POSITION STATEMENTS (ITEMS 12 - 22) 1961-1976 FD #3.

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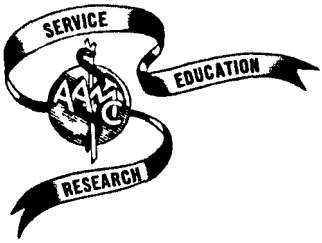

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STATEMENT ON
THE RELATIONSHIPS

BETWEEN

SCHOOLS OF MEDICINE

AND

GRANTING AGENCIES
AND ORGANIZATIONS

ADOPTED BY THE

EXECUTIVE COUNCIL

OF THE

Association of American Medical Colleges

SEPTEMBER 21, 1962

To carry out the many responsibilities with which they have been charged by society, the nation's medical schools receive annually from various sources, private and governmental, very substantial funds for the conduct, development, and extension of their programs of education, research, and service. In awarding such funds, grantors have always evaluated carefully both the potential capacity of the medical schools to use these funds productively and the schools' actual record of performance.

The accomplishments of the medical schools during the past sixty years—in educating physicians and other health personnel, in advancing medical science, and in promoting the health and welfare of our nation—are well known. These accomplishments furnish abundant testimony that the funds provided the medical schools have been spent to excellent purpose.

By the most conservative estimate, the economic value to the American people of the medical schools' contribution to the lengthening of life, to the shortening and prevention of illness, and to the reduction of disability amounts to a many-fold return on these funds. Further, the steadily increasing support which the activities of the medical schools have attracted in recent decades is clear indication that those who control funds have confidence in the capacity of the schools to use such funds to advance the welfare of mankind.

The funds received by the medical schools for the support of their various activities are now of considerable magnitude; as a result, it is obvious to the schools that, more than ever, they must effectively demonstrate not only their ability to use funds productively but also their capacity to manage these funds responsibly and prudently for the purposes for which they were given. Indeed, the schools know that only if they fulfill both of these obligations will they maintain the trust and confidence of those who provide funds.

At the same time, the schools believe that there is a reciprocal responsibility on the part of the grantors. The conditions imposed and the procedures required to insure proper fiscal administration of grants and contracts should not restrict the academic freedom

of the schools' faculties, nor should they limit the individuality and diversity which contribute so importantly to the strength of this country's medical institutions. Individually and collectively, the schools have a responsibility to study carefully conditions proposed for regulating the expenditure of funds and to determine which conditions are acceptable and which cannot be accepted if they are to carry out their mission.[1)]

It is recognized that those who provide funds, both private and governmental, may be legally restricted to support only research, or only teaching, or only medical care, as the case may be. In any event, grantors must be satisfied that the activity for which they are providing support is being fully and properly pursued. In their own interest, however, as well as in the interest of the proper development of the schools, grantors should not attempt to impose conditions that would unwisely restrict or distort the activities of recipient institutions or force them to attempt an artificial or impossible separation of their activities.

In this connection it should be understood that, with rare exceptions, medical school faculties are engaged in both teaching and research, and, in many instances, in patient care and community service as well. Often faculty members will be engaged in two, three or all of these activities simultaneously. Further, their participation in any of these activities commonly enhances, directly or indirectly, their capability in the others.

To a medical student the research activity of a faculty member may constitute a teaching exercise; to a patient a faculty doctor's research activities may provide medical diagnosis and care. On the other hand, a faculty member's activities in teaching, patient care or community service may contribute importantly to his research goals.

There is growing concern among the medical schools that some who control funds would pursue policies that will divorce teaching from research. Such a situation would most certainly impair the basic education of those who will become the investigators,

1) *Sponsored Research Policy of Colleges and Universities* published by the American Council on Education in 1954 is an excellent report of one such study.

teachers and practitioners of the future, and would be a serious blow to the development and extension of research as well as to the advancement of medical care in this country.

The schools would also urge that those who provide funds for research be mindful that the steps by which creative research may be prosecuted most successfully cannot always be specified in advance and that, indeed, the most significant results of a proposed research program often cannot be foreseen. It is important, therefore, that the conditions under which research grants are made and accepted permit responsible scientists the scientific and administrative latitude and flexibility necessary for productive work.

The schools also call attention to the fact that the proper management of the large sums of extramural funds now being entrusted to the medical schools is in itself an item of considerable cost.

In recent years the administrative problems associated with gifts and grants to the medical schools have become exceedingly complex—largely because of the rapid increase in the number of grants and because funds have come from so many different sources, for so many different purposes, and under so many different conditions. The medical schools recognize the need to examine closely their policies and practices for handling such funds and where necessary to institute improved management policies and practices that will insure that funds are being administered responsibly and economically for the purposes for which they are given.

The Association of American Medical Colleges believes the following principles are basic to the proper management and expenditure of extramural funds by the medical schools and their parent universities:

1. In expending extramural funds each institution should adhere to the same rules and principles, exercise the same prudence and require the same authorizations and controls as it does in the expenditure of the institution's own funds.

2. Policies and procedures for the expenditure of funds should be defined by each institu-

tion for the guidance of its administration and faculty.

3. The admininstrative officers and faculty of each institution should observe the spirit and the letter of the conditions under which extramural funds have been made available to and have been accepted by the institution.

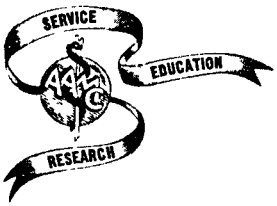
4. For the proper management of extramural funds each institution should develop and maintain a system of accounts that will insure:

   a) That the institution at all times has available a current, complete, and accurate separate record of each extramural fund in a form similar to that maintained for its own funds.

   b) That it can demonstrate that proper internal controls of expenditures consistent with sound academic operating policies are being exercised.

The Association of American Medical Colleges plans a continuing study of problems related to administration and management in the medical schools. In the spring of 1962 the Association arranged a series of regional meetings at which the deans and business officers of the medical schools discussed with representatives of the National Institutes of Health, the administration of N.I.H. grants and contracts. Similar meetings are planned for 1963. In addition, in 1963 the Association will hold a national conference of the medical schools at which basic problems of administration will be examined with the assistance of experts in management from business, industry, public affairs and education.

The Association of American Medical Colleges is prepared to provide consultation and advice to member institutions or granting agencies concerning matters discussed in this statement to the end that the productive relationship now existing between the medical schools and the many agencies concerned with the support of medical research, education, and service will be strengthened and advanced.



A PROPOSAL
FOR A PROGRAM
OF
FEDERAL ASSISTANCE
TO MEDICAL EDUCATION

PRESENTED BY THE

ASSOCIATION OF AMERICAN MEDICAL COLLEGES

2530 Ridge Avenue

Evanston, Illinois

April 1963

Responding to the concern of the American people for better health, the Federal government has developed programs to provide substantial funds for two important phases of the attack on disease: the construction of hospitals and other facilities for patient care under the Hill-Burton Act; and, the construction of research facilities and the support of medical research and research training through the National Institutes of Health. Significant gains in the prevention and treatment of disease and in the lengthening of productive life have resulted from this support. However, our nation's continuing progress toward improved health is threatened by the developing shortage of health personnel, in particular, the shortage of physicians.

Several studies by responsible groups have established that the annual output of physicians must be increased 50% by 1975 if we are to maintain the present ratio of doctors to population, a ratio generally accepted as a minimum requirement.

To expand existing schools and build new schools takes time, as does the recruitment and organization of faculties. And the training of new generations of physicians requires from 5 to 9 years of professional education after college. A comprehensive national effort to support medical education is required immediately—if the nation's need for physicians in the 1970's is to be met.

In undertaking such an effort, it must be recognized that the three basic activities of a medical school—teaching, research, and service—are inseparable; each is necessary for the full effectiveness of the others. However, the Federal government has had no program for the development and expansion of teaching facilities. Such a program is needed at this time not only to increase the number of physicians but also to permit the education of additional medical teachers, research personnel, and essential allied health groups including dentists, nurses, physical therapists, and others.

As an important step toward meeting the nation's need for additional medical personnel, the Association of American Medical Colleges suggests some basic principles for a program of Federal assistance to medical education.

THE PROBLEM

Either we make a concerted effort to increase the number of doctors so that the ratio of doctors to population is maintained or increased, or we accept a reduction in our ability to control and cure disease and a reduction in the quantity and quality of medical service to the public.

To maintain the present ratio of doctors to population will require an annual increase of 4,000 first-year places in the schools of medicine. The only way that this can be achieved is by increasing enrollments in existing schools and building new schools. Existing schools can, through expansion, admit approximately 1,700 of the 4,000 additional students needed to meet the demands of the 1970's. To provide for the remaining 2,300, approximately 23 new medical schools must be built.

Equally important, if we are to attract increased numbers of able students, is the necessity for relieving medical students of at least part of the heavy financial burden they incur during their professional training. Ways must also be found to support the schools in financing the educational programs which this expanded student body will require.

THE SOLUTION

Substantial help in meeting certain clearly recognized needs can be provided by the Federal government through financial assistance:

1. To existing medical schools—to aid in remodeling, expansion, and staffing of present facilities;
2. To medical students—to reduce the financial burden of obtaining an M.D. degree;
3. To universities—to encourage the building of the new medical schools which must provide places for the 2,300 additional medical students;
4. To medical schools—to strengthen and expand their basic educational programs.

The Association of American Medical Colleges urges the following as a minimal program of Federal support:

For existing medical schools:

1. Grants for the modernization, expansion, and replacement of educational, research, and library facilities.
2. Grants for the establishment, modernization, and expansion of teaching hospitals and clinics.

For new facilities:

1. Grants to universities for studies of the feasibility of establishing new schools.
2. Grants for construction of new schools, including research facilities and teaching hospitals and clinics.

For medical students:

1. Non-refundable scholarships which will be available for all four years of medical school and will impose no restriction on the choice of school or the choice of post-graduate work.

For all medical schools present and proposed:

1. Grants to schools to cover part of the cost of their faculties and teaching programs.
2. Payment of the full costs of federally sponsored research and research training.

Specifically, the Association of American Medical Colleges recommends that the Congress pass enabling legislation, covering a ten-year period, to provide matching funds for the full modernization and expansion of existing programs in medical education and the development of new programs.

It is recommended that the first appropriation measure cover a three-year period with a provision for annual amendment, depending upon the continuing study of needs and of amounts that can be expended to the best possible advantage. As a basic appropriation for the three-year period, the Association recommends:

1. $50 million each year for matching grants for the modernization of educational, research, and library facilities of existing medical schools;

2. $50 million a year for matching grants for the modernization, expansion or establishment of teaching hospitals and clinics;

3. $300,000 each year for grants up to $50,000 each to universities interested in studying the feasibility of establishing new medical schools within their institutions;

4. $50 million for the first year, with appropriations in later years to be determined by further studies of the need, in matching grants for the construction of new schools including research facilities and teaching hospitals and clinics;

5. Annual grants to each school for non-refundable fellowships calculated on the basis of $500 per student, to be awarded by the schools to needy and deserving students in amounts not to exceed $2,500 to any one student in a single year;

6. Annual grants to each school, which should provide with other national and local sources the needed additional operating funds to assure the continuation of full institutional control of medical education.

Finally, the Association takes cognizance of the long and effective working relationships existing between the medical colleges and the Department of Health, Education, and Welfare, particularly the U. S. Public Health Service and its National Institutes of Health, and expresses its hope that the future Federal support of medical education will be administered in the same enlightened manner, with the full utilization of non-federal consultants, that has characterized the past.

The proposals set forth above were unanimously endorsed by all the medical schools in the United States on January 11, 1961 and unanimously reaffirmed on November 8, 1961 and October 31, 1962.

Association of American Medical Colleges
Proposals for the Support of Medical Education by the Federal Government
Adopted by the Institutional Membership
January 11, 1961
Chicago, Illinois

PREAMBLE

The American people are deeply concerned about health. Responding to this concern as a matter of national policy, the Federal Government in the past fifteen years, largely through the Department of Health, Education and Welfare, has joined state and local governments, health and educational institutions, voluntary health agencies, private philanthropy, and industry in meeting two especially critical needs in the attack on disease: the construction of hospital and other facilities for the care of patients (Hill-Burton program), and the support of medical research (National Institutes of Health).

