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## ANNUAL DISCOURSE

### TRENDS IN MEDICAL EDUCATION\*

J. M. HAYMAN, JR., M.D.†

BOSTON

THE invitation from the Massachusetts Medical Society to deliver the Annual Discourse for 1962 is an honor that I prize and a task worthy of a great orator. But the choice of this year's speaker from one of the yet small number of medical deans in the Commonwealth shows a prime interest of the Society in medical education. From this platform, Dr. Sosman<sup>1</sup> observed six years ago that the subjects presented annually over the last hundred and fifty years covered a wide field of practical, theoretical and philosophical content, but that problems of medical education were foremost. This is as it should be, for concern with the education of physicians was one of the purposes for which the Society was chartered by the Great and General Court in 1781, and the same concern attended the birth of the American Medical Association sixty-six years later.

The *philosophy* of medical education held by the leaders of the profession has changed little, if at all, I believe, since the time of Hippocrates, but *methods and technics* have changed greatly, and they are again a pressing concern at the present time. True, there have been some who would degrade the profession for monetary gain, or for political or personal power, and we still have them. But they are a proper target of disciplinary and regulatory authorities.

The object of medical education is to equip endowed and motivated young men and women to provide for the health care of the people. This pious aim is easy to state; the implementation is difficult and beset with many and complex problems. The fields in which physicians work are many and diverse. Some serve as *personal* physicians, some become specialists in broad or ever narrowing areas, some become public-health officers, and others spend their lives in the laboratory devoted to increasing our knowledge of human biology and having little or no direct contact with patients. Should all have the same basic humanitarian, altruistic orientation? Should all have the

same basic curriculum in medical school? There are differences in opinion on the latter question. Dr. Rutstein<sup>2</sup> and Dael Wolffe<sup>3</sup> have suggested that there be two types of medical school, one providing the best scientific training for those who specialize or go into the laboratory, and another for those who will be responsible for patient care. This is the present organization in Russia. Others, and I am among them, believe that the very diversity of careers open to the physician and the rapid increase in the knowledge of human biology demand the same grounding in scientific method and an understanding of the known principles of human biology for all who hold the M.D. degree.

The increased concern for the technics of medical education is shown in the teaching institutes held by the Association of American Medical Colleges for the past nine years, in which representatives from almost every school in this country and from many in Canada have participated. These have covered, in different years, the preclinical and clinical subjects, selection of students, postgraduate training and the role of organized research. The establishment of departments of medical education and professorships of medical education are other evidences of the ferment.

Medical education in colonial times was by preceptorship — the student associated himself to a practitioner, followed him on his rounds and visits and “*read medicine*” from what books were available in the doctor's office. Teaching was by precept; it depended on more or less acute observation and experience. There was little about it that could be called scientific. But although the student lacked “*science*” he had ample opportunity to get to know patients as human beings, as well as their ecology and socio-economic setting. He also had the advantage of participation in continuing care for all or a good part of their lives.

The development of pathology and the discoveries of Pasteur, Lister and a host of others in the latter half of the nineteenth century introduced a whole new body of knowledge. These disciplines established

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†Dean, School of Medicine, Tufts University.

the basis for the "science of medicine," which attempted to discover the etiology of many diseases and to describe the manifestations in terms of alterations in the chemistry or structure of the organism. However, the *art* of medicine still dominated in its practice.

There was a distinct shift not only in the training of physicians but in the practice of medicine during the first half of the twentieth century. This really began in this country with the founding of Johns Hopkins, and it had a tremendous spurt after the Flexner report in 1910. There were a number of factors leading to this change in medical practice. Fundamental was the tremendous increase in knowledge in the basic sciences of biochemistry, bacteriology, physiology and pharmacology. The advances in surgery, made possible by better anesthesia and asepsis, also contributed. The inevitable result was that the fund of medically related knowledge became too great for any one man to encompass. This led to specialization. And with specialization came the treatment of a *disease* rather than a *patient*, and the passing of the patient from one specialist to another to take advantage of special knowledge and skills in the handling of isolated episodes of ill health. Although there were a few teachers, such as Osler and Peabody, who emphasized that the care of the patient consisted in caring for the patient, instruction in the medical schools, and in practice, became more and more compartmentalized.

