
The Mount Sinai Concept

HANS POPPER, M.D. *

The overriding obligation of a new medical school is to develop physicians who will fulfill the medical needs of society in the last quarter of the century and beyond. This necessitates a prediction of the type of medicine which will be practiced in years to come. Present trends in medicine must be used as guidelines whether or not they are desirous and welcome.

One of these trends is the increasing impact of biologic thinking in medicine and the attempt to rationalize diseases as the pathology of an organ, of a cell, of an organelle or of a molecule. As we raise the magnification, the similarity of the biologic processes in all living organisms becomes apparent. Extrapolations can be made, for example, from bacterial and viral genetics to diseases in human. This approach is associated with the trend of the increasing specialization of physicians as is borne out by statistics showing decreasing numbers of general practitioners and family physicians and a steep rise in specialists in a single organ or even part of an organ. They may combine medical and surgical approaches focused on this organ. The time may come when the thoracic surgeon, the cardiac surgeon, the neurologic surgeon and the gastrointestinal surgeon may replace the respective non-surgical specialist in these fields as is already the case in ophthalmology, urology or gynecology. This development will be favored by the changes in surgical thinking with removal of organs being replaced by surgical corrections of functional conditions as exemplified by shunt surgery for portal hypertension or by organ transplantation. Such surgical procedures require thorough biologic, physical and chemical knowledge in a circumscribed field and thus favor the trend toward specialization.

The described development will leave a void in the logistics of the initial referral of the patient to the specialist and associated with it in the management of those diseases which are far more common and do not require a specialist. This void will have to be filled by physicians whose spe-

cialization lies in the problems of Public Health. Perhaps a better term would be Community Medicine, particularly since much of their future function will concern recognition of preclinical stages and hopefully, prevention of the crippling stages of disease. Whether or not this trend of specialization is socially desirable, the sophisticated young physician will be attracted by a type of medicine in which he is able to accomplish dramatic improvements based upon his specialized knowledge in diagnosis and his specialized skill in therapy.

The New "Generalist"

In this "brave new world" of the organ-specialists, the danger will arise that preoccupation with one area may reduce the interest in the patient as a whole. Safe-guards should be developed to retain in the organ-specialist the mission of the healer, of the complete physician. Whatever his special concern for one organ may be, he must be a generalist of the mind of his patient. One of the methods of meeting this challenging task is to provide the broadening influence and hopefully retained interest in nonbiological disciplines such as sociology, anthropology, economics, and psychology. This kind of background will, it is hoped, influence the specialist to be aware of his patient, of his family and of his surroundings, aside from the preoccupation with his specific illness. A university as a community of scholars in all areas of human endeavor thus appears as the ideal environment in which a medical school can offer both the nonbiologic human sciences for the broader vision and the nonmedical biologic disciplines to augment the impact of biology with all its physical and chemical techniques.

Several years ago, the Board, the Staff and the Administration of The Mount Sinai Hospital considered the foundation of a medical school on the campus of The Mount Sinai Hospital. The motives were many. A few of the most effective ones were:

1. The need in America for more medical and paramedical manpower.
2. The desire to enlarge the scope of an institution with an old heritage in patient care, research and postgraduate teaching.

* Professor of Pathology and Acting Dean of The Mount Sinai School of Medicine, New York, New York.

3. The wish to strengthen the academic staff of the institution by providing additional facilities in basic sciences as they become increasingly important in the practice of scientific medicine.

Initially, the immediate motive was the strengthening of the Hospital. However, as the problems of medical education of the future were studied this motive moved into the background overshadowed by the desire to develop a medical educational facility for the future and the Hospital is now looked upon as an instrument rather than as the beneficiary. Possessed of extensive experience in patient care, research and postdoctoral teaching, the main emphasis can be devoted to the task of training the medical students to become the physicians of the future and as an adjunct to the development of paramedical scientists, i.e. human disease or health oriented biologists, physicians, chemists and psychologists.

Seeking a Substitute for University Affiliation

Our existing facilities permit concentration upon the experiment in education more effectively in new medical schools developing on a campus of a university where these facilities and experiences for patient care and medical research have to be established. However, the absence of a university is a void in The Mount Sinai experiment. Initially it was attempted to overcome this by affiliating with a university, although the campus would be geographically removed from the medical school campus. It was hoped that this affiliation would confer the stability, serenity and academic discipline conventionally and to a varying degree offered by the parent university to its component medical school. In these negotiations, unsuccessful as they were, it became clear that such an influence may have an effect upon the faculty but would have little impact upon the medical student. His human and biological inspiration requires from the nonmedical teacher in the university not only proximity but also dedication to his development. To provide this influence and to more effectively integrate these disciplines into the outlook of the student and of the faculty the concept was developed to establish graduate schools with health-sciences orientation on the campus of the medical school. They need not be a part of the medical school but would be an important part of a community of scholars and thus give the campus the aspects and advantages of a university specializing in the health sciences.