Expenditures by the Government in support of these two programs represent investments in the health of the nation which pay rich dividends, as has been amply documented. It is imperative that these programs be continued and developed further.

Health service facilities and medical research have made possible dramatic progress in the prevention and treatment of disease. A block to the effective use of new knowledge and to the pursuit of further knowledge is the increasing shortage of personnel in the health professions, particularly doctors. This block can be removed only by the improvement and expansion of the nation's system of medical education.

The critical nature of this problem has been defined in five reports prepared in recent years by advisory groups of non-government consultants.* These authoritative studies show that by 1975 the nation will need to train about fifty per cent more physicians than in 1960 just to maintain the current ratio of physicians to population, a ratio generally accepted as a minimum requirement.

Because of the time required to improve and develop facilities and faculties and to take doctors through the full cycle of five to nine years of professional training, action to improve and expand programs of medical education must be taken at once. Otherwise, the nation faces a very serious reduction in its ability to control and cure disease and our people will not have available the medical service they want and expect.

Since the problem of medical manpower can be solved only by prompt and comprehensive national effort, it is appropriate that medical schools and their parent institutions outline the basic requirements which to them seem necessary to accomplish this national objective while preserving the traditional freedom of the educational institutions. To this end, the Association of American Medical Colleges is suggesting principles of a Federal program of assistance to medical education which have been generally agreed to by its members.

The program presented in this statement outlines those measures that the medical schools believe necessary if existing programs of medical education are to be maintained at an adequate level of quality and if there is to be a sufficient expansion of our facilities to provide the number of well trained medical graduates that the nation requires.

In considering needs of medical education, it is important to understand the variety, complexity and interrelationships of activities involved in the training of medical personnel. This is especially true in relation to the three components of medical education: teaching, research, and service. The inseparable nature of these three functions has led to the "medical center" concept as a more realistic characterization of medical education than the too frequently held concept of the medical school, the teaching hospital, the research program, and community health services as activities independent of each other. However, the two major Federal support programs - for medical facilities and for medical research - while understandably directed toward specific restricted objectives have complicated the conduct of medical education by failing to recognize that research and service are integral functions with teaching. Thus, the need for service facilities and the need for research facilities in a medical education environment have been considered independently by the government, and no provision at all has been made for teaching facilities, although teaching is basic to both service and research.

The medical center typically has as its nucleus a medical school for the undergraduate training of candidates for the M.D. degree. Essential to this program is a strong faculty in the basic health sciences. Such

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* *1952 Report of the President's Commission on the Health Needs of the Nation*
1958 Final Report of the Secretary's Consultants on Medical Research and Education
1959 Report of the Surgeon General's Consultant Group on Medical Education
1960 Report of the Committee of Consultants on Medical Research to the Subcommittee on Departments of Labor, Health, Education, and Welfare, of the Committee on Appropriations, United States Senate, Eighty-Sixth Congress, Second Session
1960 The Report of the President's Commission on National Goals

scientists can be retained and can be fully effective only when they are given broad opportunity for research activity -- teaching is barren in the absence of an environment conducive to the vigorous pursuit of new knowledge. These same faculty members are also called upon to train another important group of students -- the future specialists in their fields who are Ph.D. candidates within the graduate program of the parent university. This is a vital function, particularly for the production of medical teachers and research personnel. Likewise, these faculty members in many situations are called upon to teach basic sciences to dental students, nursing students, and paramedical personnel. They must also participate in clinical teaching conferences in support of both undergraduate and graduate medical education.

The medical center concept is particularly pertinent in the teaching of the clinical specialties. Clinical teaching is conducted in relation to patient care, and a high standard of patient care is necessary for good teaching. A core of full-time teachers is required to give continuity and responsible direction and supervision to patient care and the related teaching. The teaching hospital of a medical school, then, whether directly operated by the school or affiliated with it, is an important component of the medical center, Also, opportunity for research is important to the clinical teacher and to good clinical teaching just as is true in the basic sciences.

The clinical faculty, in addition to its responsibility for teaching of M.D. candidates, is becoming increasingly responsible for graduate training of doctors -- interns, residents, and fellows. Medical graduates are tending more and more to seek advanced clinical training in hospitals operated in conjunction with medical schools because of the educational orientation of the training. These teaching and training responsibilities put a heavy burden on the schools and their teaching hospitals for which support is required.

Finally, a new and growing responsibility of medical schools is to provide leadership in coordinating medical services within their area and in providing post-graduate and specialized training opportunities for practicing physicians.

These various activities of the medical school beyond the four-year M.D. program must be understood and recognized -- and support of medical education must be provided in keeping with the concept of the medical center.

The proposals that follow represent the initial steps that the Association of American Medical Colleges believe should be undertaken in order to accelerate the ability of this nation's system of medical education to produce the numbers, categories, and quality of the professional and technical personnel required to meet the health needs of a population that is not only growing in size but also in medical understanding.

These proposals cover only the needs of the nation's existing schools of medicine and the need for new schools. The Association of American Medical Colleges recognizes the importance of the health professional areas other than medicine and also of the research and research training that is done in institutions other than schools of medicine. Any provision which the Federal government makes to meet the needs of educational and research activities that take place outside the medical school and its research and service facilities should be over and above the recommendations in this statement.

While all of the proposals require implementation, funds for construction are given first priority because it is the inadequacy of existing facilities that is the primary obstacle to the over-all development that is needed. Until steps are taken to solve this problem, little will be accomplished by efforts to increase medical school faculties or student enrollments. Students and teachers must have suitable places in which to work, including classrooms, laboratories, libraries, hospitals and clinics.

I. Matching funds for modernization and expansion of existing schools and the construction of new schools.

A. The Need

In the fall of 1959 the Surgeon General's Consultant Group on Medical Education reported that to maintain this nation's present ratio of physicians to population, by 1975, 3,500 more physicians must be graduating each year than is presently the case. This means, with due allowance for drop-outs between admission and graduation, that by 1970 this nation must provide an increase of approximately 4,000 first year places in its schools of medicine.

A survey in the fall of 1960* discloses that 1,700 of these additional first year places can be created by the full modernization and expansion of existing schools. The remaining 2,300 must come from the establishment of new schools. Therefore, the provision of funds that will provide for both of these approaches will permit enrollment increases that can be both prompt and continuous. The nation's schools of medicine, colleges and universities of themselves do not have the resources to finance the necessary modernization expansion and new development. Most of the needed money must come from the Federal government.

B. Policy

Since medical education serves many national purposes and since its strength comes through the diversity

* *Medical Education in the United States and Canada, Wiggins, W.S., Leymaster, G.R., Taylor, A.H., and Tipner, Anne, JAMA 174: 1425-1431*

of local ownership and control, the Association of American Medical Colleges favors both federal and local participation in the construction of medical schools and their related research, library, hospital and clinic facilities.

Federal matching funds should be provided under conditions that will:

1. be sufficient in amount to encourage action that is both prompt and adequate;
2. encourage the modernization and expansion of existing schools;
3. encourage academic institutions not presently involved in medical education to plan and develop new schools;
4. encourage an institution's continuing effectiveness in maintaining diversity in its sources of financial support;
5. recognize the essential unity of medical education and research by identifying the support of one with the other;
6. recognize the indispensability of the library, the university hospital, and clinic to medical research and education.

C. Proposals

1. As an initial step, the Association of American Medical Colleges recommends that the Congress pass enabling legislation covering a ten year span that will provide matching funds for the full modernization and expansion of existing programs in medical education and the development of new programs.
2. It is recommended that the first appropriation measure cover a three year period with a provision for annual amendment, depending upon the continuing study of needs and of the amounts that can be expended to the best possible advantage. As a basic appropriation for this three year period, the Association recommends:
   a. that $50 million a year be appropriated for grants for the full modernization, expansion or replacement of the educational, research, and library facilities of existing schools of medicine. If an increase of 5 per cent or more is made for the enrollment of first year medical students, the federal matching should be three dollars for one; if there is less than a 5 per cent increase in first year places, the federal matching should be three dollars for two;
   b. that $50 million a year be appropriated for grants to existing schools of medicine for the establishment, modernization and expansion of those teaching hospitals and clinics that are their primary base for clinical teaching and research, the granting of such funds to be upon application made by the medical school or university. The matching formula for such grants should be one Federal for one local dollar;
   c. that for the first year, $50 million be appropriated for grants for the construction of new schools, including research facilities and teaching hospitals and clinics. Federal funds should be provided upon a 3 to one basis;
   d. that $300,000 per year be appropriated for grants, up to $50,000 to an academic institution that wishes to study the feasibility of establishing a new school.

II. Financial aid to students of medicine.

In spite of a rapid increase in the number of liberal arts graduates, there continues to be a decline in the number of medical school applicants. While this may be due to a variety of reasons, there can be no doubt that one important reason is the amount of personal expense and time involved in study for the M.D. degree and in the additional years the young physician must spend in internship and residency training as contrasted with the time and cost involved in securing the Ph.D. in the various sciences.

A nation wide study of the students graduating from medical schools in 1959 showed that at least one third had important financial problems.

The Association of American Medical Colleges believes that to insure an adequate number of medical students, the most crucial need at this time is for non-refundable educational grants (pre-doctoral medical fellowships). The Association recommends that these grants be provided in amounts and under conditions that will attract and hold qualified students who for financial reasons might not otherwise be able to pursue a career in medicine. The Association recommends that these non-refundable fellowships should:

1. be available for students during all four years of medical school;
2. not in any way limit the ability of a student to attend the school of his choice;

3. not impose restrictions upon the student's freedom to obtain postgraduate training or pursue a career of his choice;

4. be made available as a lump sum grant to each school, the amount to be determined by the number of enrolled medical students. Five hundred dollars per student is suggested;

5. be administered by each school in accordance with its particular needs and circumstances with the provision that all such funds be used in direct aid to medical students, that up to $2,500 per student be the maximum of the Federal fellowship allowed in a single school year, and that no restrictions be placed upon the freedom of the school to use funds for student aid from other sources.

III. The provision of the full cost of project-supported research and research training.

The Association continues to recommend that grants from the National Institutes of Health for the support of research and research training permit the payment of full costs based upon a formula that will allow for variations in the costs from institution to institution.

IV. The support of research and research training.

The Association of American Medical Colleges recognizes that the Federal Support of research and research training has lead to great improvement in the health of both the nation and of the world and recommends that this support be continued. One of the major objectives of the Association's proposals for funds for the remodeling and expansion of existing schools and for the construction of new schools, as well as its recommendations for full reimbursement for the cost of research and research training, is to strengthen the basic capacity of the nation's schools of medicine to conduct these activities.

The Association therefore recommends that, as the result of constant study, each year's appropriation for research and research training continue to be adjusted to the national need, to the availability of facilities and scientific personnel, and to the amounts of money that can be spent wisely and efficiently.

V. General support of medical education.

The program of assistance to medical education offered in the foregoing sections is essential to modernize and expand the physical facilities of the medical schools of the nation, to assist in the creation of new schools, and to make it possible for young men and women of intelligence and character, even though of modest means, to secure a medical education.

But this program alone will not provide enough physicians to meet the needs of the nation. A strong system of medical education requires adequate financial support that is continuing and stable. Universities with budgets already under great stress will be unable to maintain, improve, or expand their existing medical programs or to establish new medical schools or new educational programs unless sources of additional operating funds are found.

Since this is a matter of vital concern to the entire nation, the Association of American Medical Colleges believes it is reasonable and proper that the Federal government should provide together with other national and local sources the needed additional operating funds. All such funds should be made available in a manner which will assure the continuation of full institutional control of medical education.

VI. Administration

The Association of American Medical Colleges believes that the close coordination of Federal programs that support medical education is essential.

