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Sue Jin Fields / x-2164 / catering

Front Desk → 2280

PROGRAM PLANNING COMMITTEE

D. Kay Clawson, M.D.
Bernard J. Fogel, M.D.
Louis J. Kettel, M.D.
Walter F. Leavell, M.D.
Leon E. Rosenberg, M.D.
Cecil O. Samuelson, M.D.
William D. Sawyer, M.D.

aamc

ASSOCIATION OF AMERICAN MEDICAL COLLEGES

COUNCIL OF DEANS SPRING MEETING

Program

April 2–5, 1986
The Ocean Reef Club
Key Largo, Florida

SPRING MEETING of the COUNCIL OF DEANS

April 2-5, 1986
The Ocean Reef Club

Wednesday, April 2nd

1:00-5:00 pm
Reef Lounge

ARRIVAL & REGISTRATION

SESSION I

5:30-7:00 pm
*Poinciana/Frangipani Rooms**

WELCOME & OVERVIEW

PRESIDENT'S REPORT
John A.D. Cooper, M.D.
7:00-8:00 pm,

RECEPTION

Thursday, April 3rd

SESSION II

8:30-9:00 am
Poinciana/Frangipani Rooms

ATTRACTIVENESS OF MEDICINE AS A PROFESSION
Spencer Foreman, M.D.
President
Sinai Hospital of Baltimore

9:00-10:30 am

SMALL GROUP DISCUSSIONS

10:30-11:00 am

BREAK

SESSION III

11:00-11:30 am

CORPORATE RESPONSIBILITY FOR MEDICAL STUDENT EDUCATION
David C. Dale, M.D.
Dean, School of Medicine
University of Washington

11:30 am-1:00 pm

SMALL GROUP DISCUSSIONS

1:00 pm

UNSCHEDULED TIME

Friday, April 4th

SESSION IV

8:30-9:00 am
Poinciana/Frangipani Rooms

CORPORATE RESPONSIBILITY FOR GRADUATE MEDICAL EDUCATION
Harry N. Beaty, M.D.
Dean
Northwestern University Medical School

9:00-10:30 am

SMALL GROUP DISCUSSIONS

10:30-11:00 am

BREAK

SESSION V

11:00-11:30 am

TRANSITION BETWEEN MEDICAL SCHOOL AND RESIDENCY EDUCATION
Leon E. Rosenberg, M.D.
Dean, School of Medicine
Yale University

11:30 am-1:00 pm

SMALL GROUP DISCUSSIONS

1:00 pm

UNSCHEDULED TIME

Saturday, April 5th

SESSION VI

8:30-12 noon
Poinciana/Frangipani Rooms

COD BUSINESS MEETING

12 Noon

ADJOURNMENT

**All meetings located in Key Largo building*

E The Ocean Reef Club
Key Largo, Florida 7

ASSOCIATION OF AMERICAN MEDICAL COLLEGES

COUNCIL OF DEANS

Spring Business Meeting

AGENDA

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I.	**Call to Order**	
II.	**Report of the Chairman**	
III.	**Approval of Minutes**	1
IV.	**Action on Discussion Group Deliberations**	
	-- Presentations by Discussion Group Leaders/COD Board Members	
V.	**Discussion Items**	
	A. Draft Report of the AAMC ad hoc Committee on Federal Research Policy	10
	B. Draft Report of the AAMC Committee on Financing GME	71
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VI.	**Information Items**	
	A. Current Legislation on Financing GME	153
	B. Alternate FY87 Budget Proposal of Ad Hoc Group on Medical Research Funding	162
	C. President's FY87 Budget Proposals for PHS, NIH, ADAMHA and VA	165
	D. Malpractice Insurance Legislation	171
	E. Tax Reform Proposals (separate handout)	
	F. Current Proposals on Reimbursement of Indirect Costs of Research	174
	G. National and Institutional Trends in Applicant and Matriculant Qualifications	183
	H. MCAT Essay Pilot Project	213
VII.	**Old Business**	
VIII.	**New Business**	
IX.	**Adjournment**	

ASSOCIATION OF AMERICAN MEDICAL COLLEGES

COUNCIL OF DEANS

Business Meeting

Georgetown Room

Washington Hilton Hotel

Washington, D.C.

October 28, 1985

I. CALL TO ORDER

Having determined that a quorum was present, Arnold L. Brown, M.D., chairman, called the meeting to order at 2:00 p.m.

II. CHAIRMAN'S REPORT

Dr. Brown reviewed some of the achievements of the Administrative Board in the past year. Significant in this first post-GPEP year was the attention given to concerns related to medical student education. The Administrative Board resolved to remove the term "undergraduate medical education" from its lexicon. The term "medical student education" was seen as describing better the professional nature of the education and the high expectations deans and faculties should have for these students. The Board also had invited the chairpersons of the Group on Medical Education, the Group on Student Affairs and the Group on Public Relations to join them for discussions. Invitations to other AAMC Group chairpersons would follow.

Several board members had collaborated with representatives of the Council of Academic Societies in the development of a Commentary on the GPEP Report. Drs. Daniels, Christakos, St. Geme and Stemmler participated in a nearly year long planning effort which resulted in an eminently successful national invitational conference on clinical education. The attention of the deans this past year had also been directed to changes being proposed in the NBME examinations, the development of an experimental essay section to the MCAT, and the Association's planned review of MCAT itself.

Dr. Brown noted that financing issues, particularly those related to graduate medical education, continued to consume the deans' energies. There had been increasing discussion on the proper role of the medical school in governing residency education. The problems medical students were currently experiencing in the transition to graduate medical education, the unreviewed decision of the American Board of Pathology to lengthen by one year its educational requirements for certification, and the increasingly apparent need for reducing the numbers in some training

programs and increasing them in others, all argued for a new commitment to the Association's position on institutional or corporate responsibility for graduate medical education, first proposed by the CAS in 1968. This, in Dr. Brown's view, was one of the most important issues to be faced in the next several years.

III. PRESIDENT'S REPORT

Dr. John A.D. Cooper referred to the motto of the United States, "e pluribus unum," to portray the Association as a unifying force for a wide variety of divergent interests. In his view, the AAMC had successfully resisted pressures to conceive of its role in narrow and parochial terms. It had been unique as a spokesman for the broad interests of biomedical and behavorial scientists. More than a decade ago, the Association was a lone voice in forthright opposition to the dismemberment of the NIH by the National Cancer Act and was active presently in opposing proposals for congressional micromanagement of NIH. These stands, while helping to preserve the NIH, had been taken sometimes at great costs to the Association's relationships with single-minded advocacy groups.

The AAMC had also been active as a coalition builder. It was instrumental in the founding of the Coalition for Health Funding and the development of the ad hoc Committee for the Support of Biomedical Research, and had supported the newly formed National Association for Biomedical Research.

Dr. Cooper drew on two examples, indirect costs and tax-exempt bonding authority, to illustrate how the AAMC, representing both faculty and institutional leadership interests, had been often pulled and tugged in many different directions by its members. Dr. Cooper urged the deans not to let the Association in the future be splintered into a vast number of contending and uncompromising parties. While it was unavoidable on some occasions for members to disagree, he believed that the strength of the Association in the future would depend on emphasizing the larger interests members shared over the narrower ones that divided.

IV. CONSIDERATION OF MINUTES

Two amendments and one addition to the minutes of the March 23rd COD business meeting were introduced. Mr. Keyes noted that the minutes incorrectly identified Edward Wolfson, M.D., as chairman of the Federation of State Boards of Medical Examiners (FSMB). He was in fact chairman of the FSMB's Commission on Foreign Medical Education. Also, the minutes incorrectly stated that the FSMB was planning to establish the Commission. At the time of Dr. Wolfson's presentation the commission was in existence and he was reporting on its activities.

Dr. Sutnick noted that the minutes failed to report the Council's discussion and action related to proposed changes in "Special Requirements of Approved Residency Programs." At the Spring Meeting, Dr. Sutnick and Dr. Luginbuhl expressed concern about the possible adverse impact of some changes on medical school programs. In response, Dr. Clawson suggested that all deans be given an opportunity to review proposed amendments to any of the Special Essentials in advance of ACGME action on them. Dr. Swanson of the AAMC staff responded that this could

be effected by AAMC staff action. The Council had concurred in this action.

Action: On motion, seconded, and carried, the Council approved the March 23rd COD business meeting minutes, with these amendments and addition.

V. REPORT OF THE NOMINATING COMMITTEE AND ELECTION OF OFFICERS

Dr. Stuart Bondurant, chairman of the nominating committee, reported that the committee enthusiastically supported the nomination of Dr. Edward Stemmler for the position of Chairman-Elect and Drs. William Deal and Richard Ross for COD representatives to the Executive Council of the Assembly.

The committee nominated Dr. Louis Kettel for chairman-elect of the Council of Deans, and Drs. Walter Leavell, John Eckstein, and Fairfield Goodale for members-at-large of the COD Administrative Board.

Action: On motion, seconded, and passed, the Council elected as COD chairman-elect and members at-large of the Administrative Board those nominated by the committee.

VI. ELECTION OF INSTITUTIONAL MEMBER

Action: On motion, seconded, and passed, the Council approved the election of The Morehouse School of Medicine, which had received full accreditation by the LCME, to full institutional membership in the AAMC.

VII. INVESTOR-OWNED TEACHING HOSPITAL PARTICIATION IN COTH

Dr. Brown noted that the issue of allowing investor-owned teaching hospitals in COTH, and the corresponding by-laws changes that would involve, would be voted on by the AAMC Assembly the following morning. The issue had been discussed at a number of Administrative Board and Council meetings during the past year. Dr. Brown urged each member to be present at the Assembly to vote on this issue.

VIII. DISCUSSION ITEMS

A. Acquired Immune Deficiency Syndrome: Issues in Medical Student Affairs

Dr. Paul Elliott, Director of the AAMC's Division of Student Programs, brought to the attention of the Council several reported instances of AIDS among medical students. These events raised a number of issues which Council members might need to confront at their institutions. For the affected student, the issues included personal health care, emotional support/therapy, ethical counseling concerning responsibility to others, the question of continuation in the educational program, and student privacy rights. There were also the issues of disclosure to faculty, staff, and classmates and confidential counseling and health care for close friends or sexual partner(s). Additional concerns related to the welfare of patients within the teaching hospital, public health concerns, public information issues, the establishment of decision making mechanisms in the school, due process, civil rights, protection from discrimination claims, and the exchange of information with other

institutions facing similar problems. The medical school was also advised to consider its approach to newly admitted students who were diagnosed as having the AIDS virus.

Dr. Rosenberg expressed concern that the issues raised by Dr. Elliott implied a greater alarm about AIDS than was warranted by available research evidence. Dr. Rosenberg's conclusion from a recent IOM conference was that there was no evidence that AIDS could be transmitted other than by intimate sexual contact. Dr. Elliott concurred that there might be a tendency among institutions to be overly careful without justification. Dr. Tranquada observed that AIDS presented a powerful example of the value of animal experimentation in research. Other comments supported the need for a continued exchange of information on this problem.

B. Medical Student Alternative Loan Program

The GSA Committee on Student Financial Assistance had for some time been searching for an alternative loan program which could be sculpted to the special needs of medical student borrowing, loan consolidation, and repayment, a program which could take into account the lower default and delinquency rates of medical professionals and the higher professional remuneration subsequent to postgraduate training. Officials of the Higher Education Assistance Foundation (HEAF), the largest private, non-profit student loan guarantor in the United States, had indicated their desire to work with the AAMC in developing such a program. Kevin Moehn, executive vice-president of HEAF, addressed the deans on the progress of their deliberations with the AAMC. The program was to incorporate a number of special characteristics, including guaranteed access for all medical students, refinancing options, repayment options, coordinated application and delivery of major loan programs, replacement of HEAL loans for most students possibly at lower interest rates, possible lower loan guarantee/insurance rates, flexible (variable or fixed) interest options, and the provision of debt management analysis and counseling. A task force composed of GSA members, medical students, and AAMC staff had now held four meetings with HEAF officials and were planning further meetings to outline the particulars of the program.

C. Preliminary Results from the MCAT Essay Pilot Program

As a follow-up to a presentation made at the COD Spring meeting, Dr. Robert Beran discussed progress made on the MCAT Essay Pilot Project. Four essay topics had been administered at the 1985 MCAT testings. Representative samples were selected for central scoring for the purpose of conducting quantitative analyses of performance. Group performance differences between men vs. women and urban vs. rural examinees were found to be negligible. The average scores of black examinees were one-half of a standard deviation lower than whites. This difference however was quite smaller than that found on other MCAT subtests. No significant relationships had been found between essay performance and age, years of postsecondary education, or number of course hours in English. Positive relationships were found between essay performance and self-ratings of writing skills and undergraduate college selectivity. An important finding was that essay performance correlated only .45 with a combination of the six MCAT scores now reported. Since this represented only about 20 percent of shared variance with the other tests, the

finding established the essay as providing a unique measure of ability. AAMC staff were in the process of planning studies in concert with medical school admissions committees to assess the essay's impact on the selection process.

In response to questions, Dr. Karen Mitchell of the MCAT program staff described the central scoring process. Essays were scored independently by two readers on a one to six scale. Only 5 percent of these readings produced scores that were more than one point apart, resulting in a third discrepancy reading. Dr. Beran explained further the controlled experiments planned with admissions committees. Various schools had been selected to consider the essay 1) as part of a retrospective admissions process, 2) as part of a simulated admissions process, and 3) as part of the actual admissions process for the fall 1987 entering class. Dr. Beran also emphasized that the essay scoring was based on factors such as the ability to identify a central idea, to provide alternative hypotheses, and to separate relevant from irrelevant information.

D. Investigation of the VA Inspector General Regarding Conflict of Interest

Dr. John Gronvall, deputy chief medical director of the VA, updated deans on the investigation of the VA Inspector General regarding conflicts of interest. The probe began in 1984 and had been confined at that point to review of records from Smith, Kline and French over a five year period. A total of 261 cases were identified as violating VA conflict of interest rules. One hundred and seventy-four cases involved pharmacists who attended a meeting. Since the VA Central Office had encouraged this activity, no action was going to be taken. In 79 of the other 87 cases, disciplinary proceedings had been initiated. These violations covered the acceptance of honoraria and compensation for travel for speeches, acceptance of tickets for sporting and cultural events, and funding for dinner parties and receptions. The IG was proceeding to review records of other drug companies.

Dr. Gronvall commented on a few points raised in a committee hearing on the subject held by Congressman Edgar. There was agreement that it would probably always be necessary for federal employees to be held to a tighter set of ethical rules than was necessary in any individual institution. There were strong voices urging that the government not overreact to this situation in a way that would drive a wedge between the VA and its academic affiliates. Committee members recognized that faculty members who function in both VA and university hospitals might be playing by two different sets of rules, thus creating a problem. Also, the VA should not be insulated from necessary research and professional development support from industry.

The VA was preparing additional formal written guidance for institutions. A particular dilemma was posed by the part-time VA faculty member who, while his appointment represented only a fraction of his activities, was covered by the rules. Dr. Gronvall commended to the deans Dr. Butler's written statement and testimony to the Edgar Committee and urged those in the academic community to continue to work with the VA in resolving these issues.

Dr. William Butler stated that his testimony, as chairman of the VA's Special Medical Advisory Group (SMAG), emphasized the need for developing flexibility in dealing with this issue. SMAG's concerns were with a potential disruption of VA research activity, the consequent loss of the ability to attract VA faculty, and ultimately a lessened ability to maintain the high level of care brought about through the academic affiliation. The committee had responded positively to his testimony and Congressman Edgar encouraged further input from SMAG. The deans were advised to share their concerns about the problem with Dr. Butler.

In the discussion which followed, Dr. Stone took exception to a suggestion of Dr. Gronvall that federal employees were bound by higher ethical standards than medical school faculty in general. Dr. Gronvall clarified his point by stating that the differences he saw were in the detail of rules and regulations needed not in overall ethical standards. Dr. Bondurant followed this point by drawing a distinction between the ethical standards in private and public sector institutions which may be the same, and the etiquette that surrounds them which might be quite different. Dr. Gronvall reaffirmed the seriousness of this issue for deans by noting that SKF records made clear the company's explicit purposes in providing perquisites and that further scrutiny of drug company records might prove to be embarassing. Dr. Kendall expressed a plea that the paperwork associated with VA activity not be increased as a result of this probe and Dr. Clawson noted that the COD Administrative Board would continue to monitor and discuss this issue.

E. Report on Association Committees

Dr. Edward Stemmler, chairman of the ad hoc Committee on Faculty Practice, reported that the committee had met in September and defined a number of issues bearing on the survival of the academic health center in the current volatile medical practice environment. The committee was considering a role for the Association in this area. It recommended that the AAMC's Management Education Programs mount regional seminars on academic medical center relationships with alternative delivery systems. It also recommended that the Commonwealth Fund be approached for support of a national invitational conference on faculty practice. An application to the Fund had since been submitted.

Dr. Stuart Bondurant, a member of the ad hoc Committee on Research Policy, reported that the committee had also held one meeting and would be meeting again coincident with the annual meeting. The committee was dealing with a number of issues, including challenges to the peer review system, the debate over indirect costs, and the nature and desired size of the research enterprise. He encouraged deans to channel any thoughts or ideas to Dr. Leon Rosenberg or himself. Dr. Mayer suggested that Senator Weicker's presentation earlier that day, providing examples of the economic payoff of biomedical research, might be a useful approach that the committee might take in arguing their case.

Dr. Sherman Mellinkoff announced that the ad hoc MCAT Review Committee, of which he was chairman, had not yet met but that he would welcome any advice or comments from Council members.

Dr. Henry Nadler, co-chairman of the ad hoc Committee on the Governance and Management of Institutional Animal Resources, drew the attention of

the deans to that committee's final report. He emphasized the heterogeneity of perspectives represented by committee members. While some statements might be perceived as somewhat strong and others somewhat weak by the deans, he believed that the report would provide institutional leaders a clear-cut direction for implementing procedures and governance mechanisms.

Dr. Donald Weston reported the progress of the ad hoc Committee on Financing Graduate Medical Education. The committee had not yet approved a final report. It did vote to recommend a length of funding up to primary board certification with a maximum of five years. It also had suggested that institutions be allowed to bill for the services of residents up to the level of their primary certificate and had achieved firm consensus on a recommendation to limit funding to graduates of LCME-accredited schools. The committee might also support the establishment of a national body to monitor but not regulate the number and types of residents being trained.

In the ensuing discussion, Dr. Sutnick noted that institutional billing for residents' services would effectively impose a tax on the faculty practice plan. Other comments concerned the difficulty of achieving consensus on these issues and the process by which the AAMC would act on the committee report. It was observed that while the committee continued to be engaged in discussion, the Commonwealth task force had published a recommended position and several legislative proposals were gaining momentum and could be passed in the interim. The AAMC had been called to testify on the Dole-Durenberger-Benson bill and, after an extensive debate by the Executive Committee and consultation with members of the Committee on Financing Graduate Medical Education, its testimony did not oppose the provision for limiting funding up to initial board certification or five years, whichever was less. Dr. Ayres expressed concern about this stand's negative impact on training in internal medicine.

G. Legislative Report

The foregoing discussion led into prepared remarks by Dr. Richard Knapp, director of the AAMC's Department of Teaching Hospitals, on the status of federal legislative proposals for financing graduate medical education. First, he reviewed the past proposal of the House Ways and Means Committee to pay for graduate medical education under Medicare through a direct pass-through of dollars, opining that the AAMC would clearly support that. Dr. Knapp believed that while we might secure an open-ended commitment for the next year or so, the question would continue to return and the issue for the AAMC clearly was if and where we were willing to draw a line on funding. Alternatives were the Dole-Durenberger-Benson bill, the Quayle bill, and the Waxman bill. The first of these limited pass through dollars for residents up to primary board certification or five years, whichever was less, and excluded funding for alien FMG's. AAMC's testimony on this bill had generated and continued to generate controversy among AAMC members.

The Quayle bill would have established a teaching hospital registry; hospitals, to be listed, would have to agree to a minimum percentage of residents in primary care specialities and to have at least 75 percent of the residents in each program be graduates of LCME-or AOA-accredited

schools. Another requirement was that all programs be affiliated with a college of medicine. Dr. Buchanan had delivered AAMC testimony opposing this last requirement on the grounds that affiliation agreements were highly varied. The AAMC was opposed to any federal intrusion in defining acceptable affiliation agreements. Since Senator Quayle was not on the Senate Finance Committee which had jurisdiction over Medicare, the bill was likely to involve a jurisdictional battle.

The Waxman bill was limited to Medicaid only for jurisdictional reasons but would likely influence the debate. This proposal effectively weighted the pass through dollars to support residents in primary care specialties and those in years prior to first board eligibility more than other residents and fellows.

A question following Dr. Knapp's presentation addressed the status of another proposal by Congressmen Regula and Tauke. It was Dr. Knapp's impression that these people were currently working with Waxman people. Dr. Sutnick commented that the Dole-Durenberger-Benson and Waxman proposals had the effect of reimbursing more fully community hospitals affiliated with academic medical centers, where primary care and generalist training were more concentrated, and less fully the primary teaching hospitals where sub-specialty training was conducted. His preference was to fight hard for an open-ended commitment at least for the interim until a more coherent proposal could be developed. A final comment dealt with the variability among institutions in the degree of support for fellowship training from hospital funds, which was seen as weakening the argument for open-ended support.

Dr. Thomas Kennedy, director of the AAMC's Department of Planning and Policy Development, followed Dr. Knapp with a report of other legislative developments. A health manpower bill which the AAMC had supported was signed into law by the President. Both the House and Senate had passed appropriation bills which were to go to conference. The Senate bill had a provision freezing indirect cost rates and was specific in citing grant levels for each of the national institutes. The AAMC would oppose both of these provisions. A House-Senate conference bill on NIH renewal was awaiting Presidential signature. The bill was replete with provisions which the AAMC had been opposing for some time, including the creation of an Arthritis Institute, a center for nursing research, and others providing for Congressional micro-management of NIH.

Congressman Torricelli had introduced an animal research bill which would have required full text literature searches before approval of proposals to avoid what he saw as unnecessary duplication of research. The bill did not seem to be going any place. The AAMC's position on the animal research bills by Congressman Brown and by Senator Dole was that no new animal research legislation was needed. However, the staff had been working with the respective committees to ameliorate any adverse impact. Animal rights groups had also been active in suggesting amendments.

Congressman Pepper had introduced a bill that would limit payments under Medicare to residents who had been trained in LCME-accredited schools or equivalently accredited foreign medical schools. The LCME was engaged in discussion as to their willingness to take on the burden of accrediting foreign medical schools.

Dr. Kennedy next described the Gramm-Rudman proposal which, if passed, would enact routine automatic across the board cuts in programs if a balanced budget bill was not enacted. Tax reform proposals by the Administration had a number of provisions which would cause problems for AAMC members. One major one was a suggested limitation on tax-exempt bonding authority for 501(c)(3) organizations. The objective of the administration proposals was to reduce tax rates by broadening the effective tax base. AAMC staff were following these proposals closely. Bills regarding higher education reauthorization and low-level radioactive waste disposal were moving rapidly and favorably through Congress.

IX. INFORMATION ITEMS

Dr. Brown drew the attention of the deans to a report of activities of the Council of Deans of Private Freestanding Medical Schools and noted that the group had been very active and of great benefit to its members.

X. OSR REPORT

Dr. Ricardo Sanchez noted with pride several accomplishments of the OSR in the previous year. These included the OSR's participation in the discussion and debate surrounding the change in and use of NBME examinations, its contributions to the Commentary on the GPEP Report, and its publication of "Critical Issues in Medical Education," which developed a charge for further OSR activities. Dr. Sanchez related that the OSR continued to be concerned with issues such as the appropriateness of the classic teaching hospital as a site for future residency training, the demographic changes in the medical school applicant pool, and the need for representation of housestaff in the affairs of the Association.

Dr. Brown commended Dr. Sanchez for his outstanding chairmanship of the OSR in the past year.

XI. INSTALLATION OF NEW CHAIRMAN

As his final act as chairman, Dr. Brown expressed the Council's appreciation to departing members of the Administrative Board, Drs. Henry Russe, Thomas Meikle, L. Thompson Bowles, and Edward Stemmler. He then turned over the gavel to the new Council chairman, Dr. D. Kay Clawson.

On behalf of the Council, Dr. Clawson commended Dr. Brown for his exemplary handling of the affairs of the COD, and specifically for his leadership in opening up channels of communication and increasing the participation of members in Council affairs. Dr. Clawson also noted Dr. Brown's leadership in dealing with the problems created in the transition to graduate medical education. Dr. Clawson pledged to continue that tradition and encouraged members to communicate their concerns to him directly or through Mr. Keyes. He then presented Dr. Brown with a gift as token of the Council's appreciation.

XII. ADJOURNMENT

The meeting was adjourned at 4:59 p.m.

FEDERAL POLICY FOR BIOMEDICAL AND BEHAVIORAL RESEARCH

Draft Report of the AAMC ad hoc
Committee on Federal Research Policy

AAMC AD HOC COMMITTEE ON FEDERAL RESEARCH POLICY

CHAIRMAN: Edward N. Brandt, M.D.
Chancellor
University of Maryland at Baltimore

MEMBERS:

Stuart Bondurant, M.D.
Dean
University of North Carolina at Chapel Hill School of Medicine

David H. Cohen, Ph.D.
Chairman, Department of Neurobiology
SUNY at Stony Brook

Robert E. Fellows, M.D., Ph.D.
Chairman, Department of Physiology and Biophysics
University of Iowa College of Medicine

Thomas Q. Morris, M.D.
President
Presbyterian Hospital of New York

John T. Potts, Jr., M.D.
Chairman of Medicine
Massachusetts General Hospital

Leon E. Rosenberg, M.D.
Dean
Yale University School of Medicine

William B. Sawyer, M.D.
Dean
Wright State University School of Medicine

Benjamin D. Schwartz, M.D., Ph.D.
Professor of Medicine
Washington University School of Medicine

David B. Skinner, M.D.
Chairman of Surgery
University of Chicago, Pritzker School of Medicine

Peter C. Whybrow, M.D.
Chairman, Department of Psychiatry
University of Pennsylvania School of Medicine

EX OFFICIO:

Virginia V. Weldon, M.D.
Chairman, AAMC
Deputy Vice Chancellor for Medical Affairs, Washington University School of Medicine

Edward J. Stemmler, M.D.
Chairman-Elect, AAMC
Dean, University of Pennsylvania School of Medicine

PREAMBLE:

The federal government's commitment to improving the health and well-being of the American people incorporates a wide spectrum of programs and initiatives. An essential portion of this commitment is the system of biomedical and biobehavioral research that has evolved as a result of continued investment of federal funding. The success of this federal biomedical research enterprise in terms of scientific achievement and societal benefit is a testament to the policies that have guided this program over the last 40 years.

The recent pressure for deficit reduction on the Congress and the administration will force a reassessment of a number of these research policies. There is concern within the academic medical community that in their efforts to achieve a fiscally responsible budget, policy makers are concentrating on the short-term economic perspective rather than the longer-term programmatic consequences of reductions in research budgets.

An additional stimulus for reexamination of the Association's positions on federal research policy was provided by the House of Representatives Science Policy Task Force, chaired by Representative Don Fuqua (D-FL). This Task Force is conducting a two year study of all aspects of national science policy. The Association is concerned to assure that the Task Force receives thoughtful analysis of policy from all segments of the scientific community and that those elements of federal research policy that uniquely contribute to the preeminence of American biomedical and behavioral research be especially clearly articulated before a Task Force whose parent Committee on Science and Technology does not regularly deal with the Public Health Service research agencies.

As a result, the Association of American Medical Colleges appointed an ad hoc Committee on Federal Research Policy in June 1985. The Committee was given the general charge to conduct an overview of those broad policy issues related to the federal role in biomedical and biobehavioral research as currently being debated by the Congress and the administration. The Committee was to develop new positions or reaffirm existing Association positions as the basis for its recommendations in six key areas related to biomedical and biobehavioral research:

- o goals of the federal research effort
- o research manpower and training
- o research infrastructure
- o research awards system
- o federal funding for research
- o formulation of federal science policy

The following report contains the analysis and recommendations of the Committee. It is hoped that this report will facilitate the Association's participation in the public debate engendered by this crucial set of issues.

Executive Summary

Biomedical and behavioral research in the United States is conducted predominantly within our nation's medical schools and academic medical centers, where the academic faculty seek to contribute new knowledge, educate the next generation of health professionals, and provide cutting edge patient care. The major source of support for biomedical and behavioral research comes from federal investment. In 1984, 58 percent of the National Institutes of Health extramural budget was spent in academic medical centers and 67 percent of National Research Service Awards funds from NIH were awarded for research training in the health professions to academic medical centers or their trainees.

Thus, the Association of American Medical Colleges, which represents the nation's 127 medical schools, over 450 of its teaching hospitals, and over 80 academic faculty societies, is vitally concerned with the programs and policies that govern the federal investment in biomedical and behavioral research. The Association's *ad hoc* Committee on Federal Research Policy has recently completed an analysis of present policy in key areas of the research effort and offers the following recommendations in response to the current pressures to reexamine the policy basis of the national research effort and establish funding priorities.

I. THE GOAL OF THE FEDERAL EFFORT IN BIOMEDICAL AND BIOBHEAVIORAL RESEARCH

The goal of federally supported biomedical and biobehavioral research should be to acquire an expanded base of scientific knowledge to improve the health of the American people. The federal commitment to this goal is reflected in

the long-standing investment in biomedical research, which has resulted in the evolution of the world's preeminent bioscience enterprise.

Health research is conducted and supported by a number of federal departments and agencies; however, only the NIH and the Alcohol, Drug Abuse, and Mental Health Administration (ADAMHA) have the acquisition of basic biological and clinical knowledge as their primary mission. This mission must be protected and enhanced. Other vital and necessary components of national health policy, such as public education, demonstration projects, and health care delivery, should be entrusted to other agencies within the Public Health Service (PHS), other federal agencies, or, where appropriate, the private sector. In addition, the responsibilities of the NIH and ADAMHA should not be extended to include the full translation of basic biological and clinical knowledge to patient care. Finally, the goal of biomedical research must be realized through pursuit of excellence in research. The limited resources available for fundamental research must not be deployed to achieve non-scientific objectives. The benefit to all aspects of the economy derived from research should be a consequence, not a goal of the research effort.

II. THE SCALE AND SCOPE OF THE FEDERAL INVESTMENT IN BIOMEDICAL AND BIOBEHAVIORAL RESEARCH

The federal contribution to biomedical research through the NIH and ADAMHA is unique because it emphasizes basic biological and clinical investigations, many of which would go unfunded without federal support. In fact, the overall biomedical research enterprise that has evolved as a result of this federal investment is of such a scale that only continued federal support can sustain it.

The federal objective of health improvement will not be fully realized by merely maintaining the status quo; federal funding for biomedical and biobehavioral research should be increased. There are three reasons why more funding is needed. First, it costs more each year to maintain the same level of effort. Second, as we penetrate more deeply to a true understanding of biologic processes, the increasingly complex research required to solve the next generation of scientific problems costs more. And third, there should be real growth in the federal biomedical research effort to take full advantage of the currently available but unmet scientific opportunities. Budgets for the NIH and ADAMHA should increase at between 15 percent and 20 percent annually for at least the next 5 years to enable our nation to realize fully the available scientific opportunities and more rapidly improve health.

III. PRIORITIES IN THE FEDERAL BIOMEDICAL AND BEHAVIORAL RESEARCH ENTERPRISE

The present reexamination of federal research policy by the Congress and the administration must look beyond short-term budget driven decisions to the scientific, economic, and societal implications of these actions. Federal policy must recognize and preserve the unique strengths that have contributed to the system's overwhelming success. In addition to its focus on fundamental biological and clinical research, the system should continue to maintain diverse programs of research support that emphasize the vital role of investigator-initiated research. All research selected for funding should undergo rigorous technical review for scientific merit.

The system should continue to be predominantly extramural and academically-based to take advantage of the enormous national pool of creative scientific talent and resources, and to maintain the unique bond that exists between

education and research. The intramural NIH and ADAMHA research programs should be maintained as a unique research resource. A diversity of institutions provides great flexibility to respond to scientific opportunities of varying degrees of scale and complexity.

Often overlooked in the debate surrounding the scale of the federal investment in biomedical research are the research resources beyond the direct cost portion of the grant that are needed to sustain the fragile environment in which research is performed. For example, research equipment, which is becoming increasingly important as research becomes more complex, often is not recognized as an integral part of the ongoing program of federal biomedical research. State-of-the-art equipment should be provided to federally funded investigators. Maintenance of research facilities is another area in which increased federal investment is needed to maintain the research effort. Facilities needs in the biomedical sciences should be determined so that rational resource allocation can proceed. Programs for shared resources, such as the NIH General Clinical Research Centers and the Animal Resources Program, should be enhanced to increase the efficiency and productivity of the federal biomedical research investment. Flexible support funds for institutions, such as those available through the NIH Biomedical Research Support Grants, should also be increased. These funds are used to meet the unique and changing needs of individual institutions, enhance the research environment, and sustain their federal research programs.

Federal support for biomedical research also includes reimbursement to institutions for the costs associated with research that cannot be attributed directly to individual grants or contracts. Indirect costs policies are an area of disagreement among investigators, university administrators, and the federal government. All segments of the research community need to work

toward agreement that those costs included in indirect reimbursement are true and necessary costs of research. At the same time, the government must make efforts to streamline and reduce the bureaucratic requirements that add unnecessary institutional administrative burdens and indirect costs. Methods must be found to provide a reasonable level of accountability in a cost efficient manner and to reduce excessive documentation.

An indispensable component of the federal biomedical research system is a strong program of research training. This should include the broad-based disciplinary and interdisciplinary training that is essential to produce scientists capable of working at the constantly changing frontiers of research. A key part of federal programs for research training is the institutional support provided to create an optimal training milieu. The heterogeneity of current federal research training programs should be maintained, with a continued emphasis on support for postdoctoral programs, which largely rely on federal funding.

The basic components of a sound federal program for the support of research training are in place. There are two areas of research manpower, however, that cause concern. First is the declining interest in careers in the biomedical sciences. Fewer young people are interested in and preparing for careers in biomedical research. The National Academy of Sciences (NAS) should undertake studies to identify reversible causes for this trend, and efforts should be made to address these causes.

There continues to be concern over the lack of well-qualified physician investigators. The declining ability of M.D. investigators to successfully compete for research grants has been attributed to inadequate preparation for research careers. Programs such as the NIH Medical Scientist Training Program

and the Physician Scientist Awards seek to provide the highest quality training in basic science for physicians and should be models for the design of M.D. research training.

IV. FORMULATION OF SCIENCE POLICY

There is concern about the quantity and quality of scientific advice available to Congress and the Administration for the purposes of policy formulation. Efforts must be made to ensure that the Congress and the President receive impartial, realistic, and timely advice from the scientific community related to the goals of biomedical research and the means to achieve these goals. The advisory councils to the individual institutes at the NIH and ADAMHA should be more involved in the debate and make timely recommendations related to research policies and priorities to the Director of NIH and the Administrator of ADAMHA. Each agency should provide consensus advice to the Office of the Assistant Secretary for Health. The President's Office of Science and Technology Policy should include strong representation from the biomedical and behavioral science community so that the unique interests of the medical and life sciences are integrated into overall national science policy.

The NAS Institute of Medicine, which has served admirably in undertaking long-term studies on key policy issues, should also undertake the task of providing immediate and impartial advice to the Legislative and Executive Branches in such areas as budget and resource allocation in the federal program for biomedical and behavioral research. Such advice should represent a consensus of the scientific view responsive to public concerns.

I. THE GOAL OF THE FEDERAL EFFORT IN BIOMEDICAL AND BIOBEHAVIORAL RESEARCH

The ultimate goal of the biomedical and biobehavioral research conducted and supported by the federal government is to improve the health of the American people through the acquisition of scientific knowledge. This goal has a high priority for both the general public and the federal government. People today want and expect to have longer, healthier lives, free from the crippling disabilities caused by disease and aging. At the same time, the federal government has a basic responsibility, articulated in the Preamble of the Constitution, to preserve the "general welfare" of the people. One way is to work toward health improvement.

The federal role in health has evolved as the science of medicine has grown. Early efforts were devoted to sanitation, quarantine, and other hygienic measures. One of the earliest legislative initiatives was the passage of "an Act for the relief of sick and disabled seamen," which established the Marine Hospital Service -- the predecessor of the Public Health Service (PHS) -- in July 1798. As precise knowledge of the causes and treatments of human disease became the dominant influence in improving health, federal participation in acquiring this knowledge grew commensurately. Recognition of the role to be played by biomedical research in the battle against disease dates from the creation in 1879 of the National Board of Health, the first attempt at an organized, comprehensive, national medical research effort supported by the federal government. In 1887, the Laboratory of Hygiene, which served as the genesis for the National Institutes of Health (NIH), was founded.

The essential dependence of improvements in the nation's health upon fundamental biological and clinical research was reflected in the creation of

the PHS. Since 1944, section 301 of the PHS Act [42 U.S. Code 241] has stated that the agency:

> ... shall conduct and encourage, cooperate with, and and render assistance to other appropriate public authorities, scientific institutions, and scientists in the conduct of, and promote the coordination of, research, investigations, experiments, demonstrations, and studies relating to the causes, diagnosis, treatment, control, and prevention of physical and mental diseases and impairments of man...

Clearly, the acquisition of new knowledge through biomedical research is only one component of the federal government's agenda to improve the health of its citizens. Better health for the American people can only be realized through determined efforts to expand the knowledge base through research and to apply this information through social and health care delivery programs. A broad-based approach, acknowledging the importance of an entire spectrum of federal responsibilities and initiatives has enabled this nation to make great strides towards its identified health goals. The vast panoply of federal programs that contribute to the health of our citizens, ranging from toxic waste disposal to school lunches to Medicare, is administered by almost every federal agency and department. However, without the insight supplied by advances in fundamental scientific knowledge, federal efforts to improve health would be seriously limited. Research must continue to be protected and fostered as a critical component of the overall federal health policy.

- *Federally sponsored biomedical and biobehavioral research is the foundation for the government's programs to improve the health of the American people.*

Health research is conducted and supported by a number of federal departments and agencies. PHS agencies, including the Centers for Disease Control, the

Food and Drug Administration, and the Health Resources and Services Administration, as well as the National Center for Health Statistics and the National Center for Health Services Research within the Office of the Assistant Secretary of Health, pursue various components of health research with a focus on clinical science, public education, health regulation or health care delivery.

Agencies and departments outside the Department of Health and Human Services, such as Defense, Energy, and Agriculture, the Veterans Administration (VA), the National Aeronautics and Space Administration, and the National Science Foundation (NSF) also perform biological, biomedical, and health-related research. However, with the exception of small VA and NSF programs, these departments and agencies focus primarily on targeted rather than basic research and emphasize the application rather than the development of novel scientific information. The NIH and the Alcohol, Drug Abuse, and Mental Health Administration (ADAMHA) have as their primary mission the acquisition of fundamental knowledge through biologic and clinical research. Together they represent 75 percent of the federal investment in health research and development.

Over the past 40 years, advances in public health and health care have grown steadily more dependent on this expanding base of fundamental scientific knowledge, which provides the scientific opportunities that ultimately and often unpredictably lead to the solution of specific health problems. The unique focus of the NIH and ADAMHA in supporting and conducting fundamental biomedical and biobehavioral research has fostered the development of the world's greatest scientific enterprise. This emphasis must continue.

Increasing pressures to extend the missions of the NIH and ADAMHA to include health care delivery, public education, regulation, and other goals of national health policy must be resisted, and these non-research objectives undertaken by other components of the PHS, by industry, or by medical educators and practitioners as appropriate. Along a continuum from basic discoveries to the full application of such discoveries to patient care, the efforts of the NIH and ADAMHA should continue to be devoted to the acquisition of new knowledge and to the clinical research necessary to translate this knowledge into effective therapies. Demonstration projects, educational programs directed at professionals and the public, and patient care represent valuable and necessary efforts to achieve the national goal of improved health, but they should not compete for the limited financial and personnel resources available to sustain and expand the knowledge base.

- *The research mission of the NIH and ADAMHA must be preserved. Non-research components of the federal health agenda such as public education and health care delivery should be entrusted to other federal agencies or, when appropriate, to the private sector.*

On another front, the limited federal resources available for biomedical research are being threatened by the very success of the system these resources have created. Recent research advances, such as those in molecular genetics that spawned an entire biotechnology industry and contributed to national prestige and economic development, have generated pressures to divert federal research resources to achieve non-scientific goals. Examples of such broader societal concerns include using scientific investment as a mechanism for regional economic development, maintaining the competitiveness of American industry in the world marketplace, promoting geographic diversity of research

centers, and enhancing the participation of all segments of the population in a society based on science and technology.

However laudable such goals may be, a reordering of research priorities specifically for the purpose of accomplishing these non-scientific objectives will only serve to divert scarce resources from the primary mission of acquiring knowledge to improve health. Furthermore, on the basis of 40 years of past experience, one can reasonably expect that many of these societal benefits -- including economic development, world prestige, and equity of access to new therapies and to careers in science -- will continue to be achieved as a consequence of the fulfillment of the primary goal of federal biomedical research. In fact, because most of these other societal goals can be achieved only as a result of success in generating a base of fundamental knowledge, a diversion of resources away from such research would eventually undermine the success of the entire federal biomedical and biobehavioral research effort, and thereby be self-defeating.

- *The reordering of research priorities to achieve non-scientific objectives diverts limited resources from the principal goal of acquiring new knowledge to improve health and serves to weaken the overall federal biomedical research effort.*

II. THE SCALE AND SCOPE OF THE FEDERAL INVESTMENT IN BIOMEDICAL AND BIOBEHAVIORAL RESEARCH

The long-standing federal commitment to investment in biomedical and biobehavioral research as a way to improve the health of the American people has been tremendously successful in terms of scientific achievement and societal gain. This support has led to the discovery of biological and clinical knowledge that has extended the length and improved the quality of life for millions of people, thus benefiting the nation by increasing the well-being and productivity of its citizens. In addition, these advances have provided substantial gain for the national economy. For example, it is estimated that the rate of return on every $1 invested in biomedical research is $13. The introduction of lithium treatment for manic-depressive disorders has saved an estimated $6.5 billion, far exceeding the total federal investment in the National Institute of Mental Health since its inception.

The federal contribution to biomedical research remains a unique one because of the continued emphasis on basic biological and clinical investigations. Much of this research would be unfunded and therefore would not be done if not for federal resources. The system of biomedical research that has evolved with the benefit of federal support is so extensive that it must rely primarily on continued federal investment to sustain the present effort.

Historically, the federal government has followed a pattern of continued growth in the annual budget for biomedical research. In the early years these increases provided exceptional real growth, whereas more recently, large annual increases have been necessary just to achieve stable purchasing power (Figure 1). Each year it costs more for the system to support the same level of research, i.e., the same number of research projects, because of increases

in equipment and personnel costs. The Biomedical Research and Development Price Index (BRDPI) provides some measure of the cost growth characteristics for research in the medical sciences. This index has increased by an average of 7.4 percent per year between 1975 and 1984 (Table 1).

In addition, the information provided by current research often leads to more advanced and complex scientific inquiries. This next generation of research is more costly because of the need for more complex equipment and more highly trained, specialized technicians. The BRDPI probably underestimates the increased costs related to the increasing complexity of research. For example, the direct cost of individual research project grants increased an average of 8.2 percent between 1975 and 1984 (Table 2). This was in spite of mandated reductions of between 2 percent and 6 percent in several of those years. These direct costs also did not provide needed equipment in many cases. As a result, the increasing direct cost of project grants only partially reflects the actual cost associated with increasingly complex research.

- *Increased funding for biomedical research is necessary to sustain the current effort because of the increasing complexity and cost of biomedical research. An increase of 10 percent per year in the annual appropriations for the NIH and ADAMHA is necessary to meet this need.*

The situation with respect to funding for research and research training at ADAMHA is complicated by the fact that the agency experienced a one-third reduction in constant dollar purchasing power between 1974 and 1982. In spite of the significant funding increases that have been provided between 1982 and 1986, the ADAMHA funding base has not been completely restored to the 1974

level (Figure 1b). In 1985, this shortfall amounted to approximately 12 percent of the total ADAMHA budget for research and research training.

- *Funding for ADAMHA and research training needs an additional <u>one time</u> increase of approximately 12 percent to compensate for the reduction in purchasing power that occurred between 1974 and 1982.*

We must not only sustain the present effort; the national commitment to steadily improving the health of the American people demands real growth in the federal program for biomedical and behavioral research. Why is continued growth in the biomedical research effort essential? And how much federal investment is necessary to ensure this growth? The answer to both questions is scientific opportunity. The federal biomedical research effort must grow to avail itself fully of the explosion of opportunities that are currently available in the biological sciences. There are indications that this may be the beginning of a "Golden Age" of discovery in biological and medical research. Former White House Science Advisor George A. Keyworth, testifying before the House Committee on Science and Technology in February 1985, said that the "biological sciences stand on the brink of understanding that I can only liken to the brink that Einstein saw for physics in 1905." A wise federal investment policy would be to ensure that the combination of federal and private resources devoted to fundamental research in the medical sciences is sufficient to take full advantage of the opportunities for significant discovery. Only this way can the research system be tuned to maximal productivity and fully reap the already significant federal investment in advancing knowledge.

- *Increased federal support for biomedical research is essential to take advantage of currently unmet scientific opportunities.*

Scientific opportunities far exceed the current federal investment. A rational approach to the question of the scale of growth -- and the increase in federal funds necessary to achieve this growth -- would be to base the federal investment on present or anticipated scientific opportunities. This might be accomplished in several ways. One would be to link the amount of funding to the availability of high quality scientific ideas, as measured by research proposals receiving excellent scores at scientific merit review. Technical merit is rated on a scale of 100 to 500, with 100 being the best. Since 1972, there has been a steady growth, averaging more than 10 percent per year, in the number of high quality (scores of 200 or less) research project applications (Figure 2).

High quality proposals not supported because of insufficient resources represent the capacity of the federal biomedical research enterprise to grow without compromising the quality of the science being funded. The increasing numbers of high quality research ideas that have gone unfunded in the last few years demonstrate both the existence of additional scientific opportunities and the need for continued growth to take full advantage of them. For example, there were approximately 1,100 NIH competing research project applications with very high technical merit ratings that were not funded in fiscal 1983. In fiscal 1984, this number rose to 1,500.

- *High quality merit reviewed research project applications that cannot be funded are one measure of immediately available scientific opportunity.*

Unfunded applications are one way to gauge unmet opportunity and determine the appropriate scale of the federal investment. Scientific opportunity also can be assessed by a process of periodic formal review. Such review might be conducted every five years by a panel of distinguished researchers drawn from different biomedical and behavioral science disciplines under the auspices of the National Academy of Sciences. This panel would review the progress being made in various research areas and attempt to identify fields of research that are expanding and would benefit from additional funding. This overview perspective also has the advantage of providing a basis for longer-range fiscal planning. For example, the panel might identify a particular area of research that has produced a significant number of first-rate research ideas and is clearly ripe for an increased investment. Another field of research might be seen as having great promise but few researchers, thus requiring a gradual increase in funding to sustain the field as it attracts more investigators. Recent examples of such blue-ribbon panel reports prepared under NAS guidance include the Pimentel report on Opportunities in Chemistry, the Institute of Medicine report on Research on Mental Illness and Addictive Disorders: Progress and Prospects, and the current National Research Council Committee to identify Research Opportunities in Biology.