During and after World War II the increasing demand for psychiatric care in the armed forces, the recognition of the tremendous number of recruits rejected for emotional instability and the high rate of ineffectives having "nonorganic" disease brought home the realization that it is a *person* who becomes sick, and not a disease that occupies the body.

Hence, the present search in medical education, health-care plans and so forth is for a return to the treatment of the whole person, to the physician-patient relationship, for consideration of environmental factors and for continuing or comprehensive care. It is natural that acceleration in the development of scientific knowledge related to medicine should lead to a comparable acceleration in other areas. Consequently, in the relatively short span of years since the end of World War II, medical science, medical education and medical care, each so directly related to the other, have been in a state of active ferment. They have, furthermore, contributed to the rise of hospitals to a powerful and complicated business.

... From the days when medicine was almost entirely practiced by an individual physician, dealing with an individual patient in his home, we gradually moved to an era wherein the hospital assumed and has continued to carry an increasingly dominant role in the care of the sick. With this transition, the character of the hospital itself has changed steadily and so has the pattern of the diseases that account for the majority of hospitalizations. The physician's dependence on hospitals, on

laboratories, and on other physicians with specialized skills has grown apace. At the same time, rapid advances in many forms of therapy have been responsible for new emphasis on the ambulatory care of patients with illnesses that formerly caused them to be hospitalized.<sup>4</sup>

Dr. Binger<sup>5</sup> has emphasized the necessity for a change in the attitude of the profession:

In the long history of medicine, we physicians are but characters in the play called *As You Desire Me*. When society believes in evil spirits, we wear masks and beat drums to frighten them away; when it is persuaded of possession by witches, we bore holes in our patients' skulls to let them out; when it is given to materialism and worships the dynamo, we become engineers and approach the study of disease with mathematical equations and curves drawn on graph paper; when the emotional problems of living confront us on all sides, we turn to psychosomatic medicine. Finally, when society is forced by events to recognize its own disorder, then we physicians reluctantly crawl out of our libraries and laboratories and consulting rooms to talk to the people directly. Such a time is now with us.

Certainly, the interest of the public in health and in health programs has never been greater. Health is now regarded as the right of everyone — a vital national concern, not only because of the relation of health to productivity and problems of defense but also because of the general opinion that medical care should be available to all people, regardless of their ability to pay. There has never been a time in our history when so many people have been looking more carefully and questioningly at medical care. What has been happening is the recognition — greater than ever before — that medical science is inseparable from the community and society, and that our task is to address ourselves to the application of science to the needs of man and of society. This means that medicine and science must face a deeper involvement with society and social problems:

... For example, in the middle years the death rate from heart disease per 100,000 population is 485.2 as compared with a rate of 2,958.5 in the 65-and-over group. Thus, early detection and effective treatment of chronic diseases could probably postpone deaths and increase years of productivity . . . whereas 50 years ago acute infectious disease was the major cause of death, most frequently at younger ages, now more than two-thirds of deaths are due to chronic disease, and 60 per cent of the morbidity on any day is due to chronic illness.

The increase of chronic illness has had a profound influence on the nature of the physician's task. While diagnosis is still important, interesting and sometimes difficult, the crucial problem is often that of treatment. And the problem of treatment is increasingly one of how to work with the patient, his family, and his community. . . .<sup>6</sup>

Other medical educators are unwilling to be swept along in the crusade for a new orientation of undergraduate medical education. Loeb<sup>7</sup> points out that courses in sociology will not develop or instill the basic human qualities of compassion and understanding. Mastery and application of the rigorous disciplines of the basic sciences has led to the advances of the past fifty years and alone can assure the continued intellectual growth of the physician, which will be reflected in the quality of patient care. He sees serious danger that the introduction of home-care programs, precep-

torships and emphasis on socioeconomic factors may convert university schools of medicine to trade schools that would prepare physicians for practice on a desert island but leave them unequipped to cope with an evolving medicine in an enlightened American city or in many rural areas.