The Association takes cognizance of the long and effective working relationships existing between the medical colleges and the Department of Health, Education and Welfare, particularly the U.S. Public Health Service and its National Institutes of Health and expresses its hope that the future Federal support of medical education will be administered in the same enlightened manner, with the full utilization of non-federal consultants, that has characterized the past.

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FACULTY,DEFINITIONS OF
(ADOPTED BY EXECUTIVE COUNCIL)

15

June 21, 1965

ASSOCIATION OF AMERICAN MEDICAL COLLEGES

MEMORANDUM #65-24

TO: All U. S. and Canadian Deans

FROM: Robert C. Berson, M.D., Executive Director

SUBJECT: Faculty Definitions

The Executive Council, after much consideration and many revisions, approved the enclosed definition of faculties for use of the AAMC central office. While we hope schools will find these acceptable for their own use, these definitions are not to be considered the official definitions for medical schools unless so determined by the school itself. The definitions were developed for the use of the central office for any studies involving faculty.

#4754
mw

DEFINITION OF MEDICAL SCHOOL FACULTY

I. Full-Time Faculty

A. "Strict Full-Time" faculty members are those who receive their entire professional income* as a fixed annual amount from funds controlled by the medical school and/or hospitals or institutions affiliated with the medical school and who devote their full time to the programs of the institution.

1. Medical school strict full-time faculty are those who receive their entire professional income as a fixed annual amount from funds controlled** by the medical school and whose professional activities are under the direct auspices of the medical school.

2. Other strict full-time faculty are those who receive their entire professional income as a fixed annual amount from one or a variety of sources, devote their full time to academic pursuit, but whose professional activities are not under the direct auspices of the medical school.

B. "Geographic Full-Time" faculty members are those who receive a guaranteed base salary from funds controlled by the medical school and/or affiliated institutions plus some income from other professional activities and who do all of their professional work in the medical school and/or affiliated institutions. The circumstances of their professional activities, including participation in programs of the institution, the amount of time devoted to and the amount of personal income from other professional activities, are matters of institutional policy.

1. Medical school geographic full-time faculty are those who receive a base salary and who are paid all or most of their base salary from funds controlled by the medical school** and whose professional activities are under the auspices of the medical school.

2. Other geographic full-time faculty are those who receive a base salary and who are paid their base salary from one or a variety of sources, usually affiliated hospitals, and whose professional activities are not under the direct auspices of the medical school.

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* Professional Income is defined as the money a faculty member receives in the form of salary for services rendered the medical school or affiliated institutions and money derived from patient care, consultant fees, and services rendered organizations or individuals. Income derived from honoraria, publications, patents, etc., are usually not included. V.A. consulting fees may or may not be included, depending upon the policy of the medical school.

** "Funds controlled by the medical school" are defined as those funds from which expenditures must be approved by the medical school administration.

#4754

The total supplementation of the professional salaries of the geographic full-time faculty from other professional activities may be:

1. Limited by an established ceiling on earnings;

2. Limited by a fixed amount of time they can devote to other professional activities;

3. Limited by a combination of one and two; or

4. Without limitations.

II. Part-Time Faculty ***

A. "Part-Time Paid" faculty members are those who receive a salary for devoting part of their time to the programs of the medical school and/or the affiliated institutions. The circumstances of their professional activities during the time they are not paid by the medical school and/or affiliated institutions are not the official concern of the institution.

B. "Part-Time Volunteer" faculty members are those who receive no salary but who have a part-time responsibility to the medical school teaching, research, and service programs. The circumstances of their professional activities during the time they are not involved in the teaching, research, and service programs of the school are not the official concern of the medical school or affiliated institution.

*** Part-time Faculty Members are those who have an academic or research appointment in the medical school but do not spend their total professional working time in the medical school or medical center and/or a medical center institution for which the medical school has direct responsibility.

NOTE: Problems of determining whether a faculty member is full time or part time arise in situations where the individual is making a major contribution to the medical school academic programs but who is employed by a service institution which is not directly controlled by the medical school or the medical center. His academic activities, however, are directed and implemented by the medical school.

Examples are staff members of V.A. hospitals, tuberculosis sanatariums, mental hospitals, county or city hospitals, research institutes, other specialty hospitals, other professional schools, etc.

Such faculty members should be considered full time if, in the opinion of the dean, their contributions are of the magnitude that would require the addition of a full time person to the medical school faculty if their services were not available. Whether the replacement faculty member would be geographic full time or strict full time would be at the discretion of the dean.

mw
#4754

Communications

PROPOSALS FOR THE SUPPORT OF MEDICAL EDUCATION BY THE FEDERAL GOVERNMENT, 1967

Following is a statement of policy on federal government support of medical education adopted by the Institutional Membership of the Association of American Medical Colleges on April 17, 1967.

PREAMBLE

The medical schools of the United States and their associated medical centers require improved support from the federal government in order to meet their obligations to the health of the people. The expectations of the people will only be fulfilled through increased output of physicians along with other professional and supporting health workers, through continued support of both basic and applied research, and through enhanced delivery of health care in the community. In each of these functions the medical schools and their associated medical centers are an essential national resource. In order to preserve and improve this resource, 4 proposals are made:

1. A basic institutional support grant should be made to the academic medical centers.
2. Project research and research training grants should be continued and increased.
3. Programs involving the academic medical center in expanded community health service should be administered so as to increase institutional strengths.
4. In the Department of Health, Education, and Welfare a single locus of concern for academic medical center programs should be established.

THE ACADEMIC MEDICAL CENTER

The university is today the typical institutional setting of the interdependent programs of education, patient service, and research that form an academic medical center, recognizing that 10 established academic medical centers are included which have an analogous setting except that the medical school is independent of a parent university.

The core of the academic medical center is the faculty and facilities necessary for the education of the M.D. candidate. But other essential roles are simultaneously served. Basic medical scientists are also responsible for the graduate degree programs and the research training which are the source of tomorrow's teachers and investigators in these basic health sciences. The research efforts of the basic science faculty create the scholarly environment needed for the kind of education that prepares the student to understand and utilize the scientific advances that will occur during his professional lifetime. These same research efforts produce the knowledge necessary to improved definition and solution of problems vital to human health.

The clinical faculty adds the responsibility for patient care to its obligations for teaching and research. Both the medical school and the hospital phases of the physician's education are shared by the clinical faculty, while they are in-

creasingly sought after for the postgraduate education of the practicing physician. Research and research training programs, both basic and applied, are necessary for these "teacher-physician-scientists" to translate laboratory findings into improved patient care and more effective teaching. Commonly, this same medical faculty shares responsibility for teaching students of dentistry, nursing, and pharmacy and supporting health workers.

The academic medical centers vary widely in their organization for patient service, but all have the obligation to provide exemplary patient care under faculty responsibility. This high level of patient service is necessary to medical education and medical research, but is also an important community resource.

Every academic medical center in the United States is in trouble financially and some are in desperate straits. Improved support is needed to sustain the quality of their existing programs, to permit them to enlarge their output of essential medical manpower, and to provide for new programs to enhance the delivery of health services.

BASIC INSTITUTIONAL SUPPORT GRANTS FOR ACADEMIC MEDICAL CENTERS

As federal health programs have evolved over the past twenty years, they have dealt separately with education, research, and medical care. The institutional integrity of the academic medical center is essential to the attainment of the separate and collective missions of these programs and so it is necessary that these missions preserve the inseparable interdependence of teaching, research, and patient care within the academic medical center.

1. Basic institutional support grants should be increased and extended to support the full range of educational programs of the academic medical center.

2. Project grants for education or research should allow for overlapping use of these resources within the academic medical center, to the extent that the fulfillment of the primary purpose allows.

3. Academic medical center construction grants should not be restricted to the exclusive use of only one part of the triad of training, research, and service. Common use of an area is inevitable if research and service are part of the teaching environment.

4. A system of accountability which accepts the full range of health-related efforts in the academic medical center should be developed. An accounting concept which requires complete separation of teaching, research, and clinical service is not in the best national interest because it decreases the advantages of interaction among these interdependent activities.

RESEARCH AND RESEARCH TRAINING

The established programs of the National Institutes of Health must be maintained and expanded. The research and research training supported through the National Institutes of Health has been essential to improving the quality of medical education over the past twenty years. The supply of new faculty members for developing medical schools has been dependent upon the career development opportunities of these programs. Most importantly, our present knowlege cannot solve our health problems; and expanded research is urgently needed.

1. A sustained and generous commitment to independent basic and to applied

research should be maintained. Directed research should be supported as a supplement to and not as a substitute for independent research and research training.

2. General Research Support Grants should be increased in such a way that interference with the growth of independent research and research training would be avoided.

ACADEMIC MEDICAL CENTER INVOLVEMENT IN COMMUNITY HEALTH NEEDS

The purpose of medical knowledge is served only when it is applied in health care and academic medical centers seek to develop models of improved patient care for general community use. Enlarged faculty and clinical resources will be needed for the experiments in the delivery of patient care so that these increased efforts will not dilute the quality of basic programs of education and research in the academic medical center.

1. In order that the academic medical center can develop models for improved delivery of health services, capital and operating grants analogous to those supporting the clinical research centers should be provided.

THE PARTNERSHIP OF THE ACADEMIC MEDICAL CENTERS AND THE FEDERAL GOVERNMENT

In the last few years serious problems have arisen as academic medical centers have had to accommodate to the variety of administrative policies and regulations of numerous federal agencies whose first concern must be with their statutory missions rather than with the integrity of the academic institutions through which these missions are accomplished. There is a need for a continuing effort based on a long-standing mutual dependence and respect to discover and maintain the practices that will allow the public purposes of the federal government to be achieved through the efforts of the academic medical centers.

1. In the planning and operation programs that are conducted within the resources of the academic medical centers, a single locus of responsibility within the Department of Health, Education, and Welfare should be established by the Secretary.

2. Programs of federal agencies conducted in cooperation with academic medical centers should be administered to produce the specific results required by the agency and also with a view to increasing the institutional strength of the medical center.

CONCLUSION

In 1961 the Association of American Medical Colleges outlined the opportunities and needs by which their Institutional Members could contribute most effectively to the achievement of national health goals. Each of the recommendations made in 1961 has now been initiated in legislation that has established a partnership of effort between the academic medical centers and the federal government.

The academic medical centers of the United States through the Association of American Medical Colleges accept the responsibility they have to serve the health needs of the people. The proposals that have been made for the support of medical education by the federal government are essential to the fulfillment of this responsibility.

PROPOSALS

FOR THE SUPPORT OF MEDICAL EDUCATION

BY THE FEDERAL GOVERNMENT, 1967

A STATEMENT OF POLICY ON FEDERAL GOVERNMENT SUPPORT OF MEDICAL EDUCATION ADOPTED BY THE INSTITUTIONAL MEMBERSHIP OF THE ASSOCIATION OF AMERICAN MEDICAL COLLEGES ON APRIL 17, 1967.

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Medical school administrators need not worry about financing an elaborate effort in the history of medicine. All that is needed is some enthusiastic and knowledgeable faculty members who would plan and conduct a course of from 20 to 30 lectures and seminars a year. Such devoted amateurs would prepare the way for a professional medical historian and could continue to aid in promoting such a professional's program. The history of medicine crosses all disciplinary lines in a medical school and can contribute much to the efficacy of the overall teaching program of the school.

CHAUNCEY D. LEAKE
University of California
School of Medicine, San Francisco

"WHITE PAPER," 1967

The second AAMC "white paper" on the federal support of medical education appears in this issue of *The Journal*. The document, which has been discussed and revised during several meetings of the Institutional Membership, extends the recommendations made in 1961.[1] A more effective collaboration between the medical centers and the federal government in achieving national health goals is proposed. It is heartening that all of the recommendations in the first white paper have been implemented through legislation and program development.

The new document reflects the medical schools' growing concern about the preparation of health professionals and the extension of the medical center into the community. The point is made that if medical centers are to carry out their ever broadening responsibilities for teaching, research, and service, the financial support for their basic operations must be strengthened. The federal government is seen as the major resource for the funds needed.