- *A panel of distinguished scientists, under the auspices of the National Academy of Sciences, should provide a periodic formal review of the fields of biomedical and behavioral research to identify scientific opportunity and the desirable level of investment.*

The last 40 years have shown the wisdom of providing for continued growth in the federal biomedical research budget. Such growth has been essential to meet past scientific challenges and has provided the basis for the multiplicity of medical advances that have enriched human life. This growth

also has proven to be a prudent investment in the future because it has afforded biomedical researchers new challenges and new opportunities. But this growth cannot be obtained merely by shifting funds from one budget mechanism to another. To take advantage of expanding scientific opportunities and to reach the full potential of this immensely productive national research program, an additional 5 percent to 10 percent yearly increase in NIH/ADAMHA appropriations for at least the next 5 years would be a wise and cost effective federal investment. This increase would be in addition to the 10 percent needed to sustain the current level of effort.

- *A <u>total</u> annual increase in appropriations for biomedical and behavioral research of from 15 percent to 20 percent for at least the next 5 years is needed both to sustain the present research effort and to take advantage of new opportunities.*

The present political and fiscal pressures occasioned by the growing federal budget deficit are challenging this long-standing federal commitment to the biomedical research effort. Despite these pressures, any reevaluation of policy must acknowledge that reductions in research funding in attempts to reduce the deficit in the short-term will have serious repercussions for biomedical research -- and thus the health and welfare of the American people -- in the long-term. The current fiscal climate requires a careful husbanding of federal resources, but the potential of the federal biomedical research enterprise and the opportunities that are available argue that such husbanding includes enhancing the federal investment in biomedical research. Those who wish to reduce federal spending for health care research and at the same time cut the costs for providing the basic safety net of social service and medical care programs must realize that it is this very research that offers a significant prospect for eventually reducing expenditures for health care. An

era of deficit reduction and decreasing federal budgets is, paradoxically, not the time to cut federal investment in research. Investment in basic research not only fuels the economy with jobs and funds, it also produces discoveries that improve the lives of our citizens and ensures our preeminence in world markets as well as domestic prosperity.

III. PRIORITIES OF THE FEDERAL BIOMEDICAL AND BEHAVIORAL RESEARCH EFFORT

The organizational structure for the conduct of biomedical and biobehavioral research that has evolved as a result of the ongoing investment of federal funds has been highly successful in achieving its scientific goals of improving the quality of life for the American people. These triumphs were possible, in large part, because of several unique strengths of this system. It is imperative that federal policy recognize these strengths and preserve them in the face of increasingly stringent economic constraints by giving them the highest priority for the limited federal resources. These characteristics are:

1) emphasis on fundamental biologic and clinical research;

2) emphasis on investigator-initiated research, selected through rigorous review for scientific merit;

3) support for predominantly extramural, academically-based research;

4) provision of the diverse resources necessary to sustain the extramural, investigator-centered research enterprise; and

5) provision of support for the research training system necessary to continue the flow of creative investigators.

FUNDAMENTAL RESEARCH

The federal investment in biomedical research traditionally has placed a greater emphasis on basic or fundamental research than on targeted or applied research. Federal policy makers have acknowledged that the discovery of new scientific knowledge through basic biological research is the cornerstone in our understanding of human disease and its eventual prevention or treatment.

Such research includes as a key component clinical investigation to advance our knowledge of human biology and pathology. Clinical research is not only the crucial link where basic biological knowledge is both developed and utilized; it also serves to identify areas where further basic research is necessary.

In a time of fiscal constraint, this emphasis on fundamental research should continue and be strengthened. Federal funds should support heavily this portion of the spectrum of biomedical research, because other sources of support for it are not available. In some areas of applied research, such as large scale clinical trials where the general efficacy of already developed therapies is being tested, efforts should be made to identify other resources, such as patient care or pharmaceutical industry funds, to share in the support of such research.

In general, the federal biomedical research effort should not extend into areas of applied or targeted research where the goal is the commercial development and production of diagnostics and therapeutics. The biomedical industry has both the resources and the expertise to carry out technology transfer for commercial development in a much faster and more efficient manner than the federal government could hope to accomplish; indeed, survival in today's competitive marketplace demands the ability to translate basic scientific discoveries into practical applications. A prime example of this is the growth of the bioengineering industry out of basic discoveries in molecular genetics.

- *The federal investment in biomedical research should continue to emphasize fundamental biological and clinical research. Such research is the source of the new knowledge needed to accomplish advances in health care.*

INVESTIGATOR-INITIATED RESEARCH

The past has shown the value of a wide range of funding mechanisms to support biomedical research. Within this diverse portfolio, however, the investigator-initiated research project has proven to be the vital core of the federal biomedical research effort. The investigator-initiated project is the mechanism that has proven to be the most productive in exploring and developing new scientific opportunities. This approach utilizes the unique talents of thousands of individual scientists to sustain a broad-based, flexible program of biomedical research. Investigators pursue their own ideas and use their scientific instincts and laboratory experience to develop new approaches to research problems and to follow up on unexpected findings. Investigator-initiated research may occur in multi-investigator and multi-disciplinary settings; its hallmark is that scientists formulate the proposed research whether through a program project, center, or other funding mechanism. However, since these tend to be large numbers of relatively small projects, the NIH and ADAMHA have the flexibility to shift the emphasis in programs as scientists shift their research without disrupting large bureaucratic enterprises.

In a time of limited resources, however, the value of this far-ranging, essentially untargeted research may not be immediately obvious to the public, which is understandably more concerned with short-term applications of scientific knowledge to specific diseases. Yet it is in such times of fiscal

constraint that we should assign the highest funding priority to this most essential and creative component of the biomedical research effort.

- *The highest funding priority should be given to investigator-initiated research projects because these provide maximum creativity and flexibility in the research system.*

EXTRAMURAL RESEARCH

The founding genius of our federal biomedical research effort was the decision to seek new knowledge in the biosciences predominantly through a system of awards to individuals in institutions all across the nation. This decision to fund the best and most promising scientific ideas regardless of where they originated sparked the development of the outstanding biomedical research enterprise the nation now enjoys. The research agencies have been able to tap the human, organizational, and physical resources of the entire country to create a truly national effort.

This extramural approach provides several distinct advantages. First, a vast national pool of creative scientific talent can be drawn from and the resources of many diverse institutions can be joined with those of the NIH and ADAMHA to further the federal biomedical research effort. This large and heterogeneous assortment of institutions has the capacity to undertake research projects of varying degrees of scale and complexity. Such a system encourages maximum creativity and flexibility from individual investigators or teams of researchers in responding to scientific opportunity.

Another advantage is that this research is conducted primarily in academic settings. In fiscal 1984, 75 percent of NIH extramural awards went to institutions of higher education, and 52 percent went to medical schools and their affiliated hospitals. The coupling of the research and educational

efforts is a unique strength of the American university system. In most graduate programs, students are trained while they participate in research, thus yielding a dual dividend: talent and knowledge. The search for new knowledge and the dissemination of established learning make invaluable contributions to one another.

The diversity of institutions that participate in the extramural system also enables and encourages a cross-section of this nation's people to participate in the federal biomedical research effort, thereby benefiting both the institutions themselves and society as a whole.

- *The federal biomedical research enterprise should remain predominantly extramural and academically based.*

INTRAMURAL RESEARCH

This emphasis on extramural research should not detract from the importance of the remarkably vigorous and productive intramural programs at the NIH and ADAMHA. The wealth of basic biological and clinical knowledge developed in these programs has contributed significantly to our current understanding of human disease. The recent achievements in research on the viral agent for acquired immune deficiency syndrome (AIDS) once again demonstrate the strength of the intellectual and creative resources of the intramural program. The Clinical Center at the NIH is the site of innovative clinical investigations into the mechanisms underlying human disease and should continue as a vital component of the intramural program. The presence of this active research effort at NIH also enhances the quality and sophistication of the administration of the extramural program.

In addition to the research itself, the NIH and ADAMHA programs make significant contributions to research training and serve as an important personnel resource for the extramural research community. A free flow of ideas and personnel between the intramural and extramural programs strengthens both and should be encouraged. The ability of the intramural program to recruit and retain well-qualified senior scientists and administrators should be enhanced. Such initiatives would ensure the continuation of the competent leadership provided by the senior staff at the NIH and ADAMHA, which is critical to the success of not only the intramural programs but also the entire extramural research effort.

- *The intramural research program at NIH and ADAMHA should be continued. Programs for research trainees and investigators to participate in intramural research should be strengthened and expanded. Initiatives should be undertaken to attract and retain exceptional senior scientists and administrators at the NIH and ADAMHA.*

SCIENTIFIC MERIT REVIEW

The concept that the significance or merit of a scientific proposal is judged best by other scientists is not new; it has existed in various forms since the 17th century. Even so, the post World War II decision to allow scientists a primary role in determining the merit basis for the allocation of federal funds for scientific research was a rather bold one that did not command universal assent. The record of the past 40 years, however, has shown the wisdom and value of scientific merit review.

Recently the equity of the merit review system has been challenged both from outside and within the science community. As science and the federal

investment in it have grown in scale and impact, the desire to participate in and partake of this success has increased commensurately. The public, and their elected representatives, are increasingly interested in focusing these enormous talents and technical resources on the diseases that to them are most urgent. Judgment of the merit of research proposals on the criteria of scientific excellence and opportunity is increasingly at odds with congressional concern for equal distribution of scientific resources.

Many scientists also have joined the critics of the merit review system. These criticisms are probably more a consequence of the inordinate pressures brought to bear on the scientific review system because funds are not sufficient to keep pace with the burgeoning scientific opportunity in biomedical research. Scientists with good ideas that are not funded increasingly challenge the ability of the merit review system to make fine distinctions between the quality of ideas.

The concept of peer review is sound. The primary basis for allocation of federal funds for biomedical and biobehavioral research must be the scientific quality of the research proposals submitted. Scientific quality is best judged by scientists who are familiar with the field of research in question and can, therefore, address issues such as scientific opportunity and technical merit. The record of the peer review system over the last 40 years speaks for itself. Through peer review for scientific merit and Advisory Council review for program priority, federal funds awarded to a remarkable array of institutions and scientists have led to world preeminence for American biomedical research and significant improvements in human health.

- *The allocation of federal funds for biomedical and behavioral research should continue to be based on the system of scientific merit review of proposals. This system is best able to identify scientific excellence and to insure the quality of the federal investment. Priorities for funding to meet national goals should be determined by the Institute Advisory Councils and funding decisions within these priority areas should be based on scientific merit.*

Despite all of the concerns expressed by scientists and lay observers about the potential for abuse and conflict of interest inherent in any system that employs peer judgments, the peer review systems that have evolved at the NIH and ADAMHA remain the best and most objective method available to evaluate scientific merit. The scale of the review system, with over 1,000 scientists participating and one-quarter of the membership changing every year, does much to ensure that the majority of the research community, rather than a select few, eventually serve as evaluator as well as applicant. The system works; it must be preserved and strengthened. There must be continued attention to maintaining a balanced representation on review groups and to insuring the quality of the peer review process.

- *There should be a periodic, formal examination of the mechanisms for merit review of grant applications used by NIH and ADAMHA. Such review will insure that equitable peer review procedures are used to identify the best science.*

RESEARCH SUPPORT

Federal support for fundamental, investigator-initiated, extramural research necessarily involves more than just the direct cost portion of the grant. It

includes all of the resources needed to ensure that the individual investigator or group of scientists can actually do the research. This is particularly true in fiscally austere times, when one possible policy option is to withhold certain elements of research support to sustain an arbitrarily determined number of grants with partial support. It should be a major goal of federal policy during periods of fiscal constraint to ensure that the scale of the effort does not exceed that which can be appropriately supported.

- *The number of extramural grants awarded each year should be maintained at the highest level at which adequate funds for full direct grant costs and research support resources can be provided.*

Another factor to be considered is that even though the core of the federal biomedical research enterprise consists of ideas generated by individual investigators, the research support necessary for the realization of these ideas often extends far beyond that awarded to the individual scientists themselves. The federal investment in biomedical research must not only support the individual projects but also the entire system or environment in which the research takes place.

To the extent to which these resources are beyond the scope of the direct costs on individual research awards, they must be available to ensure that maximal research productivity can be sustained. As funding for biomedical research has plateaued, these resources have become increasingly constrained. This frugal approach is perhaps understandable as a short-term strategy for coping with limited resources, but now it is becoming a de facto long-term policy that is increasingly counterproductive as resources accumulated during years of expanding biomedical research investment become depleted in rapidly advancing fields.

Resource support is particularly critical at a time when the academic medical center is threatened by resource constraints on all fronts. Pressures to reduce health care costs are reducing the institutional support derived from the education and clinical practice efforts of the faculty; medical school applications and enrollments are declining in response to a perceived physician surplus; and access to capital in the non-profit sector to restore or replace aging equipment and facilities is increasingly limited.

While responsible policy in the present era would support a cautious approach to investment in research resources and seek in all instances to maximize the research return on these investments, this area of federal investment policy deserves concerted study. When "making do" hobbles research productivity, it is unsound public policy. It should be the responsibility of the federal government to monitor the resources of the extramural research community with a view to understanding what is needed to maintain the national research capacity.

- *The NIH/ADAMHA should analyze the research capability and anticipated needs for major equipment and facilities to maintain the biomedical and behavioral research capacity of the extramural community.*

Direct Costs

During the past several years, the direct cost portion of biomedical research grants has risen dramatically. Much of this increase can be attributed to the increasing complexity of research in the biological sciences. This advance in science is reflected in proportional increases in all components of direct costs. However, personnel costs continue to account for over two-thirds of the direct cost of research grants. Salaries have increased because of the need to hire technicians with more advanced training to cope with advancing

technology. Salaries for research personnel have also increased because of the need to make them more competitive with industry and other occupations to attract and keep well-trained personnel in academic laboratories. Efforts to limit or reduce direct costs below study section recommendations would have a chilling effect on biomedical research by making it difficult to hire and retain sufficient skilled laboratory personnel.

- *Direct costs for biomedical and biobehavioral research grants should be provided at amounts determined to be adequate by scientific review.*

Equipment

Equipment is a crucial component of a successful biomedical research effort; it has become increasingly vital over recent decades as research has become more complex. Between 1983 and 1985, the NIH examined the state of research instrumentation in the extramural research institutions through a study of the status of equipment, present expenditures, and projected needs. In the field of biomedical research the greatest need continues to be for equipment of a scale that can be provided through direct grant programs. The recent NIH/WESTAT study pinpointed a major need for equipment in the $10,000 to $50,000 range. To achieve optimal research productivity and remain at the forefront of science, appropriate equipment needs should be met as an integral part of the ongoing federal biomedical research program.

- *Federal policies should encourage the provision of state-of-the-art equipment for biomedical research through direct award on individual grants or Shared Instrument Grant awards.*

A recent interagency study was also completed that explored ways of improving the purchase and management of research equipment to reduce waste and improve utilization. Federal policy in many areas impinges on the ability to obtain university research equipment. Tax policy can be constructed to encourage corporate donation of equipment; federal depreciation schedules can be accelerated in recognition of the rapid obsolescence of research equipment; novel arrangements can be tried to facilitate direct grant purchase of more expensive equipment by spreading the purchase cost over several years of the grant or among several grantees; and indirect costs policies can be reviewed with an eye toward encouraging economies of use and purchase for state-of-the-art equipment.

- *Federal policies that impinge on acquisition, maintenance, and use of research equipment should be reviewed to streamline procedures and encourage economies of use and purchase. State-of-the-art equipment must be appropriately available for use in federally funded research projects.*

Shared Resources

As increasingly diverse scientific opportunities compete for limited resources, sound federal research policy must turn to ways in which needed resources can be used most efficiently and productively. One approach is through programs that provide research resources for shared use by entire institutions or even the entire research community. NIH provides such support programs through its Division of Research Resources. The General Clinical Research Centers (GCRC) program supports 75 clinical research centers at our nation's academic medical centers. By providing centralized facilities and core laboratory and clinical personnel, these centers support the clinical

research being performed on over 3500 project grants. These unique facilities with personnel trained in research procedures have been a remarkably efficient and productive resource, and full support of a vigorous GCRC grant program is warranted. The Animal Resources program also provides critical resources for research by supporting regional primate centers, laboratory animal sciences program grants, and a program to provide institutional animal resource improvements. In view of the well documented need for substantial investment to upgrade animal facilities at academic medical centers and research institutions, this program deserves increased funding to assist institutions in providing the facilities essential to maintain the high quality of research involving animals.

- *Creative federal grants programs to provide the shared research resources vital to realizing the full research potential of our nation's academic medical centers and universities should be continued and enhanced.*

Flexible funds available for deployment at the discretion of individual institutions are awarded through the NIH program of Biomedical Research Support Grants. These funds are variously used for start-up and transition support for investigators, urgently needed equipment and other resources. They are carefully husbanded to meet the unique and changing needs of each institution and to maximize its ability to sustain the extramural federal research program.

- *Maximal research productivity and optimal institutional support for the federal research program are enhanced by the provision of some flexible research funds for deployment at the discretion of the*

institution. Programs such as the NIH Biomedical Research Support Grants should be continued.

Indirect Costs

There is no area of federal support for biomedical research that is more contentious than the reimbursements paid to universities for the costs they incur at a central or institutional level in support of federally-funded research conducted at their facilities. The total cost of research at an institution can be divided into two categories -- direct and indirect -- depending on whether or not the costs can be attributed to individual research projects. Indirect costs are legitimate research expenses, documented by agreed upon accounting conventions and subject to audit. Their method of payment through a calculated average percentage of the direct costs across the entire university, however, creates a dissociation between these two equally real cost components of research and imparts an artificial quality to the indirect cost calculations. These indirect cost reimbursement policies evolved because it was not possible to assign all of their components to individual grants; yet, it is this lack of a concrete association between the direct project costs and these supporting costs at the level of the individual grants that has engendered distrust and strained relations between individual faculty researchers and administrators. In biomedical research, this distrust is further fueled by a steady shift in the proportion of total research costs expended in the direct and indirect cost categories. Despite a number of policy reviews and examinations of this issue by both universities and the federal government, the legitimacy of costs in the indirect category continues to be questioned.

- *Appropriately audited research costs assigned by convention or choice to the indirect costs category are a legitimate component of the total costs of research. Payment of these costs is as critical to extramural research productivity as payment of direct costs.*

The division within the research community on this issue does not encourage thoughtful policy deliberation and invites outside intervention by budget cutters who seek to "control" research costs and decrease the federal investment rather than to optimize the productive allocation of research funds.

- *All segments of the research community should join together in a concerted effort to agree on the components and accounting of indirect costs so that these are better understood and accepted. All must agree that these are necessary costs of research for them to enjoy the confidence of the entire research community.*

As the scale and complexity of the nation's biomedical research effort have increased, it has become increasingly cumbersome to administer. Numerous, individually well-intentioned procedures, directives, guidelines, regulations, and laws have been promulgated concerning the administrative and fiscal procedures that awardee institutions must follow to be eligible for and provide accountability for federal biomedical research funds. Little attention has been paid at the federal level to the degree to which this gradual bureaucratic accretion contains redundant, contradictory, counterproductive, or simply not cost effective requirements.

The cost to the institution of meeting these requirements reduces the total dollars available to fund the research itself. Ways must be found to achieve a level of accountability that is reasonable and agreeable to both the

government and the research institutions, but which is cost efficient and does away with excessive documentation. Recent efforts by the NIH to increase the jurisdiction of the institutional prior approval system for grant rebudgeting and by the White House Science Council to recommend that investigators be permitted to use up to 10 percent of their grant support on a discretionary basis for research and educational purposes and to carry forward unexpended funds from one fiscal year to the next are examples of laudable trends.

- *Concerted efforts should be made to streamline and reduce federal bureaucratic requirements that add unnecessary administrative burdens to research institutions and divert scarce research funds.*

Facilities

Recent attention in the extramural research community has focused on the declining state of science facilities in all disciplines as a growing threat to the nation's research capabilities. The absence of significant federal investment in extramural facilities through competitive construction grants programs for over a decade is cited as a prime reason for this decline. This lack of support for facilities also is blamed for the growing trend toward individual universities seeking direct congressional appropriations for science buildings.

The inevitable deterioration of facilities built before 1970 and the limited resources to keep pace with the growth in scale and complexity of the research effort have taken their toll. However, at least in biomedical research, a thorough study of the nature and degree of these deficiencies in facilities has not been undertaken and is urgently needed to guide responsible policy decisions and program planning. Especially in the area of physical plant and fixed equipment, the needs of different disciplines are bound to vary, and

decisions concerning the types of facilities and the means through which they should be funded should be field specific.

- *The federal government should assume responsibility for specific and ongoing studies to ascertain the state of the physical plant in the nation's universities and academic medical centers. Such studies are the necessary basis for policy decisions and program planning to assure that the capacity of the national effort in biomedical research is sustained.*

Based on results of such studies, policies should be developed to determine the yearly scale of the federal investment in maintaining and rejuvenating facilities for federally funded biomedical research. The methods by which these capital costs are met also should be carefully considered. Until 1969 the NIH had a Health Research Facilities Grants Program through which yearly appropriations for major construction and renovation projects were channeled. The lapsing of authority for this program has undoubtedly contributed to the lack of major resources to revitalize the physical plant in the biomedical sciences. A direct facilities grants program would have the advantages that applications would be competitive and their relative scientific merit could be weighed. Funds would be provided to NIH/ADAMHA specifically for buildings in the fields of biomedical and behavioral sciences. The scale of the federal investment in capital costs for buildings would be reviewed yearly in competition with the federal appropriations for other research programs and based on a clear policy decision about resource allocation.

While an authorized program would permit capital costs to be provided through direct federal grant construction support, recovery of private capital investments is currently possible through federal reimbursement of

use/depreciation charges and through indirect cost recovery of interest paid on buildings constructed through privately incurred debt. In 1985, NIH invested $13.1 million in extramural research facilities through several specific categorical construction authorities and $70 million through use allowance and depreciation costs. These reimbursement methods by which federal funds can be tapped to contribute to the financing of facilities at research institutions provide an important degree of flexibility for universities. They have the added virtue that they provide funding through mechanisms that intimately link federal funds for facilities with the continued ability of that university or academic medical center to be the venue for a large volume of merit reviewed competitive research grant funding. They have the disadvantages that federal investment in facilities is not subject to review of the scale of investment through the appropriations process, where it is weighed in competition with funding for other research programs when scarce funds are allocated, and that funds to pay for buildings in a given field of science through indirect cost reimbursement are partially provided from the budgets of agencies in other fields of science.

- *Federal policy should be developed to determine how documented need for research facilities should be met under conditions of fiscal constraint on research allocations. Programs of direct merit reviewed capital grants and opportunities for phased recovery of capital investments from non-federal sources should be provided. The scale of the federal investment from all sources should be monitored and weighed with other investment priorities.*

RESEARCH TRAINING

This nation's remarkable achievements in biomedical research would not have been possible without strong federal support for the training of research

manpower. A reservoir of highly trained biomedical scientists is indispensable to the national biomedical research system and must be replenished continually if we are to maintain our current research capabilities and take advantage of future opportunities. To ensure the continued availablility of sufficient skilled scientists to meet these national research objectives, significant federal involvement in research training must continue.

The Current System

Federal biomedical and behavioral research training programs must provide a variety of training mechanisms and encourage the broad-based disciplinary and interdisciplinary training essential to produce scientists capable of productive careers within a profession with constantly evolving frontiers. This support ranges from formal research training programs funded under the authority of the National Research Service Awards (NRSA) to support of trainees as research assistants on individual project awards.

In research intensive universities, as many as 30 percent of Ph.D. candidates are supported as research assistants on federal research grants; nationally, almost half of all Ph.D. postdoctorals and 5 percent to 10 percent of M.D. postdoctorals are supported through research project funds. While these funds do not support the training environment per se, they are an appropriate source of support for trainees during those portions of training when they can and should function as integral members of individual research teams.

Currently, federal training programs provide approximately 15 percent of Ph.D. predoctoral support, but 34 percent of Ph.D. postdoctoral and 45 percent of M.D. postdoctoral research training support in the biomedical sciences. This federal emphasis on support for graduate, and even more for postgraduate,

programs must continue. It is at the postgraduate level that those talented individuals who will make future creative contributions to biomedical research are identified, and at this level that non-federal sources of support for such advanced training diminish, leaving a natural and essential role for federal programs.

A further important component of federal support for advanced trainees is the program of research career development awards through the NIH and ADAMHA. This varied portfolio of awards, designed to support the transition from research trainee to fully independent, funded investigator, is uniquely tailored to the needs of differing career stages and to addressing shortage areas such as physician investigators.

- *The heterogeneity of federal support mechanisms for biomedical and behavioral research training must be maintained. The mixture of support from different agencies and under the aegis of different programs, ranging from those specific for training to components of research or clinical programs, should be continued. Federal programs should emphasize support of postdoctoral programs.*

NRSA training programs include both institutional training grants and individual fellowship awards. At the recommendation of the National Academy of Sciences Committee on National Needs for Biomedical and Behavioral Research Personnel, 85 percent of NRSA grants are made to institutions. While the individual awards based upon competitively reviewed research proposals are an important mechanism for supporting advanced research fellows, the majority of funds should continue to be provided in the form of institutional training grants. Such grants enable institutions to amass sufficient trainees and the

critical institutional resources to provide a proper and broad-based training milieu.

- *Federal programs should continue to emphasize and strongly support the institutional components of research training as well as trainee stipends to provide an optimal training milieu.*

The exponential expansion of the "new biology" necessitates an average investment of ten years of training beyond the baccalaureate degree. The length of this training requires large scale programs involving extensive and long-term commitments of personnel and laboratory resources in order to sustain sufficient numbers of trainees at each stage to eventually yield a small cadre of research scientists. The NAS estimates that nationally there are at any one time some 60,000 Ph.D. predoctoral candidates and 15,000 Ph.D. and M.D. postdoctorals in training in the biomedical and behavioral sciences. It is estimated that each year approximately 2,200 Ph.D.s. 1,200 M.D.s, and 150 M.D./Ph.D.s complete the entire training sequence and emerge from postdoctoral fellowship programs fully trained for careers as independent investigators.

These estimates emerge from the extensive manpower study conducted biennially by the NAS Committee. This committee was chartered by the National Research Act of 1974 to develop projections of manpower needs and make recommendations regarding the appropriate scale and scope of federal training programs in the biomedical sciences. The data collected by this committee have proven useful in evaluating the current status of research manpower in the clinical, basic biomedical, and biobehavioral sciences as well as allied health sciences and nursing research.

- *The federal government, through the National Academy of Sciences, should continue to monitor all aspects of research training in the biomedical and behavioral sciences.*

Unfortunately, while the present effort can be quantitated, projections of future manpower needs in rapidly evolving disciplines, based on unknown future scientific opportunity, cannot be made with a high degree of accuracy. The unpredictability of the rate of advance in various scientific fields and the long lag time between identification of the need for additional manpower and the production of more fully trained investigators argue for a system that makes only the most general estimates and tends to err on the side of overproduction. Elaborate efforts to quantify the unquantifiable should yield to ensuring an excess of broadly-trained personnel in a system with sufficient flexibility, adaptability, and re-training capacity to provide a continual supply of new young researchers with the capability to pursue these dimly forseen opportunities.

Future Concerns

The basic components of a sound federal program in support of research training in the biomedical sciences are in place. Continued attention to the appropriate scale of these programs to meet anticipated manpower needs and to the provision of adequate trainee support and institutional resources within each program are essential. In two areas, however there is concern that research manpower needs are in jeopardy.

First, there is growing apprehension related to the declining interest in careers in the life sciences. The number of potential applicants for Ph.D. programs in biomedical research has declined over the past decade, and current indications are that this trend will continue. The number of people

graduating with baccalaureate degrees in the life sciences has been decreasing since 1976 (Figure 3). Current estimates by the NAS are that the number of first-year graduate enrollments in the biomedical sciences peaked in 1978, and has been declining ever since. Medical school applications have fallen by 23 percent since 1974. In addition, training program directors in the biomedical sciences have noted deterioration in the quality of the predoctoral applicant pool, increased numbers of foreign nationals in these training programs, and an increased competition for qualified postdoctoral trainees. The trends are becoming apparent: fewer young people today are preparing for careers in the biomedical sciences.

These trends must be monitored closely, and studies undertaken to identify reversible causes for these declining enrollments. Anecdotal evidence suggests that careers in biomedical research appear less attractive to young people than they once did. The fierce competition to sustain grant support, increasing administrative and bureaucratic burdens, reduced freedom and flexibility to pursue independent research ideas, and prolonged training are all cited. Efforts to document these or other causes and to reverse these trends should be undertaken.

- *The NAS should closely monitor worrisome trends toward diminishing interest in life science careers. Studies should be undertaken to identify reversible causes for this decline in the student groups from which future biomedical scientists are recruited.*

The "payback" provision of the NRSA grants is widely held to be a deterrent to potential trainees who cannot be sure that they have the talent or desire to pursue a research career. This provision, which was established with the creation of this training authority in 1974 to insure that federal funds were

not misused to train non-researchers, requires trainees to agree to payback each additional month's stipend allowance after the first 12 months of training with equivalent research or teaching time. Trainees unable to secure research or academic positions must pay back the stipend monies. At a time when we lack sufficient numbers of physician scientists, such a deterrent should be eliminated. This "payback" provision also fails to recognize that the trainee is actually repaying in kind by participating in research throughout the training period.

- *The payback provision of the National Research Service Awards is a disincentive to recruitment for research careers and should be eliminated.*

Equally troubling is the continued lack of sufficient well-qualified physician investigators, first identified in the late 1970s. The percentage of physicians serving as principal investigators on NIH investigator-initiated research project grants (R01 awards) continues to decline (Figure 4) and the number of M.D. postdoctorals in the NRSA program remains below recommended levels (Figure 5). Clinical investigators make two vital and indispensable contributions to biomedical research. First, there are certain types of research that are best done or can only be done by individuals with clinical training. Second, M.D. investigators uniquely employ their clinical knowledge and experience to identify important problems and needs for basic research. Physician investigators truly serve as vital bridges to achieve the necessary synthesis of new basic knowledge with its application to clinical situations and problems.

While the number of M.D. and M.D./Ph.D. applicants for research funding have remained relatively steady during the last 10 years, the percentage of grant

applicants and recipients with clinical degrees has declined. This is because of the increasing numbers of Ph.D. applicants and the growth in the total number of grants funded. After a thorough examination of threats to this "endangered species," the NIH concluded that the declining ability of M.D. investigators to compete successfully for research grants and to successfully sustain full research careers can in large part be attributed to inadequate preparation to deal with the increasingly complex research required to make the next generation of advances in biological research. NIH has shown that the duration of research training correlates with later success in obtaining competitive research funding (Figure 6).

To remedy this problem, NIH has focused efforts since 1980 on developing programs to provide better research training opportunities for M.D.s. NIH has strongly recommended that M.D. trainees on institutional research training grants spend a minimum of 2 years and preferably longer in an advanced program of research training. There have also been attempts, thus far unsuccessful, to increase the number of M.D.s on both institutional and individual training grants in the NRSA postdoctoral program. The distribution of career development awards has shifted to ensure that 50 percent of awardees will be young physician scientists. A special career development program -- the Physician Scientist Award -- was created to provide M.D.s with five years of training in both basic and clinical research. Renewed emphasis has been placed on generating interest in research careers among medical students by a short term research program and a joint venture with the Howard Hughes Medical Institute to support year-long research experiences for medical students at the NIH. Resources for the highly successful Medical Scientist Training Program (MSTP) have continued to increase. The MSTP program is an M.D.-Ph.D. program that provides participants with a firm grounding in basic biomedical

research while supporting their training as physicians. Unfortunately, increased resources for this program have only kept pace with rising costs, and there has been no increase in the number of trainees or training sites since 1978.

There are many more qualified applicants and training sites than can be accommodated in the research intensive MSTP and Physican Scientist Award Programs, and efforts should be made to increase the number of trainees in these programs as well as the number of M.D. trainees in rigorous institutional training grant programs. All of these initiatives are laudable and target identified causes for decreased physician participation in research. Physician investigators must have basic and thorough research training comparable to that received by Ph.D.s. Such training is not an integral part of medical school or clinical residency programs and must be fully provided within the research portion of M.D. investigator training.

- *Recent federal emphasis on programs to train physician scientists should be continued and expanded to counter their declining participation in research. Efforts should focus on increasing the quality and duration of scientific training for M.D.s.*

IV. FORMULATION OF SCIENCE POLICY

Over the past 40 years, a complex system for federal policy-making in the biomedical and behavioral sciences has evolved. In theory, there are interrelated but separate roles assigned to each of the major participants; the Congress sets overall goals and allocates resources within very generic categories, and the Executive Branch, through its departments and agencies, establishes working priorities and determines the actual means to achieve these goals. In practice, the system is highly pluralistic. As the size and complexity of the federal biomedical research enterprise has grown, and as its successes and potential have become better known to the public, the number and variety of groups and persons seeking to influence federal health research policy has grown commensurately.

The formulation of federal biomedical research policy, because it involves the expenditure of public funds, rests with the President and the Congress. As fiscal constraints have become more dominant, resource allocation has become a major arena in which conflicts related to policy priorities are expressed. As a result, both the White House Office of Management and Budget (OMB) and the congressional appropriations committees have become major foci for research policy and priority decisions. Recent policy emanating from the OMB has caused particular concern because of the apparent priority given to the current fiscal exigiencies over scientific considerations.

The priority of investment in science vis a vis other federal endeavors and the relative priority accorded different fields of science in the allocation of limited federal resources are rightly public decisions. Within any field of science, such as the biomedical and behavioral sciences basic to medicine, subsidiary goals must be chosen and priorities established to achieve the

generic goal of advancing biologic knowledge and improving human health. While all segments of society should have a voice in setting overarching federal priorities and scientists should participate both as citizens and experts in these debates, it is increasingly critical that the best scientific advice be available to Congress and the Executive Branch as specific goals and priorities are established within a given scientific domain. Indeed, as the formulation of policy and decision-making about the allocation of resources move from general to more specific questions about the means to achieve a given goal, there must be a corresponding shift from the public and political arena to the professional administrators of the federal biomedical research enterprise working in concert with the scientists themselves.

The present system for obtaining advice about the allocation of resources within the domain of biomedical and behavioral research is pluralistic and decentralized. This has the advantage that all shades of opinion are represented through both formal and informal channels, that laymen as well as scientists present their views, and that no aspect of the enterprise lacks adherents and advocates. It has the disadvantage that this chorus of opinion is cacophonous and often contradictory. The scientific community is concerned to ensure that Congress and the President receive impartial, realistic, and timely advice from scientists concerning goals, priorities, and means to achieve goals in the field of biomedical research so that federal decision-making may be as informed and effective as possible.

Formal mechanisms to achieve the best consensus of the scientific community on key policy issues and priorities for biomedical research would be a useful adjunct to the present process. Such mechanisms would focus debate and provide a forum for resolution to the extent that they were able to pursue practical policy questions in a realistic time frame as well as advise on long

range priority setting. While they would address issues of public concern, they would not be mechanisms for achieving agreement between scientists and the public but for presenting scientific advice. Potential forums for providing such scientific advice to the President and Congress currently exist in the institute advisory councils of the NIH and ADAMHA and the National Academy of Sciences/Institute of Medicine. To fulfill this role these bodies must be charged with providing such consensus advice in a fashion more timely and germane to public policy debates than they provide in their current roles.

ADVICE TO THE EXECUTIVE BRANCH

The advisory councils of the individual institutes of the NIH and ADAMHA are duly constituted bodies chartered to provide policy advice and establish priorities within categorical disciplines as well as approve funding allocations within their respective institutes. These councils are charged to debate and develop recommendations on policies and priorities on broader issues germane to biomedical and behavioral research. Some of this is done in conjunction with the individual institute 5-year plans. To provide the consensus and broad view most useful to the public debate, it is important that the deliberations of the councils be sent directly to the Director of NIH or Administrator of ADAMHA to be integrated with the views of other councils and the senior agency staff so that the overall priorities that are recommended balance the views of differing disciplines. Such consensus should be achieved through the use of an integrating advisory mechanism that remains within the respective agency. The final recommendations of each agency should be publicly available to assist in national policy debates.

To effectively serve as a scientific advisory body, each council requires an appropriate number of scientists drawn from the top ranks of the relevant

academic disciplines. Such high quality active scientists broadly representative of the national cadre of working scientists in each discipline must continually be recruited to fill the ranks of the advisory councils to ensure that the most knowledgeable advice is obtained. The scientific expertise and calibre of these critical advisory bodies is essential to their current function and would be even more essential in an expanded role as policy advisors to NIH as a whole and ultimately the Executive Branch and the President.

Through these duly constituted standing panels of advisors, scientific advice with a disciplinary focus could be formally developed, integrated at the agency level, and presented through the Office of the Assistant Secretary for Health, who then provides overall biomedical and behavioral research advice to the Department of Health and Human Services and eventually to the President. While this administrative hierarchy is currently in place, the key changes that would cause it to function as a more useful biomedical research policy advisory mechanism would be to shift the focus of the advisory council towards providing such advice, thus making them the fulcrum for much of the debate that now occurs in a decentralized and fragmented way, and to require the formulation of timely consensus recommendations on key issues from each of the research agencies.

- *The advisory councils of the individual institutes at NIH and ADAMHA are charged to advise on research policy and priorities and should submit their recommendations to the Director of NIH or Administrator of ADAMHA. The Directors in turn should develop and present consensus scientific advice on key issues in research policy to the Administration via the Office of the Assistant Secretary for Health.*

The Executive Branch also receives independent advice on science policy from the White House Office of Science and Technology Policy. This body was established to provide the President with advice that represents and integrates the major domains of science and examines issues of government-wide research policy. For this office to function optimally in providing such advice, it is important that it include strong representation from the life sciences, including a prominent senior scientist from the biomedical and behavioral research community who can provide expert advice on biomedical research policy and see that the unique interests of the medical and life sciences are integrated into the overall science enterprise.

- *The President's Office of Science and Technology Policy should include strong senior representation from the fields of biomedical and behavioral sciences.*

Advice to Congress

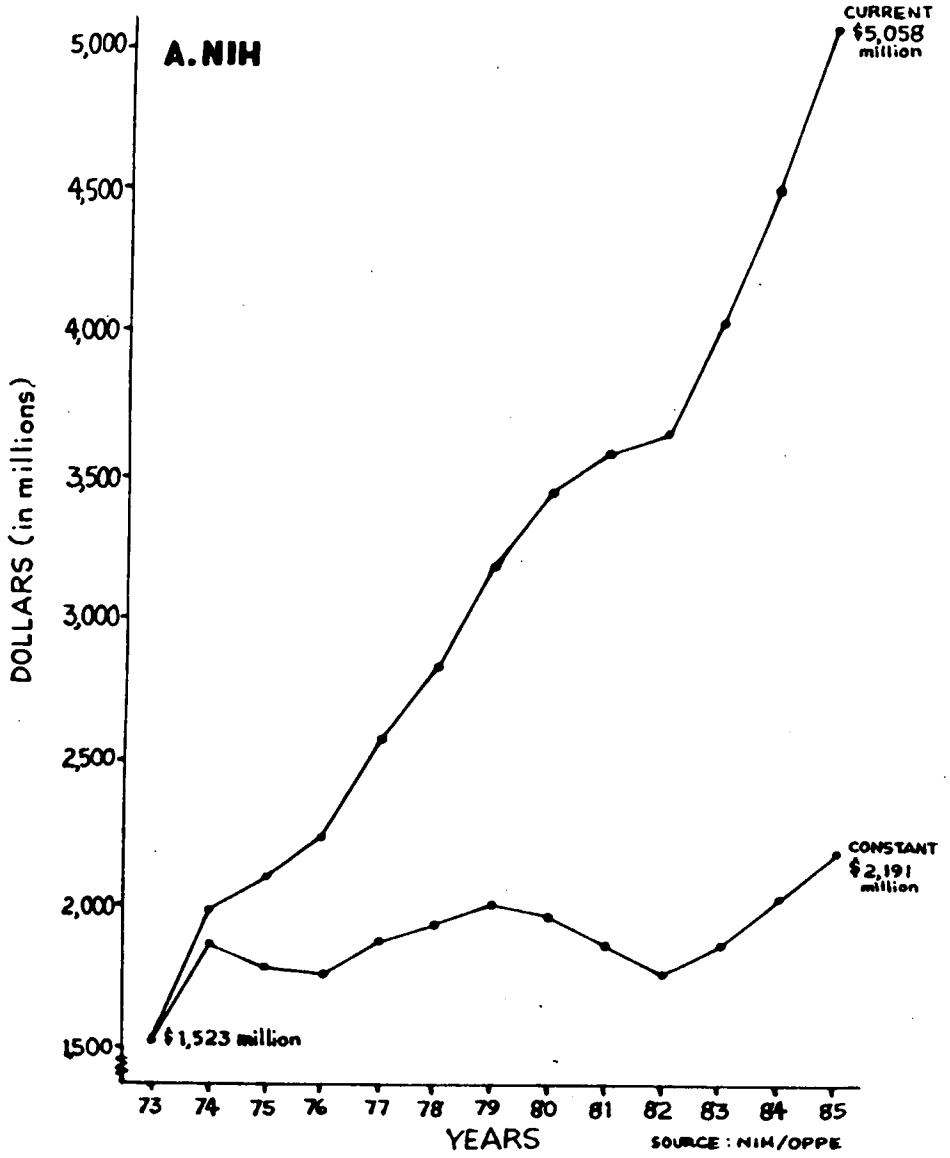
While Congress has access to the views of the biomedical and behavioral research agencies through both oversight hearings and mandated reports, and is also beseiged by many professional and public constituencies who speak for segments of the research community, it lacks a single formal mechanism for obtaining the highest level of advice in its efforts to formulate federal policy for support of biomedical and behavioral research. An independent advisory structure could provide an ongoing appraisal of the state of biomedical and behavioral research, highlighting opportunities for current progress, areas of promise, and neglected disciplines or themes. Besides this ongoing function of evaluating the federal directions in biomedical and behavioral research, such an advisory body could provide timely counsel in

formulating the health and life sciences research budgets and assist Congress in establishing short and long term funding priorities.

In theory, a new entity is not needed to fill this role. The National Academy of Sciences was chartered by President Lincoln in 1863 to serve as an official advisor to the federal government on any question of science or technology. It has fulfilled this role admirably in undertaking long-term studies on key policy issues and in providing a forum for debate and opportunities to seek consensus within the scientific community on many aspects of scientific policy and priority setting. These valuable functions should continue. The National Academy could also organize itself through the Institute of Medicine to meet the need for timely advice and undertake the task of generating a consensus position on issues of immediate concern to Congress and the administration. Its membership of eminent scientists as well as other members of the science community could be tapped to deliberate such issues and charged to provide impartial and balanced scientific advice in areas of budget and resource allocation that is cognizant of the realistic pressures and choices faced by Congress and that presents a considered scientific judgment responsive to public aspirations and concerns.

- *The National Academy of Sciences through the Institute of Medicine should assume a strengthened role as an advisory body to Congress, the Executive Branch, and the public on issues of topical concern in the biomedical sciences and in areas where resource allocation and program priority decisions are being made under pressures of fiscal and time constraints.*

Figure 1. Research and Research Training Funding in Current and Constant Dollars. Fiscal Years 1973-1985.
1A. NIH Funding; 1B. ADAMHA Funding.