On the other side Castelnovo-Tedesco<sup>8</sup> encountered considerable resistance among medical residents in developing interest in a patient's total problem. They tended to regard themselves as physicians who did something *to* their patients, with a reluctance to become closely involved in the patient's distress and to share with him the responsibility for its outcome. The deep-seated and still common attempt to separate the "mental" and the "organic" aspects of the human totality help to explain why comprehensive medicine is preached much more often than it is practiced.

The tremendous increase in the amount of medical facts and information available has made "complete coverage" impossible in the four years of medical school, or even in a lifetime. This has forced those of us who are particularly concerned with medical education to do some honest soul searching to find just what the objectives of a "medical education" should be and what we hope to accomplish in medical school. The core of the question is a clear-cut definition of objectives.

As Dr. Wearn<sup>9</sup> pointed out in his Alan Gregg Lecture, if essentials can be reasonably defined, there should be a change in the appraisal of student performance. The word "essentials" implies that the student must master 100 per cent, not 60 or 75, before he is advanced to greater responsibilities. Once the student has mastered the clearly defined essentials, opportunities should be available to encourage the more able students to develop and go as far beyond the minimum requirements as their capacities permit.

It is obvious that accumulation of a certain number of facts is inadequate. He cannot, as his grandparents did, expect to continue practicing the kind of medicine he learns in medical school.

Therefore, the most important thing we can do for the medical student is to guide him into the methods and technics of self-education — so that he can go on after he leaves medical school.

Dr. Berry<sup>10</sup> has stated — in an address at the inauguration of President Plimpton at Amherst College — the difference between education and training:

The best synonym for education is growth. No man can grow for another — no teacher can educate a student. Which is not to say that he cannot foster the students' learning, for that is precisely the contribution of a good teacher.

Training, on the other hand, is something that one can do to seals or dogs, and — unfortunately to medical students. Training is primarily the acquisition of factual knowledge and technique, while education seeks to stimulate the native curiosity of the learner, to help him see that a question can be asked, to ask it in such a

way that data can be secured pro or con and then analyzed, leading to the formulation of a more penetrating question. Call this the "scientific method" if you wish. However that may be, it is the very heart of the learning process.

In talking about medical education, I have tried to emphasize that medical education is good only when it is good *education*. Thus, it is preferable to send medical students into the professional world knowing less, but understanding better how to learn. In any case, their stock of facts will become a steady diminishing asset. If they have not learned while in medical school how to learn, they never will. And to be a good physician today requires that learning continues for life.

All schools must take a critical look at their curriculum. If it is agreed that all physicians should have the same essential preparation in the basic sciences and patient contacts and in the social responsibilities of medicine, it is necessary to consider what is unessential in the present curriculum. We must study the psychologists' data on learning and forgetting. How many of the hours spent in repeating classical experiments in the basic-science laboratories are a waste of time? How many of the hours spent on the revered ward rounds are little more than "shifting dullness"? To any one faculty member abandonment of complete coverage is acceptable if it means that the time allotted to his colleagues is cut in order that he may have more for the presentation of his own subject. Hours assigned to a clinical specialty should not be designed as a recruitment device for that specialty. But abandonment of "coverage" is often a source of frustration and anxiety to students because unhappy specialists keep telling them that they need to know all about a particular specialty and because of the minutiae asked by some of our leading hospital physicians on intern examinations.

The essential curriculum should include so much of the basic sciences, pathology, medicine, surgery, psychiatry, public and community health and physician-patient relation as will permit the student to enter one of the many special career fields available. But it is equally essential that the future investigator have an appreciation of the patient's personality and of his place and meaning to his family and to the community. Otherwise, he may regard the hospital as an animal house, and the patients merely as experimental animals.

Recognition of the changing patterns of medical education is reflected in the curriculums being tried out in a number of medical schools.

