" periods of several months to a year or more for research and work experiences will become standard parts of the curriculum. (8) Early patient contact beginning in the first year of medical school in a variety of ways, from patient advocacy to assumption of nonprofessional and subprofessional roles. (9) In some of the new curricular programs, a student may spend the major part of his time in a relevant university discipline, e.g., sociology, anthropology, psychology or engineering. In this way, we hope to develop some physicians who can "speak" two languages: the languages of, say, the social sciences and of medicine. (10) A multiple-entry system in which students may begin their medical education at different levels, depending upon the amount of sophistication in their prior education.

Education in the health sciences is thus taking on more of the spirit of graduate education. Students will progress at differing rates. The idea of a class—a group of students who start together and four years later graduate together—will probably disappear. Students will be taught in smaller groups from the first year on; they will then spread out in the university community as they pursue particular goals and interests in a variety of departments, hospitals, laboratories, and community agencies.

Continuing Education

A sixth commitment is to continuing education which will protect the health professions against the invariable obsolescence of knowledge that follows so rapidly upon graduation. Present methods of continuing education are admittedly inadequate to meet the needs of today's practicing professionals. There will be continued sophistication of audiovisual techniques, closed-circuit television and computer-assisted educational programs. However, these must be supplemented by the more lasting effects of education of physicians, nurses, dentists and others in community hospitals and in the course of their daily work. The Health Sciences Center must assist every community hospital to become an educational institution. Provision of an "in situ" faculty, consultation in educational methods, and training of an indigenous faculty are responsibilities that the Center must undertake.

Human Values, Health Care and Health Education

A seventh major commitment of the health professions must be to maintain the human and compassionate aspects of medical care in the tightly organized

and highly technical systems of medical care now emerging. Special attention in professional education must be given to underscoring the humanistic, ethical, social, historical and economic dimensions of health. This implies a much closer interchange with the university disciplines and their actual involvement in clinical teaching as described earlier. Opportunities for the continuation of a student's general education while in the professional schools must be developed. Faculties, too, must be enriched by adding more teachers who can devote major attention to humanizing the clinical experience and teaching humaneness by their own example.

The Allied Health Professions

Up to this point, I have said little specifically about the health-related professions for two reasons: We are still largely a planning organization and can deal only in "promissory notes"; secondly, the integrated approach we have taken to all the health sciences makes the setting within which we develop the health-related professions a pertinent determinant of the programs themselves.

Education for the allied health professions is at present in an extremely fluid state. Up to this time most programs have been conducted in small colleges, hospitals, community colleges or vocational schools. More recently, education for the allied health professions has begun to move into the university. In keeping with the movement of all the other health professions toward a university-based education, we can safely predict the acceleration of this trend in the years ahead.

The advantages of location in the university and especially in the medical centers are many: better general educational preparation, more uniform academic standards, better exchangeability of credits, the opportunity for close contact with the other health professions and working with the mainstream of health care availability of the University Hospital, and the opportunity for advanced degrees in related fields. Moreover, universities and medical centers are better equipped to conduct multiple programs rather than isolated ones in a single discipline.

In keeping with these trends and its own commitment to the concept of a comprehensive Health Sciences Center, Stony Brook plans to establish a College of Allied Health Professions as one of its component units. As in nursing, the baccalaureate and master's degrees will be offered. Professional doctoral degrees are not planned at this time. Stony Brook, with its comprehensive university programs, should be in an excellent position to educate future leaders and faculty members in all the allied health professions.

In these programs, as in nursing and medicine, attention will be directed to cooperative arrangements with the other institutions in our region. We are preparing to admit transfer students into baccalaureate programs from technical and two-year programs in the health professions. The progressive "ladder" concept is of special significance to our programs. Many of the underprivileged may make their entrance into the program of higher education by means of technical and associate degree programs. Within these groups, there will be many who can proceed further; they must be provided the opportunity.

Determination of specific curricula in the allied health professions is still to be made, since a dean has just been appointed. Although diversified programs will characterize the school's curriculum, a general statement that covers all fields is possible. Initially, four programs are projected: physical therapy, medical technology, speech pathology and therapy, and dental hygiene and therapy. Other programs will be added later in such fields as occupational therapy, dietetics, medical records librarianship, and rehabilitation therapy. We anticipate a large growth potential in this college as medical advances create the need for new helping professions. As the physician concentrates increasingly on highly scientific and demanding technical activities, he will have even less time than is now available to meet the totality of his patient's needs. Indeed, many of the things we regard as medicine today e.g., suturing lacerations, minor surgery, taking of history, performing a physical examination, delivering a baby, patient education and well-baby care may well be done by nonphysicians working under the doctor's supervision in highly responsible roles.

The College of Allied Health Professions has the exciting and exacting responsibility of defining and educating for these new professions. Their potential contribution to meeting national health needs is great. Without their vigorous development, it is doubtful whether we can deliver optimal care to every citizen—the final goal of all educational efforts in the health professions. Students in the College of Allied Health Professions will become intimately associated with the other health professions, share in the educational programs, and thus become familiar with their role relationships. The same general commitments and educational goals described for medicine will be exemplified in the programs in the allied health professions: flexible curricula, multiple paths, early choice of specialization, and assumption of a major responsibility for postgraduate and continuing education.

Conclusion

The health-related professions today constitute the fastest-growing segment of the health sciences. They promise to assume increasingly significant technological and social roles in our health care system. Although they are recent additions to the university setting, they too must be developed within the university tradition to meet their special responsibilities. We can expect the individuals involved in these professions to assume more independent roles and to perform many functions that are now the responsibility of the physician alone.

Within the Health Sciences Center, these professions must be provided the opportunity to participate fully in educational and research activities and in experimental models of patient care delivery.

The health-related professions are at the very cutting edge of the changes occurring in the health care system in our country. They must be nurtured with the same care and commitment that attended the more traditional health professions. Only in this way can the health sciences become instruments of social purpose dedicated to the wider distribution of scientific and concerned health care for the entire population.

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