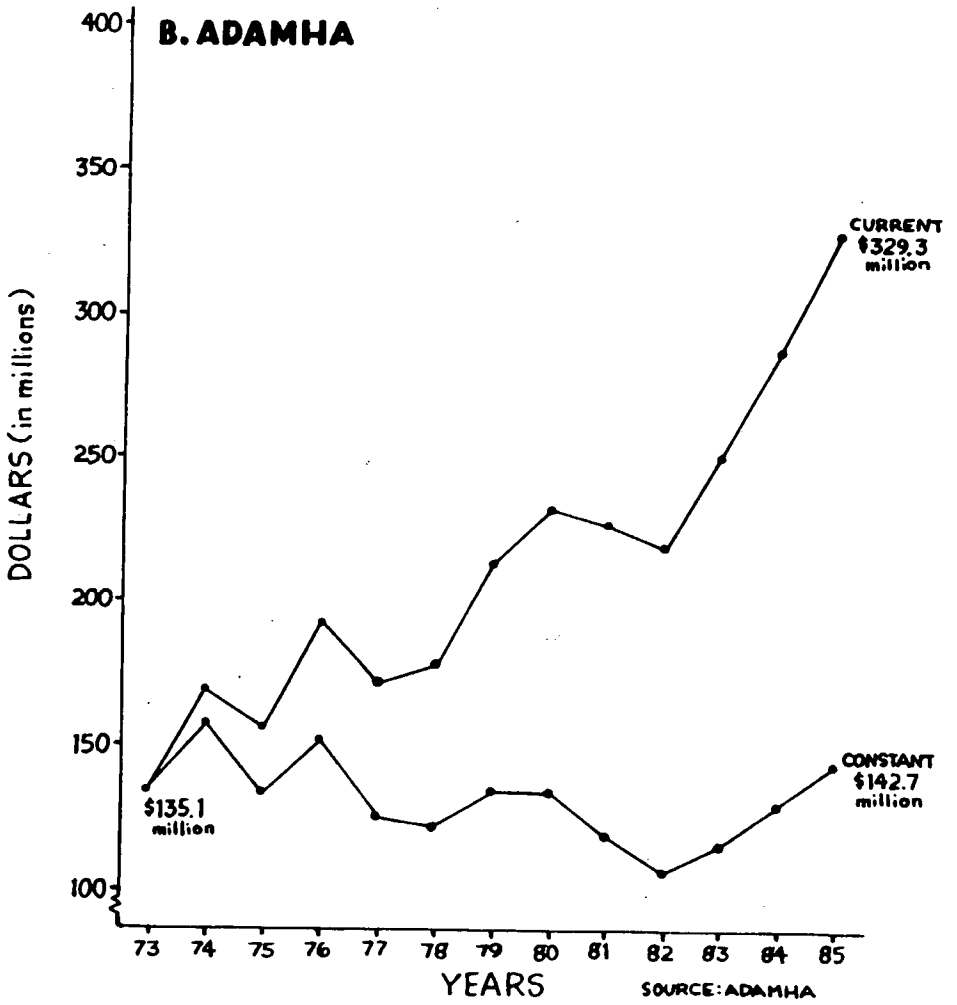
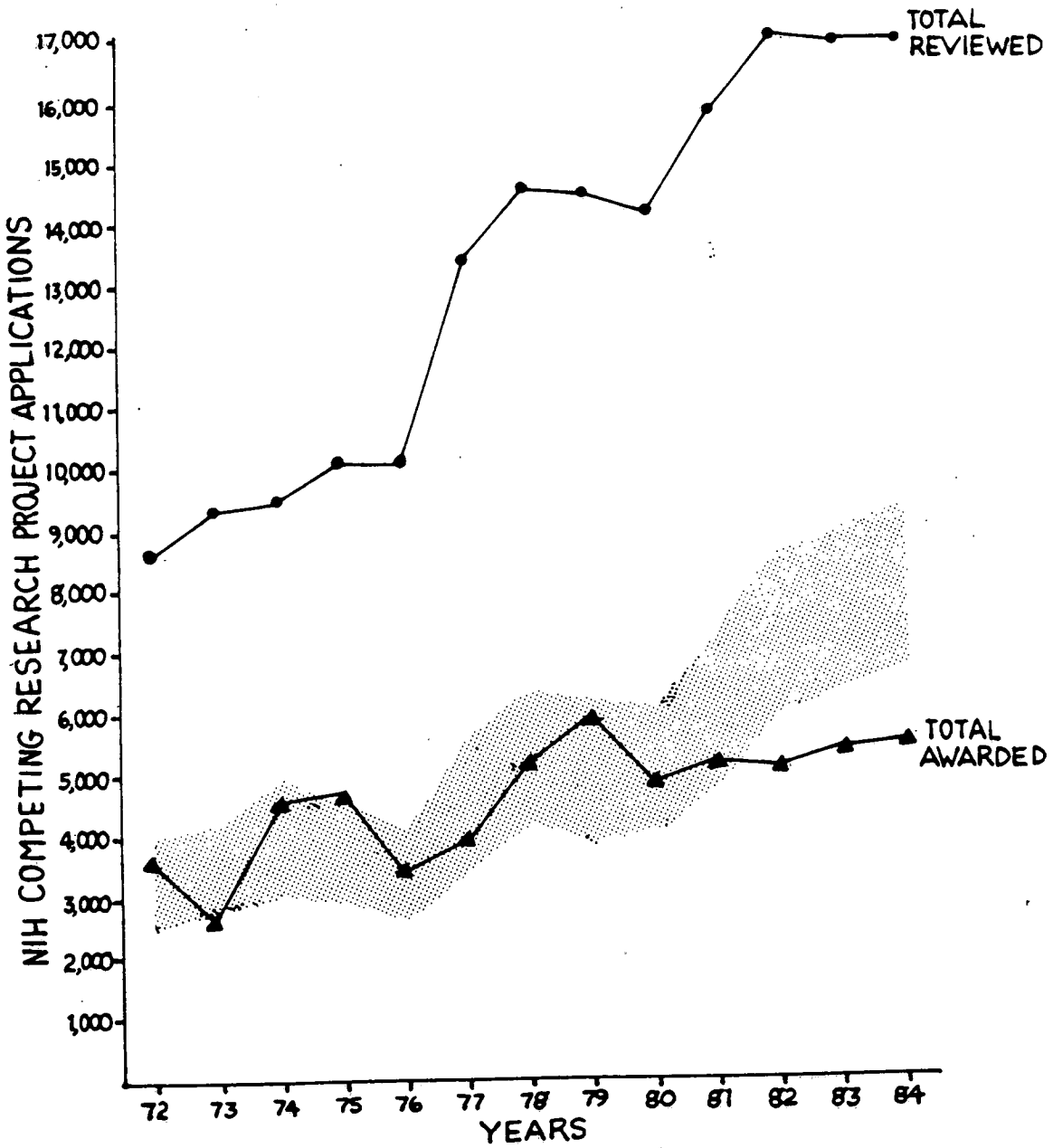
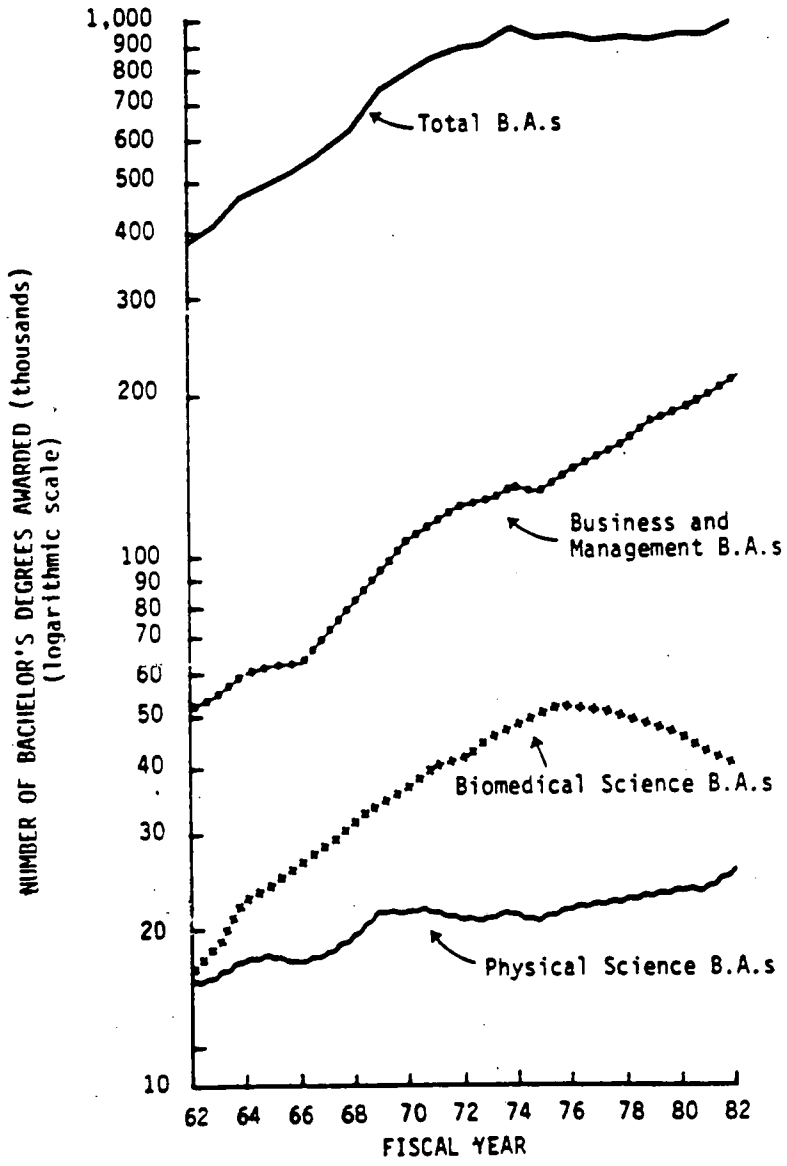


Figure 2. NIH Competing Research Project Grant Applications. Total Applications Reviewed and Total Grants Awarded. Applications given priority scores in merit review of 200 to 250 are shown as a gray zone. Fiscal Years 1972-1984.



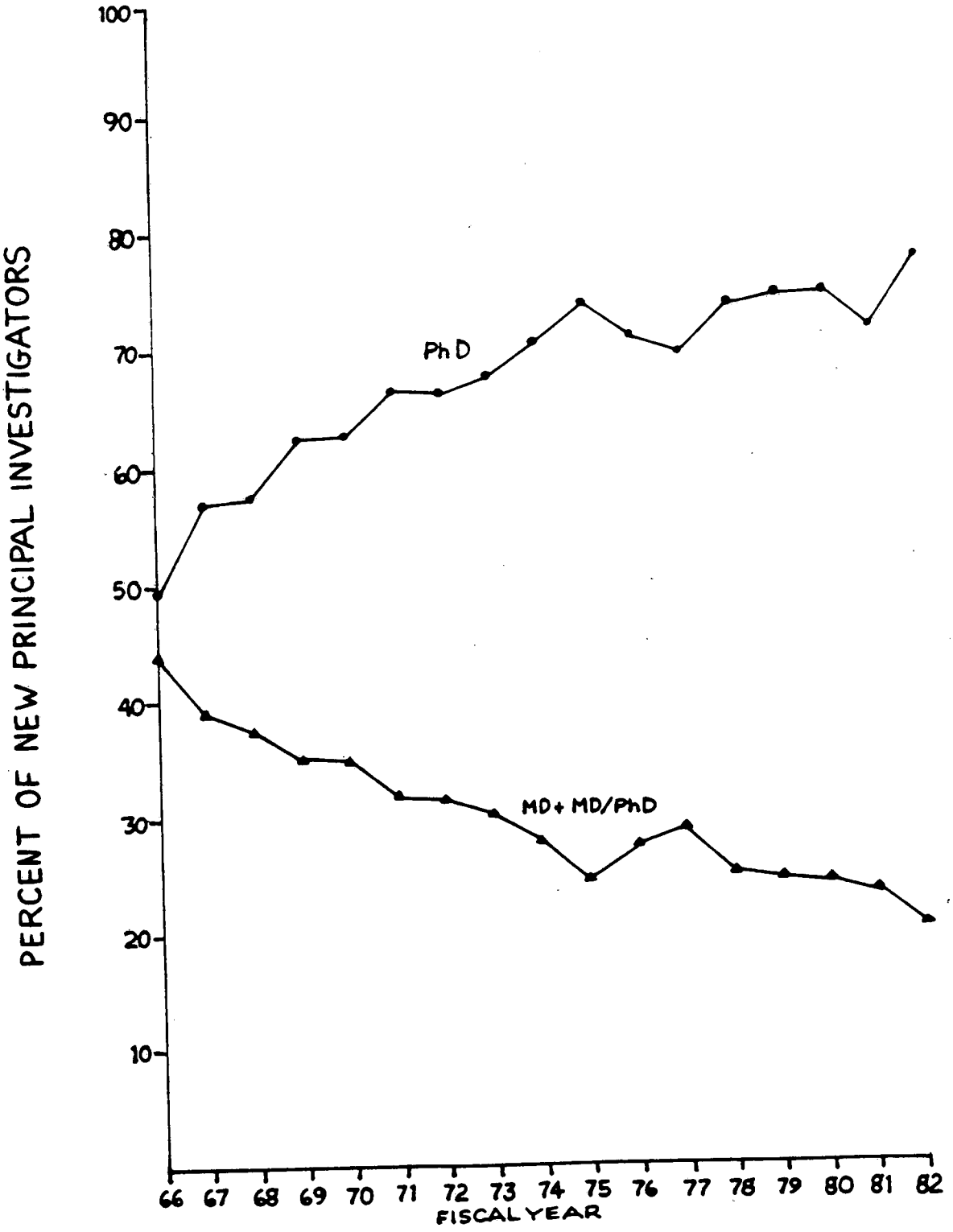
Source: NIH

Figure 3. Bachelor's degrees awarded in biomedical science fields, compared to other fields. 1962-1982



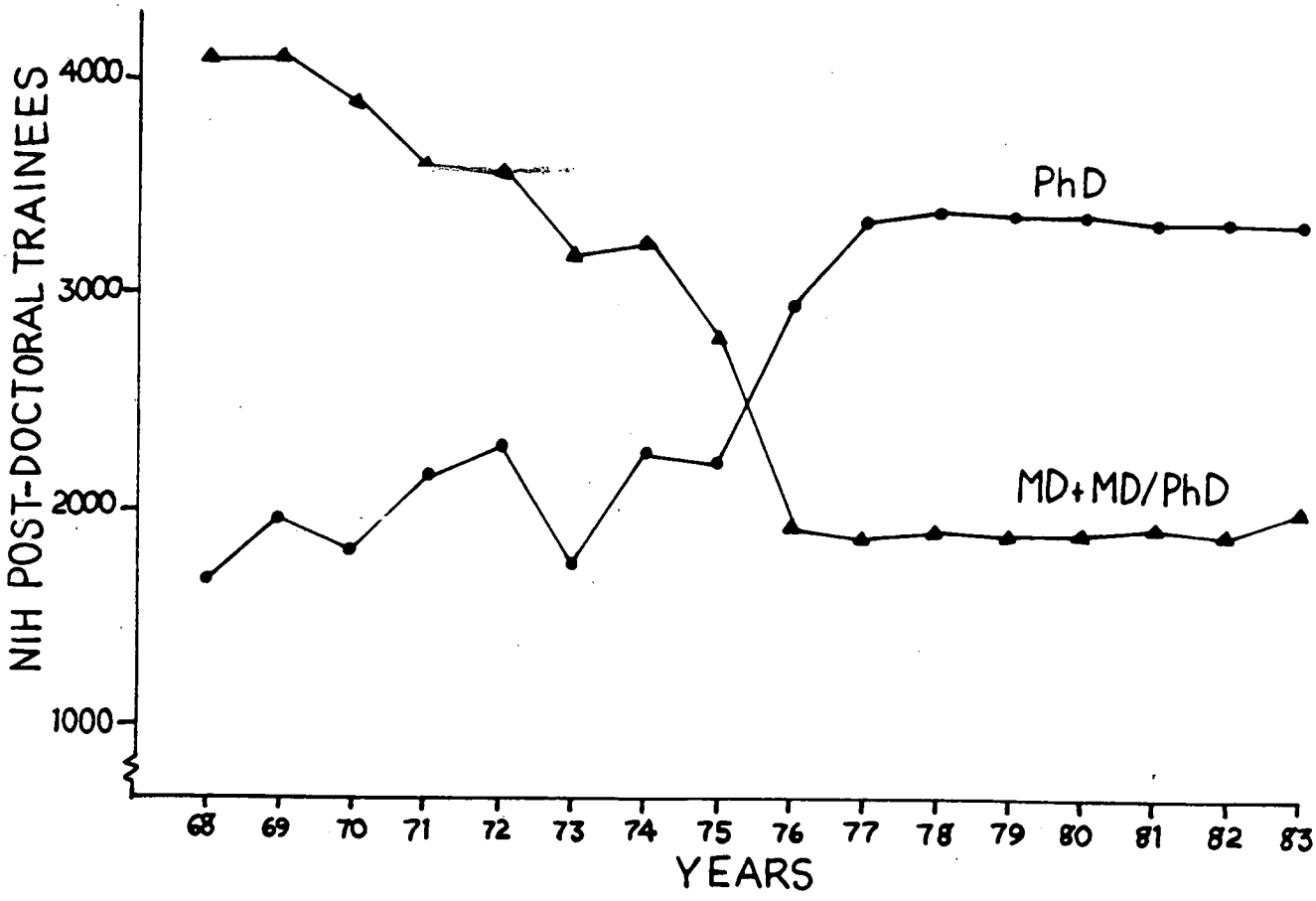
Source: NAS Personnel Needs Committee 1985 Report

Figure 4. New NIH Research Project Awards Charted by Type of Earned Degree of the Principal Investigator. Fiscal Years 1966-1982.



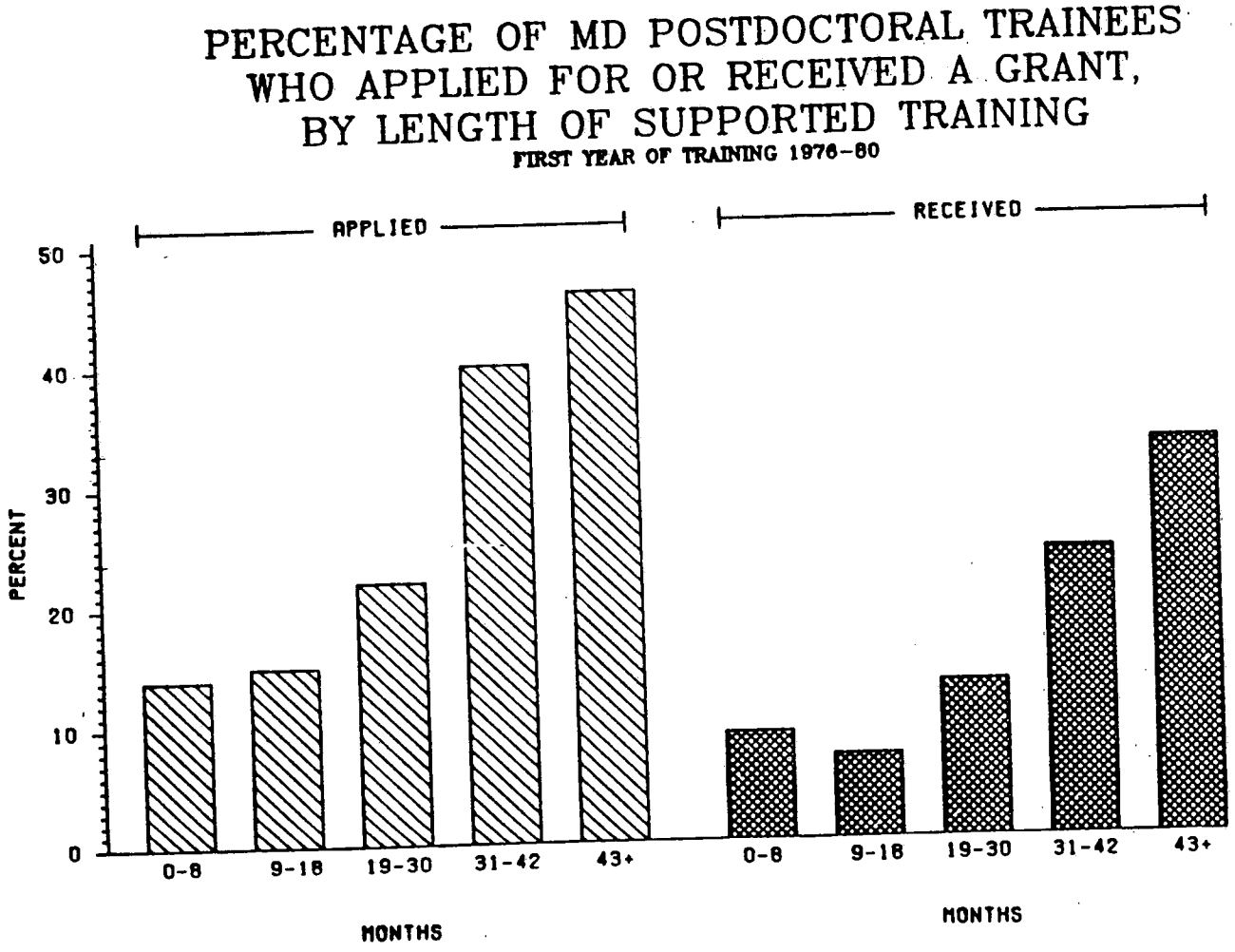
Source: NIH

Figure 5. Postdoctoral traineeships and fellowships awarded by NIH to Candidates holding the M.D. and M.D./Ph.D. degrees as compared with those holding the Ph.D. degree only. (Full-time equivalent trainees and fellows.) Fiscal Years 1968-1983.



Source: NIH

Figure 6



Source: NIH/OPPE/DPA

Table 1. BIOMEDICAL R&D PRICE INDEX

Year	BRDPI Index	Percent Increase
1975	100.0	--
1976	107.5	7.5
1977	116.0	7.9
1978	124.7	7.5
1979	134.9	8.2
1980	147.2	9.1
1981	162.3	10.3
1982	174.2	7.3
1983	182.8	4.9
1984	189.3	3.6

Source: NIH Data Book 1985

Table 2. AVERAGE DIRECT COST OF NIH TRADITIONAL RESEARCH PROJECTS (ROI)
(current dollars in thousands)

Year	Average Direct Cost	Percent Increase
1975	$41.0	--
1976	43.7	6.6
1977	48.3	10.5
1978	52.3	8.3
1979	55.3	5.8
1980	59.0	6.7
1981	64.2	8.8
1982	69.1	7.6
1983	74.7	8.1
1984	83.3	11.5

Source: NIH, DRG, Statistics and Analysis Branch

REPORT OF THE COMMITTEE ON
FINANCING GRADUATE MEDICAL EDUCATION

In response to growing concern over the ability of teaching hospitals to sustain their current support of residency and fellowship training, the AAMC established a Committee on Financing Graduate Medical Education in September 1984 with Dr. J. Robert Buchanan as chairman. The Committee has examined the current AAMC policy position on financing graduate medical education (GME) in light of the new arrangements for organizing patients and paying for care. It met seven times and prepared two documents, one a set of background papers and data and the other a "Statement of Issues". These documents were distributed to all AAMC members as well as to other interested parties. Dr. Buchanan and other members of the Committee have summarized the Committee's delibertaions at previous meetings of the Council of Deans, the Council of Teaching Hospitals, and the Council of Academic Societies.

After thoroughly reviewing the current and projected affects of changes in hospital payment on graduate medical education, the Committee has concluded that the AAMC should modify its current position. The Committee's draft report and an Executive Summary are enclosed for your review.

EXECUTIVE SUMMARY

Within the past few years, there have been significant changes in the methods of payments for hospital care. Since graduate medical education takes place primarily in teaching hospitals and adds to the cost of operating the hospital, changes in the hospital payment methods have raised the concern that teaching hospitals may no longer be able to sustain their current support of graduate medical education. Additionally, there has been extensive growth in the proportion of care being delivered by health maintenance organizations and in ambulatory care settings, but are were no clear sources of funding that will enable educators to train physicians for practice in these settings. Concern over these changes and what they would portend for the future of graduate medical education prompted the appointment of a Committee on Financing Graduate Medical Education.

The first major issue identified by the Committee was the advisibility of creating a separate societal fund for financing graduate medical education. This fund would eliminate the current reliance on teaching hospital payments from insurers and governmental programs to pay for residency and fellowship training; however, it would force graduate medical education to be totally dependent on the funding policies established by the single source of support. After considerable discussion of the benefits and inherent disadvantages of each of these potential positions, the Committee concluded that price competition and other changes in hospital payments are likely to reduce the amount of support teaching hospitals can provide for graduate medical education; however, the full effects of the current environment on teaching hospitals' ability to support graduate medical education are unknown, but do not appear to warrant acceptance of the disadvantages of a single national fund. Instead, the Committee recommends:

(1.) TEACHING HOSPITAL REVENUES FROM PATIENT CARE PAYERS SHOULD CONTINUE TO BE THE PRINCIPAL SOURCE OF SUPPORT FOR GRADUATE MEDICAL EDUCATION, BUT THAT MODIFICATIONS BE MADE IN WHAT THEY ARE EXPECTED TO FUND.

(2.) ALL HEALTH CARE PAYERS, INCLUDING MEDICARE, SHOULD CONTINUE TO PROVIDE THEIR APPROPRIATE SHARE OF SUPPORT FOR GRADUATE MEDICAL EDUCATION. MEDICARE MAY BE A KEYSTONE IN ASSURING THIS SUPPORT SINCE MEDICARE POLICIES ARE DETERMINED BY CONGRESS AND THE DEPARTMENT OF HEALTH AND HUMAN SERVICES, BODIES WHICH ARE SUPPOSED TO THE GUARD THE PUBLIC INTEREST.

(3.) IN ADDITION TO PATIENT CARE PAYERS, OTHER SOURCES CURRENTLY PROVIDING FUNDS FOR HEALTH CARE TRAINING NEED TO CONTINUE TO PARTICIPATE IN FUNDING RESIDENCY TRAINING, OR, IN FACT, MAY BE CALLED UPON TO PROVIDE GREATER SUPPORT IN THE FUTURE. THESE OTHER SOURCES INCLUDE STATE AND LOCAL GOVERNMENTS, SPECIAL PURPOSE FEDERAL GOVERNMENT PROGRAMS, AND PRIVATE ORGANIZATIONS THAT PROVIDE SUPPORT TO MEET SPECIFIC NEEDS.

In return for continued broad-based societal support the Committee recommends that medical educators must recognize their responsibilities to fulfill society's expectations for the training of highly qaulified and skilled practitioners. The Committee believes:

(4.) THE MEDICAL EDUCATION COMMUNITY SHOULD CONTINUE TO MONITOR THE QUALITY OF ITS RESIDENCY TRAINING AND PROVIDE ASSURANCES THAT GRADUATES OF ITS RESIDENCY PROGRAMS ARE ADEQUATELY PREPARED FOR PRACTICE.

(5.) THE INSTITUTIONS RECEIVING FUNDING SHOULD RECOGNIZE THEIR OBLIGATIONS TO TRAIN THE TYPES OF PHYSICIANS NEEDED BY SOCIETY.

(6.) THESE INSTITUTIONS ALSO MUST RECOGNIZE THEIR OBLIGATION TO OPERATE THE TRAINING PROGRAMS IN A COST-EFFECTIVE MANNER.

To elaborate on the changes envisioned in its first recommendation, the Committee deliberated over a variety of issues such as the length of training for which broad-based societal support might be expected, the types of trainees and programs to be funded primarily through teaching hospital revenues, and the appropriate means by which to influence the specialty choice of residents. The Committee recommends the following principals in determining the programs and residents to be supported:

(7.) FUNDING FOR GRADUATE MEDICAL EDUCATION SHOULD BE LIMITED TO GRADUATES OF MEDICAL SCHOOLS APPROVED BY THE LIAISON COMMITTEE ON MEDICAL EDUCATION OR THE AMERICAN OSTEOPATHIC ASSOCIATION.

(8.) ONLY RESIDENTS IN PROGRAMS APPROVED BY THE ACCREDITATION COUNCIL ON GRADUATE MEDICAL EDUCATION OR THE AMERICAN OSTEOPATHIC ASSOCIATION'S COMMITTEE ON MEDICAL EDUCATION SHOULD BE FUNDED.

(9.) THE ACGME AND THE AOA SHOULD ACCREDIT PROGRAMS SOLELY ON THE BASIS OF WHETHER THE PROGRAMS MEET THE EDUCATIONAL CRITERIA ESTABLISHED.

(10.) FUNDED TRAINING OPPORTUNITIES IN RESIDENCY PROGRAMS SHOULD BE SUFFICIENT TO ENABLE ALL GRADUATES OF LCME OR AOA APPROVED SCHOOLS OF MEDICINE TO ENROLL IN AN ACGME OR AOA APPROVED RESIDENCY TRAINING PROGRAM.

The Committee believes limits should be placed on the length of training for which teaching hospitals are expected to provide a major source of support. However, it believes that in all instances, residents should be supported in

their training at least until they are capable of the independent practice of medicine. The Committee believes that this level of competence is attained when the resident has completed sufficient training to be eligible to sit for their initial specialty board. Therefore, the Committee recommends:

(11.) RESIDENTS IN APPROVED-TRAINING PROGRAMS SHOULD BE FUNDED LARGELY BY PAYMENTS TO TEACHING HOSPITALS BY PATIENT CARE PAYERS AT LEAST THROUGH THE NUMBER OF YEARS REQUIRED TO ACHIEVE INITIAL BOARD ELIGIBILITY IN THEIR CHOSEN DISCIPLINE.

(12.) ONE ADDITIONAL YEAR OF FUNDING BEYOND INITIAL BOARD ELIGIBILITY SHOULD BE PROVIDED FROM TEACHING HOSPITAL REVENUES FOR FELLOWS IN ACCREDITED TRAINING PROGRAMS TO THE EXTENT THAT THE HOSPITAL FUNDED SUCH TRAINING IN 1984.

(13.) AN INDIVIDUAL SHOULD BE SUPPORTED FROM PATIENT CARE PAYERS' PAYMENTS TO TEACHING HOSPITALS FOR A MAXIMUM OF SIX YEARS OF GRADUATE MEDICAL EDUCATION.

Other sources of funding must be found to support the advanced training of subspecialists and other trainees seeking advanced educational opportunities. The Committee recommends:

(14.) BEYOND THE FIRST YEAR OF FELLOWSHIP TRAINING, CLINICAL TRAINING FOR FELLOWS SHOULD INCREASINGLY BE SUPPORTED BY GOVERNMENT OR CORPORATE GRANTS, PHYSICIAN PRACTICE INCOME, PRIVATE PHILANTHROPY, AND OTHER SOURCES.

The Committee was concerned that opportunities should be found to educate trainees in ambulatory care sites and other, non-hospital based settings. It recommends:

(16.) THE FUNDING FOR GRADUATE MEDICAL EDUCATION MUST SUPPORT THE RESIDENTS AND INSTITUTIONS IN AMBULATORY AND INPATIENT TRAINING SITES THAT ARE MOST APPROPRIATE FOR THE EDUCATIONAL NEEDS OF THE TRAINEES.

The Committee reviewed support received from the Veteran's Administration, the Department of Defense, and other health care service providers not typically receiving fees for services rendered. The Committee believes these other sources of support are vital to the current structure of medical education. In addition, the Veteran's Administration, the Department of Defense and some of the other providers care for an unusual group of patients who offer unique training opportunities which are needed for the training of a full spectrum of specialists. Thus, the Committee recommends:

(17.) THE VETERANS ADMINISTRATION AND THE DEPARTMENT OF DEFENSE SHOULD CONTINUE THEIR SUPPORT OF RESIDENCY TRAINING, PARTICULARLY PROVIDING SUPPORT FOR THE EDUCATION OF PHYSICIANS TO MEET THE SPECIAL SERVICE NEEDS OF VETERANS AND ARMED FORCES PERSONNEL.

(18.) OTHER PROVIDERS OF SERVICE THAT ARE NOT TYPICALLY AMONG THOSE RECEIVING DIRECT PAYMENT FOR SERVICES RENDERED TO INDIVIDUAL PATIENTS SHOULD CONTINUE THEIR SUPPORT OF GRADUATE MEDICAL EDUCATION, PARTICULARLY FOR THOSE SPECIALTIES NEEDED FOR THEIR UNIQUE PATIENT POPULATIONS.

Draft Report

AAMC Committee on Financing Graduate Medical Education

March 14, 1986

Chapter I.

The Need to Re-examine Current Policies

In the past few years, constraints on the general economy have brought significant changes to the health care sector. Health care expenditures now constitute nearly 11 percent of the gross national product. Businesses, insurers, and government agencies that pay for health care services have sought to constrain the amount they pay. Many corporations have expressed increasing concern over the amount of money they spend in providing health care coverage for their employees, and the effect those expenditures are having on their profitability. Government agencies, particularly federal officials and legislators responsible for expenditures under the Medicare and Medicaid programs, have become alarmed over the rapid increases in government expenditures for health care. In an era of grave concern over the national debt and with the realization that the number of Medicare eligible persons will increase significantly within a few years, the federal government has become eager to find ways to reduce the increases in health care costs.

Efforts to curb health care costs include regulation, such as price or rate setting, and enhancing price competition among health care providers. Many health care payers are currently experimenting with a variety of approaches that will allow them to spend their health care dollars "more wisely." These payers have attempted to find out precisely for what they are being charged and to restrict themselves to paying for only those goods and services they believe are necessary and reasonable for the care of the patients for whom they are responsible. They then negotiate the most favorable price they can for those goods and services.

Some payers have developed or entered into capitated arrangements for a defined set of benefits. Others have retained the more traditional fee for service model, but they have sought to change how those services are purchased by setting prices or engaging in competitive arrangements to encourage efficient, low cost delivery of services. The best known arrangement to set prices for services delivered is Medicare's Prospective Payment System which redefines the unit of service delivered as all hospital care rendered to a patient during a hospital admission and pays a fixed price based on the patient's diagnosis. Other fixed price arrangements have been established by law or negotiated by large insurers to pay for hospital care on a per case or patient day basis. In other instances, large scale purchasers of health services have been able to create preferred provider arrangements to achieve price discounts from hospitals.

A related and equally challenging recent development has been the growth of ambulatory care. As a result of new technologies and treatments, patients who previously would have been hospitalized for several days are now being cared for in a few hours in an ambulatory setting. Neither the pace of the patient-physician interaction nor the financing arrangements for ambulatory care are conducive to traditional graduate medical education experiences. Unless a means is found to support medical education in ambulatory care sites, residents will lose the opportunity to be trained to deliver care to a large and growing number of patients.

These new approaches have caused concern in the medical education community because the explicit or implicit reluctance of payers to pay for graduate medical education costs places its financing in jeopardy. This report has been developed by the AAMC's Committee on Financing Graduate Medical Education to examine current developments affecting the financing of graduate medical education and to

recommend principles and changes in current policies on financing this training. This report assumes the reader has some familiarity with the current structure and method of financing residency and fellowship training programs. Those who do not may wish to begin by reading Appendix A.

Current Policy Debate

The task facing this Committee was to identify a method of financing graduate medical education that would preserve quality educational opportunities in all medical disciplines while recognizing the financial constraints under which the hospitals must operate. The Committee believed, and continues to believe, that certain aspects of the current structure of graduate medical education must be preserved to provide appropriate educational opportunities for those who will become practicing physicians. These include:

(1.) The opportunity for every graduate of a United States' medical school to become capable of the independent practice of medicine through the successful completion of a residency program;

(2.) The assurance of quality in the training programs through the review and accreditation of programs;

(3.) The opportunity for each trainee to be exposed to an appropriate mix and number of patients to learn the type of diagnostic and therapeutic modalities used;

(4.) The ability to balance the competing demands of research, teaching, and patient care as appropriate for each institution;

(5.) The flexibility to meet the differing needs of the training programs in various specialties and subspecialties; and

(6.) The ability to choose the setting or settings for training based on the educational needs of the trainees.

To date, graduate medical education programs sponsored and conducted by teaching hospitals generally have been successful in meeting the first five goals, but have had difficulty in achieving the last goal. With the increasing use of the ambulatory care setting and with the constraints on payments to teaching hospitals, the ability of the academic medical community to continue to meet these goals and provide high quality education to trainees is at risk.

Currently, the chief means of support for graduate medical education is teaching hospital revenues derived from services provided to patients. The Committee was concerned that teaching hospital revenues in the price competitive health care market would be insufficient to sustain the current level of graduate medical education. Thus, the Committee believed the current structure of graduate medical education and the method by which it is financed had to be reconsidered. In considering what options were possible, it was important to be cognizant of those within and outside the medical education community who were advocating a change from the current dependence on teaching hospital revenues for the financing of graduate medical education. Those seeking change can be broadly classified into four groups:

- Those who believe graduate medical education is a legitimate public expense, but who believe hospital revenue should be used for patient care and not to subsidize other functions;

- Those who are supportive of graduate medical education, but wish to gain control over the number and types of physicians being trained and who believe they can achieve this goal through restructuring the financing;

- Those who simply wish to purchase quality health care for the lowest price possible and are not concerned with what elements go in to creating that price;

- Those who believe graduate medical education is a legitimate teaching hospital expense, but who believe the amount of support teaching hospitals are asked to provide must be constrained or curtailed.

While the views and objectives of these four groups differ, their simultaneous interest in changing or eliminating support for graduate medical education threatens the financial stability of residency and fellowship programs.

Debate Over Source of Funding

Some business leaders, policy makers and analysts believe graduate medical education is a function worthy of public investment; however, they do not believe it should be cross subsidized by patient care expenditures. One argument this group makes is that the public ought to be cognizant of how much it is spending on graduate medical education and should make explicit judgments regarding future expenditures in light of other demands for public funds. This philosophy was exemplified in the 1984 report of the 1982 Social Security Advisory Council which examined the future of the Medicare program. It recommended:

> In view of the financial crisis facing the Medicare program and the expanding supply of physicians and other health care professionals, the Advisory Council on Social Security believes that there is a serious question concerning the use of the Medicare Hospital Insurance trust fund for the training of physicians, nurses, and other health care professionals. The Council recognizes that the Medicare program has had a significant

impact upon the supply of health professionals by subsidizing the expense of training and medical education for these groups. However, the Council thinks that the involvement of the Medicare program in underwriting these costs is inappropriate since the program is designed to pay for medical services for the elderly, rather than to underwrite the costs of training and medical education.

The Council recognized that the extent of public support for medical education and training health professionals is a complex and difficult matter to determine and implement. The abrupt discontinuance of the use of the Medicare Hospital Insurance trust fund for medical education without an analysis of the impact upon training institutions and concomitant search for alternative public funding sources would be a disservice to the training and medical education institutions in the country and the training of prospective health care professionals. The Council believes that a study on the restructuring of medical education financing should be undertaken immediately in order to recommend another source for training support that is now being provided under the Medicare program. The Council does not intend to suggest that governmental funding for medical education is inappropriate. This study should be completed within three years under the direction of the Department of Health and Human Services.*

Another point raised by people who do not believe graduate medical education funding should be derived from patient care revenues is that such a financing mechanism constitutes a "sick tax". In other words, those who are ill pay for the education of physicians through their hospital bill, while those who are healthy have no bill to pay. Others counter this argument by noting that the vast majority of payments for hospital services comes from health insurance premiums paid by employers and employees or payroll deductions and general taxes supporting Medicare and Medicaid. Therefore, the support for graduate medical education is from payments made on behalf of both the sick and the well and is broad-based.

Control Over Production

Several key senators, congressmen, and others who have studied the current situation have suggested it is time for explicit manpower policies to ensure the training of the types of physicians needed by the public. This group points to:

*Medicare Benefits and Financing, Report of the 1982 Advisory Council on Social Security, pg. 70.

- The Graduate Medical Education Advisory Commission (GMENAC) Report which predicted an oversupply of physicians in nearly every specialty and subspecialty by 1990,
- Reports from the bureau of health manpower of the Department of Health and Human Services which predict surpluses in most specialties, and
- Reports from some state and local governments that suggest there is a geographic maldistribution of physicians such that people in some rural and inner city areas do not have adequate access to physicians, while in other areas there is an abundance of physicians. This group believes that through intervention in the funding, changes can be made in the specialty and/or geographic distribution of physicans.

Some federal policy makers have advocated changes in the Medicare and Medicaid payment systems to address these concerns. Bills were introduced in both houses of Congress that would curtail Medicare funding for graduate medical education by controlling the number and type of residents to be financed. Generally, these proposals have attempted to foster primary care training opportunities while restricting more specialized training.

In addition, some states, notably New York, Michigan, and Wisconsin have begun examinations of the numbers and types of residents being trained in the state. These are indications of a public desire for a heightened and more visible accountability of the medical education community.

Paying the Lowest Price

In the current marketplace for hospital services, many large scale purchasers are shopping on behalf of their beneficiaries for the best price for

each service. Such purchasers include HMOs, commercial insurance companies, self-insured employers, and some Medicaid plans. They may choose to purchase selected services or packages of care for patients, but they commonly make no distinction between the price they are willing to pay to a teaching hospital versus a non-teaching hospital. This group is not espousing any view with regard to if or how medical education should be funded. They are simply purchasing a service without specifying the components that go into creating that service. However, because graduate medical education adds costs to a hospital, teaching hospitals are at a disadvantage when their prices are set to recover costs. Health care payers are likely to try to encourage their patients to use less costly providers. In fact, several already have begun to use explicit and implicit means of directing patients to less costly hospitals. If this trend continues, teaching hospitals will lack the number and variety of patients needed to provide an appropriate educational experience for residents and fellows.

Constraining Teaching Hospital Investment in Graduate Medical Education

The final group is comprised of those who believe graduate medical education is a legitimate expenditure for teaching hospitals, but who believe those expenditures must be curtailed. In this group there are public policy makers, representatives of patient care payers, and medical center and hospital executives who traditionally have been supportive of graduate medical education. They have observed the growth in the number of residents trained and the extension of the length of training needed to fulfill the requirements of the various specialty boards. However, constraints on teaching hospital and insurance company income, either through regulation or competition, have prompted those in this group to doubt that the current open-ended commitment to graduate medical eduction can be sustained. Therefore, they are seeking to establish a

line of demarcation between those medical education expenses that may be funded from teaching hospital revenues and those expenses for which other sources of revenue must be found.

Many teaching hospital executives, medical school deans, faculty members and others involved in medical education have examined the current price-competitive environment and do believe that teaching hospital revenues will not be sufficient to support current commitments to graduate medical education. They believe teaching hospitals can not sustain their current commitments to graduate medical education and remain price competitive. If teaching hospitals do not remain price competitive for the provision of a wide array of patient care services, this group believes the multiple missions of the hospital will be compromised.

Summary

Concerns over the open-ended nature of the financing of graduate medical education, the inability of the public to influence the type of specialists being trained, and the appropriateness and continued viability of patient care payments as a source of financing for residency and fellowship training have all been raised previously, but usually at separate times. It is the convergence of these concerns as well as the impetus of the impending federal deficit and other general economic concerns that compels reassessment of the structure of graduate medical education financing.

Chapter II

Issues and Policy Recommendations

In the last decade, health care providers have experienced significant changes in the services they offer and in the ways in which they are organized and financed. As a result, hospitals may not provide residents adequate exposure to some types of patients nor be able to provide as much financial support as they have previously. Thus, it is the change in how health services are purchased and the growing constraints on how much purchasers are willing to pay for services that greatly concern the entire medical education community.

The AAMC's current policy on financing graduate medical education, stated in 1980 by the AAMC's Task Force on Graduate Medical Education, is:

> Graduate medical education should continue to be financed from multiple sources, with the principal source being the general operating revenues of the teaching hospitals. The financing of special educational initiatives in graduate medical education from a variety of sources should be encouraged. These initiatives include programs in new and developing specialties, programs to achieve local and regional objectives, and programs to prepare clinical investigators and medical educators. Special initiatives should be supported through grants from private, voluntary agencies and from federal and state governments.

This policy was consistent with then existing congressional intent for Medicare and the payment practices of other payers. However, the rapid changes in the financing of hospital care since 1980 and the refocusing of congressional intent for Medicare have caused the AAMC leadership and many of its members to question whether this policy will be realistic in the future.

In the face of growing price sensitivity within the health care market and the strength of the wide-spread perception that the current level of financial commitment to education can not be sustained by the teaching hospitals, acceptable alternatives for financing graduate medical education need to be found. The following key policy questions have become the focus of debates.

- o If teaching hospitals' revenues are, or will soon be, inadequate to provide sufficient support for residency training, what policy options are available for the medical education community?
  - What would happen if no explicit changes were made in the current system of financing graduate medical education?
  - What would happen if the current system were radically changed to fund graduate medical education out of a single national fund or a series of state funds?
  - Can modifications be made to the current methods of financing graduate medical education that will enable the teaching hospital to be competitive while maintaining the stability of the educational program?

Each of the three options - make no change, change to a single source of funding, and modify the current structure - must be considered, and the benefits and risks associated with each identified and assessed.

The financing of GME through patient care revenues has admirably served the purposes of society, teaching hospitals, and physicians-in-training for decades. If residency training could continue to rely substantially on hospital patient

care revenues for support, many of its advantages would be retained. These advantages include the freedom of medical students to choose the program in which they wish to train; the ability of teaching hospitals to offer a variety of training programs appropriate to their missions, the patient population they serve, and the faculty on their medical staff; and, the ability of training programs to be designed to meet perceived needs for physicians.

However, the risk of continued reliance on patient revenues in the price-competitive market is that the revenues probably will be insufficient to sustain current hospital investments in graduate medical education. Payers may reduce or totally withdraw their explicit or implicit support of graduate medical education. Medical education will become another priority in a series of competing priorities in which hospitals may invest. As such, hospitals may choose to limit their investments in medical education to support only those programs and trainees that are commensurate with the hospitals' goals. That is, hospitals might choose to invest in programs and trainees that augment, or at least do not diminish, their ability to generate revenues. For example, hospitals might seek to have residents and fellows near the culmination of their training while avoiding those in their initial years of training because they are "inefficient."

Another option for hospitals seeking to limit their investments in medical education would be to reduce the support for faculty and other related costs of the educational programs. In some institutions, reductions in the support for faculty would seriously damage the quality of the training. The residents and fellows might receive inadequate instruction and supervision in the treatment of patients.

A single national fund for graduate medical education would provide comprehensive funding, would avoid conflicting manpower policies that may be exhibited by the various payers in different states, and would permit financing of training in patient care sites that are not hospital-based. However, residency training would be dependent on a single source of revenue, and it would be one of many competing priorities in the annual debate over the Federal budget. Currently, the impact of federal policy changes for Medicare and Medicaid payment of graduate medical education may be somewhat buffered because other hospital payers may not act simultaneously and may choose other funding strategies. However, if a single national fund for graduate medical education were created, no such buffer would exist. This might result in fiscal instability for training programs. It is highly likely that the accompanying regulations would not only determine how the proceeds of the fund would be distributed but also lead extensive intervention in medical education, including a determination of the number of each type of specialty to be trained, the location in which the training would take place, and the amount that could be paid for stipends, faculty salaries, and the other components of training costs. In 1985, legislative and regulatory proposals were introduced* to attempt to influence these aspects of medical education, even though the federal government currently controls only Medicare and Medicaid payments. If the federal government controlled all expenditures on graduate medical education, such intervention would be more likely to be adopted.

*For example, Congressman Waxman introduced a bill H.R._____ that would have paid more for residents in the primary care specialties than in the non-primary care specialties in an attempt to influence specialty distribution. Senatory Quayle introduced a bill (S. 1210) that would have empowered a Council on Graduate Medical Education to determine the appropriate mix of primary care versus non-primary care specialists to be trained in a hospital or a group of hospitals affiliated with a medical school.

Another approach to this option could be to establish state controlled funds to provide comprehensive funding for graduate medical education. State control over the number and types of graduate physicians trained could result in conflicting health manpower planning decisions by failing to recognize the interstate migration of students and practitioners. Just as with the national fund, each state fund would have to compete annually with other expenditure priorities. Additionally, given the distribution of residents depicted in Table 9, it would result in very different financial burdens for some states.

The third option is to modify the current reliance on the teaching hospital to support such a large proportion of graduate medical education. This would allow teaching hospitals to be more competitive in the price conscious patient care market while preserving many of the current benefits of the educational structure. The disadvantage to this option is that there are no guarantees that teaching hospitals will be able to sustain even a modified commitment to medical education in light of the price competition and other drains on hospital revenue. Additionally, if a limit is established on what support may be expected from teaching hospital revenues, it will be necessary to eliminate some trainees, programs, or portions of faculty support or to find other sources of support.

The AAMC Committee on Financing Graduate Medical Education concludes that price competition and other changes in hospital payments are likely to reduce the amount of support teaching hospitals can provide for graduate medical education. It believes that if the representatives of the medical education community do not specify how teaching hospital payments for medical education reasonably can be curtailed, then individual teaching hospitals may act in their own best interests which may not be commensurate with the provision of quality educational experiences in all physician specialties and subspecialties. Therefore the

Committee believes some change from the current financing system should be made. Presently, the full effects of the current environment on the teaching hospitals' ability to support graduate medical education are not known; but they do not appear to warrant acceptance of the disadvantages of a single national fund would impose. The Committee believes the problems associated with such a fund currently outweigh the benefits it might offer. A discussion of this option is provided in Appendix B. The Committee therefore urges the AAMC to continue its long-standing policy that residency training should be supported from a variety of sources with the principal source being the revenues of teaching hospitals, but with substantial modifications to the current structure of graduate medical education financing. It recommends:

(1.) TEACHING HOSPITAL REVENUES FROM PATIENT CARE PAYERS SHOULD CONTINUE TO BE THE PRINCIPAL SOURCE OF SUPPORT FOR GRADUATE MEDICAL EDUCATION, BUT THAT MODIFICATIONS BE MADE IN WHAT THEY ARE EXPECTED TO FUND.

Obligations of Society and Educators

It is important that there be stability in the funding provided for graduate medical education programs. In order for there to be stability, society must understand why support for graduate medical education is in its best interest and must encourage health care payers and other sources to act as it agents in providing appropriate support. Medical educators should help society understand why its interests will be served by providing stable and adequate funding.

American society is, and should continue to be, willing to provide support for graduate medical education because it needs fully trained physicians to meet its health care needs. Medical school alone does not provide sufficient clinical

training for the independent practice of medicine. In the past five years, the AAMC has completed comprehensive reviews of undergraduate and graduate medical education.* Both studies recognized that medical schools provide the general professional education which is the foundation of all medical practice, and residency training provides the formal clinical education that develops the skill and experience necessary for independent practice. Since graduate medical education is necessary to the preparation of a fully trained physician, it is a public service. Thus, the public should be willing to provide support. Additionally, it should be recognized that society has been providing support for residency training virtually since its inception. Through this support, medical educators have developed an educational system that is unsurpassed in the world. American society continues to need these highly skilled, highly trained physicians to provide care of the quality it has come to expect.