More effective and efficient operation of the medical center demands that the previous philosophy of the federal government which separated teaching, research, and service be revised. It is quite apparent that the medical centers cannot make their proper contribution on this compartmentalized basis. One of the major impediments to the recognition of the interdependence of these areas has disappeared: the Congress has accepted the philosophy that the federal government has a responsibility for supporting education and the delivery of health care; the necessity for trying to justify federal support under the rubric of research or research training has passed.

It is time for the problems of the medical centers to be faced squarely. The partnership of the federal government and the centers must be extended to meet the demands for better health care for our people. Hopefully, the recommendations in the second white paper will meet the same acceptance and support as those made in 1961.

JOHN A. D. COOPER

1. Association of American Medical Colleges: Proposals for the Support of Medical Education by the Federal Government, Adopted by the Institutional Membership January 11, 1961. *J. Med Educ.*, 36:730-736, 1961.

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Communications

JOINT AMA-AAMC STATEMENT ON HEALTH MANPOWER

To meet national expectations for health services the enrollment of our nation's medical schools must be substantially increased. At a joint meeting held in Chicago on February 28, 1968, the representatives of the Board of Trustees of the American Medical Association and the Executive Council of the Association of American Medical Colleges emphasized the urgent and critical need for more physicians if national expectations for health services are to be realized.

National policy which would best meet this need and would be consistent with the American ideal of equal educational opportunity for all would provide such resources that every young person interested in and qualified for entry to the study of medicine would have this opportunity. Both Associations endorsed the position that all medical schools should now accept as a goal the expansion of their collective enrollments to a level that permits all qualified applicants to be admitted. As a nation, we should address the task of realizing this policy goal with a sense of great urgency.

In their endorsement of and call for broadening educational opportunity for the study of medicine, both Associations stressed that the length of time necessary to realize such a goal does not minimize the need to respond to today's critical shortage of physician manpower. In order to enable the nation's medical schools both to meet today's crisis and to attain the longer range goal of unrestricted educational opportunity, those responsible for allocation of resources must recognize the magnitude of these tasks.

There are both immediate and long-range steps which should be taken. The immediate steps are:

1. To increase the enrollment of existing medical schools. Considering the time required to create new schools and to provide a student with a medical education there is no alternative to this step in meeting our present emergency.

2. To foster curricular innovations and other changes in the educational programs which could shorten the time required for a medical education and minimize the costs. In view of the increasing quality of preprofessional education and the growing competence of entering medical students, it should be possible to reduce the length of medical education without sacrificing quality. Also, as the amount of clinical experience provided medical students increases, the duration of internship and residency training should be reassessed. The process of educating a physician embraces the entire curriculum from high school through residency training.

3. To meet the need for innovation in educational programs and to encourage diversity in the character and objectives of medical schools. The development of schools of quality where a primary mission is the preparation of able physicians for clinical practice as economically and rapidly as possible is to be encouraged. Such schools may have less emphasis upon fundamental biologic research than is appropriate for a number of other schools.

A longer range approach to the need for physicians is the development of new medical schools. This approach will not solve our immediate, urgent need for more physicians; but it is essential for meeting the national needs of 1980 and beyond. The contribution of such schools to the total capacity of the medical education system is important. The advantages of the organization of as many such centers of medical education and development through the country as consistent with strong programs should be kept in mind.

To implement the measures enumerated above will require adequate financial support from governmental and various private sources for:

1. Construction of facilities to expand enrollment of existing schools and to create new schools.
2. Support of the operational costs of medical schools.
3. Stimulation and incentive for educational innovation and improvement.

To implement these measures will further require that each medical school and its university reexamine its objectives, its educational program, and its resources to determine how it can contribute most effectively to the national need for more physicians and what financial help it will need to make this contribution. Also required is understanding by the public, the private foundations, industry, local and state governments, and the national Congress-groups which must provide the financial support which is necessary.

Initiative for development of new schools and expansion of established institutions should be locally determined. Only the governing bodies of schools with ongoing programs in medical education can decide to expand such programs. Institutions wishing to organize new medical schools must assume the responsibility for marshalling the necessary support. Both Associations are prepared to lend any assistance they can to such efforts.

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Communications

JOINT STATEMENT ON HEALTH MANPOWER*

AMERICAN MEDICAL ASSOCIATION AND ASSOCIATION OF AMERICAN MEDICAL COLLEGES

Rising public expectations for health services and determination to upgrade quickly the health care of large segments of the population have created unprecedented demands for physician manpower. The public's challenge to medical education to respond by producing the necessary health manpower is clearly understood and has been accepted by the medical profession. At a second joint meeting of members of the AMA Board of Trustees and the Executive Council of the AAMC [in June, 1968], these groups again expressed their determination to mobilize the support necessary for the medical schools to expand enrollments to desirable levels.

A medical college is a complex, multipurpose enterprise with important obligations to various individuals, groups, organizations, and to society. It is impossible for a medical college to operate at a high level and to discharge these obligations without effective funding, planning, coordination, and control. Appreciation of the complexity of function and financing is necessary for any understanding of the fiscal predicament in which academic medical centers now find themselves.

At this time AMA and AAMC urge that increased emphasis be given to support of the educational component of academic medical center activities with the intent that the production of physicians and other health personnel by such centers be assigned the highest possible priority. In their effort to mobilize support for medical education, AMA and AAMC leaders resolve to use all of their resources to achieve the desired results.

The problems of each academic medical center are unique to that institution. A blanket solution nationally designed and centrally imposed will not produce desired results. Rather, the interests and talents of governing boards, the magnitude and sources of assured support, the abilities and goals of faculties, the hopes and ambitions of students, and the influence of local, regional, and national attitudes must all go in to determining in what fashion each academic medical center can make its optimal contribution.

INCREASED NUMBER OF GRADUATES

1. Increased Enrollment. Each medical school is examining carefully what it can do. In September, 1968 about 200 more students will enroll in the first-year classes of all existing medical schools than in the fall of 1967. By 1969 another increase of over 400 is expected. Incentives should be devised to assist with increased construction funds and operating budgets those schools which elect to expand enrollment.

* The Joint AMA-AAMC Statement on Health Manpower which resulted from the meeting of the AMA Board of Trustees and the AAMC Executive Council on February 28, 1968 was published in the April, 1968 issue of *The Journal*. The present document amplifies that statement.

2. More Medical Centers. In September, 1967, 4 new medical schools opened their doors, and in 1968 5 others are expected to begin operation. Universities in cities with a combination of population density, a strong undergraduate school, availability of adequate land, appropriate clinical facilities, and a reasonable source of financial support have been and should continue to be strongly encouraged when they seek to organize medical schools.

MOBILIZATION OF SUPPORT

1. From Local Sources. The AMA has asked its field staff to highlight the urgency of the manpower question before county and state medical societies. These societies have been asked to form committees to marshal a response at city, county, and state levels aimed at increased production of health manpower in both privately and publicly owned medical schools.

2. From Private Sources. Private sources—individuals, industries, and foundations—remain as major contributors to the support of medical education. This fact must never be obscured by the prominence of federal and state tax support. Private support has allowed American medical education the flexibility which has made it strong. The AMA and the AAMC through the AMA Education and Research Foundation and the National Fund for Medical Education are joining forces to convince industry and the foundations that it is in their vital interest to encourage diversity in the support of American medical education.

3. From the Federal Government. Federal support for the educational component of medical center activity should be further encouraged. The full sums of money authorized under existing legislation should be appropriated. Both AMA and AAMC have testified repeatedly and will continue to testify before both Senate and House committees during the coming year. Their testimony is virtually identical in request for support for medical education linked to increased enrollments. Passage of the Health Manpower Act of 1968, which provides for funding for construction, operation, and educational innovation in medical centers, is being strongly advocated by both Associations.

OTHER SPECIFIC STEPS

In addition to the above-mentioned testimony before Congress for support of full appropriations for existing legislation, the call for passage of the Health Manpower Act of 1968, the development of local committees in state and county medical societies, and coordinated approaches to industry and other private sources, other measures are under way. Medical schools are (*a*) continuing to seek ways to enroll more students and to reduce dropout rates; (*b*) exploring methods for allowing entry into medical schools from many backgrounds, and at different levels; (*c*) organizing curricula which will permit progress through medical school at different rates; and (*d*) introducing measures to increase the educational effectiveness and productivity of medical schools. The modern medical curriculum, a continuum which includes college, medical school, and the internship and residency years, is being examined with the objective of achieving optimal investment of the time of each student and faculty member.

The AMA and AAMC will continue to lend all of their support to a national program encompassing the features outlined in this statement.

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Communications

PLANNING FOR COMPREHENSIVE AND CONTINUING CARE OF PATIENTS THROUGH EDUCATION*

Several significant reports have appeared recently calling for a reappraisal of the functions of the primary, family, or general physician in American medicine. These reports contain specific recommendations concerning medical education in the years immediately ahead. The Executive Council of the Association of American Medical Colleges has not formally taken a position on any of these recommendations. It is, however, deeply conscious of the need for finding the best ways to deliver optimal medical and health care and for developing the modifications of our educational programs that are necessary if that goal is to be achieved.

Last winter, the Executive Council constituted an *ad hoc* Committee on Medical Schools and the AAMC in Relation to Training for Family Practice to examine some of the issues that have been raised. Appointed to the Committee were Drs. Edmund D. Pellegrino (Chairman), W. Reece Berryhill, James L. Dennis, Leon O. Jacobson, Charles J. Tupper, and Robert C. Berson, and Mr. Stanley A. Ferguson. The preliminary report of this Committee has been discussed by the deans of American medical schools at their regional meetings and modified slightly thereafter. The Executive Council is convinced that it is the responsibility of each medical school to give conscious consideration to the questions raised, to devote the necessary faculty time and energy to their resolution, and to devise solutions that are appropriate in its own circumstances. The Council hopes and believes that this thoughtful report will be helpful to medical faculties and others deeply interested in the subject.

INTRODUCTION

The task of today's medical schools can be no less than the "creation of the future" in the field of health care (1). To this end they must apply to relevant social issues the same intellectual and practical resources they have applied so well to scientific questions, and they must do so before the forces of change make the future too painfully obvious.

The recent series of reports on the state of comprehensive medicine and the general physician therefore constitute a significant challenge to the medical schools of this country (1-6). They express the common opinion that in our present system of medical care there is a serious deficiency in the provision of comprehensive, personal, and family health services. Redefinition and rehabilitation of the role of the general physician is firmly recommended and the central responsibility of the medical schools in this reappraisal is set forth.

* Report of the Committee on Medical Schools and the AAMC in Relation to Training for Family Practice. Committee members include: Edmund D. Pellegrino, M.D. (Chairman), Director, Health Sciences Center, State University of New York at Stony Brook; W. Reece Berryhill, M.D., Chairman, Division of Community Medicine, University of North Carolina School of Medicine; Robert C. Berson, M.D., Executive Director, Association of American Medical Colleges; James L. Dennis, M.D., Dean, University of Oklahoma School of Medicine; Stanley A. Ferguson, Director, University Hospitals of Cleveland; Leon O. Jacobson, M.D., Dean, Division of Biological Sciences, University of Chicago School of Medicine; and Charles J. Tupper, M.D., Dean, University of California, Davis, School of Medicine.

Like recent federal legislation, the reports reflect a deep public and professional uneasiness with the way in which primary medical care is delivered to individuals, families, and communities. Deep concern is equally expressed for making the benefits of scientific medicine quickly accessible and available in every community.

Medical schools cannot fulfill their social mandate without a clear recognition of the dimensions of the current disquietude and of the essentiality of their genuine involvement in its resolution. A direct confrontation with society's aspirations for optimal health services is now requisite for every medical school. Indeed, the "crisis of service," as one report puts it, may well be the major problem before the medical educator (6).

Though independently prepared by committees of varying composition, the reports are in agreement on a number of very important points:

1. There is a major national need for the better provision of comprehensive, personal, primary, or family medical care.

2. This need has been accentuated by the necessary rise of specialization, which underscores the need for a concomitant development of the synthesizing and coordinating functions formerly performed by general practitioners.