The first radical change was introduced at Western Reserve University in 1952. The objective was to teach medicine as a coherent, meaningful whole rather than a series of unrelated disciplines and to give to the student from the beginning of his medical education a feeling for the central purpose, to deal helpfully with patients.

Some aspects of the Western Reserve program, if not actually incorporated into the programs of other schools, are at least appreciated as being significant steps and have reminded the rest of us that the medi-

cal student is the focal point of medical education. Expressed another way, the essence of Western Reserve is that they have there actually put into practice some of the reforms that other medical educators have been talking about.

In establishing the new University of Florida it was agreed that the primary role of the university was education specifically to meet the future needs of the state. Since the great majority of students would practice, the educational program should be directed primarily toward the education of practitioners. On the assumption that the practice of medicine primarily deals with people the program was planned around interpersonal relations, with the emphasis on understanding people, their behavior and their problems. The personal responsibilities of the physician for the welfare of his patients were stressed.

Other new programs have been instituted at Johns Hopkins, Northwestern, Boston University and Stanford. In each, the objectives are to shorten the total time between high school and the M.D. degree, and to integrate more closely the medical curriculum with the university phase of the education of the physician. It is far too soon to attempt any appraisal of the results of these experiments.

But as one reviews the results of Osler Peterson's<sup>11</sup> study of general practice in North Carolina something certainly needs to be done. Peterson concluded that after several years of practice the performance of "good" students from the "best" schools, and with more postgraduate training, did not differ significantly from that of "poor" students from schools with less reputation and less postgraduate training. Unfortunately, even after five years we have no published studies confirming or refuting Peterson's conclusions or the adequacy of his data.

Today's medical-school graduate has a handicap that postgraduate courses will not correct. How can he acquire an understanding of human values? A student does not need so much to be taught as he does to read and to live. As Stewart Wolf<sup>12</sup> suggested, there are students with an I.Q. of 170 "who have never been beyond the range of football trips or read anything not required in the classroom. We don't need a change in curriculum so much as we need a complete reorientation of our ideas as to what constitutes education."

According to Wolf, we need the development of a new and very different type of general practitioner, although he will probably be called by another name:

... He will see the patient first and be the diagnostician, evaluator and analyst of the data, and the counselor of the patient. He will rely heavily on us technologists of medicine, . . . second-class physicians, [who] . . . will be located in centers surrounded by costly and impressive equipment plugged into digital computers. The surgeons and obstetricians will be there too. With modern means of communication a patient can get definitive help in those areas at a distance of 30 miles quicker than . . . at the turn of the century when Susie had to go out in the snow and find the doctor who lived in the

community. The man in the field, my new kind of general practitioner, will be the really first-class physician. . . .

He will be using his head, which as Dr. Wolf points out, "contains the only computer that can be mass-produced by unskilled labor," and sometimes even without a digital system.

We continually hear complaints that few graduates elect family practice. I do not think this is altogether due to the blandishments of specialist teachers or to the lure of supposed greater financial returns. I believe that the tremendous increase in the mass of medical knowledge is often a potent factor. In talking about their plans, fourth-year students have said to me, "I could never know enough to be a general practitioner." It is by no means the abler students who try to become specialists.

Ward Darley<sup>13</sup> has pointed out that the new generalist can best be described in terms of his function. He should serve as health counselor, whenever possible, throughout the entire life span of any given person. He should supervise the care of infants, mature adults and old people. He must be an astute diagnostician, particularly if he is to recognize and control intelligently the significant beginnings of disease. The management of chronic illness and its rehabilitation will be among his most important activities.

#### SUMMARY AND CONCLUSIONS

Medical colleges, like other social institutions, are under pressure to meet the needs and desires of many groups of people in our society. The past fifty years have seen the practice of medicine move from an arena of empiricism to one of science. There has been a change from trade-school to university-graduate education, and clinical science has shifted from an art tempered by experiment to a budding science, applying the scientific method to patient care.

The impressive accomplishments of medicine have aroused unprecedented interest in health among our citizens and hopes, expectations and demands for physicians' services and medical care that are not being met realistically by present patterns of practice.