Quality programs are developed and maintained across many years by attracting high quality faculty members to teach and practice in the educational setting and by providing those faculty members with the technology, space and staff needed to provide appropriate care, work with residents and medical students, and explore ways in which medical care may be enhanced. Commitments to such faculty members both for their own compensation and for the provision of the necessary technology and staff are made only when the teaching hospital can be assured of some degree of predictability about its own funding. Substantial fluctuations in the way in which payment is made for graduate medical education will preclude hospitals from making this commitment and may force faculty members to re-evaluate their commitment to teaching hospitals. Therefore, the public

*Physicians for the Twenty-First Century: The GPEP Report published by the AAMC in 1984 and Graduate Medical Education: Proposals for the Eighties, the report of the AAMC Task Force on Graduate Medical Education published in the Journal of Medical Education, Vol. No. 9, September, 1981.

benefits from stable and adequate support for graduate medical education. The Committee believes that on behalf of the public:

(2.) ALL HEALTH CARE PAYERS, INCLUDING MEDICARE, SHOULD CONTINUE TO PROVIDE THEIR APPROPRIATE SHARE OF SUPPORT FOR GRADUATE MEDICAL EDUCATION. MEDICARE MAY BE A KEYSTONE IN ASSURING THIS SUPPORT SINCE MEDICARE POLICIES ARE DETERMINED BY CONGRESS AND THE DEPARTMENT OF HEALTH AND HUMAN SERVICES, BODIES WHICH ARE SUPPOSED TO THE GUARD THE PUBLIC INTEREST.

(3.) IN ADDITION TO PATIENT CARE PAYERS, OTHER SOURCES CURRENTLY PROVIDING FUNDS FOR HEALTH CARE TRAINING NEED TO CONTINUE TO PARTICIPATE IN FUNDING RESIDENCY TRAINING, OR, IN FACT, MAY BE CALLED UPON TO PROVIDE GREATER SUPPORT IN THE FUTURE. THESE OTHER SOURCES INCLUDE STATE AND LOCAL GOVERNMENTS, SPECIAL PURPOSE FEDERAL GOVERNMENT PROGRAMS, AND PRIVATE ORGANIZATIONS THAT PROVIDE SUPPORT TO MEET SPECIFIC NEEDS.

While the Committee believes the most appropriate approach is to rely on payers to provide the majority of funding for graduate medical education, and calls upon all payers to share in the costs of residency training, it recognizes that all payers may not subordinate their economic self interest to provide sufficient funding for graduate medical education. As a result, the revenue base for residency training may be incomplete and constantly in flux.

The Committee believes public support and continued financing can best be assured if the medical education community acknowledges that it has an obligation to society to provide residency training that meets the needs of society. First, medical educators must provide quality training so that residents are capable of independent practice upon completion of their training. Secondly, medical

educators must provide the type of specialists that will be needed by society. The open ended nature of the size and length of training programs and the institutional autonomy in controlling training programs must be reassessed in terms of current fiscal constraints and societal needs. Thirdly, the institutions receiving these funds must recognize their obligation to ensure that the training is conducted as efficiently as possible. Currently, housestaff make a contribution to the support of their education by working long hours participating in the provision of patient care services.

In recognition of the responsibilities concommitant with societal support, the Committee recommends:

(4.) THE MEDICAL EDUCATION COMMUNITY SHOULD CONTINUE TO MONITOR THE QUALITY OF ITS RESIDENCY TRAINING AND PROVIDE ASSURANCES THAT GRADUATES OF ITS RESIDENCY PROGRAMS ARE ADEQUATELY PREPARED FOR PRACTICE.

(5.) THE INSTITUTIONS RECEIVING FUNDING SHOULD RECOGNIZE THEIR OBLIGATIONS TO TRAIN THE TYPES OF PHYSICIANS NEEDED BY SOCIETY.

(6.) THESE INSTITUTIONS ALSO MUST RECOGNIZE THEIR OBLIGATION TO OPERATE THE TRAINING PROGRAMS IN A COST-EFFECTIVE MANNER.

Subsequent recommendations of the Committee will address possible limitations in teaching hospital support, the open-ended nature of the training programs, explicit mechanisms for providing quality assurances and alternate sources of funds.

Chapter III.

General Funding Principles

The Committee believes that future policies on funding graduate medical education should be based on the general principles articulated below. The recommended principles cover the criteria for training and programs that would qualify for funding, the way in which initial and advanced residency training periods should be funded, the means for monitoring the supply of physicians, the opportunities and responsibilities for other medical systems such as the Veterans Administration, and transition issues.

Quality Assurances

Because societal support for graduate medical education is based on the need to train competent clinicians, society is entitled to assurances that the programs it funds provide quality training. Society's support should be contingent upon a requirement that the trainees funded are in programs that at least meet the qualifications that ensure the physicians will be adequately prepared to practice medicine in the field they have chosen.

The medical school experience provides both the basic science and the initial clinical experience necessary as a foundation for the residency training. The Liaison Committe on Medical Education and the American Osteopathic Association accredit medical schools based on a series of criteria established to ensure that medical students are afforded appropriate educational experiences. Accreditation provides assurances that the medical school is preparing its graduates to accept responsibilities of a residency training program as conducted here in the United States. Some foreign medical schools may provide excellent

training for the practice of medicine, but there is no objective review process by which these schools can be distinguished from the others that provide training of questionable quality. Additionally, there is sufficient capacity within the United States' medical schools to train enough physicians to fulfill the health care needs of the American public. Table 10 shows the growth in the capacity of U.S. medical schools since 1954. Therefore, the Committee recommends:

(7.) FUNDING FOR GRADUATE MEDICAL EDUCATION SHOULD BE LIMITED TO GRADUATES OF MEDICAL SCHOOLS APPROVED BY THE LIAISON COMMITTEE ON MEDICAL EDUCATION OR THE AMERICAN OSTEOPATHIC ASSOCIATION.

Accreditation by the Accreditation Council for Graduate Medical Education or the AOA provides assurances that the residency training programs society is supporting are of high quality. They ensure that the residents receive appropriate and adequate supervision and education so that upon completion of the program they may practice independently. Thus, the Committee recommends:

(8.) ONLY RESIDENTS IN PROGRAMS APPROVED BY THE ACCREDITATION COUNCIL ON GRADUATE MEDICAL EDUCATION OR THE AMERICAN OSTEOPATHIC ASSOCIATION'S COMMITTEE ON MEDICAL EDUCATION SHOULD BE FUNDED.

The Committee also believes program accreditation and health manpower planning should be separate activities. The ACGME and the AOA should approve all residency training programs that meet the established criteria. The ACGME and AOA should not be asked to implement health manpower planning objectives by limiting the number of programs granted approval to train residents. The Committee recommends:

(9.) THE ACGME AND THE AOA SHOULD ACCREDIT PROGRAMS SOLELY ON THE BASIS OF WHETHER THE PROGRAMS MEET THE EDUCATIONAL CRITERIA ESTABLISHED.

Each resident graduating from an accredited school needs to complete residency training before independent practice, and sufficient residency positions should be funded so that each graduate has this opportunity. Thus, the Committee recommends:

(10.) FUNDED TRAINING OPPORTUNITIES IN RESIDENCY PROGRAMS SHOULD BE SUFFICIENT TO ENABLE ALL GRADUATES OF LCME OR AOA APPROVED SCHOOLS OF MEDICINE TO ENROLL IN AN ACGME OR AOA APPROVED RESIDENCY TRAINING PROGRAM.

In making this recommendation, the Committee was concerned that if funding for residency positions was severely constrained or if explicit manpower restrictions regarding the number of residency positions were adopted, the number of available residency positons might decrease to a point where graduates of LCME or AOA accredited medical schools might be unable to enter graduate training. The Committee believes it is inappropriate to eliminate a student's opportunity to train midway through the educational process needed for the independent practice of medicine. Once a student has entered medical school and as long as the student meets or exceeds all of the standards for attainment of skills and knowledge, the Committee believes the student should have the opportunity to complete sufficient residency training to practice independently in their specialty.

Funding of Residents Through Teaching Hospital Revenue

As noted in the preceding chapter, the ability of teaching hospitals to fund residency training programs is diminishing as price competition intensifies. Reasonable options for limiting the amount of training that is expected to be funded from this source must be identified.

Several options for limiting the funding to be derived from teaching hospital revenues were considered by the Committee including approaches that would fund all residents for a set length of time (e.g., 3 years, 3.5 years, or 4 years); options that would fix the amount of money to be spent; and options that establish the number of residents and fellows to be trained in each specialty and subspecialty. The Committee concluded that to meet society's expectations, residency education must be supported by payments to teaching hospitals by patient care payers at least until the trainees are eligible for their primary specialty board.

Residents were identified as being capable of the independent practice of medicine if they had completed enough formal training to be eligible to sit for first board certification in their chosen specialty field. The specialty board for each specialty determines the length of training necessary for competent practitioners in their field. These decisions are codified in the "Essentials of Accredited Residency Training" which are published in the 1985-1986 Directory of Residency Training Programs. Thus, the Committee believes residents should be supported primarily by general hospital revenues which are either explicitly paid to support graduate medical education or implicitly included in the price an insurer is willing to pay at least until they have completed sufficient training to be eligible to become board certified in their discipline.

The Committee recommends:

(11.) RESIDENTS IN APPROVED-TRAINING PROGRAMS SHOULD BE FUNDED LARGELY BY PAYMENTS TO TEACHING HOSPITALS BY PATIENT CARE PAYERS AT LEAST THROUGH THE NUMBER OF YEARS REQUIRED TO ACHIEVE INITIAL BOARD ELIGIBILITY IN THEIR CHOSEN DISCIPLINE.

In making this recommendation, the Committee recognizes that the various specialties have structured their training programs differently. For example, in internal medicine, residents must generally complete a three year internal medicine residency before entering subspecialty training. In surgery, residents are allowed to enter some specialized surgical programs and complete them within the same time period required for a resident in general surgery. Similar differences are present in other specialties. As a result of the differences in the structures of training programs, specialties would be affected differently if the proposal were limited to support residents solely through initial board eligibility.

The Committee was concerned that the fiscal stability of fellowship programs that provide the training for those who want to practice in the subspecialties or who wish to become academic physicians would be unduly jeopardized if no support were provided from teaching hospital revenues. In reaching this conclusion, the Committee was aware that the majority of those enrolled in fellowship programs have completed residency training in internal medicine and that a recent study by Schleiter and Tarlov* found that only two-fifths of fellowship funding for the subspecialties of internal medicine are supported by non-federal hospital revenues. However, the extent to which hospital revenues provide support for particular programs differs greatly across hospitals. The fellows in some programs are funded almost completely out of teaching hospital revenues. In other programs, the support comes largely from a combination of research and

training grants and physician fees. A third group of programs has a mixture of revenue sources. This disparity means that some programs would be greatly affected by the sudden elimination of hospital revenues as a source of funding. Therefore, the Committee recommends:

(12.) ONE ADDITIONAL YEAR OF FUNDING BEYOND INITIAL BOARD ELIGIBILITY SHOULD BE PROVIDED FROM TEACHING HOSPITAL REVENUES FOR FELLOWS IN ACCREDITED TRAINING PROGRAMS TO THE EXTENT THAT THE HOSPITAL FUNDED SUCH TRAINING IN 1984.

The Committee has recommened restricting the extension of fellowship funding to one year as a means of balancing the needs of the hospitals to reduce expenditures on graduate medical education with the need for adequate support for training programs that provide skilled practitioners in all of the subspecialties as well as the specialties. In recognition of the fact that hospital patient care payers are unlikely to be willing to spend more in the aggregate on gradute medical education than they do now, the Committee recommended the reliance on teaching hospital revenues as a source of fellowship support be limited to the hospital's current level of fellowship support. By this, the Committee does not intend to suggest a freeze in the dollars of support provided. Instead, the Committee intends that the proportion of support provided from the teaching hospital should not increase.

To be responsive to the concerns of society and the teaching hospitals over the length of training to be supported, the Committee believed it was necessary to establish a limit on the maximum number of years to be supported for an individual resident. The Committee recommends:

(13.) AN INDIVIDUAL SHOULD BE SUPPORTED FROM PATIENT CARE PAYERS' PAYMENTS TO TEACHING HOSPITALS FOR A MAXIMUM OF SIX YEARS OF GRADUATE MEDICAL EDUCATION.

This recommendation would mean that residents in thoracic surgery, which requires seven years of formal training, would not be funded by the hospital in the final year of training. Also, residents that change specialties after completing some portion of their initial training may reach the six year limit.

As another expression of the medical education community's accountability to the American public, the Committee believes that any increase in the required training periods deemed necessary by the specialty boards should be made only after full deliberation and public consideration of the educational needs and the additional costs attributable to the extension of the required training period. In 1984, the president of the AAMC wrote the executive vice president of the American Board of Medical Specialties (ABMS) stating:

> The AAMC believes that the time has come when the ABMS must extend its role beyond simply coordinating the activities of its members and assume the power to approve or reject changes that are proposed in educational requirements. We believe that this is essential to avoid conflicts among member boards and between boards and the institutions and organizations that provide the resources for graduate medical education in the United States. Accordingly, the AAMC requests that Section 12.4 of the by-laws of the ABMS be amended as shown (below).

(a) Primary and Conjoint Boards have the responsibilty of establishing their own educational requirements for certification and may change such requirements. Changes that alter the resources that must be provided by teaching hospitals for their graduate programs or changes that impinge on the resources of educational programs in other specialties shall be submitted to the ABMS for approval prior to their implementation. Specifically, changes that lengthen the duration of training or that require a portion of the training period to be spent in an accredited program of another specialty shall be submitted for approval.

The ABMS discussed and tabled the AAMC's recommended change. The Committee believes it is time for the issue to be reconsidered.

Other Sources of Revenue for Advanced Training

The advanced training of subspecialists is vital and appropriate. Advanced clinical training must be supported if the American public is to have physicians competent in cardiology, endocrinology, pediatric surgery, and a host of other medical fields. However, unlike the training required to reach initial board eligiblity, advanced clinical training is not necessary for a physician to enter the independent to practice of medicine. Those involved in graduate medical education should not expect payers to augment teaching hospitals payments to recognize the costs of subspecialty or other advanced training beyond the year of funding provided for fellowship training in those hospitals that currently are supporting this training. If they choose, hospitals could use their general revenues to support the second or third year of training of subspecialists. In addition, continued funding of some particular subset of the subspecialists may

be in the public interest and unlikely to occur without explicit public support. In such instances, government or public intercession is necessary. Examples of such programs may include training in public health and preventive medicine or the new and developing field of geriatrics.

Other advanced residency training programs may reflect personal and professional goals which individuals should pursue and support on their own. Institutions or physician groups may also perceive the presence of advanced fellows to be in their best interest. They may be willing to support the advanced training of fellows in order to have those individuals available to provide services in the institution or in their practice setting. Thus, training for practice in the subspecialty areas of medicine and surgery would be funded in a similar manner to the way other professionals are trained to achieve full recognition in their professions. The Committee recommends:

(14.) BEYOND THE FIRST YEAR OF FELLOWSHIP TRAINING, CLINICAL TRAINING FOR FELLOWS SHOULD INCREASINGLY BE SUPPORTED BY GOVERNMENT OR CORPORATE GRANTS, PHYSICIAN PRACTICE INCOME, PRIVATE PHILANTHROPY, AND OTHER SOURCES.

Monitoring Physician Supply

An area of particular concern to the Committee is that of physicians in advanced training for specialties in which there is a physician shortage. Under the current unrestricted financing structure, it generally is not the lack of funding that deters residents from electing to train in these specialties. However, to the extent that training in these specialties extends beyond the period recommended for support from teaching hospital revenues, the reduced financing would further diminish the attractiveness of these programs. There are

two problems associated with these specialty shortage areas: (1.) how to identify them, and (2.) how to provide sufficient funding for them. Identifying shortage areas can be accomplished within the broader context of examining physician distribution in general.

One means of monitoring the supply of physicians by specialty would be the establishment of a private sector effort to collect data on the supply of physicians in general and of each type of specialist in particular. While this effort would only collect and disseminate data regarding the supply of physicians, it may be influential in convincing hospitals not to offer and residents not to enter oversubscribed specialties and instead to seek to practice in the shortage areas. Thus, the Committee recommends:

(15.) A COORDINATED, NATIONWIDE, PRIVATE SECTOR EFFORT SHOULD BE MADE TO COLLECT AND DISSEMINATE INFORMATION ON THE SUPPLY OF PHYSICIANS BY SPECIALTY.

Ideally, this data collection effort would be non-governmental; that is, it would be conducted by an organization from the health care provider sector. If possible, it should obtain its funding from the private sector as well.

The data may be useful in helping to identify potential shortage specialties. Once these areas have been identified, the use of positive incentives by public or private organizations to encourage providers to offer more of a particular type of training position or to encourage more trainees to enter training programs in undersubscribed specialties would be justifiable. The incentives offered might include payment bonuses to providers for the training of residents in the shortage specialities, and to the residents who would enter the

undersubscribed specialties, or the enhancement of the opportunities available in the practice of medicine in the specialty after post-graduate training.

In influencing the trainee to select certain specialties, it must be recognized that a number of factors will affect specialty choice. One of those factors is likely to be fees paid to the fully trained physicians who practice in that specialty. Unless physician payments support the desired manpower mix it is unlikely the mix will be attained.

In addition to shortages in particular specialty fields, there may be shortages of physicians willing to pursue certain types of careers, such as those who would wish to become physician investigators and faculty members. The resources necessary to complete the research portion of the training of future academicians and investigators have come from a mixture of federal and private research training grants, endowments and gifts. The clinical portion of the advanced training has been supplied by a mixture of hospital and physician patient care revenues as well as private grants. Currently NIH research training grants are not used to support clinical training and it would require a major policy change to accomplish this. New approaches to funding the clinical training of future investigators will be needed if governmental and charitable programs must replace hospital revenues for such support in the future.

It is important to remember that the future service needs of the American population and the treatment capabilities that will be available during the next decade cannot be precisely predicted. Using the data collected through this private sector effort to determine which residency training programs to fund in the future would be inappropriate.

Support of Training in New Practice Areas

Current payment mechanisms for graduate medical education are more supportive of training in the inpatient hospital setting than of the training in ambulatory care sites or other alternate care settings. Increasingly, care that was in a hospital inpatient setting is now being moved to ambulatory surgery centers, clinics, and other alternate settings. Health maintenance organizations and other forms of managed care are growing rapidly, and public interest has been expressed in promoting non-hospital care. If physicians are to practice appropriately in these settings, it is important for them to be trained in similar settings. Changes are needed to ensure that the training site chosen by the residency program directors are chosen because they offer appropriate educational opportunities, not because they are more easily funded. Therefore, the Committee recommends:

(16.) THE FUNDING FOR GRADUATE MEDICAL EDUCATION MUST SUPPORT THE RESIDENTS AND INSTITUTIONS IN AMBULATORY AND INPATIENT TRAINING SITES THAT ARE MOST APPROPRIATE FOR THE EDUCATIONAL NEEDS OF THE TRAINEES.

The most appropriate method for funding these ambulatory care training sites has not yet been identified. Family practice training programs housed in model practice clinics currently are allowed to bill on behalf of the residents for services provided, and this arrangement has provided substantial support for these programs. Another option might be to require a linkage between the ambulatory training site and a teaching hospital and channel the funding for the ambulatory site through the hospital. Other creative options need to be developed and explored to assure adequate opportunities for ambulatory training.

Since current payment sources do not achieve the objective expressed in the Committee's recommendation, supplemental funds should be made available from government and private sources as needed to promote training opportunities

available in HMOs, ambulatory surgical centers, and other non-hospital sites. Currently, federal and state governments fund some initiatives in ambulatory and primary care training through grant programs such as that enacted under Title VII of the Public Health Service Act. These initiatives may need to be augmented in light of the increasing price sensitivity of the health care market.

The Veterans Administration and the Department of Defense

By operating health care programs which include hospitals, rehabilitation centers, and ambulatory care centers, the Veterans Administration and the Department of Defense are major providers and payers of patient care services. In this dual role, they have provided important sites for the training of residents and the funding for that training as well. The need of the Veterans Administration and the Department of Defense for adequately trained physicians to serve their patient population has not diminished, and by all predictions, will grow in the next several years. As representatives of one sector of the society that will continue to need increasing amounts of health care services, the Veterans Administration and the Department of Defense should continue their support of residency training. It must be recognized that the VA and DOD have unique service needs and must provide the training sites and funding for physicians to meet these needs in the future. Such needs will certainly include physicians experienced in physical and rehabilitation medicine, orthopedics, trauma surgery, and geriatric care. Thus, the Committee recommends:

(17.) THE VETERANS ADMINISTRATION AND THE DEPARTMENT OF DEFENSE SHOULD CONTINUE THEIR SUPPORT OF RESIDENCY TRAINING, PARTICULARLY PROVIDING SUPPORT FOR THE EDUCATION OF PHYSICIANS TO MEET THE SPECIAL SERVICE NEEDS OF VETERANS AND ARMED FORCES PERSONNEL.

Other Health Care Delivery Systems

Other providers who operate health care delivery services that are not dependent on revenues for services rendered to individual patients may also have unique patient care service needs. For example, the Shriners may have particular needs for physicians experienced in burn care or orthopedics to provide care for the unique patient population seen in their hospitals. These providers may also be called upon to provide both the site and support necessary for the training of physicians who will provide care for their unique patient population. Therefore, the Committee recommends:

(18.) OTHER PROVIDERS OF SERVICE THAT ARE NOT TYPICALLY AMONG THOSE RECEIVING DIRECT PAYMENT FOR SERVICES RENDERED TO INDIVIDUAL PATIENTS SHOULD CONTINUE THEIR SUPPORT OF GRADUATE MEDICAL EDUCATION, PARTICULARLY FOR THOSE SPECIALTIES NEEDED FOR THEIR UNIQUE PATIENT POPULATIONS.

Transition for Foreign Medical Graduates

The Committee has recommended that only graduates of LCME or AOA approved schools be funded. In making this recommendation, it recognizes that a number of hospitals have large numbers of foreign medical graduates in their training programs and depend on these FMGs to provide a significant amount of their patient care services. To allow these hospitals sufficient time to develop alternate strategies to provide this care, the Committee believes funding for FMGs should be phased-out over a three year period. Additionally, to respect the commitments made to residents currently in training, funding should be provided for any resident currently enrolled in a training program until the training requirements of that program have been met.

The withdrawal of patient care support for foreign medical graduates does not mean that all foreign medical students should be precluded from training in American hospitals. There are public policy reasons why the United States may wish to support the education of a limited number of alien foreign medical graduates. For example, the United States may wish to train physicians from developing nations, who will return to their native land. Special purpose funds should be made available for the training of these physicians, but only if their training is requested by the government or their educational institution. The requesting government or educational institutions would be responsible for guaranteeing that there are positions available to the trainees upon return to their native countries.

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Appendix A

THE STRUCTURE OF GRADUATE MEDICAL EDUCATION AND ITS FINANCING

Graduate medical education describes the period of formal education in clinical practice that begins with graduation from medical school and ends with the fulfillment of the requirements for certification in specialty or subspecialty practice. This training, which varies from three to seven years, traditionally takes place in "teaching hospitals." Trainees in programs leading to eligibility for initial board certification are generally called "resident physicians" or, more concisely, "residents." Trainees who complete residency training and enroll in subsequent programs leading to a certificate of special competence are generally called "clinical fellows" or simply "fellows."

Each specialty has a formally organized board that establishes the minimum length of time to be spent in training (Table 1) and the other criteria a resident must fulfill to be eligible for certification. The 23 certifying boards are autonomous, but they consult with each other and exchange information under the auspices of the American Board of Medical Specialties (ABMS). The certifying boards work to achieve high standards for specialty practice and to improve the quality of graduate medical education.

Certificates of special competence are granted to recognize proficiency in subspecialty fields by ten of the specialty boards. There are eleven subspecialty fields in internal medicine for which certificates are granted, nine in pathology, six in pediatrics, four in obstetrics and gynecology, three in surgery, two in psychiatry and neurology, one each in allergy and immunology, anesthesiology, dermatology, and radiology. (Table 2)

In addition to the ABMS and its specialty certifying boards, a variety of professional societies influence graduate medical education. The Council of Medical Specialty Societies has as members major specialty colleges and academies. Each of these colleges and academies has a close relationship with its respective specialty board, and several name representatives to their respective boards.

In 1972, the Liaison Committee on Graduate Medical Education (LCGME) was established to accredit graduate medical education programs. It was sponsored by the Association of American Medical Colleges, the American Board of Medical Specialties, the American Hospital Association, the American Medical Association, and the Council of Medical Specialty Societies. In 1981 the LCGME was reorganized and renamed the Accreditation Council for Graduate Medical Education (ACGME). The ACGME relies on residency review committees (RRCs) to perform the actual review of each training program. A residency review committee consists of representatives from the specialty appointed by the AMA, the appropriate specialty board, and, in some cases, a national specialty society. Residency programs are accredited either by the ACGME upon recommendation of the RRC or by the RRC itself if the ACGME has delegated authority to it.

Thus, a large number of professional organizations are involved in graduate medical education to provide control over the quality of the training and to assure that those completing training programs are capable of practicing safely and efffectively.

The Financing of Graduate Medical Education

Sponsors of graduate medical education incur real and significant costs in providing these programs. There are "direct" costs consisting of stipends and

fringe benefits for residents, faculty salaries, institutional space and facilities devoted to education, and allocated overhead. There are also "indirect" costs for medical education. These include the processing of additional diagnostic tests and the reduced pace at which members of the hospital staff function because they are helping to educate the residents. The inability to separate clearly clinical care from clinical education makes agreement on the determination of educational costs virtually impossible. Any attempt to distribute the costs of joint products simultaneously produced cannot be done objectively, but only subjectively. Differences in the assumptions made by the subjective assessments probably explain the differences in the outcomes of various studies attempting to estimate the costs of graduate medical education.*

While there have been studies of graduate medical education costs,* no widely accepted measure of either the indirect cost or the benefit from the trainee's service is available. With regard to direct costs, data on the costs of faculty and space also are not available; however, the costs of stipends and benefits for the housestaff are collected for members of the Council of Teaching Hospitals in an annual survey.* Using these data, it is estimated that current annual expenditures on housestaff stipends and benefits amount to $2 billion.

There are no comprehensive data on the sources of funding for graduate medical education costs. However, the Council of Teaching Hospitals' survey on housestaff stipends asks for sources of funding for stipend and benefit expenditures, and these data provide some indication of the sources of funding for support of all residency training. Residents' stipends, according to the survey, are funded from a variety of sources, but primarily from patient care revenues of teaching hospitals (Table 3). Patient care revenues in non-federal members of the Council of Teaching Hospitals account for approximately

four-fifths of the support for residency training. Another six percent of the funding comes from state or local governments, and the remaining 14 percent from a diverse group of sponsors.

According to the data from the COTH survey, three-fifths of the support for clinical fellows in non-federal hospitals is derived from hospital patient care revenues. Other significant support for fellows comes from physician fee revenues, NIH grants, foundation grants and voluntary agencies. These survey results do not include the Veterans Administration hospitals. The survey may underestimate the role of the non-hospital sources because only fellows for whom the hospital keeps financial records are reported. Fellows engaged in research activities in non-hospital settings or whose funding is not administered by the hospital may not be included. Schleiter and Tarlov* have reported more refined and specific data for fellowship programs in internal medicine that show 39 percent of the funding comes from non-federal hospital revenues (Table 4), 20 percent from the Veterans Administration and military, 11 percent from federal grants and 8 percent from physician fees. The remaining funds come from an assortment of sources, none of which contributes more than 6 percent.

Using federal data, the Committee estimates that roughly $3 billion were provided from teaching hospital patient care revenues for the support of the direct costs of graduate medical education last year, with Medicare providing just over $1 billion. Medicare pays for its portion of the direct costs on a cost reimbursed basis; that is, hospitals compute the sum of their total direct medical education costs and determine Medicare's prorated portion of those costs based on the ratio of Medicare days to total patient days. Some Medicaid programs and some Blue Cross programs also provide explicit cost-based funding for residency training. However, most other patient care payers provide funding

for graduate medical education only because such costs are included in the hospital's charges. Notably, the states that have developed "all payer rate" setting programs have included the costs of graduate medical education in approved hospital payments.

As changes are considered in the current method of financing graduate medical education, it is important to be cognizant of characteristics of graduate medical education which may determine how particular hospitals and residents are affected by the changes. Residents and the institutions in which they train differ along a variety of important dimensions.

Variations in Resident Characteristics

Nearly 85 percent of the first year residency positions were filled by graduates of American medical schools as of September 1, 1984*. The remaining 15 percent of residents in their first year of training were graduates of foreign medical schools (FMGs). Almost 18 percent of all the residents in training were from foreign medical schools (Table 5). The percentage of FMGs in residency training peaked during the mid-seventies at approximately 30 percent.

Foreign medical graduates come from a variety of schools to enter residency positions in the United States. In recent years, a large proportion have come from the medical schools located in the Caribbean and Mexico. Concern about the quality of the medical education provided in many of the Caribbean schools was raised by the 1980 General Accounting Office (GAO) study, "Policies on U.S. Citizens Studying Medicine Abroad Need Review and Reappraisal" and by the 1985 GAO study, "Federal, State, and Private Activities Pertaining to U.S. Graduates of Foreign Medical Schools."

Another dimension along which medical students vary is educational debt. The most recent data from the AAMC Medical School Graduation Questionnaire* show that upon graduation from a U.S. medical school, eighty-seven percent of the graduates have debt, and the average size of the debt is $29,943. Nearly thirteen percent of the graduates have debt in excess of $50,000. The prospect of decreasing physician income coupled with the growing substantial debt would make it difficult for residents to finance their training with additional borrowing.

Variation by Type of Training Program

While there are many speciality training choices for residents, the greatest percentages of residents on duty in September of 1984 were in internal medicine (24.4%), general surgery (11.0%), family practice (9.9%), pediatrics (8.1%), and obstetrics and gynecology (6.2%) training programs. Thus, these five programs account for approximately 60% of all residents.

During current discussions of graduate medical education, the term "primary care residency programs" has been usually used to identify residents in internal medicine, pediatrics, and family practice. In 1984, there were 31,600 residents in these programs, and they were 42.4% of all residents. In some analyses, ob/gyn residents are considered primary care trainees. In 1984, when 6.2% of the residents were in ob/gyn, the inclusion of this specialty would mean that 48.6% of all residents were in primary care training. It is important to note that not all residents training in these specialties intend to practice primary care medicine exclusively. Schleiter and Tarlov report that 60 percent of all internal medicine residents go on to receive fellowship training* (Table 7). Data on the proportion of pediatric, ob/gyn, and family practice residents that enter fellowship programs are currently unavailable.

Residents are not evenly distributed among the states (Table 8). In 1984, eight states - California, Illinois, Massachusetts, Michigan, New York, Ohio, Pennsylvania and Texas provided the site for the training of 55.1% of the residents. These eight states are among the largest states on a variety of demographic dimensions, and it is not surprising that they should be the largest in terms of graduate medical education, as well. However, the proportion of residents in these states, as well as the other states, does not vary precisely with the general population data. Thus, New York and Massachusetts support disproportionately more residents per capita than states such as Wyoming or North Dakota (Table 9).

Variations by Institutions

In 1984 there were 1343 hospitals and 187 other organizations involved in graduate medical education. If all 74,495 residents were distributed evenly, the institutions would each have about 49 residents. However, residents are not evenly distributed. The fifty non-federal members of the Council of Teaching Hospitals with the largest residency programs train 29 percent of all residents. They have an average of 425 residents in their programs. The fifty COTH members with the next largest programs train 17 percent of the residents and have an average of 239 residents in their programs. At the other end of the spectrum, there are teaching hospitals with just one or two residents in the hospital. Thus, while responsibility for residency training is widely dispersed across more than 1500 institutions, it is also highly concentrated in a small percentage of the institutions.

Teaching hospitals also vary in the type of patients they serve, and that characteristic determines the types of training programs they can conduct successfully. For example, some general acute care teaching hospitals do not

have the patient population or referral network to provide an adequate educational experience for some subspecialists or other more focused types of training.

Other teaching hospitals have assessed the patient care resources available within their community and have elected to concentrate in certain types of care but not in others. For example, some teaching hospitals have elected not to offer pediatric care because nearby children's hospitals were meeting that community need. Some teaching hospitals may have more sophisticated and well developed internal medicine patient care capabilities while other teaching hospitals may have highly developed and focused surgical capabilities. These two groups of hospitals will treat very different mixes of patients, and therefore, will have very different capacities to train medical or surgical residents. Different proposals for changing the payment for graduate medical education can have different effects on these two groups of institutions.

Summary

Graduate medical education is a generic term used to describe a very diverse group of programs designed to train physicians to practice medicine competently and safely in 23 specialty areas and numerous subspecialty areas. A large number of professional organizations are involved in determining the standards to be met by each type of specialty training program and in assessing whether or not individual programs meet the standards. Programs currently meeting these criteria exist in a variety of institutions, but primarily in a small percentage of hospitals. The residents and fellows are supported by many sources, the largest of which is the patient care revenues of the hospital.

Appendix B

A National Fund for Graduate Medical Education

As new hospital payment systems are developed and introduced, purchasers of hospital services are placing increased emphasis on the prices paid for services. In this price competitive environment, teaching hospitals may be at a disadvantage because of their additional costs for special services such as medical education. To help maintain teaching hospital competitiveness, it has been suggested that a national fund be created to finance graduate medical education (GME) separately from patient service charges.

In its discussions, the AAMC Committee on Financing Graduate Medical Education considered recommending a national fund for GME. Having considered the advantages and disadvantages of such a fund, the Committee does not favor establishing a national GME fund at this time. The Committee does recognize, however, that there is an interest in this approach. Therefore, this appendix describes the primary and secondary policy issues which must be addressed in considering a national GME fund.

The appendix addresses three primary issues: What is the total funding needed for GME? How should the needed funds be raised? and How should the funds be distributed? The secondary issues discussed include balancing a variety of GME objectives, influencing health manpower, and setting the locus of administration for the fund. The Committee recognizes that these issues overlap. They have been separated for ease of presentation.

PRIMARY ISSUES

What is the total funding needed?

Identifying the costs of graduate medical education are not a simple task. First, data on total spending for graduate medical education are not readily

available. Similarly, data are not available readily on spending for the individual components that make up GME spending.

One component of GME spending can be estimated. Assuming the average resident is paid at the national average for a second year resident, total expenses for resident stipends are currently about $1.75 billion(1). When benefits are added, total expenses for resident stipends and benefits are estimated to be $1.99 billion(2). To obtain a complete estimate of national GME costs, the $1.99 billion for resident stipends and benefits would have to be increased for (1) the costs of individuals in fellowship programs, (2) the costs of supervising faculty, and (3) the costs of program overhead (e.g., clerical support, program administration, teaching facilities, and library resources).

The inability to estimate accurately total national spending on GME is not a pivotal matter for this appendix. The partial cost estimate of $1.99 billion for resident stipends and benefits demonstrates that any special fund would have to be large. Therefore, the fund would tend to have the budgetary, political and administrative characteristics of large, special purpose funds. It should be understood, however, that if a fund were to be established, each of the presently unknown costs would have to be determined and determining the size of the fund would be a point of disagreement between those financing the fund and those receiving its monies.

How Should Funds be Raised?

(1). Computation of total resident stipend expenditures: $22,900 per resident from 1985 COTH Survey of Housestaff Stipends and Benefits times 74,495 residents from Directory of Residency Training Programs equals $1,705,935,500.
(2). 1985 COTH Survey of Housestaff Stipends and Benefits reports a mean ratio of benefits to stipend expenditures of 16.7%

At the present time, the costs of graduate medical education are supported primarily by the patient service revenues with limited supplementary funds from government appropriations, governmental and private grants and philanthropy. The patient service revenues are derived from a combination of prospectively determined payments, negotiated prices, cost reimbursement, and payments for charges. In order to raise monies for a single national fund for graduate medical education, the following three approaches are generally identified:

- o the monies could be raised by general taxes (i.e., income or payroll) from a single source, such as the Federal government; or
- o the monies could be raised by a special tax on health providers in order to spread the costs of GME across all providers; or
- o the monies could be raised by taxing the large number of health insurers, business, and governmental units currently helping to underwrite GME costs.

Each of the approaches to raising the necessary funds involves substantial problems.

The first alternative is in many ways the simplist. Federal tax revenues would be increased and Federal funds would support all GME costs. With a Federal program assuming this responsibility, other payers would no longer have to support GME in their payments. Ideally, the increase in Federal taxes would be offset by a corresponding reduction in insurance premiums, health service charges, and grants so that total spending did not change. In spite of the simplicity of using a single revenue source, the approach seems politically

unlikely. If the Federal government created a national GME fund, either taxes would have to be levied to finance that portion of GME funds presently underwritten by the private sector or the deficit would be increased. As a federal fund, the money would have to be collected, administered, and distributed by a federal agency. The President has repeatedly stated his opposition to increased taxes, and the Federal Government is reducing spending to reduce budget deficits.

The second alternative seeks to reduce the economic disadvantage of teaching institutions by spreading GME costs across a larger provider base, perhaps all hospitals, physicians, and health plans. For example, all hospitals could be taxed (on admissions or revenues) and the monies raised could be allocated to teaching hospitals. In recent years, a similar approach has been explored for financing charity (or uncompensated) care. While attempts to tax hospital revenues or incomes to finance charity care have been successful in some states, the approach has generally been opposed by hospitals paying more in the tax than they receive in return. The opposing hospitals believe financing charity care is a societal responsibility not a hospital responsibility. It seems likely that a tax on providers to support GME would encounter similar opposition.

The final alternative seeks to capture and centralize the present expenditures of health insurers, self-insured employers, and government programs. The approach presents three difficulties. First, insurance regulation is generally a state administered function. Second, the current Employee Retirement Income Security Act (ERISA) law would have to be changed to direct the expenditures of self-insured corporations. Since ERISA was enacted, corporations have opposed efforts to amend it to control plan expenditures. Finally, the GME

expenditures of the various insurers, corporations and government programs differ. An attempt to impose uniform expenditures would be opposed as unfair by those who currently have below average expenditures for GME. An attempt to simply collect current expenditures would be opposed as inequitable by those with above average expenditures for GME.

Each of the approaches to underwriting a national GME fund presents problems. This does not mean a national fund is impossible. It does mean, however, that the difficulties of any approach are unlikely to be overcome unless the continuation of GME is clearly threatened by inadequate financial support. If a crisis was present and a fund was established and underwritten, issues concerning distributing the fund would become important.

How Should Funds be Distributed?

While there are numerous ways in which the monies in a GME fund could be distributed, they are primarily variations on three approaches. One approach is reimbursement. Providers with GME costs could submit a budget of planned expenses or a report of actual expenses as the basis for determining payment. The reimbursement can be open-ended, as Medicare has traditionally been, or close-ended with payment limits set in advance.

A second distribution method would be the establishment of a GME grants program. The recipient could be state governments, providers, or trainees. Grants could be competitive with an evaluation mechanism for selecting the best proposals or non-competitive with a formula used to determine the amount of the award.

A third approach for distributing GME funds would be to use the monies to increase otherwise determined service payments. For example, a surgical procedure might be paid at price $X in a non-teaching provider and a price $X+Y in a teaching provider. While this would provide added funding for teaching hospitals, it would be difficult technically to set a price difference which appropriately compensates different teaching hospital for their individual GME costs.

The design of the distribution mechanism is important. For example, a reimbursement approach requires review of costs. Decisions must be made on the types of costs which will be recognized and on the reasonableness of the costs. Reporting forms must be created and reviewed. Grant programs also require application and reporting forms. If the grant is competitive, a mechanism to review and evaluate grants must be developed. Grantee actions must be reviewed to ensure that the funds are used as intended. As these examples illustrate, the form and nature of the distribution mechanism determines how interventionist the fund will be.

Second Order Issues

Currently, providers sponsoring graduate medical education programs have considerable autonomy. Within program essentials and accreditation requirements established by the Accreditation Council for Graduate Medical Education and the Residency Review Committee, providers can choose the types of GME programs and the number of trainees they will support. While it is possible that a national GME fund would not interfere with the provider's present autonomy, it is unlikely. Spending several billion dollars a year imposes an accountability on the agency. The agency must be able to defend what has been supported with its funds. Unlike the present system where authority and decision-making are

diffuse, a single national fund centralizes decisions. National policy becomes an objective rather than a consequence of local decisions.

In a centralized national fund, the administrative mechanism is of critical importance. Is the administration to be incorporated into an existing agency or is a special purpose agency to be established? Does the agency have an advisory (or governance) body or only a paid staff? If an advisory body is included, how are members selected, which viewpoints are represented, and what is the relationship to staff? Administering a program requires decisions on broad policies and operational details. Each of the decisions has important implications for graduate medical education.

The distribution of funds makes an explicit statement about the desired specialty mix of training programs. If the agency continues to fund present programs, it is making an explicit statement that the current specialty mix is at least acceptable. Those who believe the present mix is unacceptable will try to have the agency use its funds to change the specialty mix. Similarly, funding decisions embody policies about the geographic distribution of training programs and the type of provider sponsoring the training program. In short, establishing a single, national GME fund will require those administering the fund to make explicit decisions about the number of residents trained, the specialty mix of programs, the geographic distribution of programs, and the type of provider sponsoring the training. The diffused autonomy of the present system will be replaced by more centralized decisions.

Secondly, those administering the fund will have to balance a number of competing interests. The educational needs of the trainees will have to be balanced with the service needs of the sponsoring provider. Emphasizing the learner role means an emphasis on rounds, lectures, and library time with less

time available for direct patient care. Also, the service needs of the sponsoring provider will have to be balanced with the needs of the trainee's ultimate practice setting. The training program must include learning new skills for independent practice in different settings rather than becoming a technical specialist for the training institution. To ensure that these and other balances are maintained, those administering the fund will become involved in program decisions specifying the length and content of funded programs.

The centralization of GME financing will in all likelihood be accompanied by a centralizing of GME decision-making. This centralization of educational decisions will occur at the same time that patient service and health care financing decisions are being decentralized and subjected to local marketplace forces. The impacts of this inconsistency are unknown and untested.

SUMMARY

The financing of graduate medical education has been stable for two decades. Now, there is increased uncertainty about GME financing. Because the present GME system and its financing have served the needs of patients, trainees, and training institutions, the AAMC Committee does not advocate a single national fund for GME. The primary and secondary issues surrounding a national fund for GME are substantial and make it acceptable only if GME financing in the future becomes grossly inadequate.

TABLE 1

GME YEARS REQUIRED TO CERTIFICATION

Specialty	Preliminary Training Requirements	Specialty Residency Training Requirement	Total Years to Certification (Minimum)
Allergy and Immunology	3	2	5
Anesthesiology	1	3	4
Colon and Rectal Surgery	5	1	6
Dermatology	1	3	4
Emergency Medicine	1	2	3
Family Practice	---	3	3
Internal Medicine	---	3	3
Neurological Surgery	1	5	6
Nuclear Medicine	2	2	4
OB/GYN	---	4	4
Ophthalmology	1	3	4
Orthopaedic Surgery	---	5	7
Otolaryngology	1	3	5
Pathology	---	4	4
Pediatrics	---	3	3
Physical Medicine & Rehabilitation	1	3	4
Plastic Surgery	3	2	5
Preventive Medicine, General	3	1	4
Psychiatry & Neurology	---	4	4
Radiology	---	4	4
Surgery	---	5	5
Thoracic Surgery	5	2	7
Urology	2	3	6 1/2

Source: American Board of Medical Specialties Annual Report & Handbook 1984

TABLE 2

SPECIALTY BOARDS: CATEGORIES OF CERTIFICATION

Specialty Boards	General Certifications	Special Certifications
Allergy & Immunology	Allergy & Immunology	Diagnostic Laboratory Immunology
Anesthesiology	Anesthesiology	Critical Care Medicine
Colon & Rectal Surgery	Colon & Rectal Surgery	
Dermatology	Dermatology	Dermatopathology Dermatological Immunology
Emergency Medicine	Emergency Medicine	
Family Practice	Family Practice	
Internal Medicine	Internal Medicine	Cardiovascular Disease Critical Care Medicine Diagnostic Laboratory Immunology Endocrinology and Metabolism Gastroenterology Hematology Infectious Disease Medical Oncology Nephrology Pulmonary Disease Rheumatology
Neurological Surgery	Neurological Surgery	
Nuclear Medicine	Nuclear Medicine	Cooperates with American Board of Pathology and American Board of Radiology in Radioisotopic Pathology and Nuclear Radiology
Obstetrics & Gynecology	Obstetrics & Gynecology	Critical Care Medicine Gynecologic Oncology Maternal & Fetal Medicine Reproductive Endocrinology

Source: American Board of Medical Specialties Annual Report & Handbook 1984

TABLE 2. (continued)

SPECIALTY BOARDS: CATEGORIES OF CERTIFICATION

Specialty Boards	General Certifications	Special Certifications
Orthopaedic Surgery	Orthopaedic Surgery	
Ophthalmology	Ophthalmology	
Otolaryngology	Otolaryngology	
Pathology	Anatomic & Clin. Path. Anatomic Pathology Clinical Pathology	Blood Banking Chemical Pathology Dermatopathology Forensic Pathology Hematology Immunopathology Medical Microbiology Neuropathology Radioisotopic Pathology
Pediatrics	Pediatrics	Critical Care Medicine Diagnostic Laboratory Immunology Pediatric Cardiology Pediatric Endocrinology Pediatric Hemato-Oncology Pediatric Nephrology Neonatal-Perinatal Medicine
Physical Medicine & Rehabilitation	Physical Medicine & Rehabilitation	
Plastic Surgery	Plastic Surgery	
Preventive Medicine	Aerospace Medicine Occupational Medicine Public Health and General & Preventive Medicine	

Soource: American Board of Medical Specialties Annual Report and Handbook 1984

TABLE 2, (continued)

SPECIALTY BOARDS: CATEGORIES OF CERTIFICATION

Specialty Boards	General Certifications	Special Certifications
Psychiatry & Neurology	Psychiatry Neurology Neurology with Special Qualifications in Child Neurology	Child Psychiatry Critical Care Medicine
Radiology	Radiology Diagnostic Radiology Therapeutic Radiology	Nuclear Radiology
Surgery	Surgery	Critical Care Medicine Pediatric Surgery General Vascular Surgery
Thoracic Surgery	Thoracic Surgery	
Urology	Urology	

TABLE 3

PERCENTAGE DISTRIBUTION OF FUNDING SOURCES USED TO PAY HOSPITAL COSTS OF HOUSESTAFF STIPENDS AND FRINGE BENEFITS

	Source of Funding			
	Residents		Clinical Fellows	
Funding Source	1984	1978	1984	1978
Patient Revenues and General Operating Appropriations	81.10%	73.56%	60.92%	50.75%
State Appropriations Earmarked for Housestaff Expenses	4.9%	5.13	2.3%	2.2%
Municipal Appropriations Earmarked for Housestaff Expenses	1.19	5.77	0.64	1.3%
Veterans Administration Appropriations	1.9%	2.30	4.04	1.33
Physician Fee Revenue	0.60	1.51	9.03	9.0%
Medical School/University Funds	1.91	2.96	2.35	4.67
NIH	0.29	0.43	8.75	10.88
Other Federal Agencies	0.27	0.17	0.89	5.05
Endowment Income, Foundation Grants, Voluntary Agencies	0.46	0.45	5.92	8.78
Other	7.23	7.72	5.18	5.96

Source: COTH Survey of Housestaff, Stipends, Benefits, and Funding, 1985

TABLE 4

SCHLEITER AND TARLOV DATA ON SOURCES OF FUNDING FOR INTERNAL MEDICINE FELLOWSHIP PROGRAMS

	1983-1984	
	Percent	Dollars
Sources:		
Hospital revenue	39.0%	$64,552
State and local governments	6.0	9,931
Veterans Administration and military	20.0	33,104
Federal training grants	11.0	18,207
Research grants	3.0	4,966
Professional fees	8.0	13,242
Medical school funds	4.0	6,621
Foundation training grants	6.0	9,931
Other	3.0	4,966
Total		165,519
Mean stipend/program		109
Mean stipend/fellow		24

TABLE 5

NUMBER OF RESIDENTS BY TYPE OF MEDICAL SCHOOL

Residents* on Duty as of September 1:	U.S. Medical School Graduates	Foreign Medical School Graduates	Total Residents	% FMGs
1984	61,158	13,337	74,495	17.9%
1974	44,381	18,131	62,512	29.0
1964	30,128	10,974	41,102	26.7
1954	24,524	5,036	29,560	17.0

*Includes interns

Source: Directory of Residency Training Program for years 1984-85, 1974-75, 1964-65, and 1954-55.