3. Medical schools have devoted insufficient energies to defining the role of the general physician in present and future patterns of health care. There is urgent need for developing the faculty, the curriculum, and the clinical models of comprehensive care essential in any redefinition and in encouraging more students to consider the new generalist roles as attractive career choices.

4. The generalist of the future will be more than a reincarnation of the general practitioner of the past. He will become a new kind of specialist who will be expert in primary, comprehensive, or family medicine or some combination of these elements.

5. He will function in large part as coordinator and integrator of medical facilities, techniques, and other health personnel.

GENERAL ASSESSMENT OF THE REPORTS

These reports clearly perform a valuable service in pointing up a significant social need and the unresolved educational and practical problem of how to meet that need. Their many useful insights and recommendations deserve careful cogitation by all medical educators. However, given our present uncertainty over which patterns of medical care will prove to be optimally suited to present and future health needs, it would be imprudent to endorse any of the reports in their entirety as a general prescription for all medical schools.

Some of the recommendations are too specific and detailed. If followed precisely in their descriptions of professional functions and educational context, they would limit the exploration of alternate and possibly superior solutions. This Committee favors somewhat more diverse, flexible, and experimental approaches specifically tailored to the environment and character of each medical school. The solutions elaborated by a medical school are inevitably conditioned by the needs of its community, the interest of its faculty, and the extent of its financial and manpower resources.

In general, the reports seem to rely heavily on a pattern of functions and services too closely linked to present and even past models. Greater emphasis is needed on the unquestionable fact that patterns of health care in the future are likely to differ drastically from present models. Any realistic and viable definition

of the general physician implies a serious effort to locate him within the framework of newer, more highly organized, and more institutionalized systems of care. Such definitions must make full use of new organizational patterns, of the systems and operations analytic methods, and the intercalation of computers and other technologic tools for the physician and his aides.

Whatever the newer patterns may be, and however efficient, demands on the physician's time will still be great though qualitatively different. The production of physicians will not be equal to these demands. Optimal use of nonphysician manpower is already an urgent necessity in every phase of the health care process. New roles for physicians and nonphysicians must be created to fit the emerging patterns of medical care. Medical centers carry responsibility for a creative reappraisal of the functions of all members of the health care team. Only within such a context can the redefinition of the functions of the several physicians have real significance.

THE FUNCTION OF THE GENERALIST: AN OPERATIONAL DEFINITION

A wide variety of terms is used to describe the missing element in our medical care system: family practice, general practice, personal medicine, primary physician, first-contact physician, generalist, and comprehensive medical care. Each term has historical and semantic overtones which complicate objective discussion of the functional substratum underlying all of them.

It is more useful, therefore, to think of a function needed in society for optimal health care and to define that function operationally. Patients in one degree or another need the following when they seek medical attention:

1. Assessment of their total needs before these are categorized by specialty.
2. Elaboration of a plan for meeting those needs in the order of their importance.
3. Determination of who shall meet the defined needs—physicians, general or specialist; nonphysician members of the health team; or social agencies.
4. Follow-up to see that needs are met.
5. All must be done in a continuous, coordinated, and comprehensive manner.
6. Attention at each step must be given to the personal, social, and family dimensions of the patient's problem.
7. Health maintenance and disease prevention are as important as cure and rehabilitation.

From the patient's point of view, what is sought is a mode of easy entry into a system which will assure the type of medical care needed to solve the immediate problem which caused him to ask for medical advice in the first place. The patient also wants the advantage of moving freely throughout this system from the simplest to the most complex services, if they are needed to resolve his particular problem. He has the right to insist upon the application of all the potentialities of scientific medicine. In addition, everything must be done in a way which is comprehensible to him and takes into account his personal, family, and human needs as well as the needs of his disease.

The public, in short, is seeking a complex of medical care services with the characteristics of comprehensiveness, continuity, competence, considerateness, and family orientation. This Committee suggests that it is better for medical schools to concentrate on devising a medical care system with these characteristics than to apply any of the particular formulas suggested in the reports which have appeared to date. It is essential that each medical school devote a significant amount

of the time and energy of its faculty and administration to a consideration of how to provide a pattern of medical care which will have the characteristics defined above.

Within any such system of medical care there is certain to be increasing need for a general physician of some type. The functions required of this generalist in such a system are diverse. He must be capable of establishing a profile of the total needs of the patient and his family. This evaluation should include social, economic, and psychologic details as well as the more strictly "medical" aspects. He must know what resources are available for meeting those needs. He should then define a plan of care, deciding which parts are to be carried out by himself and which by others. The plan should have a long-range dimension. It should be understandable to the patient and his family, and it should include a follow-up on whether indicated measures have been undertaken and whether they have been effective.

An organization pattern of medical care must be devised which provides the supportive framework for these functions of the general physician. This is more realistic than expecting one physician to contain in himself all of the characteristics of a comprehensive medical care system. The critical functional problem is how best to build certain specific characteristics into a schema of care and to define the role of the general physician within the schema.

Clearly, none of the existing specialties, though it may attempt to provide this kind of comprehensive medical care, is now fully capable of doing so. The specialist can and should take a comprehensive approach to the limited spectrum of disorders defined by the organ system or technique he has mastered. But it is the provision of this approach over the entire range of human illness that is missing now and must be part of future patterns of medical care.

The development of medical care as a system is essential at this time in our social and economic history. All society is moving toward an increasingly complex organization with the closest interlocking of functions, personnel, and institutions. Further, an era of heightened social consciousness will make it virtually impossible for isolated phenomena to exist in the health field and be out of phase with other social phenomena.

The matrix of medical care must be regionalized so as to provide differing levels and complexities of service in the smaller communities, the community hospital, and the university medical centers. Communication among all elements of the system by computerization and centralization of clinical data as well as the coordination of functions and personnel will be essential if the patient's needs as defined above are to be met in every community. Only within an organized system which defines the roles of the various individuals participating in the health care team can the general physician function efficiently and competently.

SOME RESPONSIBILITIES AND RECOMMENDATIONS FOR MEDICAL SCHOOLS

1. To stimulate changes and to teach the comprehensive approach, medical centers must be involved in providing medical care for a defined population through a model which can be manipulated and studied for its utility and effectiveness. Such a model should be the point of primary contact for unselected patients and should be structured to provide all of the functions defined above. It would experiment with the interplay of such modalities as the medical care team; the clinical specialties; and preventive, educational, and rehabilitative measures. The model would

emphasize contact with the home, the community, and the other agencies essential to total health care. It would exploit the computer and other automated methods of collecting, storing, and using clinical data.

Within such a model the generalist physician would provide the coordinating and synthesizing functions and would gradually emerge as the genuine leader of a health care team. The physician has long assumed that he has a natural right to this leadership. He must earn such a position by learning the skills necessary for its successful fulfillment in the working situation of a model of care.

It is obvious that there exists at present no perfect or final model which can be established at all schools to achieve the ends of education, practice, and research in comprehensive medical care. Each medical center is therefore called upon to design that configuration of organization and services it conceives of as being closest to meeting patient needs. Only by empirical trial and studied observation will truly effective models be identified.

In any model there must be full participation by students, faculty, and house staff. The model should be designed primarily as a research and teaching tool under constant evaluation. It is not the *major* mission of the medical school to provide all the medical services for large segments of the population. Any patient care model should be designed to explore the most efficient ways to provide optimal health services to individual patients within a larger framework relevant for the whole of society.

2. The comprehensive attitude of mind should be cultivated in all the patient care activities in which a medical school engages. This approach can even be taken in the teaching and practice of specialties—not over the full spectrum of human disorders as is the case for the generalist—but over a limited field. Close integration of the general and special care of the patient enables the student better to appreciate the contribution of both and to recognize in which area his own talents may lie.

3. Even more important is the need to give serious attention to the specific education required to develop the synthesizing function of the generalist. Specific training in the psychology of group coordination and group dynamics and in the logic of synthesis and value judgments, familiarity with principles of social organization, and facility in using the computer are examples of the knowledge and skills to be developed by concrete educational experiences not now readily available.

4. A faculty specifically interested in, and dedicated to, this type of medicine must be established. Such faculty must function as full-fledged members of the academic departments. The academic and financial rewards for the individuals devoted to teaching comprehensive medicine must be on a par with those of other faculty members. Without this type of academic "respectability," the student will easily detect the dichotomy between a medical school's words and its true beliefs.

5. In its model the medical school will need to develop the requisite nonphysician manpower and explore its role in the health care team. The interrelationships of the roles of the various health professions and their optimal alignment to meet patient needs are best studied in an actual operating model designed to deliver comprehensive care.

6. Critical evaluation of the efficiency and value of the model of care is essential.

Nonphysicians such as sociologists, anthropologists, economists, system analysts, and many others in the university can make valuable contributions to various aspects of operation and evaluation of the model. Indeed, such cooperative efforts centered on the delivery of patient care can prove to be an efficient catalyst in reducing some of the customary impedances to communication between medicine and the other university disciplines.

7. A model of comprehensive patient care cannot be developed in isolation. Too often in the past, important decisions relevant to the care of patients have been made by the physicians alone. A viable and relevant model will only be generated in cooperation with the other health professions—nursing, social work, pharmacy, hospital administration, etc.

In addition, these other health professions must participate in teaching many aspects of comprehensive medicine to medical students. The educational experiences of students of medicine, nursing, social work, pharmacy, etc., should be shared at several points. Students in each profession can, thus, actually experience the way in which the health team operates and see its relevance to their own specific roles.

8. Teaching of the generalist function as defined above must not be limited to the medical student. Members of the house staff should participate in the model of care at some time during their training. Equally important is the use of the model in continuing education. This is now a neglected area. Seminars and actual operational experience in new patterns of patient care are essential for practicing physicians. Many physicians appreciate the need for experiences in the coordination of medical care, in working with the health care team, and in extending their own capabilities through the comprehensive approach. Their postgraduate education has to date, however, not contained such experiences. It is unrealistic to expect practicing physicians to become sophisticated in the comprehensive approach without actual experience.

9. The need to educate generalists and to operate a model of patient care will demand clear definition of the goals of the medical school. It is primarily an educational institution which must always fulfill its academic responsibilities. It must preserve its freedom to experiment not only in comprehensive medical care, but in all other aspects of the clinical and basic sciences.

Medical schools, therefore, will have to strike a careful balance between the demand to make resources available to the community and the equal demand to continue as institutions which focus on change and experiment. The design and operation of a model of comprehensive and general medical care is appropriate to the mission of today's medical school. But the focus of the model should be on teaching, research, innovation, and evaluation. Medical schools in the long view would be unfaithful to the public trust if they burdened themselves with the provision or coordination of all of the comprehensive care in their communities.

SOME IMPLICATONS AND SOME PROBLEMS

As the medical schools of the nation advert consciously to devising new ways of providing medical care with the characteristics of comprehensiveness, continuity, family and individual orientation, certain new questions must be faced.

1. There will be additional costs in providing faculty, other personnel, and services to operate models of care and to provide educational programs in comprehensive medicine. Additional sources of support must be forthcoming and on

a more stable basis than is now the case. Correlatively, it will be important to define these additional costs and separate them from the costs of other medical school functions.

While the financial requirements are significant, they must be surmounted. By themselves, they cannot excuse medical schools from their duty to explore the relevant issues.

2. Only a relatively small number of faculty members are at present experienced in establishing and operating newer models of patient care. Fewer are prepared adequately to teach the elements of team and comprehensive health care. Those medical centers which have pioneered in this sphere should provide opportunities for training and undertake to supply teachers for other programs and schools.

Most medical schools will need to build up faculties qualified in the requisite modalities as soon as possible. It is most important, therefore, that financial and professional advancement be accorded those faculty members interested in developing comprehensive and general medicine as academic disciplines.

3. A model of patient care is best designed and evaluated when applied to a defined population for which responsibility is assumed. The demarcation of such a population introduces questions of relationship with the practicing community. If the effort is to be a cooperative one—and it must be to succeed—the medical school is impelled to communicate its academic objectives clearly and sincerely.