A Graduate School for Human Studies was conceived with relatively small departments in the fields listed. To this list could be added law, art, history and the science of communication if found desirable upon further study. A small group of scholars interested in the health aspects of their fields could, as part of a biomedical center and by daily informal contact, exert more influence on the medical community of the center than would a highly organized and self contained department of a large university. However, only a part of the effort of these departments in a Graduate School for Human Studies would be directed toward the medical student and faculty. In our country the percentage of the old and of the partially incapacitated persons in the population keeps rising; therefore interest in the health aspects of several not medical disciplines grows. Whereas throughout the world in previous decades and in many countries at present physically incapacitated persons were or are considered a useless burden on the society, in our society they form a segment considered important. Their mental and physical needs and problems require thorough study by scholars interested in a "Culture of the Infirm." Thus such departments of the graduate school may have graduate students who will devote themselves to research in these areas. The pattern of the Graduate School for Human Studies is presently under intensive discussion with nonmedical university and college authorities. Since it is hoped that it will influence the faculty even more than the student body, it might start functioning before the first class of medical students are admitted, so that the teachers of medicine may be imbued with its spirit. Hopefully then, the medical student and the postdoctoral house staff will emulate the physicians who teach them. Scholars in human sciences may be in the hospital "in residence."

Other Graduate Schools Contemplated

For instruction in physical sciences which are more or less oriented toward biology, a Graduate School for Physical Sciences is being discussed. This graduate school with departments of physics, chemistry and mathematics would take into account the increasing concern for terrestrial and space environment.

A Graduate School for Biological Sciences will open its doors simultaneously with the medical school. It should develop paramedical scientists and give medical students as well as physicians in their postdoctoral period, the opportunity to

have their research work acknowledged by advanced degrees. When initial space limitations are overcome, departments overlapping the conventional basic science departments may serve as focal points for endeavors in such areas as oncology, organ transplantation and psychobiology.

The medical school, together with the graduate schools listed, supported by The Mount Sinai Hospital and several other hospitals such as the City Hospital Center, at Elmhurst, which is affiliated with Mount Sinai Hospital and hospitals in the City of New York which have indicated a desire for an affiliation will form a complex having the functional force of a graduate university. When the integration of the graduate schools with the medical school will have sufficiently progressed it might be desirable to have the entire complex become affiliated with an existing university. Most of those engaged in the planning of this community of scholars feel that such an affiliation may give added support. There are others, however, particularly among our distinguished advisors, who feel that in the cultural setting of the City of New York, an independent unit may flourish more effectively.

To make the Mount Sinai Concept of balancing biologic thinking in medicine with a concern for the whole patient socially effective, special attention must be given to the logistics of patient care in a medical world populated largely by specialists. The Mount Sinai Biomedical Center is to relate to the City of New York as a whole, not only to the great cultural center but also to the large masses of people of all walks of life, all colors, races or creeds. The center must be dedicated not only to some level of care of the masses in the large metropolis but rather to search for methods to cover adequately large groups of populations in the future setting of medicine. Effective methods discovered by research must be taught to medical students and house staff. A strong department of Community Medicine should explore practical methods of mass physical examinations including the utilization of paramedical personnel on doctoral and technologist level for patient care. Screening techniques based on automation and computer devices will be used to detect preclinical and clinical disease and to promptly channel the patient who needs them to the proper specialists. Instead of giving a limited group of indigent families intensive and complete service of the "Cadillac" type, it might be more useful socially to give "motorcycle" service to the largest possible number of people. Thus, Community Medicine rep-

resents the third leg of a tripod necessary to balance the future of medicine, together with specialization and human studies.

Clinical Practice a Dominant Theme

Turning to the product of the medical school, the medical student, it is the purpose of the new school to develop physicians who might be full-time academic clinicians or basic science investigators, or practicing physicians either without interest in research or with continuing research activities. Since as a rule the interest of the graduates reflect the spirit of an institution, the last group i.e. the practicing physician is expected to dominate among our graduates. However, the commitment is to the quality rather than to the type of the graduate. Area specialization of the future might favor physicians who are dedicated to continuous research efforts in a circumscribed field in which clinical observation becomes part of research and exact biology bears more readily on clinical activity.

The Curriculum is the backbone of the medical school. If continuous curiosity and learning after graduation is to be imbued in the medical students a type of education is required which is more often given in graduate schools leading to a Ph.D. degree than in medical schools. The graduate schools avoid the lockstep education by encouraging study in depth in one area. Yet the practicing physician, responsible for the health and life of patients, must have the necessary information and skills, also to cope with the demands of the various licensing agencies. To chart a course between a trade school providing these necessary skills as well as information and a graduate school providing in depth tailored to the individual student, the school plans to combine both by providing two types of curriculum both of which will be taken by each medical student.