TABLE 6

UNDERGRADUATE INDEBTEDNESS: DEBT BY YEAR

				Percent Change		
Debt	1981	1984	1985	81-84	84-85	81-85
None	64%	64%	47%	0	-26.6	-26.6
$1 - $6,000	29%	28%	29%	- 3.4	+ 3.6	0
$6,000 +	7%	8%	24%	+14.3	+200.0	+242.9

MEAN DEBTS OF SENIOR MEDICAL STUDENTS*
1978-79 THROUGH 1984-85

Academic Year	All Seniors	Seniors with Debt	Percent of Seniors with Debt
1978-79	$11,602 (N=5823)	$15,663 (N=4313)	74
1979-80	$13,243 (N=8061)	$17,212 (N=6202)	77
1980-81	$15,167 (N=8148)	$19,697 (N=6274)	77
1981-82	$16,352 (N=10,625)	$21,051 (N=8627)	83
1982-83	$20,389 (N=10,073)	$23,647 (N=8683)	86
1983-84**	$23,347 (N=10,547)	$26,496 (N=8041)	88
1984-85	$25,938 (N=10,844)	$29,943 (N=9438)	87

*Includes both pre-medical and medical school debt, excludes spouse's debt.

**Due to an error in survey instructions, data for this year may be subject to a slight downward bias.

Source: AAMC Graduation Questionnaire

TABLE 7

SCHLEITER AND TARLOV DATA ON NUMBER OF RESIDENTS AND FELLOWS IN TRAINING BY TYPE OF MEDICAL SCHOOL

Type of Graduate	Year of Residency						Year of Fellowship			
	R1	R2	R3	R4	R5	Totals	F1	F2	F3	Totals
	← n →					n(%)	← n →			n(%)
1983-84										
USMG	5,587	4,372	4,110	487	76	14,632 (78)	2,608	2,272	742	5,622 (80)
US-FMG	771	664	529	23	9	1,996 (11)	124	128	18	270 (4)
FMG	734	626	625	57	25	2,067 (11)	533	453	147	1,133 (16)
Totals	7,092	5,662	5,264	567	110	18,695	3,265	2,853	907	7,025

TABLE 8

DISTRIBUTION OF RESIDENTS BY STATE

Region/State	Percent of Residents on Duty 1984	1974
New England	7.3%	---
Connecticut	2.0	2.0%
Maine	0.2	0.1
Massachusetts	4.0	4.3
New Hampshire	0.2	0.2
Rhode Island	0.5	0.5
Vermont	0.2	0.2
Middle Atlantic	23.7	---
New Jersey	2.7	2.4
New York	14.6	17.5
Pennsylvania	6.4	6.3
East North Central	17.7	---
Illinois	5.6	5.7
Indiana	1.2	1.1
Michigan	4.0	4.3
Ohio	5.1	5.0
Wisconsin	1.7	1.4
West North Central	6.8	---
Iowa	0.9	0.8
Kansas	0.8	0.9
Minnesota	2.0	2.9
Missouri	2.3	2.6
Nebraska	0.5	0.6
North Dakota	0.1	---
South Dakota	0.1	---
South Atlantic	14.7	---
Delaware	0.2	0.2
District of Columbia	2.2	2.5
Florida	2.3	2.4
Georgia	1.7	1.2
Maryland	2.6	2.6
North Carolina	2.2	1.9
South Carolina	1.0	0.7
Virginia	1.9	1.9
West Virginia	0.6	0.4
East South Central	4.4	---
Alabama	1.1	0.8
Kentucky	1.0	1.0
Mississippi	0.5	0.5
Tennessee	1.8	1.7

Source: Directory of Residency Training Programs 1984-85.

TABLE 8, (continued)

DISTRIBUTION OF RESIDENTS BY STATE

Region/State	Percent of Residents on Duty 1984	1974
West South Central	9.1%	---
Arkansas	0.5	0.4%
Louisiana	1.8	1.4
Oklahoma	0.9	0.6
Texas	5.8	4.5
Mountain	3.1	---
Arizona	1.0	0.8
Colorado	1.2	1.5
Montana	---	---
New Mexico	0.3	0.3
Utah	0.5	0.5
Wyoming	---	---
Pacific	12.1	---
Alaska	---	---
California	9.6	9.9
Hawaii	0.5	0.4
Idaho	---	---
Nevada	0.1	---
Oregon	0.6	0.7
Washington	1.2	1.2
Territory	1.1	---
Puerto Rico	1.1	0.8

TABLE 9

RESIDENTS PER THOUSAND POPULATION BY STATE

	State	Approximate # of Residents	Population (in "000's")	Residents per Thousand Population
1.	District of Columbia	1,639	631	2.60
2.	New York	10,876	17,659	.62
3.	Massachusetts	2,980	5,781	.52
4.	Connecticut	1,490	3,153	.48
5.	Maryland	1,937	4,265	.46
6.	Pennsylvania	4,768	11,865	.41
7.	Rhode Island	372	958	.39
8.	Hawaii	372	994	.38
9.	Minnesota	1,491	4,133	.37
10.	Illinois	4,172	11,448	.37
11.	Ohio	3,883	10,791	.36
12.	Missouri	1,713	4,951	.35
13.	Michigan	2,980	9,109	.33
14.	Louisana	1,341	4,362	.31
15.	Colorado	894	3,045	.30
16.	California	7,152	24,724	.29
17.	Vermont	149	516	.29
18.	Texas	4,321	15,280	.29
19.	Tennessee	1,341	4,651	.29
20.	New Jersey	2,011	7,438	.28
21.	North Carolina	1,639	6,019	.28
22.	Arizona	745	2,860	.27
23.	Wisconsin	1,266	4,765	.27
24.	Virginia	1,415	5,491	.26
25.	Delaware	149	602	.25

Source: Directory of Residency Training Programs 1984-85
World Book Almanac

TABLE 9, (continued)

RESIDENTS PER THOUSAND POPULATION BY STATE

	State	Approximate # of Residents	Population (in "000's")	Residents per Thousand Population
26.	Kansas	596	2,408	.25
27.	Iowa	670	2,905	.24
28.	Nebraska	372	1,586	.24
29.	South Carolina	745	3,203	.24
30.	Utah	372	1,554	.24
31.	West Virginia	447	1,948	.23
32.	Georgia	1,266	5,639	.23
33.	Oklahoma	670	3,177	.22
34.	Washington	894	4,245	.22
35.	Alabama	819	3,943	.21
36.	Kentucky	745	3,667	.21
37.	Arkansas	372	2,291	.17
38.	Florida	1,713	10,416	.17
39.	Indiana	894	5,471	.17
40.	New Mexico	223	1,359	.17
41.	Oregon	445	2,649	.17
42.	New Hampshire	149	951	.16
43.	Mississippi	372	2,551	.15
44.	Maine	149	1,133	.14
45.	North Dakota	75	670	.12
46.	South Dakota	75	690	.11
47.	Nevada	75	881	.09
48.	Idaho	0	965	.00
49.	Montana	0	801	.00
50.	Alaska	0	438	.00
51.	Wyoming	0	502	.00

TABLE 10

U. S. MEDICAL SCHOOL ADMISSIONS

Class Year	First-Year Enrollment	Graduates
198-	16,99-	16,31-
197-	14,97-	12,71-
196-	8,85-	7,40-
195-	7,57-	6,97-

Source: AAMC Data Book

TABLE 11

DISTRIBUTION BY SPECIALTY

Specialty	Percent of Residents on Duty 1984	1974	1964
Allergy and Immunology	0.3%	---	---
Anesthesiology	5.2	3.9%	3.9%
Colon and Rectal Surgery	0.1	0.1	---
Dermatology	1.1	1.4	1.3
Dermatopathology	---	---	---
Emergency Medicine	1.5	---	---
Family Practice	9.9	5.1	---
Internal Medicine	24.4	21.0	17.7
Neurological Surgery	0.9	1.2	1.5
Neurology	1.9	2.0	1.6
Nuclear Medicine	0.3	0.2	---
OB/GYN	6.2	6.5	8.1
Ophthalmology	2.1	3.0	3.4
Orthopedic Surgery	3.9	4.5	4.7
Otolaryngology	1.4	1.9	2.2
Pathology	3.3	5.4	6.5
Blood Banking	---	---	---
Forensic Pathology	---	0.1	---
Hematology	---	---	---
Neuropathology	0.1	0.1	---
Pediatrics	8.1	9.1	6.2
Pediatric Cardiology	0.2	0.2	0.1
Neonatal-Perinatal Medicine	0.3	---	---
Physical Medicine & Rehabilitation	1.0	0.8	0.6
Plastic Surgery	0.6	0.8	0.6

Source: Directory of Residency Training Programs, 1984-85, 1974-75 1964-65.

TABLE 11, (continued)

DISTRIBUTION BY SPECIALTY

Specialty	Percent of Residents on Duty 1984	1974	1964
Preventive Medicine, General	0.3%	---	0.1%
Aerospace Medicine	0.1	---	0.3
Occupational Medicine	0.1	---	0.2
Public Health	---	---	0.2
Combined General Preventive Medicine/Public Health	0.1	---	0.3
Psychiatry	6.1	8.3	11.2
Child Psychiatry	0.7	1.1%	1.1
Radiology, Diagnostic	4.3	1.4	2.8
Radiology, Diagnostic (Nuclear)	0.1	---	---
Radiology, Therapeutic	0.7	0.7	---
Surgery	11.0	14.0	19.0
Pediatric Surgery	---	---	---
Vascular Surgery	---	---	---
Thoracic Surgery	0.4	0.6	0.8
Urology	1.4	2.1	2.5
Transitional Year	2.0	---	---

APPENDIX A

ASSOCIATION OF AMERICAN MEDICAL COLLEGES COMMITTEE ON FINANCING GRADUATE MEDICAL EDUCATION

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School of Medicine
University of North Carolina

APPENDIX B

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APPENDIX C

AMERICAN BOARD OF ALLERGY AND IMMUNOLOGY, INC.

Approved: 1971 Incorp: 1971

SPONSORING, NOMINATING, OR CONSTITUENT ORGANIZATIONS:
American Board of Internal Medicine
American Board of Pediatrics
American Academy of Allergy and Immunology
American College of Allergists
American Association for Clinical Immunology and Allergy
American Academy of Pediatrics Section on Allergy and Immunology
American Medical Association

THE AMERICAN BOARD OF ANESTHESIOLOGY, INC.

Approved: 1941 Incorp: 1938

SPONSORING, NOMINATING, OR CONSTITUENT ORGANIZATIONS:
American Society of Anesthesiologists
American Medical Association

THE AMERICAN BOARD OF COLON AND RECTAL SURGERY, INC.

Approved: 1949 Incorp: 1935

SPONSORING, NOMINATING, OR CONSTITUENT ORGANIZATIONS:
American Society of Colon and Rectal Surgeons
Southern Medical Association Section on Colon & Rectal Surgery
American College of Surgeons
American Medical Association

THE AMERICAN BOARD OF DERMATOLOGY, INC.

Incorp: 1932

SPONSORING, NOMINATING, OR CONSTITUENT ORGANIZATIONS:
American Dermatological Association
American Academy of Dermatology
American Medical Association

AMERICAN BOARD OF EMERGENCY MEDICINE, INC.

Approved: 1979 Incorp: 1976

SPONSORING, NOMINATING, OR CONSTITUENT ORGANIZATIONS:
American Board of Family Practice
American Board of Internal Medicine
American Board of Obstetrics and Gynecology, Inc.
American Board of Otolaryngology
The American Board of Pediatrics, Inc.
American Board of Psychiatry and Neurology, Inc.
The American Board of Surgery, Inc.
American College of Emergency Physicians
American Medical Association
University Association for Emergency Medicine

Attachment C

GLOSSARY

Graduate medical education -- the period of formal education in clinical practice that begins with graduation from medical school and ends with the fulfillment of the requirements for certification in specialty or subspecialty practice.

Teaching Hospitals -- those hospitals participating in formal programs of education for graduates of medical schools.

Resident physicians/residents -- trainees in programs leading to eligibility for initial board certification.

Clinical fellows/fellows -- trainees who have completed residency training and enroll in subsequent programs leading to a certificate of special competence.

Foreign medical graduates (FMGs) -- US citizens and citizens of other countries who have graduated from a medical school outside of the United States.

Graduate Medical Education Advisory Committee (GMENAC) -- a committee established in 1980 to advise the Secretary of the Department of Health and Human Services on the number of physicians required in each specialty to bring supply and requirements into balance, methods to improve the geographic distribution of physicians, and mechanisms to finance graduate medical education.

Accreditation Council for Graduate Medical Education (ACGME) -- an independent automomous body that has responsibility for reviewing and accrediting programs in graduate medical education.

American Board of Medical Specialties (ABMS) -- the organization under whose auspices the 23 specialty certifying boards consult with each other and exchange information.

Council of Medical Specialty Societies -- an organization whose members are specialty colleges and academics, each having a close relationship with its respective specialty boards.

Residency Review Committees (RRCs) -- a body consisting of representatives from a particular specialty appointed by the AMA, the appropriate specialty board, and, in some cases, a national specialty society. These committees make recommendations to the ACGME regarding accreditation, or have accreditation authority delegated to them by the ACGME.

Direct Costs -- stipends and fringe benefits for residents, faculty salaries, for supervision and administration, institutional space and facilities devoted to education, and allocated overhead.

Cost-reimbursed -- a system in which hospitals compute the sum of their actual costs incurred in rendering a service and the insurer or other payer pays its prorated share of those costs.

"All payer" rate setting -- a system of paying for health care services in which a single methodology is used to determine the charge to be collected for services rendered to any patient.

Primary care residency programs -- graduate medical education programs in internal medicine, pediatrics, and family practice. Occasionally, obstetrics/gynecology is also considered a primary care specialty.

Capitated agreements -- contractual arrangements between a health care provider and a group of patients (or an organization representing patients) in which the health care provider agrees to accept a fixed payment per person per year and to provide any necessary medical services to the insured population without any additional charge.

Preferred provider arrangements -- arrangements between a health care provider and a group of patients (or an organization representing patients) in which the health care provider offers discounted fees to the group in anticipation of a certain volume of business.

UNIVERSITY OF UND NORTH DAKOTA

SCHOOL OF MEDICINE
OFFICE OF THE DEAN
501 NORTH COLUMBIA ROAD
GRAND FORKS, NORTH DAKOTA 58201
(701) 777-2514

January 31, 1986

Joseph A. Keyes, Jr., Director
Department of Institutional Research
Association of American Medical Colleges
One Dupont Circle, N.W., Suite 200
Washington, D.C. 20036

Dear ~~Mr. Keyes:~~ Joe,

Over the past five years the University of North Dakota School of Medicine has developed considerable experience and expertise in the area of rural health. In 1980 we established an Office of Rural Health for the purpose of "assisting rural communities of North Dakota to develop and maintain local primary health care services." Under the direction of Dr. Kevin M. Fickenscher, the Office has established a national reputation related to rural health.

My purpose in writing is to seek your assistance in establishing a new Interest Group on Rural Health within the Association of American Medical Colleges. The rural communities of our nation face many important issues which are often neglected in the debates related to health care and medical education. The purpose of the proposed interest group would be to bring those medical education resources together who have a common concern on rural health issues. As an example, the Universities of Arizona, Wisconsin and Washington also have Offices of Rural Health and a commitment to provide assistance to rural communities within their states. The opportunity to share ideas and perspectives within the forum of a rural health interest group would greatly facilitate an exchange of approaches to the critical questions on rural health care delivery.

Rural areas of the country differ appreciably dependent upon common local, geographic definition. There are, however, common themes, problems and issues which arise related to rural health services. In addition, several medical schools -- most notably the University of North Dakota and the University of New Mexico -- have developed extensive outreach education efforts as part of their curricular training programs. Yet, the opportunity to share approaches in a formal setting at the AAMC Annual Meeting does not occur. By establishing the Interest Group on Rural Health, efforts to facilitate an exchange would be greatly appreciated.

If you concur with these thoughts, I would be most willing to serve as the convener of the group at the fall meeting of the Association. If this idea meets with your, et al approval, lets discuss it at the spring meeting. Until then, if I can be of assistance, please feel free to contact me at my office. I very much look forward to working with you on the development of the rural health interest group which has importance for all of us who are concerned about the future of medical education.

With best personal regards, I remain,

Sincerely,

Tom M. Johnson, M.D.
Dean

TMJ:lls

cc: Kevin M. Fickenscher, M.D., Director
Office of Rural Health

CURRENT LEGISLATION AND PROPOSED REGULATION ON FINANCING GME

To provide clinical training for residents, nurses, and allied health personnel, teaching hospitals incur costs beyond those for patient care in non-teaching institutions. Since its inception, Medicare has paid for the additional costs of housestaff stipends and benefits, faculty supervision, supplies, and space, and related overhead expenses. Under the prospective payment system, these direct medical education costs are excluded from the calculation of the prospective rate (DRG) and are reimbursed on a passthrough basis, with Medicare paying its prorated share of these costs.

Beginning in late 1984 with a proposal by Senator Durenberger to establish a block grant system for paying these costs, Congress has considered various legislative proposals to limit the direct medical education passthrough. These efforts culminated in the passage in December 1985 of a series of compromise provisions as part of the fiscal 1986 budget reconciliation package. A conferenced version of this bill passed the House before the end-of-the-year recess, but it was sent back to the conference committee by the Senate for reasons unrelated to the Medicare provisions.

A modified version of this bill passed the House in January and then was further modified and passed again on March 6. The Senate amended the bill again, and passed its version on March 14. The key Senators and Representatives are trying to reach agreement on a compromise bill before March 21. The provisions related to direct graduate medical education costs appear to be unchanged from the bill passed in December. These provisions would replace the present cost reimbursement system for graduate medical education with a payment based on three factors:

(1) the hospital's allowable cost per resident in a base period adjusted for inflation;

(2) the hospital's number of full-time equivalent (FTE) residents; and

(3) the hospital's percentage of Medicare patient days.

To determine the allowable cost per resident, Medicare intermediaries would use the hospital's cost report for the first accounting year beginning on or after October 1, 1983, as the base period from which to begin. The intermediary would compute the allowable Medicare graduate medical education cost per FTE resident for this base period. For accounting years beginning on or after July 1, 1985, but before July 1, 1986, the hospital's allowable cost per resident would be its base period cost per resident increased by inflation plus 1 percent. For accounting years beginning on or after July 1, 1986, the allowable payment per FTE resident in the prior year would be adjusted for inflation using the Consumer Price Index.

While the allowable payment per FTE changes with the hospital's fiscal year, the count of FTE residents changes with the academic year. As a result, a hospital with a calendar fiscal year would receive payments for the first 6 months based on the number of residents in one academic

year, and payments for the second 6 months based on the number of residents in the subsequent academic year. The resident count becomes important because, beginning on July 1, 1986, Medicare will count FTE residents using a weighting system that limits support for residents and fellows in advanced training as follows:

	Weight Allowed per FTE Resident	
Type of Trainees	7/1/86 -- 6/30/87	7/1/87 -- and beyond
LCME Medical Graduate		
"initial residency period"	1.00	1.00
subsequent training years	.75	.50
Foreign Medical Graduate		
who has passed FMGEMS		
• "initial residency period"	1.00	1.00
• subsequent years	.75	.50
who has not passed FMGEMS		
• was on duty prior to 7/1/86	.50	.00
• was not on duty prior to 7/1/86	.00	.00

The term "initial residency period" is defined as the period of training required to qualify for board eligibility plus 1 year, but not to exceed a total of 5 years. An addition year also is provided for residents and fellows in geriatric medicine programs approved by the Secretary of Health and Human Services.

A related reconciliation measure would amend the Public Health Service Act to establish a Council on Graduate Medical Education. The 17-member Council would be charged to make recommendations with respect to:

(1) the supply and distribution of physicians in the United States;

(2) current and future shortages or excesses of physicians in medical and surgical specialties and subspecialties;

(3) issues relating to foreign medical school graduates;

(4) appropriate federal policies with respect to items (1), (2), and (3), including changes in the financing of undergraduate and graduate medical education programs and changes in the types of graduate medical education programs;

(5) appropriate efforts to be carried out by hospitals, medical schools, osteopathic schools, and accrediting bodies with respect to items (1), (2), and (3), including changes in undergraduate and graduate medical education programs; and

(6) deficiencies in, and needs for improvements in existing data bases concerning the supply and distribution of, and postgraduate training programs for physicians in the United States, and steps that should be taken to eliminate those deficiencies.

Notwithstanding the changes contemplated in the pending reconciliation bill, the President's budget proposal suggested changing direct medical education payments by regulation beginning July 1, 1986. In the enclosed memorandum (Attachment A), Dr. Henry Desmarais, acting administrator of the Health Care Financing Administration, asks HHS Secretary Otis Bowen to approve draft regulations which would dramatically reduce Medicare payments for the medical eudcation costs of hospitals, along the lines contemplated in the President's budget. Under the HCFA draft, "for cost reporting periods beginning on or after July 1, 1986, the following costs are not reimbursable: (1) the costs of training activities for nurses and allied health professionals; and (2) program costs (for example, the costs of teaching physicians, classroom space, supplies, residency coordinators) attributable to the training of interns and residents." For the remaining allowable costs, primarily resident stipends and benefits, a hospital-specific limit on per resident costs would be imposed using as the base cost reporting period on or after July 1, 1985 (i.e., "freeze year"). Lastly, beginning July 1, 1987, residents and fellows included in the payment would be limited to those training programs accredited by the Accreditation Council for Graduate Medical Education.

The Association previously has opposed proposals to halt or reduce Medicare support for faculty costs. In response to the draft regulation, the AAMC:

- has sent a copy of the Desmarais memorandum (Attachment A) to all members,
- has urged members to immediately contact key Administration and Congressional reports,
- has sent a questionnaire to all COTH members in order to collect up-to-date data on the financial impact of draft regulations,
- has contacted legal counsel to discuss the possibility of a legal challenge to any similar final regulations,
- has organized a coalition of interested groups and associations, and
- plans to discuss the matter with Secretary Bowen when the Executive Committee meets with the Secretary on April 9.

DEPARTMENT OF HEALTH & HUMAN SERVICES

Attachment A

Memorandum

Date

From Henry R. Desmarais, M.D. Ref.: BERC-375-P
Acting Administrator

Subject Regulations Action Memorandum - Medicare Proposed Rule - Changes in Reimbursement Policy for Direct Medical Education Costs

To The Secretary
Through: US _____
ES _____

ACT IMMEDIATELY

Action must be taken to clear and publish this proposed rule by March 30, 1986, in order to allow time to assess public comments and issue a final rule effective for cost reporting periods beginning on or after July 1, 1986. To meet the effective date, the final rule must be published by May 30, 1986.

1. Purpose

The changes described in this proposed rule with a 30-day comment period are intended to redefine the role of the Medicare program in the financing of direct medical education costs.

2. Background

Historically, Medicare has paid a share of the direct costs of training programs (such as salaries, classroom and other overhead expenses) associated with educating physicians, nurses and certain paramedical specialties. The Medicare program has paid for these costs in accordance with regulations based on a reasonable cost concept. On July 5, 1985, we published in the Federal Register a final rule that imposed a one-year limit on reimbursement for the allowable cost of approved educational activities effective for cost reporting periods beginning on or after July 1, 1985 but before July 1, 1986. For cost reporting periods affected by the July 5, 1985 final rule, a provider's net cost of approved educational activities was limited to the lesser of the provider's net cost of its program for that period

* U.S. GOVERNMENT PRINTING OFFICE 1982-522-060

or the provider's net cost incurred during a base period (the provider's cost reporting period that began on or after October 1, 1983 but before October 1, 1984). For providers whose cost reporting periods began during the months of October 1983 through June 1984, their net cost of approved programs is adjusted by an updating factor that is based on the increase in the overall rate of inflation that occurred during the provider's base period. This update factor is tied to the Consumer Price Index for All Urban Consumers (CPI-U).

Under the prospective payment system, direct medical education costs are excluded from the calculation of the prospective rate and are reimbursed on a pass-through basis based on reasonable costs. However, the pass-through costs are subject to the limit imposed by the July 5, 1985 final rule discussed above.

We believe that our current policy concerning reimbursement for direct medical education costs based on reasonable costs, subject to the limit imposed by the July 5, 1985 final rule, does not provide adequate incentives to providers to hold costs down. We believe it was not the intention of Congress in enacting the original Medicare legislation, the Social Security Amendments of 1965 (Pub. L. 89-97) that Medicare would indefinitely reimburse a full share of direct medical education costs. The Congressional committee reports that accompanied Pub. L. 89-97 suggested that Medicare would initially share in these costs with the expectation that the community would later assume these costs. Therefore, we believe that as long as Medicare continues to reimburse its full share of direct medical education costs the community will not assume full responsibility for these costs.

Currently, direct medical education costs include the costs of training interns and residents as well as the costs for training nurses and allied health professionals in programs operated by hospitals. The costs for interns and residents currently include program-related costs (for example, teaching physicians, classroom space, supplies, books and publications, residency coordinators, and so on) and the costs relating to services provided by interns and residents (that is, salaries, salary-related fringe benefits and allocated overhead costs as determined in accordance with 42 CFR 405.453).

3. Provisions

Our regulations in 42 CFR Parts 405 and 412 would be changed as follows:

- For cost reporting periods beginning on or after July 1, 1986, the costs of training nurses or allied health professionals and the program expenses relating to the training of interns and residents would be nonallowable in determining Medicare reimbursement. The only costs relating to education activities that Medicare would allow are the costs relating to the services of interns and residents (that is, salaries, salary-related fringe benefits and allocated overhead as determined in accordance with §405.453.) A provider's allowable costs would be limited to the lesser of the provider's actual allowable costs for services furnished during the affected cost reporting period or the provider's allowable cost per resident for services furnished during a base year (that is, the provider's cost reporting period that began on or after July 1, 1985 but before July 1, 1986) adjusted by an update factor, which would be based on the annual average increase in the overall rate of inflation according to the CPI-U, that occurred since the base year. This amount would be multiplied by the number of full-time equivalent interns and residents furnishing services during the affected cost reporting period.

- We would provide an exception process for providers that for the first time incur costs for the services of interns and residents for cost reporting periods beginning on or after July 1, 1986. The allowable costs for the services of interns and residents for these providers would be an amount equal to the lesser of the provider's actual allowable costs for the services of interns and residents for the affected cost reporting period or an amount per resident determined by the intermediary based on the costs for services of interns and residents incurred for the same period by other providers located in the area of the provider whose costs are at issue.

- We would revise the definition of approved education activities effective July 1, 1987, to exclude approved resident programs that are not accredited by the recognized national professional accrediting organizations listed in §405.522(a).

- We would make a conforming change to §405.522 to change the phrase "Council on Medical Education" to "Accreditation Council for Graduate Medical Education".

4. Issues

There were no issues that arose in the development of this proposed rule concerning changes in reimbursement policy for direct medical education costs.

5. Cost/Savings

The following table summarizes the estimated aggregate savings and costs for Federal fiscal years (FYs) 1986 through 1991, assuming an initial implementation date of July 1, 1986. All figures are rounded to the nearest $5 million. Savings estimates are based on eliminating reimbursement for (1) nursing and allied health training programs, and (2) graduate medical education program costs (for example, costs related to teaching physicians, classroom space, and residency coordinators).

ESTIMATED SAVINGS

FY 1986	FY 1987	FY 1988	FY 1989	FY 1990	FY 1991
-$10	-$435	-$600	-$740	-$895	-$1065

An impact analysis meeting E.O. 12291 and Regulatory Flexibility Act requirements is included in the preamble. We also determined that contractor costs to implement this proposed rule would be minimal.

Attachment - Proposed Rule - Changes in Reimbursement Policy for Direct Medical Education Costs

Prepared by: HCFA/BERC/RS/BKern/x49776 (0675R/0020R)
Contact: HCFA/BERC/ORP/DHPP/PElstein/x71755

Congressional Interest

We expect that this proposed rule will generate a great deal of Congressional interest. Although it has not passed both Houses of Congress, the Consolidated Omnibus Budget Reconciliation Act of 1985 (H.R. 3128) contains a provision that would permit a one percent increase in payments for direct medical education costs for the 1986 Federal fiscal year and would limit future increases to the urban consumer price index.

There is a provision that would allow Medicare to phase down payments for interns' or residents' training exceeding five years. Also, H.R. 3128 would require foreign medical graduates to pass an examination, or no direct medical education payments attributable to them would be allowed.

A rather large volume of Congressional correspondence (approximately 50 letters) has been received commenting on the Administration's FY 1986 proposals on medical education costs. However, given the actions of Congress in the last year, our proposed rule, by virtue of not simply extending the current freeze (that is, the freeze on payments for cost reporting periods beginning on or after July 1, 1985 but before July 1, 1986) may not be the object of concerted Congressional action to eliminate or modify direct medical education payments.

Congress may react negatively to our elimination of payments for nursing and other allied health education costs, particularly in view of increasingly limited support from other Federal sources. The conference agreement would require maintenance of payment for these health professionals while a study is conducted on payment of education costs. Also, Congress may not react favorably to the elimination of program costs (that is the costs of teaching physicians, classroom related expenses, etc.) relating to the training of interns and residents, particularly in view of the inclusion in H.R. 3128 of a provision to eliminate the doubling of the indirect medical education adjustment in the Administration's FY 87 budget.

Outside Interest

We expect that, for the most part the hospital industry, and in particular, teaching hospitals will react adversely to this proposed rule since it will decrease the amount of reimbursement they will receive for graduate medical education costs. Also, we expect the national nursing associations and organizations representing allied health professionals to oppose this rule. These organizations will look upon this rule as a move by the Federal government to reduce the supply of professionals in these fields.

AD HOC GROUP FOR MEDICAL RESEARCH FUNDING:
A PROPOSAL FOR THE NATIONAL INSTITUTES OF HEALTH

The Ad Hoc Group proposes an NIH budget of $6.079 billion for a 10.6 percent increase over the FY86 appropriation. The NIH increase would provide a current services budget for NIH; that is, all programs originally funded in FY86 would be continued at that level of effort, all research project grants would be funded at full study section recommended levels, and this should enable NIH to fund approximately 6100 competing grants for a total portfolio of 19,434, the highest ever. This would enable NIH to reach an estimated 33 percent award rate in FY87. A small increase of $86 million above current services would 1) permit funding of the full NAS recommended number of trainees (11,075), 2) add needed funds to General Clinical Research and other Centers, 3) add funds for primate centers and animal laboratories, and 4) permit the Research Career awards (K series) to grow modestly. In addition, the cost of moving nursing research to NIH this year in the newly mandated Center for Nursing Research would add $16 million, for a total of $6.079 billion.

The Ad Hoc Group proposes an ADAMHA R&RT budget of $465 million, a 27 percent increase over FY86. This request provides for current services to continue all programs from FY86, including full funding for about 691 competing research awards and a research awards total of 1,643, the highest ever. It also provides a 14.8 percent increase above current services as part of the growth plan recommended by the NAS/IOM report on mental health research. This "growth" merely restores the ADAMHA research budget, which was severely cut in the late 70's, to its 1974 purchasing power.

Ad Hoc Group for Medical Research Funding: A Proposal for the National Institutes of Health

FY 1986 Congressional Appropriation	FY 1987 Current Services	Ad Hoc Group FY 1987
$5.498 billion	$5.993 billion	$6.079 billion

This proposal brings the increase for the NIH into line with those requested by the President for science support in other agencies, with the exception of the Department of Defense. (See Figure 1.) It provides very modest program growth of about $86 million or 1.4 percent over a current services budget (which includes $15.6 million for nursing programs recently transferred to NIH).

The Fiscal Year 1987 Ad Hoc Group proposal for NIH provides funds sufficient to support research activities at levels provided for by the Fiscal Year 1986 congressional appropriation, with modest increases for a variety of important programs. Our proposal emphasizes the need for program balance at NIH with a diversity of support mechanisms and recognizes the multi-faceted mission of the agency -- to conduct basic and applied research, train qualified promising investigators, and speed the transfer of life-prolonging and life-saving research and technology to the public. Our proposal also emphasizes the high degree of flexibility required in the management of NIH for the greatest effectiveness in the use of research funds, considering the substantial variations in the pace of research in different fields supported by the various institutes.

The Ad Hoc Group proposal for FY 1987 provides for:

- a current services dollar level for full funding at study section - recommended levels of competing and non-competing research projects grants (approximately $3.4 to $3.6 billion).
- some growth in research career awards and funds sufficient to raise the current level of research trainees to that recommended by the National Academcy of Sciences (NAS).
- needed upgrading and renovation of primate centers and outmoded and inefficient research laboratories.
- some additional funding for General Clinical Research Centers (GCRCs) to facilitate the conduct of clinical research projects and trials.
- a slight increase in the number of research centers: specialized/comprehensive, biotechnology, etc.

For the remainder of NIH research activities -- contracts, biomedical research support grants (BRSGs), minority biomedical research support, intramural research and full-time equivalent (FTE) personnel -- we propose maintenance levels as established in the Fiscal Year 1986 Congressional appropriation.

A PROPOSAL FOR THE ALCOHOL, DRUG ABUSE AND MENTAL HEALTH ADMINISTRATION*

*Research and Research Training only

FY 1986 Congressional Appropriation	FY 1987 Current Services	Ad Hoc Group FY 1987
$366 million	$405 million	$465 million

The proposal for ADAMHA reflects the magnitude of the Agency's mission by providing necessary program growth over the FY '86 level-of-effort. Our recommended funding levels are consistent with the recommendations of the Institute of Medicine of the National Academy of Sciences for a doubling of the ADAMHA research budget over the 1986 to 1991 period. This increase is necessary to achieve catch-up growth in funding of mental health and addiction research. The FY '87 current services budget of $405 million merely restores ADAMHA purchasing power for research and research training to the constant dollar level of 1974.

The Fiscal Year 1987 Ad Hoc Group proposal for ADAMHA provides funds sufficient to conduct biomedical and behavioral research activities at levels only modestly in excess of the Fiscal Year 1986 congressional appropriation, with necessary increases for a variety of important programs. Our proposal emphasizes the need for program balance and recognizes the multi-faceted missions of the agency -- to conduct basic and applied research, train qualified promising investigators, and speed the transfer of life-prolonging and life-saving clinical knowledge and technology to the public. Our proposal also emphasizes a high degree of flexibility required in the management of ADAMHA for the greatest effectiveness in the use of research funds considering the diverse research funding mechanisms. We urge ADAMHA to continue to use its multiple support mechanisms in recognition of the many ways in which excellent research can be organized.

The Ad Hoc Group proposal for FY 1987 provides for:

- o necessary expansion in the level of competing and noncompeting research project grants with full funding at study section-recommended levels (approximately $243 million);
- o critical growth in Research Centers (including sufficient-funding for competing renewals), Research Scientist Development Awards (which particularly focus on establishing a pool of talented young investigators), and funds sufficient to raise the level of research trainees to that recommended by the National Academy of Sciences.
- o needed renovation of outmoded research laboratories and equipment;
- o necessary funds for the Intramural programs to provide for replacement of obsolete equipment and to regain lost positions;

This proposal recognizes the extraordinary contributions of ADAMHA-supported research and would hasten the growth and refinement of new knowledge and clinical applications.

FISCAL YEAR 1987

PRESIDENTIAL BUDGET REQUESTS

FOR

BIOMEDICAL/BIOBEHAVIORAL PROGRAMS

PUBLIC HEALTH SERVICE
(dollars in millions)

	FY86			FY87	
	Appropriation	GRH Sequester Request	Total After Sequestration	Presidential Request	% Decrease or Increase 1/
Food & Drug Admin.	$ 421.7	$- 18.3	$ 403.6	$ 423.6	+ .4
Health Resources and Services Admin.	2,341.1	- 60.1	2,281.0	1,905.0	-18.6
Centers for Disease Control	461.9	- 20.3	441.6	379.8	-17.8
National Institutes of Health	5,494.0	-236.2	5,269.0	4,936.2	-10.2
Alcohol Drug Abuse and Mental Health Admin.	968.9	-41.7	927.2	906.1	-6.5
Office of the Assistant Secretary for Health	195.8	-7.2	188.6	413.0	+110.4
(Priority Disease Control & Research Projects (AIDS))	(234)	(-10)	(224)	(203.5)	(-13.2)

1/ Percentages derived from Presidential request as compared to the FY86 appropriation component.

NATIONAL INSTITUTES OF HEALTH

(dollars in millions)

	FY86			FY87	
	Appropriation	GRH Sequester Request	Total After Sequestration 2/	Presidential Request 3/	% Decrease or Increase 4/
NIC	$1,252.7	-$ 53.9	$1,202.6	$1,158.1	- 7.5
NHLBI	859.2	- 36.9	822.9	785.7	- 8.5
NIDR	103.3	- 4.4	98.9	96.5	- 6.6
NIADDK/NIDDK	569.3	- 24.5	548.1	419.0	- 7.6
NIAMSD 5/				106.7	
NINCDS	433.4	- 18.6	414.7	399.3	- 7.9
NIAID	383.4	- 16.4	367.5	330.5	-13.8
NIGMS	514.8	- 22.1	493.8	471.5	- 8.3
NICHHD	321.8	- 13.8	308.4	309.1	- 3.9
NEI	195.1	- 8.4	186.8	179.2	- 8.1
NIEHS	197.5	- 8.5	189.0	188.0	- 4.8
NIA	156.5	- 6.7	151.1	145.8	- 6.8
DRR	305.7	- 13.1	292.5	234.2	-23.4
FIC	11.6	- .5	11.1	11.3	- 2.6
NLM	57.8	- 2.5	55.3	56.4	- 2.4
OD	117.0	- 5.0	112.0	36.7	-68.6
Buildings	14.9	- .6	14.3	8.0	-46.3
Total NIH 6/	$5,494.0	-$236.2	$5,269.0	$4,936.2	-10.2
AIDS/OASH 3/				143.9	

1/ Appropriation available for sequestration (none of the NIH accounts were exempted) and published by the Office of Management and Budget and the Congressional Budget Office in the Federal Register, January 15, 1986 (Vol. 51, No. 10, pages 1999-2001). Reflects administrative reduction of $3 million and transfer of $4.5 million from NCI to DHHS for the Mary Babb Randolph Cancer Center.

2/ Includes carryover in research project grants of $11.2 million.

3/ AIDS funding to be centralized in the Office of the Assistant Secretary of Health (OASH). Total AIDS request, $213 million in FY87.

4/ Percentages derived from actual Presidential request without AIDS funding in each institute as compared to FY86 appropriation with AIDS funding.

5/ National Institute of Arthritis and Musculoskeletal and Skin Disease, formerly part of NIADDK.

6/ Totals may not add due to rounding.

NIH BUDGET (by Mechanism)
(dollars in millions)

	FY86			FY87	
	Appropriation	GRH Sequester Request	Total After Sequestration	Presidential Request	% Decrease or Increase 1/
RESEARCH GRANTS					
Noncompeting and admin. supplementals	$2,086.7	$-74.8	$2,011.9	$2,018.7	- 3.3
Competing	954.7	-56.0	898.7	784.5	- 17.8
Research Centers	487.8	-21.0	466.8	447.2	- 8.3
Other Grants	311.2	-13.4	297.9	237.5	- 23.7
TRAINING	218.8	- 9.4	209.4	198.2	- 9.4
CONTRACTS	373.1	-16.0	357.1	328.5	- 11.9
INTRAMURAL RESEARCH	584.3	-25.1	559.2	548.4	- 6.1
RESEARCH MANAGEMENT AND SUPPORT	215.1	- 9.2	205.8	210.9	- 1.9
DISEASE CONTROL	63.9	- 2.7	61.1	61.1	- 4.4
CONSTRUCTION	8.6	- .4	8.2	0	-100.0
NATIONAL LIBRARY OF MEDICINE	57.8	- 2.5	55.3	56.4	- 2.4
OFFICE OF THE DIRECTOR	117.0	- 5.0	112.0	36.7	- 68.6
BUILDING AND FACILITIES	14.9	- .6	14.3	8.0	- 46.3
TOTAL NIH	$5,494.0	-$236.2	$5,257.7	$4,936.2	- 10.2

1/ Percentages derived from Presidential request as compared to the FY86 appropriation component.

ADAMHA

(dollars in millions)

	FY86			FY87	
	Appropriation	GRH Sequester Request	Total After Sequestration	Presidential Request	% Decrease or Increase 1/
NIMH	$ 309.1	- $13.2	$295.9	$248.7	-19.5
(research)	(214.0)	- (9.2)	(204.8)	(199.9)	- 6.6
(research training)	(18.0)	- (.8)	(17.2)	(15.8)	-12.2
(clinical training)	(20.0)	- (.9)	(19.1)	--	-100.0
NIDA	91.8	- 3.9	87.9	90.5	- 1.4
(research)	(74.0)	- (3.2)	(70.8)	(73.2)	- 1.1
(research training)	(1.5)	- (.1)	(1.4)	(1.3)	-13.3
NIAA	70.1	- 3.0	67.1	68.8	- 1.8
(research)	(57.0)	- (2.5)	(54.5)	(56.6)	- .7
(research training)	(1.5)	- (.1)	(1.4)	(1.3)	-13.3
ADAMHA TOTAL	$ 968.9	- $41.7	$927.2	$906.1	- 6.5

1/ Percentages derived from Presidential request as compared to the FY86 appropriation component.

VETERANS ADMINISTRATION

(dollars in millions)

	FY86			FY87	
	Appropriation	GRH Sequester Request	Total After Sequestration	Presidential Request	% Decrease or Increase 1/
Medical Care	$9,255.7	-$117.6	$ 9130.1	$ 9,083.9	- 1.8
Medical & Prosthetic Research	189.3	- 8.2	181.1	188.9	- .2
Medical Research 2/	(168.5)	- (7.2)	(159.3)	(164.4)	- 2.4
Rehabilitation Research	(16.0)	- (.7)	(15.3)	(16.5)	+ 3.1
Health Svcs Research	(6.7)	- (.2)	(6.5)	(8.0)	+19.4
Construction					
Major Projects	507.4	- 21.8	485.6	301.2	-40.6
Minor Projects	136.9	- 5.9	131.0	107.0	-21.8

1/ Percentages derived from Presidential request as compared to the FY86 appropriation component.

2/ Includes agent orange funds appropriated to VA but expended by CDC
FY86 appropriation - 2.3 million
FY86 appropriation - GRH 2.2 million
FY87 request - 3.5 million

MALPRACTICE INSURANCE LEGISLATION

The high cost of malpractice insurance has become a major issue for hospitals and practicing physicians. Some physicians have stopped or restricted their practice to limit malpractice liability. Hospitals and physician groups have employed various strategies to reduce the cost of insurance, including the creation of their own insurance companies or insurance pools. Still, the expense for this insurance is rising rapidly. One reason cited for the increase in premium expense is the size of the awards granted. Another is the frequency with which suits are filed because it is a lucrative business for attorneys.

Hatch Bill (S. 1804)

To curb the cost of malpractice insurance, Senator Hatch (R-UT) and Congressman Lent (R-NY) have introduced a bill (S. 1804 in the Senate, H.R. 3865 in the House) that would establish a federal incentive grant program for states that reformed their laws governing malpractice insurance to:

- allow installment payments of awards in excess of $100,000;
- require that the award to an individual be offset by any other payments made to compensate for the injury, including disability insurance and private health insurance payments;
- prohibit awards for non-economic damages, such as pain and inconvenience, from exceeding $250,000;
- establish a fee schedule for attorneys that would allow attorneys to collect -

  no more than 40 percent of the award if the settlement or award is $50,000 or less;

  $20,000 plus a third of the amount awarded over $50,000 if the settlement or award is more than $50,000 but less than $100,000;

  $36,667 plus 25 percent of the amount awarded in excess of $100,000 if the award or settlement is more than $100,000 but less than $200,000; and

  $61,667 plus 10 percent of the amount awarded in excess of $200,000 if the award or settlement is more than $200,000.

- allocate an amount equal to the licensing or certification fees of each type of health care professional to the state agency responsible for the conduct of disciplinary action for such health professionals;
- require each health care provider to have a risk management program;

- require each professional liability insuror in the state to make available to licensing boards data on settlement, judgments, and arbitration awards and to establish risk management programs that must be attended once every three years by any professional seeking malpractice insurance; and

- authorize state agencies to enter into agreements with professional societies to review malpractice actions or complaints against a health care professional.

Qualifying states would be eligible for a development grant of $250,000 to plan and implement these necessary legislative reforms. Once the reforms are in place, the state would be eligible for incentive grants of $2,000,000 that could be used to study professional liability programs or to augment state health programs.

The AMA has been the force behind the introduction of this bill and has asked if the AAMC wishes to join in its efforts to muster support for the legislation. The cost of malpractice insurance is a major concern for academic medical centers, especially if it forces physicians to limit the cases seen or treatments performed. Such limits could mean that residents being trained in some specialties or subspecialties may not be exposed to the full scope of patients normally treated by practitioners in that field. Additionally, teaching hospital emergency rooms could become the treatment sources for patients who are difficult to treat and, therefore, more likely candidates for malpractice claims. Thus, it is important for the AAMC to consider options for addressing the malpractice issue.

Critics of the proposed federal legislation suggest that:

- The bill may appear self-serving for the medical community because it places a limit on the "non-economic" damages that is considerably below the amount of some awards.

- One of the functions of the current tort law system is that it places a financial penalty on those who fail to meet the standard of care required of them. To the extent that the penalty is being ameliorated, some would argue that there is a need for a different type of assurance that quality care will be rendered. For example, some might suggest that a physician whose practice is found negligent should be required to attend some educational session analogous to a driver education program.

- Insurance is a matter within the jurisdiction of the state governments, not the federal government; therefore, more appropriate reforms could be achieved by working directly with state legislatures to enact reforms.

At the January 21, 1986 meeting of the Executive Council there was discussion of the features of the malpractice problem that were unique to the academic setting, including the mobility of faculty and the use of part-time faculty.

There was also a discussion of the need for the profession to improve disciplinary procedures. Finally, there was a realization that large awards associated with liability judgments have jeopardized forms of liability insurance beyond medical malpractice.

Although there was general support for the bill, there was some concern about the provisions relating to the attorney fee schedule and some questions about the bill's constitutionality. It was decided that the Association would support the bill in its overall thrust, particularly stressing the areas of concern to academic medical centers, and would work with the AMA to achieve tort reform.

Durenberger Bill (S. 1960)

Recently, Senator Durenberger (R-MN) and Congressman Moore (R-LA) introduced a medical malpractice bill (S. 1960, H.R. 3084) to encourage voluntary settlement of personal injury claims under Medicare, Medicaid, CHAMPUS and other federal programs. The legislation provides a model system to be adopted by the states. If states do not implement it, it would be implemented at a federal level. Key provisions include:

- tender of compensation - if a potentially liable physician provides the injured patient with a written tender to pay compensation benefits for the injury as specified in this bill, the injured individual would be foreclosed from later bringing suit. If a tender is not offered within 180 days, the injured individual may request arbitration and the arbitrator will decide the degree of liability of the doctor.