4. An important series of questions pertain to the administrative relationship of the patient care model to the medical school, the teaching hospital, the community hospital, community agencies, local and federal governmental agencies, and regional medical programs for heart disease, cancer, and stroke.

As medical centers undertake to fulfill the broadened obligations of comprehensive health care, they will necessarily mesh with existing social, welfare, and educational structures. There are precedents for these arrangements in the existing programs of some medical schools, but none on the large scale which a really comprehensive model entails. In a truly integrated system of medical care, the university medical center will attempt to provide for the easy flow of patients and information from the community to the medical center and back. The relationship of the generalist physicians in the community and those on the faculty to the specialist in caring for the hospitalized and ambulant patients will require special definition.

5. Obviously, one of the major academic challenges will be the configuration of the curriculum necessary to educate students, house staff, and practicing physicians in the generalist function as defined above. The reports emphasize the importance of internal medicine, pediatrics, psychiatry, community medicine, behavioral sciences, sociology, and psychology. Each medical school has the responsibility of examining its postulate critically and of bringing its academic resources to bear on the development of an optimum curriculum which can equip the student to perform the generalist function within a new health care matrix. Each medical school should devise a program which will express its own view of the way in which the generalist physician is to be best educated. With increasing experience and the evaluation of various models, the optimum curriculum should emerge.

6. Inevitably, this vexing question will arise: Which department should teach the generalist function or operate the model of care? A certain amount of psychological entropy will undoubtedly accrue from this discussion. In some instances,

a department of general practice might be contemplated; in others, the department of medicine, pediatrics, or community medicine might take the lead. An interdisciplinary program calling upon all departments, but totally dependent on no single one of them, might be the optimal solution. Whatever the pattern, some person must be given responsibility and authority to explore the issues raised in this and the other reports if anything concrete is to be done.

7. It may not be appropriate for some medical schools to develop models of health care or programs for the education of the generalist. However, every school must advert consciously to the question before making a decision. It would be disastrous to initiate such programs without faculty acceptance simply to satisfy external pressures or the "me too" spirit. None of these questions is to be construed as an impassable obstacle. Nor can they be answered in the abstract and a priori. As in any experiment, an hypothesis concerning the best way to provide what seems to be missing in our health care system must be set forth. It must then be tested empirically through an operational model. A rational and improved system can be developed if each school responds to the current need, constructs its best tentative answer, and examines the utility of its solution in practice.

SUMMARY

Several recent reports present significant questions and challenges to the medical schools of the nation, and they deserve conscientious examination. None is intended as a final solution but each provides substantive recommendations which must stimulate medical schools to examine more vigorously the functions and education of the general or primary physician.

This Committee does not endorse any one of these reports for universal application in all medical schools. It does, however, enjoin each medical school to advert consciously to these questions, to devote the requisite faculty time and energy to their resolution, and to devise diverse experimental solutions. It encourages cooperative efforts with other university disciplines and health professions in the design, operation, and evaluation of models of patient care which can form the best matrix within which the functions of the generalist can be realized. It emphasizes that all of this must be done without compromise to the quality of the education, research, and service our medical schools now provide.

Clearly, these reports challenge the medical schools with a reappraisal of what is at the heart of their existence—improving the health care delivered to our society. In a culture so richly endowed with the scientific and technical apparatus capable of improving the human condition, the medical schools of this country can do nothing less than confront these critical issues directly, creatively, and enthusiastically: ". . . the life of the people needs acutely to have the university participate, as the university, in its affairs" (7).

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SELF-INSTRUCTION IN MEDICAL EDUCATION: REPORT OF THE THIRD ROCHESTER CONFERENCE

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Thirty-two leaders in research on health education from the United States and abroad gathered at The University of Rochester in September, 1967 to join nearly 200 medical educators for the Third Rochester Conference on Self-Instruction in Medical Education (1).

While addressing many of the same concepts and variables as were considered in the First Conference in 1964 (2) and in the Second Conference in 1965 (3), the speakers at this meeting, sponsored by the Bureau of Health Manpower of the U. S. Public Health Service, were able to go into greater depth and specificity concerning their work and its evaluation. The sessions of the Conference focused on the following topics:

1. The educational needs of the health community both in relation to the education of doctors and paramedical personnel, and the continuing education of practicing physicians.
2. Current applications and research on individualized instruction.
3. Reports on specific experiments with programmed courses, computer-assisted instruction, and other multimedia approaches.

URGENCY OF EDUCATIONAL NEEDS

In his opening address to the three-day conference, Leonard E. Fenninger, M.D., Director of the Bureau of Health Manpower, noted:

> [Today, there is] an urgent, pressing, uncompromising demand for an increased number of health professionals. . . . More people must be recruited into the health

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fields; more education must be afforded them; more means must be given them to keep abreast of their fields and to develop new knowledge.

Advances in the understanding of the learning process and knowledge of how different kinds of information, skills, and behavior are acquired can be and *should* be put to use. We have been offered an unprecedented opportunity to experiment with ways of developing, selecting, storing, and making available all kinds of information.

Despite these opportunities, Dr. Fenninger observed that medical education has been slow to change. He stressed the fact that medical schools must become "not just the point of education for physicians, but the educational focus for other health occupations—and the general public."

Looking at the health care field as a whole, Dr. Fenninger stated that it is all too easy to identify the major problems: The new needs—how are we going to meet them? The new people—how can we recruit them and train them? The new institutions—how can we develop them? Rather than give up in the face of these obstacles, however, he urged educators to retain their perspective and "recognize that the institutions which provide education and training in the health field must be part of the mainstream of education." Most importantly, he emphasized, these institutions must provide a "variety of opportunities for their students to continue to educate themselves."

Dr. Fenninger added that the new and improved educational methods of today, particularly in self-instruction, may be the solution to the problem that faces professional and semiprofessional personnel in updating their information and expanding their careers in the health care field.

In the same way, he declared, self-education can augment the efforts of the physician, dentist, nurse, and others in the care and teaching of patients. "The young couple who wish to learn about obstetrical and infant care, the child who learns about immunization, the traveler who is briefed on health hazards . . . these are all candidates for self-education."

In conclusion, Dr. Fenninger underscored the importance of self-instruction and individualized learning, both as a means of amplifying the work of the teacher and as a way of expanding the scope of the student.

INDIVIDUALIZATION OF CURRICULA

Joseph E. Markee, M.D., James B. Duke Professor of Anatomy, Duke University School of Medicine, reported on a survey and series of visitations that took him throughout the United States and portions of Europe. His purpose was to examine current medical school curricula and teaching practices in an attempt to evaluate the changes that are taking place in these institutions. Following is his conceptualization of the school of tomorrow:

> The apparent central theme in the curricular changes is the breaking of the "lock-step" doctor of medicine program, or the abandonment of the concept that there is any one fixed sequence of courses that will best prepare the many graduates for all the many ways in which they will care for the sick. In short, curricula are becoming more individualized.

Dr. Markee went on to identify 2 major trends in changing teaching practices: (*a*) increasing opportunity for self-education in the medical schools; and (*b*) the replacement of the conventional lecture with "large-group teaching," employ-

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Financial Support of Medical Schools by the Federal Government*

In a White House Report on Health Care Needs issued on July 10, 1969, President Nixon called on the medical schools to "find new ways to expand the number of persons they are training, to shorten the time needed for training and to orient the training more towards immediate needs of the country, such as comprehensive medical care for the poor and the near poor."

We agree with the high priority established for health care. The urgent need to increase rapidly the output of health professionals to meet the expectations of society for better health care for people of all socioeconomic levels has been unequivocally accepted by both the professions and the institutions responsible for educating and training these individuals. This view is clearly expressed in a joint AMA-AAMC statement on health manpower issued over a year ago:

> To meet national expectations for health services the enrollment of our nation's medical schools must be substantially increased. At a joint meeting held in Chicago on February 28, 1968, representatives of the Board of Trustees and the Council on Medical Education of the American Medical Association and the Executive Council of the Association of American Medical Colleges emphasized the urgent and critical need for more physicians if national expectations for health services are to be realized.
>
> National policy which would best meet this need, and would be consistent with the American ideal of equal educational opportunity for all, would provide such educational resources that every young person interested in and qualified for entry to the study of medicine would have this opportunity. Both Associations endorsed the position that all medical schools should now accept as a goal the expansion of their collective enrollments to a level that permits all qualified applicants to be admitted. As a nation we should address the task of realizing this policy goal with a sense of great urgency.
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> In their endorsement of and call for broadening educational opportunity for the study of medicine, both Associations stressed that the length of time necessary to realize such a goal does not minimize the need to respond to today's critical shortage of physician manpower. In order to enable the nation's medical schools both to meet today's crisis and to attain the longer range goal of unrestricted educational opportunity, those responsible for allocation of resources must recognize the magnitude of these tasks.

Medical Schools are already responding to the need by increasing the number of students in training. They are actively planning for even more substantial expansion.

These plans cannot be implemented without a marked increase in financial support for medical education. Although the emphasis in this report is directed to federal responsibilities, it is clear that substantial increases in support from state and local governments and the private sector are also absolutely essential to meet the needs.

With annual operating costs rapidly mounting, and with accumulating needs for both new construction and renovation, the financial status of our medical schools, both public and private, is already precarious. To assume enlarged responsibilities without adequate additional support will threaten their very existence.

Medical schools are parts of complex medical centers which have a great number of

* Joint Statement of the American Medical Association and the Association of American Medical Colleges, July 18, 1969.

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interrelated and interdependent programs in education, research, and service. Reduction in support for one program will have consequences, often serious, for the others.

For these reasons, the Association of American Medical Colleges and the American Medical Association make the following recommendations for increasing the financial support of the academic medical centers to allow them to fulfill their responsibilities in meeting the health needs of the nation:

1. To provide for support of operations, funds should be appropriated for fiscal year 1970 to the full authorization of $117,000,000 permitted in the Health Manpower Act of 1968 for Institutional and Special Project Grants. These funds should be used to: (*a*) permit schools to make substantial increases in enrollments required to meet health manpower needs: (*b*) help schools sustain the increases in enrollment already achieved; (*c*) augment support for medical schools which have serious financial problems in maintaining their present programs; and (*d*) assist new schools in implementing their plans and programs.

2. The support for increasing health professional output should be provided by project grants with peer review and recommendations on proposals submitted. Awards should be made for a minimum of five years and be renewable on the basis of evidence that the objectives of the award are being attained. Priority should be given to proposals from academic medical centers that: (*a*) project a substantial increase in class size for their medical schools and allied health professional programs; (*b*) have the human resources on which to build to increase class size and maintain quality of education; (*c*) demonstrate a concern for and interest in providing education relevant to the methods for delivery of health services in the future and address the problems of providing equality in care for all socioeconomic levels of society; (*d*) plan for innovation in the use of faculty and facilities in expanding the output of health professionals; and (*e*) reduce the cost and length of education programs without sacrificing quality.

3. Student loans should be increased in accord with identified need, keeping particularly in view the efforts of schools to accept students from disadvantaged backgrounds. Even the maintenance of existing student enrollments will be difficult, and much more so their expansion, if student aid is not forthcoming in amounts related to need.

4. For fiscal year 1970 funds should be appropriated to the full authorization of $170,000,000 permitted in the Health Manpower Act of 1968 for support of the construction and renovation of health professional educational facilities. Because of the increasing difficulty in obtaining matching funds it is also recommended that the Secretary of Health, Education, and Welfare increase the matching ratio to the 66⅔ percent permitted by law. The needs are so urgent that construction of health education facilities should not be delayed even in spite of escalating building costs.

5. To make possible the continued expansion of medical education, the federal government must provide adequate support for biomedical research programs and research training at academic medical centers. Biomedical research is an integral part of the activities of a modern medical center, and any significant reduction in research support would affect adversely the supply of medical school faculty and consequently the conduct of educational programs. Even with the present financial constraints on the federal budget the present level of research activity should at least be maintained for three years with adequate provision for rising costs due to inflation and the increased sophistication of biomedical research. In awarding research funds, proper consideration should be given the needs of new schools that are developing and expanding their facilities.