The Core Curriculum, rigid and equal for each student, will teach with the best possible organization, using programming and recall of the same fact in different settings, the skill and information necessary to practice medicine, to pass the licensing examinations and to take full advantage of training during the house staff years. It is hoped that by careful planning and by deliberate, not haphazard, repetitions, this can be accomplished in shorter daily time than customary. Integration of the teaching as carried out in many progressive schools has been agreed upon. To demonstrate to the student the unity of biology, clinical thinking will be brought into the first two preclinical years

and basic science approaches will be inserted into the clinical years. It is hoped that this can be done without disturbing the conventional departmental structure by the participation of clinicians steeped in the basic sciences in the preclinical teaching. For instance the orthopedic surgeon will discuss musculo-skeletal problems and the ophthalmologist, those of the eye. Moreover, the biochemist and biophysicist will be part of clinical exercises. This integration, based on the departmental origin of the teacher, might be possible if the present tentative plan prevails to present the static norm, in the first months of the first year. Basic normal and abnormal processes such as Growth and Development, Reaction to Injury, Inflammation and Immunology, Regeneration and Carcinogenesis will be taught in the second half of the first year, while the second year will be devoted to the normal and abnormal function and structure of various organ systems. However, approximately twenty percent of the core curriculum in the first two years will be reserved for an "Introduction to Clinical Medicine." This teaching exercise will include observation of patients and a combined effort of the Departments of Medicine, Surgery, Pediatrics, Obstetrics and Psychiatry with the staff of the Graduate School for Human Studies. It is hoped that most of the material will be presented by physicians influenced by the Graduate School for Human Studies and teaching in such a manner as to impress upon the students the relevance of Human Studies to medicine. The curriculum in the 3rd and 4th years will be basically the same as in most schools, with rotating assignments to the various clinical departments. In contrast to the preclinical year where core and free curriculum will be taken simultaneously, blocks of time will be assigned to clinical services and to free curriculum activities respectively. It will be the obligation of these clinical departments to have members of the Graduate School for Human Studies participate in ward rounds and other student exercises. This will hopefully, also lead to an influence of this graduate school upon the house staff.

Individual Development Encouraged

The Free Curriculum will vary from student to student and will entail assignments according to the choice of the student under the supervision of a Faculty Committee, to a given area, either clinical, laboratory or social, with a tutorial relation between one faculty member and one or two students. It should lead to a study in depth

of the area chosen and to the development of the student to the limit of his capacity. In some instances the student might participate in or conduct research, but this will not be especially encouraged.

Assignments may be changed yearly in order to enable the student to test his own interests and capabilities. The Free Curriculum activities should be a yardstick for the future capacity of the students. It will be possible to discontinue "Core Curriculum" activities for 1 or 2 years for those wishing to conduct more laboratory research and also to work toward advanced degrees other than M.D.

No objection will be raised to permanent discontinuation of the "Core Curriculum" after the 1st year. Concentration on the Free Curriculum should lead to the Ph.D. or Doctor of Medical Sciences degree of a paramedical scientist.

The Curriculum plans are still tentative, but all concerned are convinced that the details of the plan are less important than the increasing enthusiasm in experimentation in medical education, free of the limitations of conventional grooving.

To briefly refer to the status of the school planning, schematic drawings are completed for a twenty story building in the center of the present Mount Sinai Hospital Campus which will house besides the medical school and the graduate schools, new and replacement components of the Hospital organized for medical school teaching. A small core faculty has been appointed consisting of professors and acting heads of the major departments. Other appointments will be made upon the designation of a permanent Dean. Facilities have been designed for 96 medical students in a class with space for additional graduate students. The target date for admission of the first class of 48 students is the fall of 1968.

Summary

The group planning The Mount Sinai School of Medicine is dedicated to the development of physicians who will meet the needs of society in future. The trend in medicine towards increasing specialization will require new patterns of education. The developing school intends to rely on two of the legs of the usually referred to tripod which exist on the campus now, namely patient care and research, and to lengthen the third leg from postgraduate to medical student teaching. For this another tripod is being depicted. One leg is exact biology in medicine. The second is counteraction of the depersonalization of the organ

specialized physician by the broadening influence of a Graduate School for Human Studies as part of The Mount Sinai Biomedical Center. The third leg is Community Medicine, which by experimental patterns strives to give in a setting of specialists good care to every patient and every disease including presymptomatic stages. A curriculum is planned, embodying a careful balance

of the necessary and the optional for every student. A rigid and uniform "Core Curriculum" will guarantee the skill and information which must be part of a physician while a Free Curriculum tailored to the individual interest of the student will entail study in depth in a chosen area and permit the development of the full capacities of the student worthy of a graduate school.