- amount of compensation - would equal only economic loss as defined in the bill, plus attorneys fees. Non-economic loss, such as pain and suffering, would not be compensated.

- payment schedule - compensation would be paid within 30 days of each legitimate bill to a maximum period of 5 years, but could be paid in equivalent medical services when appropriate. A lump sum payment settlement could be negotiated at any time, but if the economic loss exceeded $5,000, the settlement would require court approval.

- M.D.s could not participate in this alternative liability program without professional malpractice insurance or suitable other indemnity.

The AAMC Executive Council has not yet considered our Association position on the Durenberger bill.

CURRENT PROPOSALS ON REIMBURSEMENT OF INDIRECT COSTS OF RESEARCH

On February 7, 1986, the Office of Management and Budget published a proposed revision to OMB Circular A-21, "Cost Principles for Educational Institutions," in the Federal Register (attached). The revision would impose a ceiling on university administrative costs for federally-sponsored grants and contracts. Only administrative costs would be so capped, not the total indirect cost rate, but the cap would be a total ceiling for all four current components of administrative costs; 1) general administration, 2) departmental administration, 3) sponsored projects administration, and 4) student administration and services.

The ceiling was set at 26 percent of MTDC (modified total direct costs) as of April 1, 1986 and 20 percent of MTDC as of April 1, 1987. Agencies were given the option to delay this implementation by one year; an option already exercised by all agencies except HHS. The OMB estimates that this cap if fully implemented on the April 86 and April 87 timetable will save $100 million in FY87 and $200 million in FY88. These sums would not be shifted to direct costs in the budgets of agencies but saved to the Treasury to meet deficit reduction targets.

The 26 percent rate for FY86 (HHS) or FY87 is the average rate for administrative costs at 146 of the top research universities in FY84. Thus, over half of these research universities would have their indirect cost reimbursements reduced below FY84 percentages.

OMB proposed this rule with only a 30 day comment period and implementation (by HHS at least) 2 weeks later. A number of Associations, including AAMC, have protested the arbitrary and accelerated timetable for such a major change in federal funds flowing to universities and medical schools and pleaded for a longer period of discussion and analysis of what cost cap should be implemented.

The Council on Government Relations (COGR), representing the business officers of over 120 research universities, has written OMB proposing as an alternative:

1) a yet to be detailed plan to define departmental administrative costs more tightly to limit them and eliminate the faculty effort reporting needed to document them

2) freeze in place each university's current administrative rate components throughout FY87, and

3) suspend retroactive reimbursement of increases in indirect cost rates which are negotiated during the federal fiscal year. Only HHS currently does within year rate adjustments.

The latter two proposals are expected to save OMB an equivalent sum to that which would be saved by their 26 percent cap in FY86 and FY87. The first proposal is intended to resolve the longstanding friction between OMB, the universities, and the research faculties over effort reporting and administrative costs which created some of the political pressures leading to the proposed revision of Circular A-21.

The Association has written OMB in support of these alternate proposals of COGR to reduce costs and control departmental administration costs, and requested that these changes be realized through a negotiation between OMB and representatives of both the faculties and university administrators. The Association also urged that any changes of large magnitude be phased-in over a reasonable time frame to allow universities to adjust their research operations to continue full support of sponsored research projects, despite the revenue loss.

1986 COGR SURVEY

INSTITUTION	1986 TOTAL ADMINISTRATION RATE	LOSS OVER 26% (in 1987 $)	LOSS OVER 20% (in 1987 $)	1987 Projected FEDERAL MTDC BASE $
GEORGIA INSTITUTE OF TECHNOLOGY	49.60%	11,930,036	16,160,144	54,595,680
COLUMBIA UNIVERSITY	36.80%	7,236,000	13,128,998	78,148,800
PENNSYLVANIA, UNIVERSITY OF	38.10%	7,865,000	12,706,200	70,200,000
CARNEGIE - MELLON UNIVERSITY	44.88%	8,496,000	12,091,680	48,600,000
STANFORD UNIVERSITY	29.00%	2,941,050	9,529,002	105,877,800
MICHIGAN, UNIVERSITY OF	30.80%	3,744,000	9,097,920	84,240,000
YESHIVA UNIVERSITY	42.00%	4,976,000	7,389,360	33,568,000
CALIFORNIA, UNIVERSITY OF - LOS ANGELES	28.30%	1,846,900	7,198,092	86,724,000
CALIFORNIA, UNIVERSITY OF - BERKELEY	30.40%	2,578,400	6,581,952	63,288,000
	30.40%	2,552,000	6,514,560	62,640,000
VANDERBILT	38.00%	3,840,000	6,220,800	34,560,000
BOSTON UNIVERSITY	43.30%	4,131,603	6,009,692	25,792,668
ILLINOIS, UNIVERSITY OF - CHAMPAIGN GENERAL RESEARCH	30.05%	1,906,133	5,108,435	50,830,200
MIAMI, UNIVERSITY OF	35.08%	2,814,800	5,048,784	33,480,000
WISCONSIN, UNIVERSITY OF	26.08%	58,240	4,780,339	78,624,000
OHIO STATE UNIVERSITY	32.83%	2,335,764	4,738,694	36,934,484
JOHNS HOPKINS UNIVERSITY	26.20%	140,000	4,687,200	75,600,000
DUKE UNIVERSITY	30.83%	1,888,530	4,573,292	42,228,000
WASHINGTON, UNIVERSITY OF	24.23%	0	4,262,317	100,764,000
SOUTHERN CALIFORNIA, UNIVERSITY OF	26.92%	510,664	4,148,371	59,947,560
HARVARD MEDICAL AREA RATE	45.60%	2,729,104	3,849,708	15,037,920
VIRGINIA COMMONWEALTH UNIVERSITY	37.33%	2,144,187	3,542,053	20,438,852
CALIFORNIA, UNIVERSITY OF - SAN DIEGO	24.00%	0	3,499,200	87,480,000
ROCKEFELLER UNIVERSITY	31.36%	1,483,361	3,395,347	29,888,616
EMORY	30.15%	1,261,600	3,332,448	32,832,000
HOWARD UNIVERSITY	59.00%	2,418,553	3,086,953	7,915,265
	34.73%	1,652,724	3,011,707	20,446,876
ROCHESTER, UNIVERSITY OF	28.00%	690,900	2,984,688	37,308,600
ILLINOIS, UNIVERSITY OF - CHICAGO CIRCLE	36.50%	1,676,745	2,845,676	17,246,520
TUFTS UNIVERSITY	38.90%	1,758,012	2,781,747	14,718,240
MASSACHUSETTS INSTITUTE OF TECHNOLOGY	21.73%	0	2,300,617	132,983,640
CHICAGO, UNIVERSITY OF	25.70%	0	2,179,224	36,232,800
VIRGINIA, UNIVERSITY OF	30.16%	821,029	2,165,622	21,315,174
SOUTH CAROLINA, MEDICAL UNIVERSITY OF	42.00%	1,436,712	2,133,517	9,697,805
NORTH CAROLINA, UNIVERSITY OF - CHAPEL HILL	24.90%	0	2,126,243	43,392,717
CORNELL UNIVERSITY - STATUTORY COLLEGES	37.00%	1,237,500	2,065,500	12,150,000
MINNESOTA, UNIVERSITY OF	22.34%	0	2,062,195	88,128,000
MIAMI, UNIVERSITY OF - MEDICAL SCHOOL	35.85%	1,182,000	2,054,160	12,960,000
SOUTH FLORIDA, UNIVERSITY OF	36.83%	1,036,030	2,028,147	12,050,783
SUNY - STONY BROOK	30.90%	776,441	2,014,589	18,482,466
	37.14%	1,169,700	1,943,676	11,340,000
CONNECTICUT, UNIVERSITY OF	29.30%	634,878	1,932,339	20,777,840
MICHIGAN STATE UNIVERSITY	23.38%	0	1,927,411	57,024,000
CALIFORNIA, UNIVERSITY OF - IRVINE	27.80%	403,200	1,886,976	24,192,000
CORNELL UNIVERSITY - ENDOWED	24.00%	0	1,866,240	46,656,000
MASSACHUSETTS, UNIVERSITY OF - WORCESTER MEDICAL	41.50%	1,227,290	1,838,560	8,551,440

INSTITUTION	1986 TOTAL ADMINISTRATION RATE	LOSS OVER 26% (in 1986 $)	LOSS OVER 20% (in 1987 $)	1987 Projected FEDERAL MTDC BASE $
RENSSLELAER POLYTECHNICAL INSTITUTE	36.50%	1,066,744	1,810,417	10,972,222
CALIFORNIA, UNIVERSITY OF - SAN FRANCISCO	22.40%	0	1,765,152	73,548,000
ARIZONA, UNIVERSITY OF	24.50%	0	1,728,452	38,410,038
DENVER, UNIVERSITY OF - DRI	65.00%	1,365,000	1,701,000	3,780,000
COLORADO STATE UNIVERSITY	26.40%	98,124	1,695,578	26,493,405
MASSACHUSETTS, UNIVERSITY OF - AMHERST CAMPUS	26.70%	162,540	1,680,199	25,077,600
WASHINGTON STATE UNIVERSITY	26.70%	160,090	1,654,873	24,699,600
FLORIDA, UNIVERSITY OF	25.61%	0	1,614,995	28,787,789
HARVARD SCHOOL OF PUBLIC HEALTH	34.80%	876,480	1,592,006	10,756,800
SUNY - BUFFALO	32.20%	687,815	1,578,655	12,939,797
WASHINGTON UNIVERSITY	24.10%	0	1,538,656	38,016,000
RUTGERS THE STATE UNIVERSITY OF NEW JERSEY	30.95%	597,435	1,541,513	14,077,747
	25.80%	0	1,534,329	26,453,952
VERMONT, UNIVERSITY OF - BURLINGTON	34.19%	804,012	1,504,475	10,602,360
PURDUE UNIVERSITY	25.60%	0	1,487,808	26,568,000
PENNSYLVANIA STATE UNIVERSITY - MEDICAL CENTER	32.00%	660,000	1,425,600	11,880,000
SOUTHERN ILLINOIS UNIVERSITY	28.60%	397,800	1,421,064	16,524,000
DELAWARE, UNIVERSITY OF	35.90%	756,570	1,417,290	8,913,775
PRINCETON UNIVERSITY	28.10%	331,800	1,382,184	17,064,000
PITTSBURGH, UNIVERSITY OF	23.40%	0	1,362,312	40,068,000
INDIANA UNIVERSITY	26.40%	77,875	1,345,683	21,026,304
BROWN UNIVERSITY	29.00%	405,000	1,312,200	14,580,000
NORTHWESTERN UNIVERSITY	23.88%	0	1,303,214	33,588,000
CALIFORNIA, UNIVERSITY OF - SANTA BARBARA	27.90%	277,400	1,245,672	15,768,000
TEMPLE UNIVERSITY	30.30%	479,665	1,240,882	12,047,400
OKLAHOMA, UNIVERSITY OF	33.50%	630,000	1,224,720	9,072,000
SYRACUSE UNIVERSITY	39.80%	771,395	1,195,327	6,037,006
TENNESSEE, UNIVERSITY OF - KNOXVILLE	34.42%	639,920	1,183,594	8,208,000
HARVARD UNIVERSITY - AFFILIATED HOSPITALS	46.60%	844,600	1,177,848	4,428,000
GEORGE WASHINGTON UNIVERSITY	34.50%	623,815	1,149,287	7,926,120
CUNY CITY COLLEGE	38.00%	696,000	1,127,520	6,264,000
GEORGE WASHINGTON UNIVERSITY - MEDICAL CENTER	39.70%	721,442	1,120,394	5,687,280
NEW YORK UNIVERSITY - ON-CAMPUS	27.37%	177,072	1,111,081	15,075,720
DAYTON, UNIVERSITY OF	26.26%	40,696	1,058,214	16,904,370
CORNELL UNIVERSITY - MEDICAL COLLEGE - NYC	25.20%	0	1,043,116	20,059,920
MAINE, UNIVERSITY OF	30.20%	393,750	1,032,750	10,125,000
VIRGINIA POLYTECHNICAL INSTITUTE AND STATE UNIVERSITY	24.00%	0	1,008,246	25,206,141
SOUTH CAROLINA, UNIVERSITY OF	29.83%	363,697	1,008,133	10,255,680
WEST VIRGINIA UNIVERSITY	24.76%	0	936,228	19,668,652
CALIFORNIA, UNIVERSITY OF - DAVIS	22.90%	0	933,336	32,184,000
	31.50%	394,335	890,480	7,743,302
THOMAS JEFFERSON UNIVERSITY	31.60%	395,584	884,978	7,629,120
ILLINOIS INSTITUTE OF TECHNOLOGY	44.40%	614,192	879,630	3,605,040
MIAMI, UNIVERSITY OF - MARINE SCHOOL	40.29%	571,600	876,528	4,320,000
NEW HAMPSHIRE, UNIVERSITY OF	37.40%	524,400	864,432	4,968,000
HARVARD UNIVERSITY - UNIVERSITY AREA	23.10%	0	860,469	27,757,080
PENNSYLVANIA STATE UNIVERSITY	22.65%	0	858,600	32,400,000
CASE WESTERN - ON CAMPUS	23.43%	0	791,918	23,087,986

INSTITUTION	1986 TOTAL ADMINISTRATION RATE	LOSS OVER 26% (in 1982 $)	LOSS OVER 20% (in 1987 $)	1987 Projected FEDERAL MTDC BASE $
CINCINNATI, UNIVERSITY OF	24.50%	0	767,880	17,064,000
ALABAMA, UNIVERSITY OF - BIRMINGHAM	22.91%	0	766,843	26,352,000
COLORADO, UNIVERSITY OF - BOULDER CAMPUS	23.20%	0	734,746	22,960,800
	26.50%	51,957	729,473	11,222,663
NEW YORK MEDICAL COLLEGE	37.60%	402,887	712,994	4,051,102
CALIFORNIA STATE UNIVERSITY - SAN DIEGO	37.69%	373,425	711,850	4,024,024
BRANDEIS UNIVERSITY	26.60%	59,592	707,950	10,726,515
CASE WESTERN - HOSPITAL	27.61%	133,441	681,194	8,951,300
GEORGIA, UNIVERSITY OF	24.34%	0	649,855	14,973,608
LEHIGH UNIVERSITY	31.00%	211,233	632,237	5,747,613
	33.50%	318,750	619,650	4,590,000
NOTRE DAME, UNIVERSITY OF	31.70%	273,600	606,528	5,184,000
	21.60%	0	590,164	36,885,240
NEW MEXICO, UNIVERSITY OF - MEDICAL CENTER	29.40%	193,116	576,622	6,134,280
NEW MEXICO STATE - CAMPUS	35.18%	312,913	558,826	3,681,329
CALIFORNIA, UNIVERSITY OF - SANTA CRUZ	27.80%	117,000	547,560	7,020,000
SUNY - ALBANY	29.60%	162,174	544,781	5,674,806
DENVER, UNIVERSITY OF	33.60%	279,300	539,784	3,969,000
SUNY - DOWNSTATE MEDICAL CENTER AT BROOKLYN	30.90%	202,112	524,408	4,811,080
DARTMOUTH COLLEGE	26.70%	48,476	501,099	7,479,084
	25.00%	0	485,488	9,709,754
BOSTON COLLEGE	37.00%	283,910	473,872	2,787,480
CUNY GRADUATE SCHOOL & UNIVERSITY CENTER	50.00%	336,000	453,600	1,512,000
KENTUCKY, UNIVERSITY OF - MEDICAL CENTER CAMPUS	26.71%	43,637	445,388	6,637,680
LOUISIANA STATE UNIVERSITY - A & M - MD MED SCHOOL	24.75%	0	438,243	9,226,172
KENTUCKY, UNIVERSITY OF - LEXINGTON CAMPUS	25.65%	0	416,400	7,369,920
UTAH, UNIVERSITY OF	21.35%	0	407,773	30,205,440
ALABAMA, UNIVERSITY OF	31.22%	161,829	375,646	3,348,000
NEW MEXICO, UNIVERSITY OF	27.90%	82,640	371,096	4,697,423
ALABAMA, UNIVERSITY OF - HUNTSVILLE	33.60%	190,000	367,200	2,700,000
	24.30%	0	365,341	8,496,291
WAKE FOREST UNIVERSITY	24.40%	0	359,208	8,163,824
TENNESSEE, UNIVERSITY OF - MEMPHIS MEDICAL CAMPUS	24.65%	0	351,540	7,560,000
	30.30%	124,700	348,404	3,382,560
CUNY HUNTER COLLEGE	28.00%	78,000	336,960	4,212,000
	40.65%	210,960	321,149	1,555,200
NEW MEXICO STATE - PRIMATE CENTER	58.83%	246,502	314,876	810,910
BAYLOR COLLEGE OF MEDICINE - DH CAMPUS	21.60%	0	311,040	19,440,000
AUBURN	25.64%	0	310,651	5,508,000
CALIFORNIA STATE UNIVERSITY - SAN JOSE	34.00%	160,000	302,400	2,160,000
ARKANSAS, UNIVERSITY OF	24.70%	0	301,406	6,412,894
MARYLAND, UNIVERSITY OF - COLLEGE PARK	21.11%	0	297,920	26,839,650
	21.00%	0	288,828	28,882,841
KANSAS, UNIVERSITY OF	22.50%	0	275,805	11,032,194
TEXAS, UNIVERSITY OF - HEALTH SCIENCE CENTER - SAN ANTONIO	22.06%	0	258,077	12,528,000

INSTITUTION	1986 TOTAL ADMINISTRATION RATE	LOSS OVER 26% (in 1983 $)	LOSS OVER 20% (in 1987 $)	1987 Projected FEDERAL MTDC BASE $
	38.00%	149,563	242,292	1,346,066
FLORIDA STATE UNIVERSITY	22.86%	0	233,513	8,164,80[illegible]
CUNY BROOKLYN COLLEGE	29.00%	72,000	233,280	2,592,00[illegible]
BAYLOR COLLEGE OF MEDICINE - OFF CAMPUS	22.33%	0	223,960	9,612,00[illegible]
SUNY - BINGHAMPTON	30.40%	80,171	221,027	2,125,25[illegible]
SUNY - UPSTATE MEDICAL CENTER AT SYRACUSE	26.10%	2,646	188,298	3,086,851
TEXAS, UNIVERSITY OF - HEALTH SCIENCE CENTER - DALLAS	20.81%	0	183,708	22,680,00[illegible]
	25.40%	0	182,282	3,375,59[illegible]
CALIFORNIA STATE UNIVERSITY - LONG BEACH	30.06%	62,118	166,231	1,652,40[illegible]
CUNY QUEENS COLLEGE	26.00%	0	155,520	2,592,00[illegible]
SUNY - COLLEGE OF ENVIRONMENTAL SCIENCES & FORESTRY SYRACUSE	30.60%	46,417	124,758	1,176,962
HARVARD UNIVERSITY - OFF CAMPUS	26.20%	3,600	120,528	1,944,00[illegible]
NEBRASKA, UNIVERSITY OF - LINCOLN	22.00%	0	115,841	5,792,04[illegible]
MISSOURI, UNIVERSITY OF - ROLLA	24.00%	0	112,825	2,820,628
	26.20%	3,122	104,509	1,685,63[illegible]
	31.10%	44,057	103,559	932,967
MISSISSIPPI STATE UNIVERSITY - AGRICULTURAL RESEARCH	24.22%	0	100,267	2,376,00[illegible]
MISSOURI, UNIVERSITY OF - COLUMBIA	21.60%	0	62,640	3,915,447
CASE WESTERN - OFF CAMPUS	25.33%	0	61,478	1,153,43[illegible]
	22.43%	0	52,908	2,177,280
NEBRASKA, UNIVERSITY OF - AG STATION	22.00%	0	46,181	2,309,04[illegible]
CALIFORNIA STATE UNIVERSITY - NORTHRIDGE	29.94%	16,548	45,088	453,60[illegible]
TEXAS, UNIVERSITY OF - EL PASO	23.82%	0	37,130	972,00[illegible]
LOUISIANA STATE UNIVERSITY - A & M	20.47%	0	35,517	7,556,795
MISSOURI, UNIVERSITY OF - ST. LOUIS	27.60%	4,686	24,038	316,293
MISSOURI, UNIVERSITY OF - MEDICAL CENTER	20.50%	0	17,278	3,455,606
ARKANSAS, UNIVERSITY OF - MEDICAL SCHOOL	12.23%	0	0	3,179,928
	19.73%	0	0	37,109,880
CALIFORNIA, UNIVERSITY OF - RIVERSIDE	19.30%	0	0	9,072,000
COLORADO, UNIVERSITY OF - HEALTH CENTER - DENVER	18.59%	0	0	17,299,709
EAST TENNESSEE STATE UNIVERSITY	17.90%	0	0	707,333
GEORGIA STATE UNIVERSITY	15.69%	0	0	1,566,00[illegible]
HOUSTON, UNIVERSITY OF	18.51%	0	0	12,096,00[illegible]
IOWA STATE - AG STATION	10.60%	0	0	22,320,922
IOWA STATE UNIVERSITY - RESEARCH	13.14%	0	0	19,556,982
	20.00%	0	0	3,456,000
LOUISIANA STATE UNIVERSITY - A & M - AGRI CENTER	19.71%	0	0	2,010,110
LOUISIANA STATE UNIVERSITY - A & M - WETLANDS	17.80%	0	0	1,581,698
LOUISIANA STATE UNIVERSITY - MC	19.20%	0	0	2,893,345
LOUISVILLE, UNIVERSITY OF	18.31%	0	0	4,762,800
MISSISSIPPI STATE UNIVERSITY - ACADEMIC DIV. RESEARCH	16.78%	0	0	4,644,000
MISSOURI, UNIVERSITY OF - AGRICULTURAL STATION	15.70%	0	0	3,923,906
NEW MEXICO STATE - AG RESEARCH	14.71%	0	0	617,837
NORTH CAROLINA STATE UNIVERSITY - RALEIGH	18.99%	0	0	15,626,198

INSTITUTION	1986 TOTAL ADMINISTRATION RATE	LOSS OVER 26% (in 1987 $)	LOSS OVER 20% (in 1987 $)	1987 Projected* FEDERAL MTDC BASE *
NORTHERN ILLINOIS UNIVERSITY	11.13%	0	0	1,620,000
OKLAHOMA STATE UNIVERSITY	19.15%	0	0	5,940,000
	15.67%	0	0	44,260,000
TEXAS, UNIVERSITY OF - AUSTIN	19.19%	0	0	30,348,000
TEXAS, UNIVERSITY OF - DALLAS	18.53%	0	0	3,132,000
TEXAS, UNIVERSITY OF - HEALTH SCIENCE CENTER - HOUSTON	14.70%	0	0	10,584,000
TEXAS, UNIVERSITY OF - MEDICAL BRANCH GALVESTON	10.20%	0	0	8,640,000
TEXAS, UNIVERSITY OF - SYSTEM CANCER CENTER	18.83%	0	0	14,256,000
WILLIAM AND MARY, COLLEGE OF	8.83%	0	0	7,920,000
TOTAL		$120,681,007	$300,828,831	$3,780,333,775

* Volumes projected to estimate FY 1987 levels.

association of american medical colleges

JOHN A.D. COOPER, M.D., PH.D.
PRESIDENT

(202) 828-0460

March 14, 1986

Ms. Carole J. Dineen
Associate Director for Management
Executive Office of the President
Office of Management and Budget
Washington, D.C. 20503

Dear Ms. Dineen:

The Association of American Medical Colleges, whose member institutions include our nation's 127 medical schools, over 400 teaching hospitals and over 80 academic societies of the faculties, urges OMB to withdraw the February 12, 1986 Federal Register Notice of Revision of Circular A-21. We wrote you on February 28 urging that you lengthen the period of comment on this notice to allow for full and thoughtful comment by all those with an interest in the subject. We have since examined further the proposed change in accounting of the administrative components of the indirect cost rates of universities and believe that you should withdraw this notice and enter into negotiation with the research faculty community and university administrators to develop a fair and equitable means of accounting the administrative cost components. The present proposal seems primarily budget driven and will remove over $420 million from federal research grants to universities in the first 18 months of its implementation (FY86-87). A loss of this magnitude, especially since it will not be evenly borne by all universities, will be detrimental to federally supported extramural research.

We urge instead that you impose an immediate freeze in place of each university's present administrative rate through FY87 and permanently eliminate the DHHS system of retroactive reimbursement of indirect costs adjustments during the grant year. These two actions would realize budgetary savings distributed more equitably and prevent further growth in administrative indirect cost rates while negotiations go forward.

All interested parties should then participate with OMB in negotiations to reorganize the accounting of the indirect costs pools to achieve the following goals: adoption of a fair and reliable method of determining departmental administrative costs which also permits relief from the need for faculty effort reporting, a separate cost pool for those administrative expenses mandated by federal regulation (such as animal care and human subjects committees), methods for accounting the costs of university-purchased equipment and instrumentation, and more realistic use/depreciation allowances for scientific facilities and equipment used in federal research.

One Dupont Circle, N.W. Washington, D.C. 20036

This nation's research enterprise is presently second to none and a key source of the ideas and products which undergird the economic vigor of our nation. Concern about mounting federal deficits is appropriate and measures should be taken to reduce the deficit, but arbitrarily removing over $420 million from federally funded research is short-sighted, inequitably borne and could seriously damage the economic health of our major research universities and therefore our nation as well.

Thank you for your consideration of these proposals.

Sincerely yours,

John A. D. Cooper, M.D.

association of american medical colleges

March 13, 1986

MEMORANDUM

TO: Deans of U.S. Medical Schools

FROM: Paul Jolly, Ph.D. PJ
Director, Division of Operational Studies

SUBJECT: National and Institutional Trends in Applicant and Matriculant Qualifications

Over the past three years AAMC staff have established a comprehensive data base on students and applicants called the Student and Applicant Information Management System (SAIMS); the system has been used to support a variety of internal and external studies. Of particular interest at this time is the question of the decline in the size of the applicant pool and concern over a possible drop in academic qualifications of applicants and matriculants. From the SAIMS data base comprehensive statistics have been prepared relating to this question for entering classes from 1981-82 through the current 1985-86 academic year; these statistics appear in the tables on the following pages.

The first table includes national data for all applicants and students, while pages 2 to 19 separately report the national data by sex and ethnic categories. The national figures do not show a significant drop in academic qualifications at this time.

There may be some concern that individual institutions, particularly state institutions with a strong preference for residents of their own state, may be experiencing difficulty in filling their classes with qualified applicants. On pages 20 to 30 appear data for a sample state institution, and it does shows a substantial decline in the pool of applicants who are residents of the state. Nevertheless, MCAT scores and grade point averages have not changed appreciably. For the state institution, data are separately reported for state residents and for non-residents, and there are also separate tables for underrepresented minorities by sex and all others by sex. These breakdowns by sex and especially by minority status may be important in some institutions with strong affirmative action programs.

AAMC can provide without charge to any school whose dean requests it a set of tables displaying trends for that institution over the five year period. Deans should contact Paul Jolly at AAMC, specifying whether they desire a breakdown of data by individual minority groups or in the more aggregated form of underrepresented minorities and all others. Residents and non-residents can be combined in a single report, for those institutions where this is more appropriate.

Suite 200/One Dupont Circle, N.W./Washington, D.C. 20036/(202) 828-0400

Applicants and Students
All U.S. Medical Schools

Percentile Ranking of BCPM GPA and New MCAT Quantitative, Reading, and Science Problems Scores for Applicants and Matriculants 1981-1985

Grade Point Average - BCPM

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	36,727	3,205	.50	2.54	2.94	3.31	3.62	3.84	4.00
	Matriculants	16,660	1,113	1.01	2.93	3.24	3.53	3.77	3.92	4.00
1982	Applicants	35,730	3,237	.25	2.55	2.94	3.30	3.62	3.85	4.00
	Matriculants	16,567	1,028	.52	2.92	3.23	3.52	3.77	3.92	4.00
1983	Applicants	35,200	3,492	.67	2.54	2.92	3.29	3.60	3.83	4.00
	Matriculants	16,480	1,352	1.50	2.90	3.22	3.51	3.75	3.91	4.00
1984	Applicants	35,944	3,348	.78	2.52	2.91	3.27	3.59	3.82	4.00
	Matriculants	16,395	1,286	1.34	2.90	3.20	3.49	3.74	3.91	4.00
1985	Applicants	32,893	3,171	.58	2.53	2.92	3.28	3.59	3.83	4.00
	Matriculants	16,614	1,382	1.60	2.88	3.18	3.47	3.73	3.90	4.00

MCAT - Quantitative

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	36,727	1,146	1	5	6	8	10	11	15
	Matriculants	16,660	439	1	6	8	9	11	12	15
1982	Applicants	35,730	1,352	1	5	6	8	10	11	15
	Matriculants	16,567	436	1	6	8	9	11	11	15
1983	Applicants	35,200	1,097	1	5	6	8	10	11	15
	Matriculants	16,480	495	1	6	7	9	11	12	15
1984	Applicants	35,944	1,033	1	5	6	8	10	11	15
	Matriculants	16,395	447	1	6	8	9	11	12	15
1985	Applicants	32,893	851	1	5	7	8	10	11	15
	Matriculants	16,614	431	1	6	8	9	11	12	15

MCAT - Reading

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	36,727	1,146	1	5	7	9	10	11	14
	Matriculants	16,660	439	1	6	8	9	10	11	14
1982	Applicants	35,730	1,352	1	5	7	9	10	11	14
	Matriculants	16,567	436	1	7	8	9	10	11	13
1983	Applicants	35,200	1,097	1	5	7	9	10	11	14
	Matriculants	16,480	495	1	7	8	9	10	11	14
1984	Applicants	35,944	1,033	1	5	7	9	10	11	14
	Matriculants	16,395	447	1	7	8	9	10	11	14
1985	Applicants	32,893	851	1	5	7	9	10	11	13
	Matriculants	16,614	431	1	7	8	9	10	11	13

MCAT - Science Problems

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	36,727	1,146	1	5	7	9	10	11	15
	Matriculants	16,660	439	2	7	8	10	11	12	15
1982	Applicants	35,730	1,352	1	5	7	9	10	12	15
	Matriculants	16,567	436	2	7	8	10	11	12	15
1983	Applicants	35,200	1,097	2	5	7	9	10	12	15
	Matriculants	16,480	495	3	7	8	10	11	12	15
1984	Applicants	35,944	1,033	2	5	7	9	10	12	15
	Matriculants	16,395	447	2	7	9	10	11	13	15
1985	Applicants	32,893	851	2	6	7	9	10	12	15
	Matriculants	16,614	431	2	7	9	10	11	12	15

Percentile Ranking of BCPM GPA and New MCAT Quantitative, Reading, and Science Problems Scores for Applicants and Matriculants 1981-1985
Asian Males

Grade Point Average - BCPM

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	1,307	140	.50	2.64	3.03	3.37	3.67	3.88	4.00
	Matriculants	539	36	2.02	3.14	3.36	3.60	3.81	3.94	4.00
1982	Applicants	1,483	145	1.36	2.64	3.03	3.38	3.65	3.88	4.00
	Matriculants	640	52	1.81	3.08	3.38	3.62	3.82	3.94	4.00
1983	Applicants	1,532	172	1.50	2.60	3.00	3.36	3.67	3.87	4.00
	Matriculants	661	57	2.01	3.11	3.36	3.59	3.79	3.93	4.00
1984	Applicants	1,784	197	1.37	2.61	3.02	3.36	3.66	3.87	4.00
	Matriculants	753	68	2.06	3.11	3.33	3.58	3.80	3.94	4.00
1985	Applicants	1,736	158	1.43	2.68	3.02	3.37	3.67	3.87	4.00
	Matriculants	864	65	1.91	3.02	3.29	3.57	3.79	3.94	4.00

MCAT - Quantitative

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	1,307	51	1	5	7	8	10	11	15
	Matriculants	539	32	3	6	8	10	11	12	15
1982	Applicants	1,483	70	2	5	7	8	10	11	15
	Matriculants	640	36	3	7	8	9	11	12	15
1983	Applicants	1,532	77	2	5	7	8	10	11	15
	Matriculants	661	44	4	7	8	10	11	12	15
1984	Applicants	1,784	82	1	5	7	8	10	12	15
	Matriculants	753	49	2	7	8	10	11	12	15
1985	Applicants	1,736	56	1	5	7	8	10	12	15
	Matriculants	864	37	4	7	8	10	11	12	15

MCAT - Reading

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	1,307	51	1	4	5	8	9	10	12
	Matriculants	539	32	1	5	7	9	10	10	12
1982	Applicants	1,483	70	1	4	6	8	9	10	12
	Matriculants	640	36	1	6	7	9	10	11	12
1983	Applicants	1,532	77	1	4	6	8	9	10	13
	Matriculants	661	44	1	6	7	9	10	11	13
1984	Applicants	1,784	82	1	4	6	8	10	10	14
	Matriculants	753	49	2	6	8	9	10	11	14
1985	Applicants	1,736	56	1	4	6	8	9	11	12
	Matriculants	864	37	1	6	7	9	10	11	12

MCAT - Science Problems

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	1,307	51	3	6	8	9	11	12	15
	Matriculants	539	32	3	8	10	11	12	13	15
1982	Applicants	1,483	70	3	6	8	10	11	12	15
	Matriculants	640	36	4	9	10	11	12	13	15
1983	Applicants	1,532	77	3	6	8	10	12	13	15
	Matriculants	661	44	5	9	10	11	12	13	15
1984	Applicants	1,784	82	2	6	8	10	11	13	15
	Matriculants	753	49	4	8	10	11	12	13	15
1985	Applicants	1,736	56	2	7	8	10	11	13	15
	Matriculants	864	37	5	9	10	11	12	13	15

Percentile Ranking of BCPM GPA and New MCAT Quantitative, Reading, and Science Problems Scores for Applicants and Matriculants 1981-1985 Asian Females

Grade Point Average - BCPM

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	673	89	1.25	2.56	2.96	3.34	3.65	3.86	4.00
	Matriculants	262	26	2.00	3.07	3.32	3.57	3.79	3.93	4.00
1982	Applicants	760	69	1.33	2.60	2.95	3.30	3.63	3.88	4.00
	Matriculants	316	24	2.26	2.97	3.27	3.56	3.84	3.97	4.00
1983	Applicants	822	91	1.57	2.64	2.96	3.30	3.65	3.87	4.00
	Matriculants	338	28	2.20	2.96	3.25	3.56	3.83	3.95	4.00
1984	Applicants	1,015	92	1.25	2.61	2.92	3.29	3.59	3.83	4.00
	Matriculants	416	29	2.27	2.98	3.25	3.50	3.75	3.91	4.00
1985	Applicants	973	90	1.29	2.53	2.93	3.29	3.58	3.81	4.00
	Matriculants	446	33	2.27	3.00	3.25	3.52	3.75	3.89	4.00

MCAT - Quantitative

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	673	29	1	4	6	7	9	11	14
	Matriculants	262	14	3	6	7	9	10	11	13
1982	Applicants	760	46	1	5	6	7	9	10	13
	Matriculants	316	23	4	6	7	8	10	11	13
1983	Applicants	822	41	2	5	6	8	9	11	15
	Matriculants	338	24	3	6	8	9	10	11	15
1984	Applicants	1,015	30	1	5	6	8	9	11	14
	Matriculants	416	20	4	6	7	9	10	11	14
1985	Applicants	973	28	1	5	6	8	9	11	14
	Matriculants	446	17	3	7	8	9	10	11	14

MCAT - Reading

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	673	29	1	3	6	8	9	10	12
	Matriculants	262	14	1	6	7	9	10	11	12
1982	Applicants	760	46	1	4	6	8	9	10	12
	Matriculants	316	23	3	6	8	9	10	11	12
1983	Applicants	822	41	1	4	6	8	9	10	13
	Matriculants	338	24	2	5	7	9	10	11	13
1984	Applicants	1,015	30	1	4	6	8	9	10	13
	Matriculants	416	20	1	6	8	9	10	11	13
1985	Applicants	973	28	1	4	7	8	10	11	13
	Matriculants	446	17	1	6	8	9	10	11	13

MCAT - Science Problems

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	673	29	2	5	7	9	10	11	15
	Matriculants	262	14	5	7	9	10	11	12	15
1982	Applicants	760	46	3	5	7	9	10	11	14
	Matriculants	316	23	5	8	9	10	11	12	14
1983	Applicants	822	41	3	6	7	9	10	12	15
	Matriculants	338	24	5	8	9	10	12	13	15
1984	Applicants	1,015	30	2	5	7	9	10	12	15
	Matriculants	416	20	4	8	9	10	11	12	15
1985	Applicants	973	28	2	6	7	9	11	12	15
	Matriculants	446	17	6	8	9	10	11	12	15

Percentile Ranking of BCPM GPA and New MCAT Quantitative, Reading, and Science Problems Scores for Applicants and Matriculants 1981-1985 Black Males

Grade Point Average - BCPM

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	1,507	222	.69	1.86	2.17	2.53	3.01	3.44	4.00
	Matriculants	570	33	1.38	2.17	2.41	2.80	3.25	3.61	4.00
1982	Applicants	1,413	180	.89	1.91	2.20	2.56	3.02	3.46	4.00
	Matriculants	554	31	1.60	2.22	2.49	2.91	3.31	3.63	4.00
1983	Applicants	1,351	168	.91	1.93	2.20	2.58	3.01	3.43	4.00
	Matriculants	547	29	1.54	2.16	2.50	2.85	3.26	3.58	4.00
1984	Applicants	1,297	74	.78	1.92	2.20	2.61	3.02	3.44	4.00
	Matriculants	517	15	1.34	2.17	2.47	2.84	3.21	3.59	4.00
1985	Applicants	1,170	68	.78	1.88	2.17	2.59	3.01	3.46	4.00
	Matriculants	491	14	1.60	2.16	2.50	2.86	3.25	3.63	4.00

MCAT - Quantitative

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	1,507	77	1	3	4	5	6	8	12
	Matriculants	570	16	2	4	5	6	7	9	12
1982	Applicants	1,413	75	1	3	4	5	6	8	13
	Matriculants	554	15	2	4	5	6	7	9	13
1983	Applicants	1,351	78	1	3	4	5	7	8	13
	Matriculants	547	18	1	4	5	6	7	9	13
1984	Applicants	1,297	52	1	3	4	5	7	8	12
	Matriculants	517	14	3	4	5	6	8	9	12
1985	Applicants	1,170	37	1	3	4	5	7	8	13
	Matriculants	491	6	2	4	5	6	8	9	13

MCAT - Reading

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	1,507	77	1	1	3	5	7	9	12
	Matriculants	570	16	1	3	5	6	8	9	12
1982	Applicants	1,413	75	1	1	3	5	7	8	13
	Matriculants	554	15	1	4	5	7	8	9	13
1983	Applicants	1,351	78	1	2	4	5	7	9	13
	Matriculants	547	18	1	4	5	7	8	9	13
1984	Applicants	1,297	52	1	2	4	5	8	9	12
	Matriculants	517	14	1	4	5	7	8	9	12
1985	Applicants	1,170	37	1	2	3	5	7	9	13
	Matriculants	491	6	1	3	5	7	8	9	13

MCAT - Science Problems

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	1,507	77	2	4	5	6	7	9	13
	Matriculants	570	16	3	5	6	7	8	10	13
1982	Applicants	1,413	75	1	4	5	6	7	9	15
	Matriculants	554	15	3	5	6	7	8	10	15
1983	Applicants	1,351	78	2	4	5	6	8	9	15
	Matriculants	547	18	3	5	6	7	9	10	15
1984	Applicants	1,297	52	2	4	5	6	7	9	14
	Matriculants	517	14	2	5	6	7	9	10	14
1985	Applicants	1,170	37	2	4	5	6	8	9	13
	Matriculants	491	6	3	5	6	7	9	10	13

Percentile Ranking of BCPM GPA and New MCAT Quantitative, Reading, and Science Problems Scores for Applicants and Matriculants 1981-1985 Black Females

Grade Point Average - BCPM

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	1,199	163	.80	1.95	2.24	2.61	3.00	3.33	4.00
	Matriculants	440	29	1.01	2.29	2.52	2.81	3.18	3.52	4.00
1982	Applicants	1,248	153	.25	1.92	2.21	2.57	2.98	3.37	4.00
	Matriculants	415	20	1.61	2.26	2.48	2.86	3.29	3.57	4.00
1983	Applicants	1,268	141	1.01	1.91	2.19	2.57	2.96	3.33	4.00
	Matriculants	457	24	1.64	2.20	2.44	2.81	3.26	3.57	4.00
1984	Applicants	1,341	77	1.01	1.92	2.20	2.55	3.00	3.34	4.00
	Matriculants	484	16	1.52	2.22	2.46	2.86	3.19	3.58	4.00
1985	Applicants	1,258	72	.58	1.94	2.21	2.57	3.04	3.40	4.00
	Matriculants	521	16	1.70	2.22	2.45	2.83	3.25	3.62	4.00

MCAT - Quantitative

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	1,199	67	1	3	4	5	6	7	13
	Matriculants	440	7	1	4	5	6	7	8	13
1982	Applicants	1,248	77	1	3	4	5	6	7	13
	Matriculants	415	15	1	4	5	6	7	8	13
1983	Applicants	1,268	82	1	3	4	5	6	7	11
	Matriculants	457	15	2	4	5	6	7	8	11
1984	Applicants	1,341	64	1	3	4	5	6	7	12
	Matriculants	484	13	2	4	5	6	7	8	12
1985	Applicants	1,258	37	1	3	4	5	6	7	13
	Matriculants	521	3	2	4	5	6	7	8	13

MCAT - Reading

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	1,199	67	1	2	4	6	8	9	12
	Matriculants	440	7	1	4	5	7	8	9	11
1982	Applicants	1,248	77	1	2	4	5	7	9	11
	Matriculants	415	15	1	4	5	7	8	9	11
1983	Applicants	1,268	82	1	2	4	6	7	9	12
	Matriculants	457	15	1	4	6	7	8	9	12
1984	Applicants	1,341	64	1	2	4	6	8	9	12
	Matriculants	484	13	1	4	6	8	9	10	12
1985	Applicants	1,258	37	1	2	4	6	7	9	12
	Matriculants	521	3	1	4	6	7	9	9	12

MCAT - Science Problems

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	1,199	67	1	3	4	5	7	8	12
	Matriculants	440	7	3	4	5	6	8	9	12
1982	Applicants	1,248	77	1	3	4	5	6	7	12
	Matriculants	415	15	2	5	5	6	7	9	12
1983	Applicants	1,268	82	2	4	4	5	7	8	14
	Matriculants	457	15	3	5	6	7	8	9	14
1984	Applicants	1,341	64	2	4	4	6	7	8	14
	Matriculants	484	13	3	5	6	7	8	9	13
1985	Applicants	1,258	37	2	4	5	6	7	8	14
	Matriculants	521	3	3	5	6	7	8	9	13

Percentile Ranking of BCPM GPA and New MCAT Quantitative, Reading, and Science Problems Scores for Applicants and Matriculants 1981-1985 Commonwealth Puerto Rican Males

Grade Point Average - BCPM

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	319	202	1.03	2.23	2.70	3.03	3.40	3.68	4.00
	Matriculants	170	96	2.13	2.58	2.89	3.24	3.52	3.73	4.00
1982	Applicants	313	222	1.66	2.38	2.63	2.94	3.25	3.75	4.00
	Matriculants	124	65	1.66	2.40	2.70	3.03	3.53	3.86	4.00
1983	Applicants	298	179	1.56	2.33	2.68	2.96	3.22	3.56	3.94
	Matriculants	144	73	1.89	2.62	2.86	3.10	3.42	3.70	3.94
1984	Applicants	318	159	1.67	2.35	2.54	2.84	3.23	3.52	4.00
	Matriculants	140	61	1.67	2.47	2.75	3.04	3.32	3.80	4.00
1985	Applicants	304	187	1.73	2.24	2.55	2.91	3.17	3.47	3.95
	Matriculants	149	75	2.04	2.51	2.75	3.03	3.22	3.54	3.95

MCAT - Quantitative

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	319	16	1	2	3	5	6	7	12
	Matriculants	170	8	1	4	4	5	6	8	12
1982	Applicants	313	25	1	2	3	4	6	7	11
	Matriculants	124	5	2	4	4	5	7	8	11
1983	Applicants	298	9	1	3	4	5	6	7	12
	Matriculants	144	4	1	4	4	6	7	8	11
1984	Applicants	318	7	1	3	3	5	6	8	12
	Matriculants	140	1	1	3	5	5	7	8	12
1985	Applicants	304	4	1	2	4	5	6	7	12
	Matriculants	149	1	1	4	5	5	7	8	12

MCAT - Reading

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	319	16	1	1	2	4	6	8	11
	Matriculants	170	8	1	2	4	5	7	9	11
1982	Applicants	313	25	1	1	1	3	5	8	11
	Matriculants	124	5	1	2	4	5	7	8	11
1983	Applicants	298	9	1	1	3	4	6	8	11
	Matriculants	144	4	1	2	3	5	7	8	11
1984	Applicants	318	7	1	1	2	5	7	8	11
	Matriculants	140	1	1	3	4	6	7	9	11
1985	Applicants	304	4	1	1	2	4	6	8	13
	Matriculants	149	1	1	2	4	5	7	9	13

MCAT - Science Problems

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	319	16	2	3	4	6	7	9	13
	Matriculants	170	8	2	4	6	7	8	9	13
1982	Applicants	313	25	2	3	4	5	7	8	12
	Matriculants	124	5	4	5	6	7	8	10	12
1983	Applicants	298	9	2	4	4	5	7	8	11
	Matriculants	144	4	3	5	5	6	8	9	11
1984	Applicants	318	7	2	4	5	6	7	9	13
	Matriculants	140	1	4	5	6	7	8	10	13
1985	Applicants	304	4	2	4	5	6	7	9	12
	Matriculants	149	1	2	5	6	7	8	9	12

Percentile Ranking of BCPM GPA and New MCAT Quantitative, Reading, and Science Problems Scores for Applicants and Matriculants 1981-1985 Commonwealth Puerto Rican Females

Grade Point Average - BCPM

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	171	113	1.54	2.15	2.58	3.02	3.33	3.60	4.00
	Matriculants	57	35	2.65	2.87	3.10	3.29	3.50	3.84	4.00
1982	Applicants	228	168	1.68	2.34	2.75	3.14	3.42	3.68	3.95
	Matriculants	76	47	2.19	2.46	3.03	3.36	3.56	3.84	3.95
1983	Applicants	207	142	.93	2.33	2.50	2.90	3.23	3.58	4.00
	Matriculants	62	41	2.49	2.54	2.82	3.09	3.50	3.73	4.00
1984	Applicants	212	118	1.35	2.23	2.57	3.00	3.35	3.56	4.00
	Matriculants	78	39	2.40	2.53	2.81	3.13	3.42	3.77	4.00
1985	Applicants	207	133	1.62	2.45	2.71	3.05	3.45	3.63	3.95
	Matriculants	87	47	2.48	2.72	3.02	3.29	3.52	3.73	3.95

MCAT - Quantitative

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	171	8	1	2	3	4	5	6	10
	Matriculants	57	1	2	3	4	5	6	7	10
1982	Applicants	228	22	1	2	3	4	5	6	11
	Matriculants	76	2	1	3	4	5	6	7	11
1983	Applicants	207	8	1	2	3	4	5	6	9
	Matriculants	62	0	2	3	4	5	6	7	9
1984	Applicants	212	3	1	3	3	4	5	6	9
	Matriculants	78	0	2	3	4	5	6	7	9
1985	Applicants	207	0	1	2	3	4	5	7	11
	Matriculants	87	0	2	3	4	5	6	7	11