6. For fiscal year 1970 appropriations to the full authorization of $20,000,000 for Health Research Facilities construction should be made. Even this amount will do little for meeting the needs of new schools and for the renovation and replacement of obsolete research space in established schools.

A Bicentennial Anniversary Program for the Expansion of Medical Education

1970–1976

Report of the Committee on the Expansion of Medical Education of the Association of American Medical Colleges
September 1970

A Bicentennial Anniversary Program For the Expansion of Medical Education

Following is the text of the report by the AAMC Committee on the Expansion of Medical Education. The report was adopted by the AAMC Assembly November 1, 1970, during the Annual Meeting at Los Angeles. The Committee was chaired by Dr. Robert B. Howard, University of Minnesota. Other members of the Committee are listed at the end of the report.

Establishing a national goal for the education of physicians is a complex, multivariate problem. The educational process itself is dichotomous, involving on the one hand the formal academic qualification for the M.D. degree and, on the other, graduate training, which is the principal determinant of the availability of physicians by function and specialty. Many of the other critical variables extend into political and social realms outside of the narrow confines of medicine. The objectives established by the American public for the quantity, quality, equality, and types of health services they desire exert a dominant influence. Increasingly, however, the priority of health services will be measured against other needs such as housing, nutrition, and education that also contribute to improved health and the meeting of other important social goals.

In planning for medical education, there must be clear understanding among all that are involved of the diverse dimensions of the matter, the scope of the variables at play, and, most importantly, the specific area which is being selected for action in the context of the overall problem of the need for physicians. Otherwise, there will be confusion and disagreement in establishing objectives and failure to provide a sound basis for cooperation among all the parties that must act to meet the pressing needs to achieve better health for all Americans.

Thus, in the interest of clarity, it is to be emphasized that the purpose of this paper is to examine briefly the major considerations that bear upon the capacity, dimension, and distribution of institutions for the education of M.D. candidates as a significant and discrete element of the broad attack upon the problem of medical manpower and improving the health services of the nation. However, it must be clear that merely increasing the number of M.D. degrees awarded will not in itself solve the problem of a more even geographical distribution of physicians nor physician services for the urban and rural poor. Neither can action taken to secure such an increase assure a more appropriate and rational pattern of specialty services or an immediate and direct improvement in health services.

Overcoming the limitations, the inadequacies, and maldistribution of the nation's health services is dependent upon the development of some systematic means to modulate the whole process of investment and resource distribution in health in some rational and purposeful way. The distribution of physicians by specialty and their availability is de-

termined by the graduate training process now subject to a variety of separately acting forces, many of which are presently beyond academic control and unrelated to health service needs. Further stages in the evolution of national policy for academic medicine must engage these problems in a much more direct way.

Thus, the issues engaged in in this paper are those involved in the further development of national policy and programs aimed at a fundamental and predetermining segment of the overall problem of the availability of physician services, namely, the size of the annual cohort of entering M.D. candidates and the actions supportive of that process.

Bases for Projecting The Capacity for M.D. Education

There are two fundamental approaches for establishing the number of M.D.s to be educated in American medical schools: (*a*) The Educational Opportunity Basis (providing an entering place for all qualified students who wish to study medicine) and (*b*) The Health Service Needs Basis (educating the number of M.D.s considered necessary to meet the needs of the nation for physician services).

In a rapidly responding supply and demand system, the differences between the dimensions of our medical education plant derived from these two bases would probably be small. However, as Rashi Fein (1), among others, has pointed out, supply and demand adjustment is sluggish and incomplete in medicine so that in the short run projections derived from these two approaches may be substantially different. Some of the more important consideratons bearing upon the results obtained from these different approaches are discussed below.

EDUCATIONAL OPPORTUNITY

In 1967, the Association of American Medical Colleges and the American Medical Association issued a joint policy statement recommending that the national objective should be to provide a medical school place for every qualified applicant (2). Although it is a prime goal in the United States to make available undergraduate college education for every interested and qualified student, this policy has not been explicitly applied in medical education, in part because of the very high capital investment required and in part because medical educators have attempted with considerable success to maintain a low attrition rate for a program that is notably expensive.

To our knowledge, projections have never been made on the number of places that would be needed to accommodate all qualified students. The number probably cannot be estimated simply by the size of the current application pool. In a study of medical school applicants, Pothoff (3) showed that the number seeking admission has varied in a narrow range around twice the number of places available since the beginning of this century. This view that the size of the applicant pool parallels opportunities for admission is given some support by the falling percentage of elegible college graduates applying to medical school. The number of medical school entering places has not kept pace with the increasing number of college students. This cannot be explained entirely on the development of other opportunities for college-educated youth and probably represents the students' adjustment to a practical consideration of the odds in the situation.

Over the short term, the number of

qualified applicants can be estimated on the basis of the size of college enrollment and the historical percentage of those students interested in medicine. Information on college graduates and the applicant pool for the period 1960–68 is given in Table 2A. Two projections of the estimated number of qualified applicants for the period 1970–80 are in Table 2B. In the projections, the following assumptions have been made:

1. The percentage of college graduates applying for medical school in the future will be at a rate of 3.9 percent, as in 1960, for one series of projections, or 2.9 percent, as in 1968, for an alternate series of projections, taking into account differences between the application rates of men and women.

2. Three-fourths of the applicant pool is qualified for admission to medical school with an acceptable attrition rate and without a serious compromise of the quality of the education provided. This, of course, is an arbitrary proportion, but it does seem reasonable to assume that desire and capability are not perfectly congruent.

The set of estimates projected on the basis of these alternative assumptions are given in Table 1.

TABLE 1

QUALIFIED MEDICAL SCHOOL APPLICANTS

Academic Year	*Estimated Total Number*	
	at 1960 rate	*at 1968 rate*
1970–71	21,322	16,749
1972–73	22,870	17,965
1974–75	24,708	19,409
1976–77	26,544	20,891
1978–79	28,115	22,085
1980–81	30,695	23,005

It is apparent from the information contained in Table 1 that the entering places required to satisfy the demand for educational opportunities would substantially exceed those now available. (Medical admissions in the fall of 1970 totaled 11,360.)

These estimates would have to be increased if a larger proportion of women became interested in medicine or the availability of opportunities stimulated more men to apply. However, even if the low 1968 interest level of college graduates prevailed, the projections would still differ remarkably from projections made below on the basis of health service system demand.

Annual increments in entering class size of the magnitudes indicated in the above projection would create unprecedented problems of program and facility expansion which, in the short run, are probably insuperable in the context of the present pattern of medical education. Any serious attempt to meet this requirement for medical school places would require a substantial re-design of the present structure, process, and institutional forms of medical education plus an enormous investment in additional educational resources. While such a series of changes may be possible and perhaps even desirable, the time involved in accomplishing them would seriously delay the process of expanding the M.D. pool of the nation in the immediate future.

HEALTH SERVICE DEMAND

It is even more difficult to project the number of M.D.s that should be educated to meet the needs of health services. This is due to the many variables involved and particularly to the nature of medical practice and the delivery of health services today in the United States. Present arrangements are essentially free floating with few restrictions on the number of physicians in each of the specialty areas,

their geographic distribution, and the organization of medical practice. In such a situation, as has been pointed out above, there is no assurance that an increased number of M.D.s will result in a distribution of physician services that will meet the most pressing needs for health care. Assuming that the number of M.D. graduates could be increased to a level where the sheer pressure of numbers would, by itself, force physicians into areas and types of practice where major shortages exist does not seem to be a rational basis upon which to formulate public policy in medical education.

On the other hand, some experts, including Ginzberg (4) and McNerny (5), have argued that the current number of physicians is adequate and that the solution to the problem of the shortage of physician services rests with modifications in the health care system. These changes, they believe, will be stimulated by the developing crisis in health care,

MEDICAL SCHOOL APPLICANTS AND FIRST-TIME ENROLLEES IN RELATIONSHIP TO BACCALAUREATE DEGREES AWARDED

TABLE 2A

Actual 1960–1968

Item	Number by Academic Year				
	1960–1961	1962–1963	1964–1965	1966–1967	1968–1969
*Baccalaureate Degrees**					
Total	365,337	410,421	492,984	562,369	734,129
Men	223,427	239,108	279,777	324,236	412,932
Women	141,910	171,313	213,207	238,133	321,197
Medical School Applicants†					
Total	14,397	15,847	19,168	18,250	21,118
Percent of Baccalaureate Degrees	3.9	3.9	3 9	3 2	2.9
Men	13,353	14,646	17,437	16,554	19,021
Percent of Baccalaureate Degrees	6.0	6 1	6 2	5.1	4.6
Women	1,044	1,201	1,731	1,696	2,097
Percent of Baccalaureate Degrees	0 7	0.7	0.8	0.7	0 7
First-Time Medical School Enrollees†					
Total	8,069	8,242	8,587	8,775	9,740
Percent of Applicants	56.0	52 0	44.8	48.0	46.1
Men	7,343	7,500	7,814	7,985	8,864
Percent of Applicants	55 0	51 2	44 8	48 2	46.6
Women	726	742	773	790	876
Percent of Applicants	69 5	61 8	44.7	46 6	41.8
Qualified Applicants‡					
Total	10,798	11,885	14,376	13,688	15,839
Men	10,015	10,984	13,078	12,416	14,266
Women	783	901	1,298	1,272	1,573

* U S. Office of Education, National Center for Educational Statistics.

† *Study of U.S. Medical School Applicants* for each year

‡ Estimated at 75 percent of total applicant pool for each year.

TABLE 2B
Estimates 1970–1980

Item	Number by Academic Year					
	1970–71	1972–73	1974–75	1976–77	1978–79	1980–81
*Baccalaureate Degrees**						
Total	764,000	819,487	885,312	951,138	1,007,424	1,049,400
Men	435,480	467,107	504,628	542,149	574,232	598,158
Women	328,520	352,379	380,684	408,989	433,192	451,242
Medical School Applicants—High Projection (Calculated at 1960 Percentage of Degree Recipients)						
Total (3.9% of Baccalaureate Degrees)	28,429	31,960	34,527	37,094	39,290	40,927
Men (6.0% of Baccalaureate Degrees	26,129	28,026	30,278	32,529	34,454	35,889
Women (0 7% of Baccalaureate Degrees)	2,300	2,467	2,665	2,863	3,032	3,159
Medical School Applicants—Low Projection (Calculated at 1968 Percentage of Degree Recipients)						
Total (2.9% of Baccalaureate Degrees	22,156	23,765	25,674	27,583	29,215	30,433
Men (4.6% of Baccalaureate Degrees	20,032	21,487	23,213	24,939	26,415	27,515
Women (0 7% of Baccalaureate Degrees	2,300	2,467	2,665	2,863	3,032	3,159
Qualified Applicants‡ —High Projection (Based on 1960 Percentage of Degree Recipients)						
Total (3.9% of Baccalaureate Degrees)	21,322	22,870	24,708	26,544	28,115	30,695
Men (6.0% of Baccalaureate Degrees)	19,597	21,020	22,709	24,397	25,841	26,917
Women (0.7% of Baccalaureate Degrees)	1,725	1,850	1,999	2,147	2,274	2,369

TABLE 2B—*Continued*

Item	Number by Academic Year					
	1970–71	1972–73	1974–75	1976–77	1978–79	1980–81
Qualified Applicants‡ —Low Projection (Based on 1968 Percentage of Degree Recipients)						
Total (2.9% of Baccalaureate Degrees)	16,749	17,965	19,409	20,851	22,085	23,005
Men (4.6% of Baccalaureate Degrees)	15,024	16,115	17,410	18,704	19,811	20,636
Women (0.7% of Baccalaureate Degrees)	1,725	1,850	1,999	2,147	2,274	2,369

* U.S. Office of Education, National Center for Educational Statistics.
‡ Estimated at 75 percent of total applicant pool for each year.

the continuing rapid rise in costs, and the growing role of the federal government in the payment for care. Changes in so complex a matter as health care, however, do not occur rapidly. Although the academic health centers and others are increasingly involved in experimentation, innovation, and demonstration in health care systems, the effects of these efforts on a national scale will probably not be felt soon enough to meet the needs. Thus, dependence upon changes in the health service system as an immediate and sole means to overcome the overall physician shortage also does not seem to be a reasonable basis for planning for medical education, at least at this time.