It is maintained that specialization has produced maladjustments in the physician-patient relation and the rendering of medical care. In many areas there is a shift in medical education from the hard core of basic science to medical ecology. Introduction of the social sciences into the medical curriculum is expected to contribute to this process. At present, the social sciences are about as "scientific" as chemistry was a hundred years ago. Much research in the social and behavioral sciences and their relation to health and disease must be done. The emphasis required is on human values, not on economics. It is doubtful, however, whether the humanism and altruism that are the hallmark of the good physician can be created by medical-school courses. We see here an important obligation of admissions committees.

In spite of obvious need, if attention to the social and economic obligations of the practice of medicine dilutes the training in basic sciences, and the application of these disciplines at the bedside, which has been responsible for the advances of the last fifty years, neither medicine nor society stand to gain. At a time when currents and squalls continue to make the passage rough, let's not rock the boat.

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## A CONTROLLED EVALUATION OF DEANOL AND BENACTYZINE-MEPROBAMATE\*

ARMAND W. LORANGER, PH.D.,† AND CURTIS T. PROUT, M.D.‡

WHITE PLAINS, NEW YORK

WHEN evaluating a new drug an investigator should allow for such factors as suggestibility, the natural course of the illness and the effect of other treatments. This is particularly true in the field of psychiatry, because the subject matter readily lends itself to the influence of subjectivity, bias and the personal element. An uncontrolled drug evaluation can easily foster an erroneous view about the efficacy of a new agent. This was forcefully demonstrated in a recent experiment conducted by the present investigators on the placebo effect in psychiatric drug research.<sup>1</sup> The study dramatically illustrated the tendency of patients, psychiatrists and nurses to attribute improvement to a placebo because they had been informed that it was a real drug.

Since 1958 numerous reports have appeared concerning the successful treatment of depressed patients with deanol and meprobamate combined with benactyzine. Both drugs are currently prescribed by some psychiatrists and physicians in general practice. Unfortunately, almost none of the studies of these two drugs have been controlled, and the few investigations attempting to use controls have been either inadequately reported or poorly designed.

The purpose of the present investigation was to evaluate deanol and benactyzine-meprobamate under carefully controlled conditions. The study was planned in 1958, and the data collected between January, 1959, and July, 1960. A unique feature of the experiment was the deception employed, to promote objectivity in those who were evaluating the patients. All the participating psychiatrists and nurses

were informed that one new antidepressant drug, ST50, was being evaluated in the treatment of 60 depressed patients. Actually, 20 patients received deanol,§ 20 benactyzine-meprobamate,¶ and 20 a placebo.

#### METHOD

##### Patients

The patients were recent or comparatively recent admissions to the New York Hospital — Westchester Division, a 350-bed voluntary nonprofit hospital for the care and treatment of psychiatric disorders. Patients who had received electroconvulsive treatments within six weeks, or tranquilizing or antidepressant medication within two weeks, were not eligible for the study. Depression was a prominent symptom in all patients assigned to the experiment. The illness was serious enough to warrant hospitalization, but the depression was not severe enough, in the judgment of the staff, to require electroconvulsive therapy. Eighty-five per cent had been in the hospital for less than three months, and 70 per cent less than one month. Twenty-eight per cent had a history of previous hospital admission before the one-year period preceding their present admission. The sample included 39 women and 21 men. The patients ranged in age from twelve to seventy-two; the mean age was forty-three, and the standard deviation seventeen. More than half (55 per cent) had been educated beyond high school, and the average patient was from a middle to upper-middle socioeconomic level. The diagnoses were as follows: schizophrenia, 18; involuntal psychosis, 18; manic-depressive psychosis, 11; psychoneurosis, 11; and paranoia, 2. Be-

\*From the New York Hospital — Westchester Division. Supported by a research grant (MY2090) from the National Institute of Mental Health, United States Public Health Service.

†Director, Department of Psychology, New York Hospital — Westchester Division.

‡Clinical director and assistant medical director, New York Hospital — Westchester Division.

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