MCAT - Reading

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	171	8	1	1	2	4	5	8	10
	Matriculants	57	1	1	3	4	5	7	8	10
1982	Applicants	228	22	1	1	1	3	5	7	9
	Matriculants	76	2	1	3	4	5	6	8	9
1983	Applicants	207	8	1	1	2	3	5	7	11
	Matriculants	62	0	1	2	3	5	7	9	11
1984	Applicants	212	3	1	1	3	4	6	8	10
	Matriculants	78	0	1	3	3	5	8	9	10
1985	Applicants	207	0	1	1	3	4	6	8	10
	Matriculants	87	0	1	2	3	5	7	8	9

MCAT - Science Problems

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	171	8	2	3	4	5	6	7	10
	Matriculants	57	1	4	4	6	6	7	8	9
1982	Applicants	228	22	2	3	4	5	6	7	10
	Matriculants	76	2	3	5	6	6	7	9	10
1983	Applicants	207	8	2	3	4	5	6	7	10
	Matriculants	62	0	3	4	5	6	8	9	10
1984	Applicants	212	3	2	4	5	5	6	8	11
	Matriculants	78	0	3	5	6	7	8	9	11
1985	Applicants	207	0	2	4	5	6	7	8	13
	Matriculants	87	0	2	5	5	7	8	9	13

Percentile Ranking of BCPM GPA and New MCAT Quantitative, Reading, and Science Problems Scores for Applicants and Matriculants 1981-1985 American Indian/Native American Males

Grade Point Average - BCPM

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	116	13	.70	2.11	2.50	2.90	3.39	3.57	4.00
	Matriculants	46	4	2.09	2.44	2.86	3.32	3.47	3.70	4.00
1982	Applicants	81	12	1.61	2.21	2.49	2.88	3.24	3.63	4.00
	Matriculants	32	3	2.46	2.49	2.72	3.12	3.63	3.69	4.00
1983	Applicants	92	13	1.47	2.11	2.53	2.88	3.33	3.63	4.00
	Matriculants	35	7	1.93	2.28	2.56	2.99	3.36	3.74	4.00
1984	Applicants	102	12	1.20	2.14	2.64	3.01	3.44	3.75	4.00
	Matriculants	48	4	1.89	2.30	2.87	3.20	3.55	3.85	4.00
1985	Applicants	75	10	1.75	2.14	2.57	3.00	3.28	3.72	4.00
	Matriculants	30	2	1.88	2.40	2.91	3.14	3.33	3.87	4.00

MCAT - Quantitative

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	116	4	2	4	5	7	9	10	12
	Matriculants	46	0	5	6	7	8	9	11	12
1982	Applicants	81	1	2	4	6	7	8	10	12
	Matriculants	32	1	4	5	7	8	9	10	11
1983	Applicants	92	2	2	4	5	7	8	10	12
	Matriculants	35	0	4	5	6	7	9	10	11
1984	Applicants	102	3	2	4	6	7	9	10	12
	Matriculants	48	0	2	5	6	9	10	11	12
1985	Applicants	75	1	2	4	5	7	9	11	15
	Matriculants	30	0	4	6	7	8	10	11	15

MCAT - Reading

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	116	4	1	4	6	8	9	10	12
	Matriculants	46	0	5	6	7	9	10	10	12
1982	Applicants	81	1	1	3	6	8	9	10	12
	Matriculants	32	1	1	3	7	8	9	10	12
1983	Applicants	92	2	1	4	6	7	9	10	11
	Matriculants	35	0	4	5	6	8	9	10	11
1984	Applicants	102	3	1	5	6	8	9	10	12
	Matriculants	48	0	4	6	8	9	10	11	12
1985	Applicants	75	1	2	3	5	8	9	10	12
	Matriculants	30	0	3	5	7	8	9	10	12

MCAT - Science Problems

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	116	4	3	4	6	7	8	9	11
	Matriculants	46	0	4	6	7	8	9	10	11
1982	Applicants	81	1	2	5	6	7	9	11	13
	Matriculants	32	1	5	6	7	9	11	12	13
1983	Applicants	92	2	2	5	6	7	8	10	13
	Matriculants	35	0	4	6	7	8	10	12	13
1984	Applicants	102	3	2	5	6	7	10	10	14
	Matriculants	48	0	5	6	7	9	10	12	14
1985	Applicants	75	1	4	4	5	7	9	10	14
	Matriculants	30	0	5	5	7	8	10	13	14

Percentile Ranking of BCPM GPA and New MCAT Quantitative, Reading, and Science Problems Scores for Applicants and Matriculants 1981-1985 American Indian/Native American Females

Grade Point Average - BCPM

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	58	3	1.35	2.21	2.47	2.88	3.28	3.62	3.87
	Matriculants	20	1	2.33	2.40	2.48	2.93	3.32	3.70	3.79
1982	Applicants	66	9	1.66	2.03	2.47	2.98	3.36	3.65	3.89
	Matriculants	23	3	1.94	2.23	2.66	3.07	3.31	3.67	3.88
1983	Applicants	77	14	1.48	2.23	2.61	3.01	3.56	3.73	3.91
	Matriculants	33	4	1.82	2.22	2.64	3.15	3.72	3.82	3.91
1984	Applicants	55	5	1.69	2.34	2.54	3.03	3.51	3.76	4.00
	Matriculants	23	1	1.69	2.37	2.61	3.20	3.68	3.88	4.00
1985	Applicants	50	8	1.59	2.28	2.69	2.95	3.40	3.77	3.93
	Matriculants	25	4	2.32	2.65	2.85	3.29	3.64	3.84	3.93

MCAT - Quantitative

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	58	1	3	4	5	6	8	8	12
	Matriculants	20	0	4	4	6	8	8	10	12
1982	Applicants	66	2	2	4	5	6	8	9	12
	Matriculants	23	1	5	6	6	7	8	10	10
1983	Applicants	77	1	3	4	5	6	8	9	12
	Matriculants	33	0	4	5	6	6	9	10	12
1984	Applicants	55	1	3	4	5	6	7	9	11
	Matriculants	23	0	3	5	6	7	8	10	11
1985	Applicants	50	0	3	4	6	7	8	9	11
	Matriculants	25	0	4	4	7	7	9	10	11

MCAT - Reading

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	58	1	1	4	6	8	9	10	12
	Matriculants	20	0	4	6	7	9	10	11	11
1982	Applicants	66	2	1	4	6	8	9	10	12
	Matriculants	23	1	7	7	8	8	9	11	12
1983	Applicants	77	1	1	5	6	8	10	10	11
	Matriculants	33	0	5	6	7	8	10	11	11
1984	Applicants	55	1	1	5	6	7	9	10	11
	Matriculants	23	0	1	6	7	8	9	10	11
1985	Applicants	50	0	3	4	6	8	9	10	11
	Matriculants	25	0	3	4	7	8	9	10	11

MCAT - Science Problems

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	58	1	3	3	5	6	8	9	11
	Matriculants	20	0	4	5	6	7	9	10	11
1982	Applicants	66	2	2	4	5	6	7	9	14
	Matriculants	23	1	5	5	6	7	8	10	10
1983	Applicants	77	1	3	4	5	6	8	10	14
	Matriculants	33	0	4	5	6	7	9	11	14
1984	Applicants	55	1	3	4	5	6	8	9	12
	Matriculants	23	0	4	4	6	7	8	10	12
1985	Applicants	50	0	3	4	6	7	9	10	12
	Matriculants	25	0	4	6	6	8	10	11	12

Percentile Ranking of BCPM GPA and New MCAT Quantitative, Reading, and Science Problems Scores for Applicants and Matriculants 1981-1985 Mainland Puerto Rican Males

Grade Point Average - BCPM

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	135	31	.79	2.08	2.47	2.78	3.24	3.56	3.98
	Matriculants	64	8	1.99	2.40	2.61	3.09	3.44	3.73	3.98
1982	Applicants	127	28	1.89	2.25	2.59	2.88	3.31	3.59	4.00
	Matriculants	67	6	2.21	2.29	2.67	2.98	3.48	3.70	4.00
1983	Applicants	131	30	1.83	2.20	2.57	2.94	3.36	3.67	3.93
	Matriculants	70	9	2.05	2.50	2.78	3.10	3.45	3.80	3.93
1984	Applicants	159	32	1.51	2.21	2.56	2.91	3.27	3.52	3.90
	Matriculants	75	9	2.06	2.39	2.72	2.98	3.35	3.58	3.81
1985	Applicants	150	24	1.39	2.07	2.39	2.90	3.32	3.66	4.00
	Matriculants	81	7	2.02	2.44	2.74	3.18	3.46	3.81	4.00

MCAT - Quantitative

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	135	5	1	3	4	6	8	9	13
	Matriculants	64	1	3	4	5	7	9	11	13
1982	Applicants	127	7	1	3	5	6	7	10	12
	Matriculants	67	1	3	4	5	7	8	11	12
1983	Applicants	131	6	1	4	5	6	8	10	13
	Matriculants	70	1	3	4	5	7	9	10	13
1984	Applicants	159	6	2	3	4	6	8	9	12
	Matriculants	75	0	3	4	5	7	9	10	12
1985	Applicants	150	1	1	3	5	6	8	11	12
	Matriculants	81	0	3	5	6	7	9	11	12

MCAT - Reading

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	135	5	1	1	3	6	8	9	11
	Matriculants	64	1	2	4	6	7	9	10	11
1982	Applicants	127	7	1	2	4	7	8	9	11
	Matriculants	67	1	3	5	6	8	9	10	10
1983	Applicants	131	6	1	2	4	7	9	10	11
	Matriculants	70	1	1	2	4	8	9	11	11
1984	Applicants	159	6	1	2	4	6	8	9	13
	Matriculants	75	0	1	4	6	7	9	10	13
1985	Applicants	150	1	1	2	4	7	9	10	12
	Matriculants	81	0	2	4	6	8	9	11	12

MCAT - Science Problems

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	135	5	3	4	6	7	8	10	13
	Matriculants	64	1	5	6	7	8	9	12	13
1982	Applicants	127	7	2	4	5	7	9	11	14
	Matriculants	67	1	4	5	6	7	10	12	14
1983	Applicants	131	6	2	4	6	7	9	10	14
	Matriculants	70	1	4	5	7	8	10	11	14
1984	Applicants	159	6	2	4	5	7	9	10	13
	Matriculants	75	0	4	6	7	8	9	11	13
1985	Applicants	150	1	2	4	5	7	9	11	13
	Matriculants	81	0	4	6	7	9	10	12	13

Percentile Ranking of BCPM GPA and New MCAT Quantitative, Reading, and Science Problems Scores for Applicants and Matriculants 1981-1985 Mainland Puerto Rican Females

Grade Point Average - BCPM

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	91	19	1.77	2.09	2.45	2.78	3.19	3.58	4.00
	Matriculants	45	3	2.25	2.34	2.75	3.01	3.43	3.77	4.00
1982	Applicants	92	23	1.99	2.13	2.55	2.81	3.26	3.45	4.00
	Matriculants	40	6	2.17	2.52	2.74	2.94	3.38	3.69	4.00
1983	Applicants	95	20	1.87	2.17	2.44	2.81	3.18	3.49	3.93
	Matriculants	41	5	2.15	2.36	2.78	3.01	3.33	3.62	3.93
1984	Applicants	104	15	1.95	2.29	2.53	2.89	3.31	3.57	3.96
	Matriculants	45	4	2.27	2.40	2.69	3.14	3.50	3.61	3.79
1985	Applicants	100	19	1.07	2.08	2.36	2.88	3.22	3.55	3.93
	Matriculants	52	5	2.22	2.66	2.92	3.16	3.46	3.60	3.93

MCAT - Quantitative

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	91	2	1	3	4	5	6	8	12
	Matriculants	45	0	3	4	5	6	8	9	12
1982	Applicants	92	5	1	3	3	5	6	8	12
	Matriculants	40	1	1	3	4	6	8	10	12
1983	Applicants	95	0	1	3	4	5	6	8	10
	Matriculants	41	0	2	3	5	6	8	9	10
1984	Applicants	104	3	1	3	3	5	7	8	11
	Matriculants	45	1	3	4	5	6	8	10	11
1985	Applicants	100	0	2	3	4	5	7	8	11
	Matriculants	52	0	2	4	5	6	8	10	11

MCAT - Reading

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	91	2	1	2	3	6	8	10	12
	Matriculants	45	0	2	4	5	7	9	10	12
1982	Applicants	92	5	1	1	3	6	8	9	12
	Matriculants	40	1	1	4	5	8	9	10	12
1983	Applicants	95	0	1	2	3	5	8	9	10
	Matriculants	41	0	2	3	4	7	9	9	10
1984	Applicants	104	3	1	1	4	6	8	9	11
	Matriculants	45	1	3	5	5	8	9	10	11
1985	Applicants	100	0	1	2	4	6	9	10	12
	Matriculants	52	0	2	4	5	8	9	10	12

MCAT - Science Problems

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	91	2	1	3	4	5	7	9	11
	Matriculants	45	0	3	4	5	7	8	9	11
1982	Applicants	92	5	2	4	4	6	7	9	11
	Matriculants	40	1	3	4	5	7	8	10	11
1983	Applicants	95	0	3	4	4	6	8	9	11
	Matriculants	41	0	4	5	6	7	8	10	11
1984	Applicants	104	3	2	4	4	6	8	9	14
	Matriculants	45	1	3	5	6	7	9	10	14
1985	Applicants	100	0	3	4	5	6	8	10	12
	Matriculants	52	0	3	5	6	8	10	10	12

Percentile Ranking of BCPM GPA and New MCAT Quantitative, Reading, and Science Problems Scores for Applicants and Matriculants 1981-1985 Mexican American Males

Grade Point Average - BCPM

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	363	60	1.12	2.13	2.47	2.91	3.24	3.54	3.98
	Matriculants	192	22	1.87	2.42	2.70	3.11	3.38	3.67	3.98
1982	Applicants	350	61	1.29	2.14	2.50	2.87	3.26	3.54	4.00
	Matriculants	183	20	1.68	2.46	2.76	3.10	3.39	3.69	4.00
1983	Applicants	356	79	1.05	2.01	2.38	2.81	3.21	3.52	4.00
	Matriculants	168	30	2.06	2.47	2.73	3.10	3.39	3.70	4.00
1984	Applicants	380	89	1.38	2.16	2.48	2.85	3.28	3.59	4.00
	Matriculants	201	40	1.46	2.47	2.67	3.06	3.43	3.69	4.00
1985	Applicants	331	83	1.53	2.23	2.49	2.87	3.30	3.61	3.99
	Matriculants	182	40	1.79	2.40	2.77	3.04	3.38	3.70	3.99

MCAT - Quantitative

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	363	3	2	4	5	6	8	10	14
	Matriculants	192	1	3	5	6	7	9	10	14
1982	Applicants	350	2	1	4	5	6	8	10	12
	Matriculants	183	1	4	5	6	7	9	10	12
1983	Applicants	356	4	1	4	5	6	8	10	14
	Matriculants	168	2	2	5	6	8	9	10	14
1984	Applicants	380	3	1	4	5	6	8	10	12
	Matriculants	201	1	4	5	6	8	9	10	12
1985	Applicants	331	4	2	4	5	6	8	10	13
	Matriculants	182	0	3	5	6	7	9	11	13

MCAT - Reading

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	363	3	1	4	5	7	9	10	12
	Matriculants	192	1	2	5	6	8	9	10	12
1982	Applicants	350	2	1	3	5	7	9	10	11
	Matriculants	183	1	3	5	7	8	9	10	11
1983	Applicants	356	4	1	3	5	7	8	9	11
	Matriculants	168	2	3	5	7	8	9	10	11
1984	Applicants	380	3	1	3	5	7	9	10	12
	Matriculants	201	1	3	5	7	8	9	10	12
1985	Applicants	331	4	1	4	6	7	9	10	12
	Matriculants	182	0	2	5	7	8	9	10	12

MCAT - Science Problems

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	363	3	3	5	6	7	9	10	14
	Matriculants	192	1	4	6	7	8	9	11	14
1982	Applicants	350	2	3	4	6	7	9	10	15
	Matriculants	183	1	4	6	7	9	10	11	15
1983	Applicants	356	4	3	5	6	7	9	11	13
	Matriculants	168	2	4	6	7	8	10	11	13
1984	Applicants	380	3	2	5	6	7	9	10	15
	Matriculants	201	1	4	6	7	9	10	11	15
1985	Applicants	331	4	3	5	6	8	9	11	14
	Matriculants	182	0	5	7	8	9	10	11	14

Percentile Ranking of BCPM GPA and New MCAT Quantitative, Reading, and Science Problems Scores for Applicants and Matriculants 1981-1985 Mexican American Females

Grade Point Average - BCPM

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	151	21	1.06	2.14	2.43	2.87	3.35	3.63	4.00
	Matriculants	80	6	2.00	2.41	2.66	3.06	3.51	3.68	4.00
1982	Applicants	153	20	1.81	2.25	2.55	2.90	3.37	3.74	4.00
	Matriculants	89	10	1.81	2.37	2.59	3.07	3.49	3.82	4.00
1983	Applicants	157	32	1.41	2.12	2.54	2.94	3.29	3.55	4.00
	Matriculants	86	15	1.79	2.43	2.73	3.02	3.37	3.71	4.00
1984	Applicants	183	39	1.43	2.12	2.50	2.88	3.29	3.52	3.96
	Matriculants	78	12	2.15	2.57	2.83	3.14	3.43	3.76	3.96
1985	Applicants	187	47	1.38	2.18	2.57	2.88	3.31	3.63	3.94
	Matriculants	100	21	1.88	2.51	2.76	3.11	3.38	3.68	3.94

MCAT - Quantitative

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	151	6	1	4	5	6	7	9	11
	Matriculants	80	2	3	5	5	7	8	9	11
1982	Applicants	153	1	2	4	5	6	7	9	11
	Matriculants	89	0	3	5	6	7	8	9	11
1983	Applicants	157	1	2	4	5	6	7	9	12
	Matriculants	86	0	2	4	5	7	8	9	12
1984	Applicants	183	2	1	4	5	6	7	9	14
	Matriculants	78	0	2	5	6	7	8	10	14
1985	Applicants	187	0	2	4	5	6	8	9	11
	Matriculants	100	0	3	5	6	7	9	10	11

MCAT - Reading

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	151	6	2	4	5	7	8	10	12
	Matriculants	80	2	3	4	6	8	9	10	12
1982	Applicants	153	1	1	4	6	7	9	9	11
	Matriculants	89	0	2	6	7	8	9	10	11
1983	Applicants	157	1	1	4	6	8	9	10	12
	Matriculants	86	0	2	6	7	8	9	10	12
1984	Applicants	183	2	1	4	5	7	9	10	12
	Matriculants	78	0	3	5	7	8	10	10	12
1985	Applicants	187	0	1	4	6	8	9	10	12
	Matriculants	100	0	3	5	7	8	9	10	12

MCAT - Science Problems

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	151	6	3	4	5	6	8	9	11
	Matriculants	80	2	4	5	6	7	9	10	11
1982	Applicants	153	1	3	4	5	7	8	10	13
	Matriculants	89	0	4	6	7	8	9	10	13
1983	Applicants	157	1	3	4	5	7	8	10	14
	Matriculants	86	0	4	5	6	7	9	11	14
1984	Applicants	183	2	2	4	5	6	8	10	12
	Matriculants	78	0	4	5	6	8	10	10	12
1985	Applicants	187	0	2	5	6	7	9	10	12
	Matriculants	100	0	5	5	7	8	9	10	12

Percentile Ranking of BCPM GPA and New MCAT Quantitative, Reading, and Science Problems Scores for Applicants and Matriculants 1981-1985
Other Hispanic Males

Grade Point Average - BCPM

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	464	70	.96	2.47	2.87	3.16	3.51	3.77	4.00
	Matriculants	191	18	2.11	2.82	3.05	3.40	3.67	3.84	4.00
1982	Applicants	405	71	.52	2.31	2.74	3.16	3.49	3.74	4.00
	Matriculants	185	16	.52	2.74	3.11	3.41	3.68	3.87	4.00
1983	Applicants	409	75	1.53	2.42	2.77	3.16	3.48	3.78	4.00
	Matriculants	168	13	2.27	2.68	2.99	3.35	3.70	3.87	4.00
1984	Applicants	473	99	1.53	2.38	2.73	3.13	3.44	3.70	4.00
	Matriculants	168	28	2.38	2.93	3.13	3.39	3.63	3.83	4.00
1985	Applicants	440	65	1.53	2.33	2.72	3.11	3.49	3.73	4.00
	Matriculants	195	25	2.06	2.78	3.09	3.34	3.63	3.86	4.00

MCAT - Quantitative

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	464	14	1	4	6	7	9	10	14
	Matriculants	191	3	1	5	7	8	10	11	13
1982	Applicants	405	15	1	4	5	7	9	11	14
	Matriculants	185	1	3	5	7	8	10	11	14
1983	Applicants	409	14	1	5	6	7	9	10	14
	Matriculants	168	2	3	5	6	8	9	11	14
1984	Applicants	473	15	1	4	6	7	9	10	14
	Matriculants	168	4	3	5	7	8	10	11	14
1985	Applicants	440	5	1	4	6	7	9	10	15
	Matriculants	195	0	3	5	7	8	9	11	15

MCAT - Reading

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	464	14	1	3	6	8	9	10	12
	Matriculants	191	3	1	5	7	8	9	10	12
1982	Applicants	405	15	1	4	6	8	9	10	13
	Matriculants	185	1	1	6	7	8	9	10	13
1983	Applicants	409	14	1	4	6	8	9	10	12
	Matriculants	168	2	3	5	7	8	9	11	12
1984	Applicants	473	15	1	4	6	8	9	10	13
	Matriculants	168	4	1	6	7	9	10	11	13
1985	Applicants	440	5	1	4	6	8	9	10	12
	Matriculants	195	0	1	5	7	8	10	11	12

MCAT - Science Problems

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	464	14	2	5	6	8	10	11	15
	Matriculants	191	3	5	7	8	9	11	12	14
1982	Applicants	405	15	2	5	6	8	10	11	15
	Matriculants	185	1	3	6	8	9	11	12	15
1983	Applicants	409	14	2	5	7	8	10	12	15
	Matriculants	168	2	4	7	8	9	11	12	15
1984	Applicants	473	15	2	5	6	8	10	11	14
	Matriculants	168	4	4	7	8	10	11	12	14
1985	Applicants	440	5	2	5	7	8	10	11	15
	Matriculants	195	0	5	7	9	10	11	12	15

Percentile Ranking of BCPM GPA and New MCAT Quantitative, Reading, and Science Problems Scores for Applicants and Matriculants 1981-1985
Other Hispanic Females

Grade Point Average - BCPM

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	231	37	.87	2.30	2.62	3.12	3.42	3.74	4.00
	Matriculants	67	5	2.08	2.59	3.12	3.45	3.77	3.91	4.00
1982	Applicants	216	32	1.56	2.35	2.66	3.14	3.48	3.82	4.00
	Matriculants	87	5	2.14	2.75	3.02	3.36	3.63	3.86	4.00
1983	Applicants	235	39	1.56	2.34	2.70	3.07	3.44	3.74	4.00
	Matriculants	84	9	1.79	2.78	3.07	3.30	3.61	3.81	4.00
1984	Applicants	274	35	1.57	2.41	2.74	3.07	3.36	3.65	4.00
	Matriculants	89	13	2.20	2.80	3.09	3.33	3.58	3.92	4.00
1985	Applicants	220	30	1.52	2.31	2.70	3.03	3.38	3.70	4.00
	Matriculants	83	6	2.28	2.66	2.97	3.31	3.60	3.86	4.00

MCAT - Quantitative

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	231	11	1	3	4	6	8	9	11
	Matriculants	67	2	3	5	7	8	9	10	11
1982	Applicants	216	8	2	3	5	6	8	9	13
	Matriculants	87	4	2	5	6	7	9	10	13
1983	Applicants	235	4	1	4	5	6	8	10	12
	Matriculants	84	1	4	5	6	7	9	11	12
1984	Applicants	274	4	2	4	5	6	8	9	12
	Matriculants	89	0	3	5	6	8	9	10	11
1985	Applicants	220	4	1	4	5	6	8	10	14
	Matriculants	83	1	3	5	6	8	9	11	14

MCAT - Reading

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	231	11	1	3	5	7	9	10	12
	Matriculants	67	2	4	6	8	9	10	11	12
1982	Applicants	216	8	1	4	5	8	9	10	13
	Matriculants	87	4	1	5	7	8	9	10	13
1983	Applicants	235	4	1	4	5	7	9	10	12
	Matriculants	84	1	3	5	7	8	10	10	12
1984	Applicants	274	4	1	3	5	8	9	10	12
	Matriculants	89	0	3	5	8	9	10	11	12
1985	Applicants	220	4	1	3	6	8	9	10	12
	Matriculants	83	1	1	5	7	9	10	11	11

MCAT - Science Problems

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	231	11	2	4	5	7	8	10	13
	Matriculants	67	2	4	6	7	8	10	11	13
1982	Applicants	216	8	4	4	5	7	9	10	14
	Matriculants	87	4	4	6	7	9	10	11	13
1983	Applicants	235	4	2	5	6	7	9	11	14
	Matriculants	84	1	5	6	7	9	10	11	14
1984	Applicants	274	4	2	4	5	7	8	10	13
	Matriculants	89	0	5	6	7	8	10	12	13
1985	Applicants	220	4	3	5	6	8	9	10	12
	Matriculants	83	1	5	7	8	9	10	11	12

Percentile Ranking of BCPM GPA and New MCAT Quantitative, Reading, and Science Problems Scores for Applicants and Matriculants 1981-1985 White Males

Grade Point Average - BCPM

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	20,486	1,287	.77	2.67	3.00	3.34	3.63	3.85	4.00
	Matriculants	9,622	526	1.56	3.06	3.30	3.56	3.78	3.93	4.00
1982	Applicants	19,504	1,322	1.02	2.68	3.00	3.33	3.64	3.86	4.00
	Matriculants	9,392	468	1.65	3.03	3.28	3.55	3.79	3.93	4.00
1983	Applicants	18,758	1,409	.67	2.67	2.99	3.32	3.63	3.85	4.00
	Matriculants	9,189	635	1.50	3.01	3.27	3.53	3.77	3.92	4.00
1984	Applicants	18,735	1,450	1.00	2.66	2.98	3.31	3.62	3.84	4.00
	Matriculants	8,975	617	1.63	3.02	3.27	3.53	3.76	3.91	4.00
1985	Applicants	16,703	1,272	1.02	2.67	2.99	3.32	3.62	3.84	4.00
	Matriculants	8,779	554	1.79	2.98	3.24	3.50	3.75	3.92	4.00

MCAT - Quantitative

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	20,486	445	1	6	7	9	10	11	15
	Matriculants	9,622	202	2	7	8	10	11	12	15
1982	Applicants	19,504	588	1	6	7	9	10	11	15
	Matriculants	9,392	202	3	7	8	9	11	12	15
1983	Applicants	18,758	400	1	6	7	9	10	11	15
	Matriculants	9,189	224	1	7	8	9	11	12	15
1984	Applicants	18,735	423	1	6	7	9	10	11	15
	Matriculants	8,975	227	3	7	8	10	11	12	15
1985	Applicants	16,703	227	1	6	7	9	10	11	15
	Matriculants	8,779	114	3	7	8	10	11	12	15

MCAT - Reading

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	20,486	445	1	6	8	9	10	11	14
	Matriculants	9,622	202	1	7	8	9	10	11	14
1982	Applicants	19,504	588	1	6	8	9	10	11	13
	Matriculants	9,392	202	1	7	8	9	10	11	13
1983	Applicants	18,758	400	1	6	8	9	10	11	13
	Matriculants	9,189	224	1	7	8	9	10	11	13
1984	Applicants	18,735	423	1	6	8	9	10	11	14
	Matriculants	8,975	227	1	7	8	9	10	11	14
1985	Applicants	16,703	227	1	6	8	9	10	11	13
	Matriculants	8,779	114	1	7	8	9	10	11	13

MCAT - Science Problems

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	20,486	445	1	6	8	9	11	12	15
	Matriculants	9,622	202	3	8	9	10	11	13	15
1982	Applicants	19,504	588	2	6	8	9	11	12	15
	Matriculants	9,392	202	4	8	9	10	11	13	15
1983	Applicants	18,758	400	2	6	8	9	11	12	15
	Matriculants	9,189	224	3	8	9	10	12	13	15
1984	Applicants	18,735	423	2	6	8	9	11	12	15
	Matriculants	8,975	227	3	8	9	10	12	13	15
1985	Applicants	16,703	227	2	7	8	9	11	12	15
	Matriculants	8,779	114	4	8	9	10	12	13	15

Percentile Ranking of BCPM GPA and New MCAT Quantitative, Reading, and Science Problems Scores for Applicants and Matriculants 1981-1985 White Females

Grade Point Average - BCPM

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	8,951	593	1.46	2.75	3.06	3.38	3.67	3.87	4.00
	Matriculants	4,094	257	1.57	3.08	3.32	3.57	3.80	3.94	4.00
1982	Applicants	8,762	579	.79	2.76	3.07	3.38	3.66	3.85	4.00
	Matriculants	4,099	233	2.03	3.08	3.31	3.56	3.78	3.92	4.00
1983	Applicants	8,956	740	1.42	2.75	3.05	3.36	3.64	3.84	4.00
	Matriculants	4,208	341	1.97	3.06	3.30	3.55	3.76	3.91	4.00
1984	Applicants	9,206	732	1.18	2.72	3.03	3.34	3.63	3.85	4.00
	Matriculants	4,235	324	2.15	3.04	3.27	3.53	3.76	3.92	4.00
1985	Applicants	8,373	610	1.21	2.73	3.03	3.34	3.62	3.83	4.00
	Matriculants	4,197	284	2.00	3.01	3.25	3.50	3.74	3.90	4.00

MCAT - Quantitative

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	8,951	265	1	5	7	8	10	11	14
	Matriculants	4,094	141	3	6	8	9	10	11	14
1982	Applicants	8,762	271	1	5	7	8	9	11	15
	Matriculants	4,099	111	2	6	7	9	10	11	15
1983	Applicants	8,956	239	1	5	6	8	9	11	14
	Matriculants	4,208	139	3	6	7	9	10	11	14
1984	Applicants	9,206	218	1	5	6	8	9	11	15
	Matriculants	4,235	108	2	7	8	9	10	11	15
1985	Applicants	8,373	150	1	5	7	8	10	11	15
	Matriculants	4,197	67	1	6	8	9	10	11	15

MCAT - Reading

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	8,951	265	1	6	8	9	10	11	14
	Matriculants	4,094	141	1	8	9	10	11	11	14
1982	Applicants	8,762	271	1	6	8	9	10	11	14
	Matriculants	4,099	111	1	7	8	9	10	11	13
1983	Applicants	8,956	239	1	6	8	9	10	11	14
	Matriculants	4,208	139	1	8	9	10	10	11	14
1984	Applicants	9,206	218	1	7	8	9	10	11	14
	Matriculants	4,235	108	1	8	9	10	11	11	14
1985	Applicants	8,373	150	1	6	8	9	10	11	13
	Matriculants	4,197	67	1	8	9	10	11	11	13

MCAT - Science Problems

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	8,951	265	2	6	7	8	10	11	15
	Matriculants	4,094	141	4	7	8	9	10	11	15
1982	Applicants	8,762	271	1	6	7	8	10	11	15
	Matriculants	4,099	111	4	7	8	9	11	12	15
1983	Applicants	8,956	239	2	6	7	8	10	11	15
	Matriculants	4,208	139	4	7	8	10	11	12	15
1984	Applicants	9,206	218	2	6	7	8	10	11	15
	Matriculants	4,235	108	4	7	8	10	11	12	15
1985	Applicants	8,373	150	2	6	7	9	10	11	15
	Matriculants	4,197	67	4	7	8	10	11	12	15

Applicants and Students
Sample State Medical School

Percentile Ranking of BCPM GPA and New MCAT Quantitative, Reading, and Science Problems Scores for Applicants and Matriculants 1981-1985

SAMPLE STATE RESIDENTS

Grade Point Average - BCPM

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	387	0	1.85	2.88	3.18	3.47	3.75	3.92	4.00
	Matriculants	193	0	2.33	3.10	3.38	3.64	3.84	3.95	4.00
1982	Applicants	356	0	1.71	2.86	3.19	3.47	3.74	3.89	4.00
	Matriculants	192	0	2.64	3.14	3.32	3.61	3.82	3.94	4.00
1983	Applicants	304	2	1.89	2.79	3.13	3.39	3.71	3.90	4.00
	Matriculants	168	1	2.40	3.04	3.21	3.55	3.79	3.92	4.00
1984	Applicants	311	1	1.49	2.59	3.02	3.42	3.73	3.94	4.00
	Matriculants	167	0	2.26	2.98	3.27	3.58	3.81	3.96	4.00
1985	Applicants	297	3	1.81	2.73	3.10	3.45	3.73	3.94	4.00
	Matriculants	173	2	2.10	2.92	3.27	3.56	3.78	3.99	4.00

MCAT - Quantitative

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	387	1	2	6	7	8	10	11	13
	Matriculants	193	0	5	7	8	9	10	11	13
1982	Applicants	356	2	3	6	7	8	10	11	14
	Matriculants	192	0	5	7	8	9	11	11	14
1983	Applicants	304	0	3	6	7	8	9	11	14
	Matriculants	168	0	5	6	8	9	10	11	14
1984	Applicants	311	1	2	5	7	8	10	11	14
	Matriculants	167	0	5	7	8	9	10	11	13
1985	Applicants	297	0	4	5	7	8	10	11	14
	Matriculants	173	0	5	7	8	9	10	12	14

MCAT - Reading

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	387	1	1	6	8	9	10	11	14
	Matriculants	193	0	5	8	8	9	10	12	14
1982	Applicants	356	2	1	6	8	9	10	11	12
	Matriculants	192	0	5	7	8	9	10	11	12
1983	Applicants	304	0	1	6	8	9	10	11	13
	Matriculants	168	0	5	7	8	9	10	11	13
1984	Applicants	311	1	2	6	8	9	10	11	13
	Matriculants	167	0	4	8	9	10	10	11	13
1985	Applicants	297	0	1	6	8	9	10	11	12
	Matriculants	173	0	4	7	8	9	10	11	12

MCAT - Science Problems

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	387	1	3	6	7	9	10	11	14
	Matriculants	193	0	6	7	9	10	10	12	14
1982	Applicants	356	2	4	6	7	9	10	11	14
	Matriculants	192	0	7	8	9	9	10	12	14
1983	Applicants	304	0	4	6	8	9	10	12	15
	Matriculants	168	0	7	8	9	10	10	12	14
1984	Applicants	311	1	4	6	7	9	10	11	15
	Matriculants	167	0	6	8	8	10	10	11	14
1985	Applicants	297	0	4	6	7	9	10	11	14
	Matriculants	173	0	6	7	8	9	11	12	14

Percentile Ranking of BCPM GPA and New MCAT Quantitative, Reading, and Science Problems Scores for Applicants and Matriculants 1981-1985 Underrepresented Minority Males SAMPLE STATE RESIDENTS

Grade Point Average - BCPM

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	12	0	1.85	1.90	2.44	3.07	3.47	3.70	3.71
	Matriculants	2	0	3.13	-	-	-	-	-	3.44
1982	Applicants	6	0	1.93	-	2.17	2.58	3.00	-	3.67
1983	Applicants	11	0	1.99	2.02	2.16	2.72	3.38	3.98	4.00
	Matriculants	2	0	2.72	-	-	-	-	-	4.00
1984	Applicants	6	0	1.88	-	2.07	2.18	2.37	-	2.71
	Matriculants	1	0	2.26	-	-	-	-	-	2.26
1985	Applicants	5	0	2.21	-	2.49	3.32	3.60	-	3.68

MCAT - Quantitative

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	12	0	2	2	4	6	8	10	10
	Matriculants	2	0	7	-	-	-	-	-	8
1982	Applicants	6	0	3	-	3	5	6	-	8
1983	Applicants	11	0	3	3	6	6	8	9	9
	Matriculants	2	0	6	-	-	-	-	-	9
1984	Applicants	6	1	2	-	3	4	8	-	8
	Matriculants	1	0	8	-	-	-	-	-	8
1985	Applicants	5	0	4	-	5	7	8	-	8

MCAT - Reading

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	12	0	2	2	3	6	7	8	8
	Matriculants	2	0	7	-	-	-	-	-	7
1982	Applicants	6	0	1	-	3	5	7	-	9
1983	Applicants	11	0	1	2	5	7	7	9	9
	Matriculants	2	0	7	-	-	-	-	-	7
1984	Applicants	6	1	2	-	3	5	8	-	9
	Matriculants	1	0	9	-	-	-	-	-	9
1985	Applicants	5	0	4	-	5	6	9	-	9

MCAT - Science Problems

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	12	0	3	4	6	7	8	10	10
	Matriculants	2	0	8	-	-	-	-	-	9
1982	Applicants	6	0	4	-	4	6	6	-	8
1983	Applicants	11	0	4	4	6	7	8	10	10
	Matriculants	2	0	10	-	-	-	-	-	10
1984	Applicants	6	1	5	-	6	6	8	-	9
	Matriculants	1	0	7	-	-	-	-	-	7
1985	Applicants	5	0	4	-	6	7	8	-	8

Percentile Ranking of BCPM GPA and New MCAT Quantitative, Reading, and Science Problems Scores for Applicants and Matriculants 1981-1985 Underrepresented Minority Females SAMPLE STATE RESIDENTS

Grade Point Average - BCPM

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	8	0	2.43	-	2.66	2.83	3.31	-	3.87
1982	Applicants	3	0	2.31	-	-	3.36	-	-	3.89
1983	Applicants	4	0	1.93	-	-	2.82	-	-	3.86
	Matriculants	2	0	2.61	-	-	-	-	-	3.86
1984	Applicants	2	0	2.69	-	-	-	-	-	3.52
1985	Applicants	9	0	1.81	-	2.73	3.34	3.59	-	3.90
	Matriculants	3	0	2.73	-	-	3.34	-	-	3.35

MCAT - Quantitative

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	8	0	3	-	4	5	6	-	8
1982	Applicants	3	0	4	-	-	5	-	-	6
1983	Applicants	4	0	3	-	-	6	-	-	9
	Matriculants	2	0	8	-	-	-	-	-	9
1984	Applicants	2	0	5	-	-	-	-	-	8
1985	Applicants	9	0	5	-	5	5	7	-	9
	Matriculants	3	0	5	-	-	5	-	-	6

MCAT - Reading

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	8	0	1	-	4	6	10	-	10
1982	Applicants	3	0	5	-	-	9	-	-	10
1983	Applicants	4	0	3	-	-	6	-	-	10
	Matriculants	2	0	9	-	-	-	-	-	10
1984	Applicants	2	0	8	-	-	-	-	-	10
1985	Applicants	9	0	5	-	6	7	9	-	9
	Matriculants	3	0	5	-	-	8	-	-	9

MCAT - Science Problems

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	8	0	3	-	4	5	7	-	9
1982	Applicants	3	0	4	-	-	7	-	-	7
1983	Applicants	4	0	5	-	-	7	-	-	10
	Matriculants	2	0	8	-	-	-	-	-	10
1984	Applicants	2	0	8	-	-	-	-	-	9
1985	Applicants	9	0	4	-	6	7	9	-	12
	Matriculants	3	0	6	-	-	6	-	-	8

Percentile Ranking of BCPM GPA and New MCAT Quantitative, Reading, and Science Problems Scores for Applicants and Matriculants 1981-1985
All Other Males
SAMPLE STATE RESIDENTS

Grade Point Average - BCPM

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	250	0	1.94	2.91	3.17	3.46	3.74	3.91	4.00
	Matriculants	128	0	2.33	3.06	3.27	3.60	3.78	3.93	4.00
1982	Applicants	235	0	1.71	2.84	3.21	3.48	3.76	3.89	4.00
	Matriculants	136	0	2.64	3.12	3.29	3.60	3.81	3.93	4.00
1983	Applicants	190	1	1.89	2.86	3.16	3.40	3.73	3.92	4.00
	Matriculants	109	0	2.40	3.07	3.22	3.54	3.79	3.89	4.00
1984	Applicants	200	1	1.49	2.60	2.98	3.38	3.70	3.93	4.00
	Matriculants	110	0	2.52	2.97	3.18	3.54	3.76	3.94	4.00
1985	Applicants	197	1	2.10	2.74	3.11	3.45	3.73	3.94	4.00
	Matriculants	126	0	2.10	2.90	3.27	3.57	3.78	4.00	4.00

MCAT - Quantitative

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	250	1	3	6	8	9	10	11	13
	Matriculants	128	0	5	7	8	9	11	11	13
1982	Applicants	235	2	4	7	8	9	10	11	14
	Matriculants	136	0	6	7	8	10	11	12	14
1983	Applicants	190	0	4	6	7	9	10	11	14
	Matriculants	109	0	5	7	8	9	10	11	14
1984	Applicants	200	0	4	5	7	9	10	11	14
	Matriculants	110	0	5	7	8	9	10	11	13
1985	Applicants	197	0	4	6	8	9	10	11	14
	Matriculants	126	0	5	7	8	9	11	12	14

MCAT - Reading

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	250	1	2	6	8	9	10	11	14
	Matriculants	128	0	5	8	8	9	10	11	14
1982	Applicants	235	2	3	6	7	9	10	11	12
	Matriculants	136	0	5	7	8	9	10	11	12
1983	Applicants	190	0	3	7	8	9	10	11	13
	Matriculants	109	0	5	7	8	9	10	11	13
1984	Applicants	200	0	2	6	8	9	10	10	13
	Matriculants	110	0	4	8	8	9	10	11	12
1985	Applicants	197	0	1	6	8	9	10	11	12
	Matriculants	126	0	4	7	8	9	10	11	12

MCAT - Science Problems

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	250	1	4	6	8	9	10	12	14
	Matriculants	128	0	6	8	9	10	11	12	14
1982	Applicants	235	2	4	6	8	9	10	12	14
	Matriculants	136	0	7	8	9	10	11	12	14
1983	Applicants	190	0	5	6	8	9	10	12	15
	Matriculants	109	0	7	8	9	10	11	12	14
1984	Applicants	200	0	4	6	7	9	10	11	15
	Matriculants	110	0	6	8	8	9	10	11	14
1985	Applicants	197	0	4	7	8	9	10	12	14
	Matriculants	126	0	6	8	9	10	11	12	14

Percentile Ranking of BCPM GPA and New MCAT Quantitative, Reading, and Science Problems Scores for Applicants and Matriculants 1981-1985
All Other Females
SAMPLE STATE RESIDENTS

Grade Point Average - BCPM

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	117	0	2.30	3.02	3.32	3.61	3.83	3.94	4.00
	Matriculants	63	0	2.87	3.33	3.53	3.74	3.90	4.00	4.00
1982	Applicants	112	0	2.58	3.01	3.16	3.48	3.69	3.91	4.00
	Matriculants	56	0	2.87	3.17	3.40	3.62	3.84	3.97	4.00
1983	Applicants	99	1	2.26	2.92	3.16	3.46	3.71	3.90	4.00
	Matriculants	55	1	2.65	3.06	3.27	3.56	3.86	4.00	4.00
1984	Applicants	103	0	2.24	2.77	3.13	3.48	3.78	3.98	4.00
	Matriculants	56	0	2.70	3.08	3.37	3.65	3.90	4.00	4.00
1985	Applicants	86	2	2.47	2.82	3.06	3.46	3.80	3.95	4.00
	Matriculants	44	2	2.54	2.95	3.20	3.59	3.91	3.99	4.00

MCAT - Quantitative

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	117	0	3	6	7	8	10	11	13
	Matriculants	63	0	6	7	8	9	10	12	13
1982	Applicants	112	0	3	6	7	8	9	11	12
	Matriculants	56	0	5	6	8	9	10	11	12
1983	Applicants	99	0	4	5	6	8	9	10	11
	Matriculants	55	0	5	6	7	8	10	11	11
1984	Applicants	103	0	4	5	7	8	9	11	12
	Matriculants	56	0	5	7	8	9	10	11	12
1985	Applicants	86	0	4	5	6	8	9	10	12
	Matriculants	44	0	5	6	7	8	9	11	12

MCAT - Reading

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	117	0	3	7	8	9	10	11	12
	Matriculants	63	0	6	8	9	10	11	12	12
1982	Applicants	112	0	4	7	8	9	10	11	12
	Matriculants	56	0	6	7	8	9	10	11	12
1983	Applicants	99	0	4	6	8	9	10	11	12
	Matriculants	55	0	6	7	9	9	10	11	12
1984	Applicants	103	0	5	7	8	9	10	11	13
	Matriculants	56	0	5	8	9	10	11	11	13
1985	Applicants	86	0	5	7	8	9	10	11	12
	Matriculants	44	0	5	7	8	9	10	11	11

MCAT - Science Problems

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	117	0	4	6	7	8	10	11	14
	Matriculants	63	0	6	7	8	9	10	11	14
1982	Applicants	112	0	4	5	7	8	9	11	13
	Matriculants	56	0	7	8	8	9	10	11	13
1983	Applicants	99	0	4	6	7	8	10	11	14
	Matriculants	55	0	7	8	8	9	10	11	12
1984	Applicants	103	0	4	6	7	8	10	11	13
	Matriculants	56	0	7	8	9	10	10	11	13
1985	Applicants	86	0	5	6	7	8	9	11	13
	Matriculants	44	0	7	7	8	9	10	11	13

Percentile Ranking of BCPM GPA and New MCAT Quantitative, Reading, and Science Problems Scores for Applicants and Matriculants 1981-1985

SAMPLE NON-RESIDENTS

Grade Point Average - BCPM

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	611	5	1.63	2.53	2.91	3.28	3.59	3.82	4.00
	Matriculants	7	0	3.46	-	3.48	3.74	3.84	-	3.91
1982	Applicants	534	1	1.78	2.49	2.89	3.26	3.57	3.80	4.00
	Matriculants	8	0	3.29	-	3.51	3.74	3.83	-	3.90
1983	Applicants	479	4	1.05	2.50	2.86	3.27	3.58	3.82	4.00
	Matriculants	30	0	2.91	3.10	3.33	3.52	3.87	3.98	4.00
1984	Applicants	532	4	1.75	2.50	2.88	3.24	3.56	3.77	4.00
	Matriculants	25	0	3.01	3.16	3.27	3.45	3.69	3.79	3.89
1985	Applicants	770	5	1.38	2.56	2.94	3.26	3.57	3.81	4.00
	Matriculants	27	0	2.76	2.93	3.16	3.37	3.67	3.79	4.00

MCAT - Quantitative

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	611	5	2	5	6	8	10	11	14
	Matriculants	7	0	5	-	8	9	11	-	12
1982	Applicants	534	2	1	5	6	8	9	11	13
	Matriculants	8	0	6	-	7	10	11	-	12
1983	Applicants	479	3	2	5	6	8	10	11	14
	Matriculants	30	0	5	7	9	10	11	12	13
1984	Applicants	532	2	2	5	6	8	9	11	14
	Matriculants	25	0	6	7	8	9	11	11	12
1985	Applicants	770	2	2	5	7	8	10	11	14
	Matriculants	27	0	5	7	8	9	11	12	14