In addition to the influence of health services and medical care organization, the nation's need for M.D. graduates is affected by a series of additional factors whose magnitudes are subject to varying assumptions and which will interact in a complex manner upon the need for physician services. Among such factors are population growth and change, the changing patterns of health and disease problems, the advance of medical science and technology, and the rising public expectations of the level of which health needs and wants will be met. That the net effect of these influences upon the number of physicians needed will be positive and additive seems both a valid and necessary assumption.

Therefore, we believe that a responsible national health policy must provide for a continued expansion of the nation's capability for educating M.D.s to meet the inevitable increase in physician services required for the quantitative future health needs of the nation. The most recent projections of this requirement have placed the number of M.D.s that should be added to the nation's pool, above that required to maintain present M.D.-population ratios, at 50,000 (6). An increase in medical school entering classes to 15,000 by 1976 would make it possible to assure a 50,000 M.D. increase by 1980 and provide for anticipated population increase without undue dependence upon foreign medical graduates. Our examination of the bases for projecting needs does not convince us that present data make it possible to develop a more exact or meaningful prediction based on health service needs.

We believe this projection to be a valid

basis for designing the terms of a federal support program for the expansion of M.D. production in the 1970's. While it is of a lesser magnitude than the pattern of increase that would derive from the educational opportunity projection, it would involve less fundamental change in the present structure and process of medical education and thus less uncertainties. Furthermore, the rate of increase would appear reasonable and realistic in terms of the processes of planning, construction, and program development that must be carried out, as well as permitting maintenance of adequate quality in the expanding programs.

Bicentennial Challenge Program

We think that expanding the total entering class size for M.D. education in the U.S. to 15,000 by 1976 would be an appropriate goal for the bicentennial of the nation. An increase by this date would furnish the additional physicians by the early 1980's. The physician population ratio would increase to more than 175 per 100,000 population, a level at present exceeded only by the U.S.S.R. and Israel. The health care system would have access to this increase even sooner as the students began to participate in medical care as interns and residents.

Properly challenged and with assurances of adequate federal support, we believe the nation's institutions of higher learning will respond effectively to the call for more physicians and other health care personnel. We recommend the adoption by the federal government of a clear cut, adequately financed program for growth, a program which will constitute a challenge to our institutions and which would, if implemented promptly, permit us to be well on the way to the realization of our long-range goal by the time of our Bicentennial Celebration. We believe that a program with features described below will constitute such a challenge.

Before describing the features of such a program, however, we must emphasize three important points:

1. Any meaningful program for the expansion of the nation's academic health centers must take account of the difficult financial circumstances—desperate, in many instances—in which they find themselves today. Thus, the availability of substantial and continuing operating support to present operations is essential to a program for expansion.

2. It must be kept clearly in mind that the education of a physician takes place in a most complex environment, one that involves concomitant instruction of other health personnel, as well as the conduct of biomedical research and the provision of health care. The costs of these interrelated services are not fully separable. Current public interest understandably focuses on the number of physicians produced. Thus, this number tends to become the single gauge of productivity and the sole measure of return for the public investment. It deserves emphasis, however, that amounts suggested for support of medical education, on a capitation basis, are also productive of services, research, and other educational experiences that contribute materially to health care, and the ultimate public good derived is the stability and vigor of a vital set of social institutions: the academic medical center.

3. We believe that the best interests of the nation will be served if a portion of the required increment of production of physicians is met by the development of new schools. Special attention should be given to the development of new schools in geographical areas that are at present without medical schools and that have universities with graduate

programs in the physical and biological sciences in order that such resources could be used as the basis for the development of the new medical schools. The effective utilization of clinical resources already existing in such areas, with appropriate and necessary modifications, must be encouraged in order to minimize the need for additional teaching hospitals and other clinical facilities, which are notoriously costly. It is recognized that the presence of a medical school in an area favorably influences the attractiveness of the area for physicians and the level of medical practice. It is for this reason that geographic distribution of medical schools is stressed.

OBJECTIVES OF THE PROGRAM

The objectives of this program would be:

1. To increase the nation's pool of M.D.s by a minimum of 50,000 over those required to meet population growth by 1980 to permit achieving an overall physician-population ratio of not less than 175:100,000 and make it possible for every state to have at least 100 M.D.s per 100,000 people.

2. To assist in achieving a better geographic distribution of medical capability by selective location of new medical schools in areas without medical schools or with limited access to academic medicine.

3. To diminish dependence upon the importation of foreign-trained M.D.s.

4. To provide an adequate annual cohort of M.D.s as a base for more rational distribution of physicians for graduate training in the various specialties and functional areas.

5. To provide adequate financial stability for the continuing operating requirements of medical schools.

OVERALL PLAN

As indicated in introductory paragraphs, our overall plan is aimed at having 15,000 entering places in the nation's medical schools by 1976. At present, there are 11,000 entering places,* and at least 800 more are in prospect on the basis of currently planned expansion programs. Thus, our objective is an additional expansion of 3,200 entering placed by 1976. We believe that this increment should be met by: (*a*) the development of 12 new medical schools, with 100 students in the entering class of each; a total of 1,200 new entering places; and (*b*) the expansion of the entering classes of existing medical schools by a minimum of 15 students each, up to a total of 2,000 additional entering places.

We believe that the modification of the Health Professions Education Assistance Program utilizing the following approach and presented as a challenge to the nation's institutions of higher learning will bring about the realization of this objective.

PROGRAM TERMS AND CONDITIONS

Participating Institutions.—Institutions and other public or private agencies would be invited to submit proposals on a competitive basis for federal grant support for (*a*) the development of new medical schools and/or (*b*) the expansion of present medical schools. Proposals would be evaluated by competent site visiting teams and subject to judgment by an appropriate Advisory Council in procedures currently operative with respect to various federal grants in the health fields. Judgments would be based

* At the time this analysis was prepared, the number of entering places in U.S. medical schools was estimated at 11,000. Subsequent reports placed medical school admissions in September 1970 at 11,360.

TABLE 3

DEVELOPING PROGRAMS IN UNDERGRADUATE MEDICAL EDUCATION*

	Tentative Starting Date	Number of Students	Projected Class Size (Date)
University of South Alabama, Mobile	1973	60	
East Carolina University School of Medicine	1971	16	40(1974); 84(1980)
Florida State University-Florida A & M University Program of Basic Medical Sciences	1971	30–35	50(1976–77)
University of South Florida College of Medicine	1971	24	110(1974)
University of Illinois			
School of Basic Medical Sciences-Urbana	1971		
Peoria School of Medicine	1972		
Rockford School of Medicine	1972		
University of Southern Illinois School of Medicine	1972	25	50(1973); 64(1978)
Mayo Graduate School of Medicine	1972	40	
University of Minnesota-Duluth Medical Education Program	1972	24	
University of Missouri-Kansas City School of Medicine	1971	12 for 1st three classes	100(1976)
University of Nevada-Reno School of Medicine	1971	24	48(1973)
Northern Association for Medical Education, St. Paul	1972		
Rush Medical College	1971	60 for 1st and 3rd classes	120(1975)
SUNY at Stony Brook Medical School	1971	16–32	100(1975)
University of Texas Medical School at Houston	1970	19	200(date uncertain)
Texas Technological University School of Medicine	1972	36 in 1st & 3rd classes	200(1975)
Eastern Virginia Medical School (Norfolk-Portsmouth)			
		Total Projected Class Size	1,098

* The locations listed represent a wide range of planning and development; most have not yet matriculated any students; all except the expanding programs at Illinois will involve entirely new rather than established medical schools.

on institutional strength, available facilities, and faculty together with prospects for their further development, geographic location, the degree of innovation in the educational program, community interest and support, and rapidity with which the prospective program could be developed. Successful applicants would receive support as indicated below and would be expected to reach the stated goal of entering class size within six years of the time the award was made.

Capital Costs.—An institution approved for the development of a new school or a significant expansion would receive a federal award of $200,000 per entering student for capital costs, with the obligation to provide at least $50,000 per student or more from non-federal funds.

Thus, a substantial but not extraordi-

TABLE 4

ESTIMATE OF FUND REQUIREMENTS BY YEAR

Academic Year	Number of Students		Amount of Expense (in Millions)		
	Entering	Total	Capital	Operating	Total
1971–1972	11,166	39,300	$180	$200.7	$380 7
1972–1973	12,378	41,817	460	241.9	701 9
1973–1974	13,978	45,330		292 0	292.0
1974–1975	15,078	49,122		328.2	328 2
1975–1976	15,078	52,286		378 0	378 0
1976–1977	15,078	55,081		420 0	420.0
1977–1978	15,078	56,096		458 0	458 0
1978–1979	15,078	56,096		484 0	484 0
1979–1980	15,078	56,096		518.0	518.0
Totals			$640	$3,320.8	$3,960 8

nary amount would be provided as a package to each participating institution, with the institution expected to obtain at least a modest contribution from non-federal sources but with the opportunity to make as large a contribution as it may wish in order to provide more elaborate facilities.

Start-up Costs.—New or expanded institutions under this program would receive, in recognition of start-up costs inherent in the initiation of any new program, a one-time allocation of $20,000 per new entering class place, whether in a new school or in a program of expansion of an existing school. That would become available as soon as firm arrangements for the new school or expansion program have been completed.

Operating Expenses.—An institution approved for the development of either a new school or an expansion under the terms of this program would receive $9,000 per year per student toward annual operating costs.

Operating Support of Existing Schools.—As indicated in an earlier paragraph, stability or support of present programs in medical education is essential to the realization of a program of expansion. For this reason, we recommend that a program for the continuing operating support of medical education be inaugurated and that it provide to institutions currently engaged in education of physicians $5,000 per year per student and, in recognition of costs that rise 7 percent to 8 percent per year, that this be increased gradually to $9,000 per year per student a decade hence. At that point, then, it would equal the support level proposed for the new and expanded programs.

BASIS FOR PROGRAM TERMS

The recommendations for support of ongoing programs, expansion of existing schools, and establishing new schools are based on costs of present programs.

The AAMC Cost Allocation Study indicates that the marginal costs for undergraduate medical student instruction, exclusive of research and patient care, is about $4,000 per year. The costs of the total enterprise required to educate physicians has been estimated to be $15,000 to $20,000 per year. The Canadian provinces provide in excess of $13,000 a year per undergraduate medical student for the core operations of the medical schools.

The average cost of expansion under

the Physicians Augmentation Program was $10,000 per student after an initial additional start-up cost which was given for four years. The expansion support of $9,000 after a single start-up allocation of $20,000 to cover increased expenses attendant with the initiation of new programs is in keeping with this experience.

Although capital costs for most new medical schools developed over the last decade or existing schools undertaking major expansion have substantially exceeded those recommended, the levels suggested are consistent with the growing recognition that existing clinical facilities and resources of the university can be used to a greater extent for medical education. The construction costs are in line with those envisioned by new schools adopting this philosophy.

RELATIONSHIP TO EXISTING PROGRAMS

The provisions of the proposed Bicentennial Anniversary Program for the Expansion of Medical Education would replace the existing provisions of the HPEA program for the construction of new and the expansion of existing medical schools. The program of construction funds for renovation, alteration, and replacement of existing facilities would continue.

In like manner, the provision of this new program for operating support would replace the formula component of the existing Institutional Grant program under HPEA. The Special Project program would continue in respect to innovation and program development. Projects in the expansion of enrollment would be largely obviated by the terms of this new proposal.

Programs for research, graduate training, and student assistance would continue as an essential part of the support structure for academic medical centers. Their funds' requirements, however, would reflect the expanded institutional structure that this new program would bring into being.

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