MCAT - Reading

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	611	5	1	5	7	8	9	10	12
	Matriculants	7	0	8	-	9	9	9	-	9
1982	Applicants	534	2	1	5	7	8	9	10	12
	Matriculants	8	0	5	-	7	10	12	-	12
1983	Applicants	479	3	1	5	7	9	10	11	13
	Matriculants	30	0	7	8	9	10	11	12	12
1984	Applicants	532	2	1	5	7	8	10	11	13
	Matriculants	25	0	6	7	9	10	11	11	12
1985	Applicants	770	2	1	5	7	9	10	11	12
	Matriculants	27	0	5	7	8	9	10	11	12

MCAT - Science Problems

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	611	5	2	5	7	9	10	11	14
	Matriculants	7	0	9	-	9	11	14	-	14
1982	Applicants	534	2	2	5	7	8	10	11	14
	Matriculants	8	0	8	-	10	10	10	-	11
1983	Applicants	479	3	3	6	7	9	10	11	15
	Matriculants	30	0	8	9	10	11	11	13	14
1984	Applicants	532	2	3	6	7	8	10	11	15
	Matriculants	25	0	8	9	10	11	12	12	14
1985	Applicants	770	2	3	6	7	9	10	12	15
	Matriculants	27	0	7	8	9	10	11	12	14

Percentile Ranking of BCPM GPA and New MCAT Quantitative, Reading, and Science Problems Scores for Applicants and Matriculants 1981-1985 Underrepresented Minority Males SAMPLE NON-RESIDENTS

Grade Point Average - BCPM

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	26	0	1.63	1.88	2.26	2.50	3.02	3.63	4.00
	Matriculants	1	0	3.67	-	-	-	-	-	3.67
1982	Applicants	21	0	1.78	1.83	2.16	2.49	2.95	3.33	3.87
1983	Applicants	29	0	1.05	1.71	2.01	2.60	3.06	3.31	3.96
1984	Applicants	19	0	1.88	2.08	2.56	2.86	3.46	3.68	3.82
	Matriculants	1	0	3.29	-	-	-	-	-	3.29
1985	Applicants	22	1	1.88	2.23	2.51	2.98	3.33	3.39	3.91

MCAT - Quantitative

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	26	0	2	3	4	5	6	8	11
	Matriculants	1	0	8	-	-	-	-	-	8
1982	Applicants	21	0	3	3	4	6	8	10	11
1983	Applicants	29	0	3	4	5	5	7	8	11
1984	Applicants	19	0	3	4	5	6	7	8	9
	Matriculants	1	0	6	-	-	-	-	-	6
1985	Applicants	22	0	2	3	5	6	8	11	12

MCAT - Reading

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	26	0	1	1	4	6	8	9	11
	Matriculants	1	0	9	-	-	-	-	-	9
1982	Applicants	21	0	1	2	5	6	8	9	10
1983	Applicants	29	0	1	1	4	6	8	9	10
1984	Applicants	19	0	3	3	4	6	6	8	8
	Matriculants	1	0	6	-	-	-	-	-	6
1985	Applicants	22	0	1	1	5	7	9	11	12

MCAT - Science Problems

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	26	0	2	4	5	7	7	9	12
	Matriculants	1	0	9	-	-	-	-	-	9
1982	Applicants	21	0	4	4	5	5	8	10	10
1983	Applicants	29	0	3	4	5	6	7	10	10
1984	Applicants	19	0	4	5	6	6	9	10	11
	Matriculants	1	0	8	-	-	-	-	-	8
1985	Applicants	22	0	5	6	6	7	9	11	12

Percentile Ranking of BCPM GPA and New MCAT Quantitative, Reading, and Science Problems Scores for Applicants and Matriculants 1981-1985 Underrepresented Minority Females SAMPLE NON-RESIDENTS

Grade Point Average - BCPM

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	21	0	1.79	1.82	2.28	2.75	3.12	3.72	3.82
1982	Applicants	15	0	2.14	2.15	2.44	2.89	3.12	3.57	3.92
1983	Applicants	12	0	2.02	2.13	2.42	2.68	3.36	3.71	3.76
1984	Applicants	20	0	1.84	1.91	2.11	2.54	3.00	3.59	3.68
1985	Applicants	18	0	2.01	2.04	2.08	2.46	2.83	3.53	3.92

MCAT - Quantitative

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	21	1	3	3	4	5	9	9	10
1982	Applicants	15	0	2	2	4	5	6	7	8
1983	Applicants	12	0	3	3	4	6	7	8	9
1984	Applicants	20	0	2	3	4	5	6	8	8
1985	Applicants	18	0	3	3	4	6	7	9	10

MCAT - Reading

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	21	1	1	1	4	7	9	10	10
1982	Applicants	15	0	2	3	4	6	8	9	10
1983	Applicants	12	0	3	3	4	7	8	10	10
1984	Applicants	20	0	1	2	4	6	8	9	9
1985	Applicants	18	0	1	2	4	7	9	10	11

MCAT - Science Problems

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	21	1	2	3	5	5	7	8	9
1982	Applicants	15	0	2	3	4	6	7	9	10
1983	Applicants	12	0	4	4	5	5	6	7	7
1984	Applicants	20	0	4	4	5	6	7	8	9
1985	Applicants	18	0	4	4	5	6	7	9	10

Percentile Ranking of BCPM GPA and New MCAT Quantitative, Reading, and Science Problems Scores for Applicants and Matriculants 1981-1985
All Other Males
SAMPLE NON-RESIDENTS

Grade Point Average - BCPM

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	422	3	1.82	2.62	2.98	3.31	3.62	3.84	4.00
	Matriculants	6	0	3.46	-	3.48	3.78	3.86	-	3.91
1982	Applicants	357	1	1.93	2.60	2.92	3.30	3.59	3.80	4.00
	Matriculants	5	0	3.50	-	3.52	3.71	3.84	-	3.90
1983	Applicants	321	4	1.63	2.57	2.91	3.32	3.59	3.85	4.00
	Matriculants	24	0	2.91	3.06	3.32	3.55	3.93	3.99	4.00
1984	Applicants	347	3	1.75	2.55	2.89	3.27	3.56	3.78	4.00
	Matriculants	18	0	3.12	3.19	3.29	3.48	3.68	3.78	3.89
1985	Applicants	530	4	1.38	2.59	2.94	3.25	3.57	3.80	4.00
	Matriculants	13	0	2.76	2.92	3.24	3.42	3.70	3.85	3.92

MCAT - Quantitative

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	422	3	4	6	7	8	10	11	14
	Matriculants	6	0	5	-	7	10	11	-	12
1982	Applicants	357	1	2	5	7	8	10	11	13
	Matriculants	5	0	6	-	7	7	11	-	11
1983	Applicants	321	3	3	6	7	8	10	11	14
	Matriculants	24	0	6	8	9	11	11	12	13
1984	Applicants	347	2	2	5	6	8	10	11	14
	Matriculants	18	0	7	8	8	10	11	11	12
1985	Applicants	530	1	3	6	7	8	10	11	14
	Matriculants	13	0	5	6	9	11	11	13	14

MCAT - Reading

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	422	3	1	6	7	8	9	10	12
	Matriculants	6	0	8	-	9	9	9	-	9
1982	Applicants	357	1	1	5	7	8	9	10	12
	Matriculants	5	0	5	-	6	8	10	-	10
1983	Applicants	321	3	1	6	8	9	10	11	13
	Matriculants	24	0	7	8	9	10	11	12	12
1984	Applicants	347	2	1	5	7	8	10	11	12
	Matriculants	18	0	6	8	9	10	11	11	12
1985	Applicants	530	1	1	5	7	9	10	10	12
	Matriculants	13	0	5	6	8	9	10	12	12

MCAT - Science Problems

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	422	3	4	6	7	9	10	12	14
	Matriculants	6	0	9	-	9	12	14	-	14
1982	Applicants	357	1	4	6	7	9	10	11	14
	Matriculants	5	0	8	-	9	10	11	-	11
1983	Applicants	321	3	4	6	8	9	10	11	15
	Matriculants	24	0	8	9	10	11	11	14	14
1984	Applicants	347	2	3	6	7	9	10	12	15
	Matriculants	18	0	9	9	10	11	12	12	13
1985	Applicants	530	1	3	7	8	9	11	12	15
	Matriculants	13	0	9	9	10	11	11	13	14

Percentile Ranking of BCPM GPA and New MCAT Quantitative, Reading, and Science Problems Scores for Applicants and Matriculants 1981-1985
All Other Females
SAMPLE NON-RESIDENTS

Grade Point Average - BCPM

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	142	2	1.83	2.71	2.99	3.32	3.59	3.80	4.00
1982	Applicants	141	0	1.88	2.64	2.95	3.32	3.59	3.85	4.00
	Matriculants	3	0	3.29	-	-	3.79	-	-	3.84
1983	Applicants	117	0	2.09	2.57	2.95	3.32	3.60	3.82	4.00
	Matriculants	6	0	3.25	-	3.32	3.45	3.69	-	3.82
1984	Applicants	146	1	2.22	2.67	3.02	3.25	3.61	3.81	4.00
	Matriculants	6	0	3.01	-	3.14	3.37	3.78	-	3.82
1985	Applicants	200	0	1.94	2.64	3.04	3.33	3.64	3.85	4.00
	Matriculants	14	0	2.87	2.91	3.06	3.37	3.65	3.88	4.00

MCAT - Quantitative

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	142	1	3	5	6	7	9	10	13
1982	Applicants	141	1	1	5	6	8	9	10	13
	Matriculants	3	0	9	-	-	11	-	-	12
1983	Applicants	117	0	2	5	6	7	9	10	12
	Matriculants	6	0	5	-	7	9	9	-	11
1984	Applicants	146	0	2	5	6	8	9	11	13
	Matriculants	6	0	7	-	8	10	10	-	11
1985	Applicants	200	1	3	5	6	8	9	10	12
	Matriculants	14	0	6	7	8	9	10	11	11

MCAT - Reading

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	142	1	1	5	7	9	10	11	12
1982	Applicants	141	1	1	6	7	9	10	10	12
	Matriculants	3	0	10	-	-	12	-	-	12
1983	Applicants	117	0	3	6	7	9	10	11	12
	Matriculants	6	0	8	-	9	10	10	-	11
1984	Applicants	146	0	1	6	7	9	10	11	13
	Matriculants	6	0	9	-	10	10	10	-	11
1985	Applicants	200	1	1	5	7	9	10	11	12
	Matriculants	14	0	8	8	9	10	10	12	12

MCAT - Science Problems

Year	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
1981	Applicants	142	1	2	5	6	8	10	10	13
1982	Applicants	141	1	4	5	7	8	9	10	13
	Matriculants	3	0	10	-	-	10	-	-	10
1983	Applicants	117	0	4	6	7	8	9	10	13
	Matriculants	6	0	9	-	10	10	11	-	11
1984	Applicants	146	0	4	6	7	8	9	10	14
	Matriculants	6	0	8	-	9	10	12	-	14
1985	Applicants	200	1	3	6	7	9	10	11	15
	Matriculants	14	0	7	8	8	9	10	12	12

THE MCAT ESSAY PILOT PROJECT STATUS REPORT

Previous reports to the Council of Deans regarding the AAMC's MCAT Essay Pilot Project have focused on the project's plan of research and the results of the first essay scoring in the spring of 1985. The preliminary data included in this report resulted from the second scoring of essays written during the Fall 1985 MCAT administration. Comparisons of spring and fall data are noted.

Validity data are being collected for a small number of students currently enrolled in medical school. The impact of the essay on the selection process will be investigated by schools participating in 1) simulated admissions decision-making exercises using the essay, 2) retrospective selection activities using the essay and 3) active use of the essay in admissions decision-making for Fall 1987. Research on the impact of the essay on the attitudes, course selection, curriculum, and application patterns of undergraduate students has been designed. Cost data on the development, administration and distribution of the essay will become available as the project progresses.

Preliminary results suggest that additional research on the development of comparable essay topics across administrations is needed. Differences have been noted between the mean essay scores for the Spring and Fall examinee groups. These differences indicate that changes in the format or focus of questions used on the MCAT essay may be warranted. Fall testing of essay prompts differing in length and focus is currently underway and is being considered for the Fall 1986 MCAT administration.

Sample Composition

Twenty-two thousand examinees were tested in the Fall of 1985. A sample of 1,639 examinees was selected to represent the demographic and academic characteristics of the population of Fall, Saturday examinees. Essays for these 1,639 examinees were scored by 20 experienced readers from the California university system most of whom had also participated in the scoring of the Spring 1985 sample. The data in Tables 1 and 2 show that the study sample was representative of the Fall 1985 examinee population and generalization from sample data to the population of Fall examinees is warranted.

Table 1

Demographic Characteristics of Fall Examinees and Essay Sample

		Fall 1985 Examinees	Essay Sample
Sex	Male	58.0[a]	57.5
	Female	42.0	42.5
Race	Black	9.4	9.4
	White	70.1	71.4
	Asian	11.8	10.8
	Hispanic	5.2	5.2
Language Dominance	ESL	2.6	2.6
	Native English Speaker	97.4	97.4
College Year	Freshman	.2	.0
	Sophomore	1.9	1.7
	Junior	12.3	12.3
	Senior	48.3	49.9
	Graduate +	32.0	31.4
	Not Enrolled	4.8	4.3
Home Community	Rural	14.2	15.1
	Urban	70.1	68.6
Multiple Testings	First-time Examinee	56.0	55.8
	Repeat Examinee	44.0	43.9

[a]Percent

Table 2

MCAT Scores for Fall Examinees and Essay Sample

	Fall 1985 Examinees	Essay Sample
Biology	8.1[a]	8.2
	2.5[b]	2.5
Chemistry	8.0	8.0
	2.4	2.4
Physics	8.0	8.0
	2.5	2.5
Science Problems	7.8	7.9
	2.4	2.4
Skills Analyses: Reading	7.6	7.8
	2.5	2.5
Skills Analyses: Quantitative	7.5	7.5
	2.5	2.5

[a]Mean

[b]Standard Deviation

Research Questions

The following research questions were addressed using sample data:

1. What are the performance characteristics of the total sample and of sample groups differentiated by sex, home community, race, and language dominance?

2. What are the relationships between essay scores and such demographic/academic characteristics as age, years of post-secdonary education, and college selectivity?

3. What are the relationships between essay performance and scores on the science and skills analysis tests?

Essay Results for the Scored Sample

Essay results for the 1,639 examinees in the scored sample appear in Figure 1. The score scale for the essay ranged from 2 to 12. The mean essay score for the sample was 7.6. The standard deviation was 1.7. The mean essay score for the Spring sample of 3,000 was 6.8, and the standard deviation was 1.7. The data were normally distributed and all score points were represented.

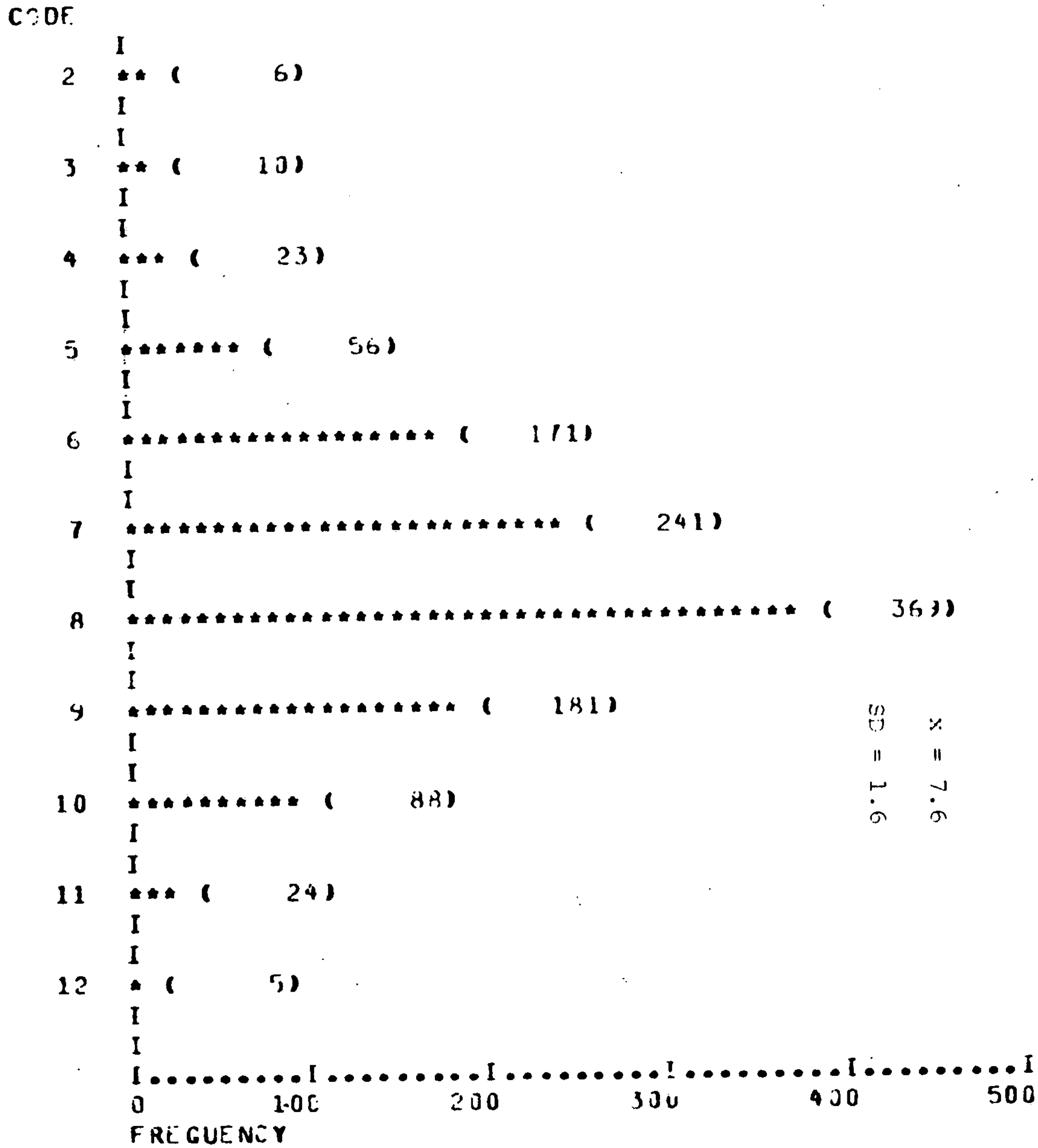

Figure 1
Essay Sample Results

$\bar{x} = 7.6$
SD = 1.6

Results for the Essay Sample Groups

Essay means and standard deviations were calculated separately for students grouped by sex, race, rural/urban status, and language dominance. Group data are presented in Table 3. Group means for the Fall sample were .4 to 1.0 point higher than for the Spring sample. Standard deviations were similar. As in the Spring, group differences were negligible for male/female and rural/urban examines. Group differences did appear, however, for race and language dominance groups. The rank ordering of groups was the same as in the Spring, except for blacks and Hispanics. In the Spring, the mean score for blacks was .6 of a point lower than the mean for Hispanics. On the Fall essay, the mean scores for these two groups were equal.

Table 3

Essay Results for the Sample Groups

		Mean Score	Standard Deviation
Sex	Males	7.5	1.5
	Females	7.7	1.6
Home Community	Rural	7.6	1.6
	Urban	7.6	1.6
Race	Black	6.9	1.5
	White	7.9	1.4
	Hispanic	6.9	1.7
	Asian	7.6	1.7
Language Dominance	ESL[a]	4.4	1.5
	Native English Speaker	7.6	1.5

[a]Includes only Commonwealth Puerto Ricans.

When average essay scores were examined across groups for students at the same Skills Analysis: Reading levels, blacks scored an average of .04 point above the mean essay scores for examinees at the same reading levels. Whites scored .09 point and Asians .02 of a point above the average essay score. Hispanics scored .38 of a point below the average essay score when reading

level was controlled. Hence, even though there were differences in essay performance for examinees of different racial groups, these differences were largely related to basic skills or reading level differences. That is, the writing exercise, itself, did not uncover differences between groups when data were examined for test-takers at the same reading score levels.

Data for Commonwealth Puerto Ricans, however, were less encouraging. As in the Spring, these students scored 2 points below the mean essay score for examinees at the same reading levels. Factors other than reading level differences may have contributed to lower performance for these examinees.

Relation between Essay Scores and Demographic/Academic Characteristics

Means and standard deviations for essay data at levels of selected demographic/academic variables appear in Tables 4-10. All group means increased by .3 to 1.1 point over the Spring sample. The trends within a group remained consistent with those that occurred for the Spring sample.

These data show no relationship between essay performance and 1) age, 2) years of post-secondary education, and 3) number of English semester hours. There was a positive relationship between essay scores and examinees' self-ratings in writing and reading. That is, examinees proved to be good judges of their writing

Table 4

Mean Essay Scores by Age Group

Age	Mean	Standard Deviation	n
19	7.9	1.6	39
20	7.7	1.5	146
21	7.7	1.6	355
22	7.4	1.6	176
23	7.6	1.5	105
24	7.5	1.5	68
25	7.2	1.7	44

r = -.02

Table 5

Mean Essay Scores by Years of Postsecondary Education

Years of Postsecondary Education	Mean	Standard Deviation	n
2	7.8	1.4	19
3	7.5	1.6	141
4	7.6	1.6	617
5	7.5	1.6	331
6	7.8	1.7	41

$r = .03$

Table 6

Mean Essay Score by Number of English Semester Hours

Course Hours in English	Mean	Standard Deviation	n
0- 4	7.8	1.6	128
5- 8	7.7	1.5	411
9-16	7.4	1.6	329
17-24	7.9	1.6	37
24+	7.3	2.0	45

$r = -.03$

Table 7

Mean Essay Scores by Self-Rating in Writing

Rating	Mean	Standard Deviation	n
Below Average	7.1	1.3	17
Average	6.9	1.6	205
Above Average	7.5	1.5	386
Top 10%	8.0	1.4	310
Top 1%	8.6	1.8	55

Table 8

Mean Essay Scores by Self-Rating in Reading

Rating	Mean	Standard Deviation	n
Below Average	7.3	1.4	10
Average	7.1	1.5	210
Above Average	7.4	1.5	371
Top 10%	8.0	1.5	310
Top 1%	8.4	1.7	71

Table 9

Mean Essay Scores by College Selectivity

College Selectivity	Mean	Standard Deviation	n
Mean SAT $\leq$ 892	7.1	1.5	183
893 $\leq$ Mean SAT $\leq$ 1036	7.5	1.6	389
1037 $\leq$ Mean SAT $\leq$ 1181	7.6	1.5	297
Mean SAT $\geq$ 1182	8.4	1.3	172

r = .28

Table 10

Mean Essay Scores by Undergraduate Major

Major	Mean	Standard Deviation	n
Biological Science	7.5	1.6	647
Physical Science	7.6	1.4	196
Math & Statistics	7.4	1.7	12
Social Science	8.2	1.5	107
Humanities	8.2	1.3	32
Specialized Health Science	7.3	1.7	94
Other	7.6	1.8	87

Relation between the Essay and Science and Skills Tests

Correlations between the essay and other tests are shown in Table 11. The correlations between the essay and science tests ranged from .26 to .30. The correlations between the essay and skills tests were higher; Skills Analysis:Reading had the highest correlation with the essay, r = .49. These intercorrelations were lower, however, than those observed among the science and skills analysis tests themselves; observed intercorrelations for these tests ranged from .51 to .87. This says that the essay was measuring a skill or skills that were different from those assessed in the current six-test battery.

Table 11

Correlations Between the Essay and Science and Skills Tests

	Essay
Biology	.30
Chemistry	.27
Physics	.26
Science Problems	.29
Skills Analysis: Reading	.49
Skills Analysis: Quantitative	.37

When essay scores were predicted from data for the six MCAT tests, the overall or combined correlation was .49. This means that 25% ($.49^2$) of the variance in the essay score distribution was common to or overlapped with variance on the other tests. Using this index of overlap and using data about the reliability of the essay and the science and skills analysis tests, an estimate of the amount of unique reliable variance in the essay distribution was derived. The resulting "uniqueness" estimate was 45%. This index says that 45% of the variance in the essay score distribution was reliable and related to abilities or traits that were unexamined by the other tests. These results do not necessarily say that the validity of selection decisions will increase by 45% when essay data are introduced. Data are not available on the relationship between the unique skills measured by the essay and performance in medical school. Performance data will be collected as the project progresses. If evidence for a positive relationship between essay scores and performance in school are obtained, an increase in the predictive validity of the battery will be realized.

1986 COUNCIL OF DEANS MEETING

COD DISCUSSION GROUPS

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THE DECLINING APPLICANT POOL AND ATTRACTIVENESS OF MEDICINE AS A PROFESSION

THE DECLINING APPLICANT POOL AND ATTRACTIVENESS OF MEDICINE AS A PROFESSION

Issue: The applicant pool for positions in U.S. medical schools has declined 22.8 percent since 1974 and is projected to continue to decline. What needs to be done to ensure an ample pool of qualified candidates for admission and/or to prevent an erosion of admission standards?

Applicant Trends

For over forty years, medicine proved to be an attractive career option for young people, as demonstrated by the favorable ratios of medical school applicants to acceptees. In the period following World War II, spurred by the bolus of returning veterans, these ratios reached an unprecedented high of 3.5 to 1 (Table 1). During the 1950's and early 1960's, the ratio first declined sharply but then remained stable at just under 2 applicants per position. The expansion of medical school places that followed was more than compensated by the surge of applicants seeking positions. Between 1964 and 1974 (the peak year), the applicant pool more than doubled (from 19,168 to 42,624) with the applicant/acceptee ratio increasing from 2.1:1 to 2.8:1. Since 1974, the applicant pool has continually declined, severely in the 1975-1978 period, but more slowly since then until another severe 8.5 percent drop in 1985 to its present level of 32,893. The number of accepted students since 1974 first continued to increase but recently has remained stable. The current applicant/acceptee ratio stands at 1.9:1.

The decline in recent years has not been uniform across all applicant subgroups. For example,

TABLE 1

MEDICAL SCHOOL APPLICANTS, ENROLLMENT, AND GRADUATES From 1930-31

Class Year	Applicants	Accepted Applicants	Applicants/ Acceptance Ratio	First-Year Enrollment*	Total Enrollment	Graduates
1930-31	--	--	--	6,456	21,982	4,735
1931-32	--	--	--	6,260+	22,135	4,936
1932-33	12,280	7,357	--	6,426+	22,466	4,895
1933-34	--	--	--	6,457++	22,799	5,035
1934-35	--	--	--	6,356++	22,888	5,101
1935-36	--	--	--	6,605	22,564	5,183
1936-37	--	--	--	5,910+	22,095	5,377
1937-38	--	--	--	5,791+	21,587	5,194
1938-39	--	--	--	5,764	21,302	5,089
1939-40	--	--	--	5,794+	21,271	5,097
1940-41	--	--	--	5,837	21,379	5,275
1941-42	--	--	--	6,218	22,031	5,163
1942-43	--	--	--	6,425	22,631	5,223
1943-44	--	--	--	6,561	23,529	5,134
1944-45	(2nd session)@@	--	--	6,648	24,666	5,169
1944-45	--	--	--	6,523	24,028	5,136
1945-46	--	--	--	6,060	23,216	5,826
1946-47	--	--	--	6,564	23,900	6,389@
1947-48	18,829	6,512	2.9	6,487	22,739	5,543
1948-49	24,242	6,973	3.5	6,688	23,670	5,094
1949-50	24,434	7,150	3.4	7,042	25,103	5,553
1950-51	22,279	7,254	3.1	7,177	26,186	6,135
1951-52	19,920	7,663	2.6	7,436	27,076	6,080
1952-53	16,763	7,778	2.2	7,425	27,688	6,668
1953-54	14,678	7,756	1.9	7,449	28,227	6,861
1954-55	14,538	7,878	1.8	7,576	28,583	6,977
1955-56	14,937	7,969	1.9	7,686	28,639	6,845
1956-57	15,917	8,263	1.9	8,014	29,130	6,796
1957-58	15,791	8,302	1.9	8,030	29,473	6,861
1958-59	15,170	8,366	1.8	8,128	29,614	6,860
1959-60	14,952	8,512	1.8	8,173	30,084	7,081
1960-61	14,397	8,560	1.7	8,298	30,288	6,994
1961-62	14,381	8,682	1.7	8,483	31,078	7,168
1962-63	15,847	8,959	1.8	8,642	31,491	7,264
1963-64	17,668	9,063	1.9	8,772	32,001	7,336
1964-65	19,168	9,043	2.1	8,856	32,428	7,409
1965-66	18,703	9,012	2.1	8,759	32,835	7,574
1966-67	18,250	9,123	2.0	8,964	33,423	7,743
1967-68	18,724	9,702	1.9	9,479	34,538	7,973
1968-69	21,118	10,092	2.1	9,757	35,833	8,059
1969-70	24,465	10,547	2.3	10,397	37,669	8,367
1970-71	24,987	11,500	2.2	11,367	40,487	8,974
1971-72	29,172	12,335	2.4	12,278	43,650	9,558
1972-73	36,135	13,757	2.6	13,642	47,366	10,396
1973-74	40,506	14,335	2.8	14,017	50,571	11,365
1974-75	42,624	15,066	2.8	14,978	53,554	12,716
1975-76	42,303	15,365	2.8	15,350	55,818	13,634
1976-77	42,155	15,774	2.7	15,667	57,765	13,614
1977-78	40,569	15,977	2.5	16,118	60,039	14,391
1978-79	36,636	16,527	2.2	16,613	62,213	14,966
1979-80	36,141	16,886	2.1	17,008	63,800	15,135
1980-81	36,100	17,146	2.1	17,205**	65,189	15,673
1981-82	36,727	17,286	2.1	17,268	66,298	15,985
1982-83	35,730	17,294	2.1	17,254	66,748	15,802
1983-84	35,200	17,209	2.0	17,150	67,327	16,343
1984-85	35,944	17,194	2.1	16,997	67,016	16,318
1985-86	32,893	17,228	1.9	16,963	66,585	

*Includes repeating and reentering students.

**Ponce did not report. This figure includes Ponce's 1979-80 data.

+No figures for the two medical schools of the University of Chicago (Rush Medical College and University of Chicago School of Medicine).

++No figures for the two schools of the University of Chicago (Rush and U. of Chicago) and Duke.

@During the war accelerated programs altered reporting periods. During the period June 1, 1946 to June 30, 1947, ten schools graduated two classes, adding 40 graduates to the total (this figure included in total graduates).

@@Under accelerated program, an extra class graduated in September 1944.

Sources--Applicants and accepted students: Applicant studies of AAMC, 1930-31 through 1978-79, published annually in Journal of Medical Education. Since 1978-79 from AAMC Division of Student Services (Final Admission Action Summary Reports).

Enrollment data: 1930-31 through 1967-68 from JAMA Education Numbers; Since 1968-69 from AAMC Division of Student Services (Fall Enrollment Questionnaire).

Graduate data: 1930-31 through 1967-68 from JAMA Education Numbers; 1967-68 to 1981-82 from LCME Part II; since 1982-83 from AAMC Division of Student Services (Student Records System).

Because there are several independent sources of enrollment data, small discrepancies among

- Underrepresented minority applicants have also declined in number but the percentage drop has been slightly smaller - 7.4 percent between 1984 and 1985 compared to 8.5 percent for the total group.
- The number of female applicants declined in 1985 for the first time since 1978. Their percentage drop (7.3 percent) was smaller than the total group however. As a consequence, the proportion of females in the applicant pool increased to 35.1 percent, continuing a fifteen year trend.
- Applicants in 1985 were more likely to have educational debts in excess of $6000.
- Applicants in 1985 were less likely to come from small private liberal arts colleges (a drop of 16.4 percent from 1984).

The career interests of recent applicants are also telling:

- Those expressing an interest in family or general practice are declining, from 38.9 percent in 1980 to 23.2 percent in 1985.
- Those expressing an interest in surgery or the surgical sub-specialties are on the rise, from 18.1 percent in 1980 to 27.6 percent in 1985.

Of major concern are changes in the academic qualifications of applicants to medical school. At this point, no significant diminution of academic credentials has been witnessed:

- The distributions of MCAT scores for applicants have either remained stable or increased slightly in recent years (Table 2).

TABLE 2
PERCENTILE RANKING OF BCPM GPA AND NEW MCAT QUANTITATIVE, READING, AND SCIENCE PROBLEMS SCORES FOR APPLICANTS AND MATRICULANTS 1981-1985

Grade Point Average - BCPM

ar	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
81	Applicants	36,727	3,205	.50	2.54	2.94	3.31	3.62	3.84	4.00
	Matriculants	16,660	1,113	1.01	2.93	3.24	3.53	3.77	3.92	4.00
82	Applicants	35,730	3,237	.25	2.55	2.94	3.30	3.62	3.85	4.00
	Matriculants	16,567	1,028	.52	2.92	3.23	3.52	3.77	3.92	4.00
83	Applicants	35,200	3,492	.67	2.54	2.92	3.29	3.60	3.83	4.00
	Matriculants	16,480	1,352	1.50	2.90	3.22	3.51	3.75	3.91	4.00
84	Applicants	35,944	3,348	.78	2.52	2.91	3.27	3.59	3.82	4.00
	Matriculants	16,395	1,286	1.34	2.90	3.20	3.49	3.74	3.91	4.00
85	Applicants	32,893	3,171	.58	2.53	2.92	3.28	3.59	3.83	4.00
	Matriculants	16,614	1,382	1.60	2.88	3.18	3.47	3.73	3.90	4.00

MCAT - Quantitative

ar	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
81	Applicants	36,727	1,146	1	5	6	8	10	11	15
	Matriculants	16,660	439	1	6	8	9	11	12	15
82	Applicants	35,730	1,352	1	5	6	8	10	11	15
	Matriculants	16,567	436	1	6	8	9	11	11	15
83	Applicants	35,200	1,097	1	5	6	8	10	11	15
	Matriculants	16,480	495	1	6	7	9	11	12	15
84	Applicants	35,944	1,033	1	5	6	8	10	11	15
	Matriculants	16,395	447	1	6	8	9	11	12	15
85	Applicants	32,893	851	1	5	7	8	10	11	15
	Matriculants	16,614	431	1	6	8	9	11	12	15

MCAT - Reading

ar	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
81	Applicants	36,727	1,146	1	5	7	9	10	11	14
	Matriculants	16,660	439	1	6	8	9	10	11	14
82	Applicants	35,730	1,352	1	5	7	9	10	11	14
	Matriculants	16,567	436	1	7	8	9	10	11	13
83	Applicants	35,200	1,097	1	5	7	9	10	11	14
	Matriculants	16,480	495	1	7	8	9	10	11	14
84	Applicants	35,944	1,033	1	5	7	9	10	11	14
	Matriculants	16,395	447	1	7	8	9	10	11	14
85	Applicants	32,893	851	1	5	7	9	10	11	13
	Matriculants	16,614	431	1	7	8	9	10	11	13

MCAT - Science Problems

ar	Status	Number	Missing	lowest	10th	25th	50th	75th	90th	highest
81	Applicants	36,727	1,146	1	5	7	9	10	11	15
	Matriculants	16,660	439	2	7	8	10	11	12	15
82	Applicants	35,730	1,352	1	5	7	9	10	12	15
	Matriculants	16,567	436	2	7	8	10	11	12	15
83	Applicants	35,200	1,097	2	5	7	9	10	12	15
	Matriculants	16,480	495	3	7	8	10	11	12	15
84	Applicants	35,944	1,033	2	5	7	9	10	12	15
	Matriculants	16,395	447	2	7	9	10	11	13	15
85	Applicants	32,893	851	2	5	7	9	10	12	15
	Matriculants	16,614	431	2	7	9	10	11	12	15

- Grade-point average figures for this group have shown only a very slight decline (Table 2).
- The MCAT scores and grade-point averages of first-year entrants have also not declined in any significant fashion (Table 2).

The distribution of applicants by state of legal residence indicates a more severe drop in numbers for selected states, which may cause problems for state-supported schools constrained to enroll a certain percentage of state residents. For example,

- Between 1984 and 1985, the number of applicants from Oregon and Maine decreased by 27 percent, from Minnesota, New Hampshire, and West Virginia by 21 percent, and from Georgia and Hawaii by 20 percent (Table 3).

A consequence of this may be a loosening of the residency restrictions as schools attempt to fill their entering classes with desirable candidates.

- Between 1981 and 1985, the proportion of applicants who matriculated in schools not in their state of residence increased from 11.2 percent to 13.4 percent.

Applicant Projections

This situation would not be great cause for concern were it not for projections of further substantial declines in the coming years. For example, AMCAS figures to date suggest a further 6 percent decline for 1986 applicants. Significant to the projection of applicant pool sizes are expected trends in the number of 22 year olds in the population. These figures peaked in 1983 and are expected to decline steadily to 1990, followed by a brief

TABLE 3

CHANGES IN THE APPLICANT POOL BY STATE OF LEGAL RESIDENCE
1981 TO 1984, 1984 TO 1985 AND 1981 TO 1985

State	1981 Applicants	1984 Applicants	% Change '81-84	1985 Applicants	% Change '84-85	% Change '81-85
Alabama	550	516	- 6.2	467	- 9.5	-15.1
Alaska	52	61	17.3	52	-14.8	0.
Arizona	340	350	2.9	362	3.4	6.5
Arkansas	356	378	6.2	322	-14.8	- 9.6
California	3,459	3,744	8.2	3,450	- 7.9	- 0.3
Colorado	533	538	0.9	459	-14.7	-13.9
Connecticut	503	461	- 8.3	420	- 8.9	-16.5
Delaware	62	74	19.4	68	- 8.1	9.7
District of Columbia	173	123	-28.9	116	- 5.7	-32.9
Florida	1,213	1,105	- 8.9	1,065	- 3.6	-12.2
Georgia	705	798	13.2	641	-19.7	9.1
Hawaii	220	205	- 6.8	165	-19.5	-25.0
Idaho	83	64	-22.9	74	15.6	-10.8
Illinois	1,892	1,729	- 8.6	1,660	- 4.0	-12.3
Indiana	590	675	14.4	586	-13.2	- 0.7
Iowa	370	346	- 6.5	327	- 5.5	-11.6
Kansas	403	334	-17.1	309	- 7.5	-23.3
Kentucky	533	515	- 3.4	473	- 8.2	-11.3
Louisiana	745	684	- 8.2	679	- 0.7	- 8.9
Maine	80	71	-11.2	52	-26.8	-35.0
Maryland	878	873	- 0.6	836	- 4.2	- 4.8
Massachusetts	1,015	1,027	1.2	975	- 5.1	- 3.9
Michigan	1,599	1,371	-14.3	1,322	- 3.6	-17.3
Minnesota	857	730	-14.8	574	-21.4	-33.0
Mississippi	381	338	-11.3	309	- 8.6	-18.9
Missouri	572	600	4.9	508	-15.3	-11.2
Montana	94	80	-14.9	72	-10.0	-23.4
Nebraska	386	373	- 3.4	320	-14.2	-17.1
Nevada	120	134	11.7	125	- 6.7	4.2
New Hampshire	61	72	18.0	57	-20.8	- 6.6
New Jersey	1,329	1,249	- 6.0	1,167	- 6.6	-12.2
New Mexico	244	206	-15.6	195	- 5.3	-20.1
New York	3,901	3,704	- 5.0	3,413	- 7.9	-12.5
North Carolina	787	700	-11.1	642	- 8.3	-18.4
North Dakota	146	139	- 4.8	123	-11.5	-15.8
Ohio	1,605	1,697	5.7	1,554	- 8.4	- 3.2
Oklahoma	455	396	-13.0	349	-11.9	-23.3
Oregon	298	350	17.4	254	-27.4	-14.8
Pennsylvania	1,990	1,843	- 7.4	1,642	-10.9	-17.5
Puerto Rico	580	614	5.9	567	- 7.7	- 2.2
Rhode Island	117	116	0.9	112	- 3.4	- 4.3
South Carolina	412	427	3.6	396	- 7.3	- 3.9
South Dakota	149	117	-21.5	104	-11.1	-30.2
Tennessee	656	623	- 5.0	595	- 5.5	- 9.3
Texas	1,913	2,138	11.8	2,018	- 5.6	5.5
Utah	280	279	- 0.4	276	- 1.1	- 1.4
Vermont	98	83	-15.3	66	-10.0	-32.7
Virginia	956	834	-12.8	732	-12.2	-23.4
Washington	502	484	- 3.6	460	- 5.0	- 8.4
West Virginia	259	298	15.1	236	-20.8	- 8.9
Wisconsin	675	578	-14.4	545	- 5.7	-19.3
Wyoming	44	54	22.7	48	-11.1	9.1
**Foreign/Unknown	506	646	27.7	590	- 8.7	16.6
	36,727	35,944	- 2.1	32,893	- 8.5	-10.4

SOURCE: AAMC Division of Student Services

upsurge and then further declines (Figure 1).

The number of entering college freshmen and their expressed career interests might be thought to afford an even more precise near-term prediction of applicant pool size. These data are shown in Table 4. The freshmen enrollment data are based on surveys by the National Center of Education Statistics, while the data on percentage of freshmen expressing a career interest in medicine are drawn from annual surveys conducted by the Higher Education Research Institute at UCLA. The third column in Table 5 expresses the product of these two figures, which is an estimate of the number of students entering college with an expressed interest in becoming a physician. Freshmen enrollment peaked in 1981 (the cohort which served as the basis for 1985 applicants) with steady declines since then. The percentage of college freshmen expressing a career interest in medicine has actually been increasing in recent years, although not in a straight line. Reliance on these data alone would have predicted a 15 percent increase in medical school applicants between 1981 and 1985, instead of the 10.4 percent decrease observed! <u>These data suggest that the decline in medical school applicants observed in recent years is not due to a declining population base nor to a decline in early career interests in medicine, but possibly to a growing disaffection with medicine during college in favor of alternative careers</u>.

<u>Factors Involved in Changing Career Interests</u>

The Council of Dean's discussion paper <u>Issues for Consideration</u>, prepared in 1984, notes several factors which could be

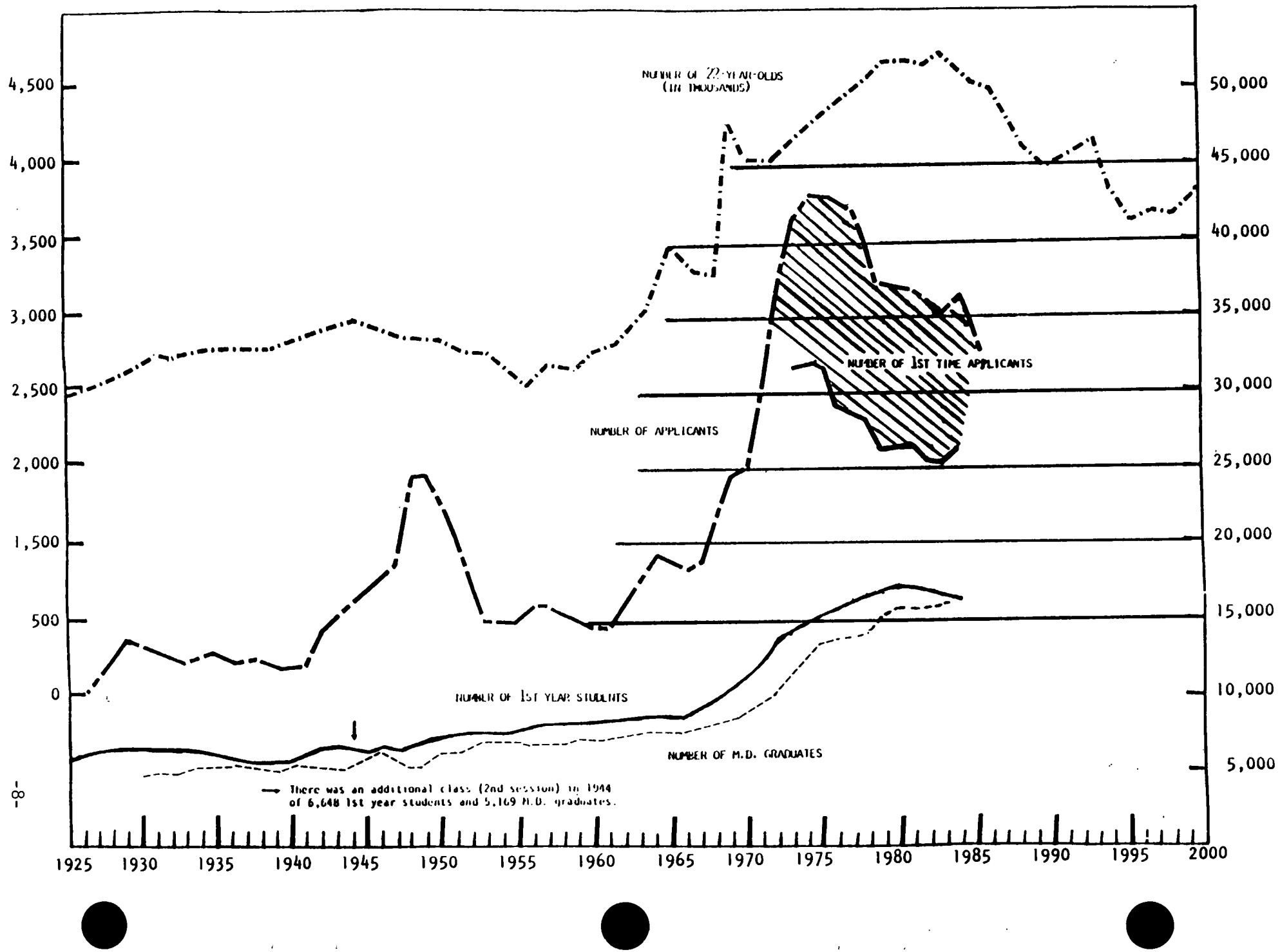


TABLE 4

FIRST-TIME COLLEGE FRESHMEN, PERCENTAGES EXPRESSING A CAREER INTEREST IN MEDICINE, AND MEDICAL SCHOOL APPLICANTS FOUR YEARS LATER - MEN, WOMEN, TOTAL - 1977-1985

	A Number of First-Time College Freshmen* (in millions)	B Percentage Expressing Career Interest in Medicine+	C Col. A x Col. B	D Number of Medical School Applicants Four Years Later
Men				
1977	1.156	3.9	45,084	25,054
1978	1.142	4.3	49,106	24,045
1979	1.180	4.0	47,200	23,239
1980	1.219	4.1	49,979	23,468
1981	1.218	4.0	48,720	21,331
1982	1.199	4.1	49,159	-
1983	1.159	4.5	52,155	-
1984	1.112	4.5	50,040	-
1985	NA	4.1	-	-
Women				
1977	1.238	2.5	30,950	11,673
1978	1.248	2.8	34,944	11,685
1979	1.323	2.9	38,367	11,961
1980	1.369	2.9	39,701	12,476
1981	1.378	2.9	39,962	11,562
1982	1.306	3.1	40,486	-
1983	1.285	3.4	43,690	-
1984	1.244	3.5	42,296	-
1985	NA	3.4	-	-

TABLE 4 (Continued)

	A	B	C	D
Total				
1977	2.394	3.2	76,608	36,727
1978	2.390	3.5	83,650	35,730
1979	2.503	3.4	85,102	35,200
1980	2.588	3.5	90,580	35,944
1981	2.595	3.4	88,230	32,893
1982	2.505	3.6	90,180	-
1983	2.449	3.9	95,511	-
1984	2.357	4.0	89,566	-
1985	NA	3.8	-	-

* Source: Fall Enrollment in Colleges and Universities, 1983, National Center for Education Statistics, Washington, D.C.

\+ Source: The American Freshman: National Norms, Higher Education Research Institute, UCLA, Los Angeles, California.

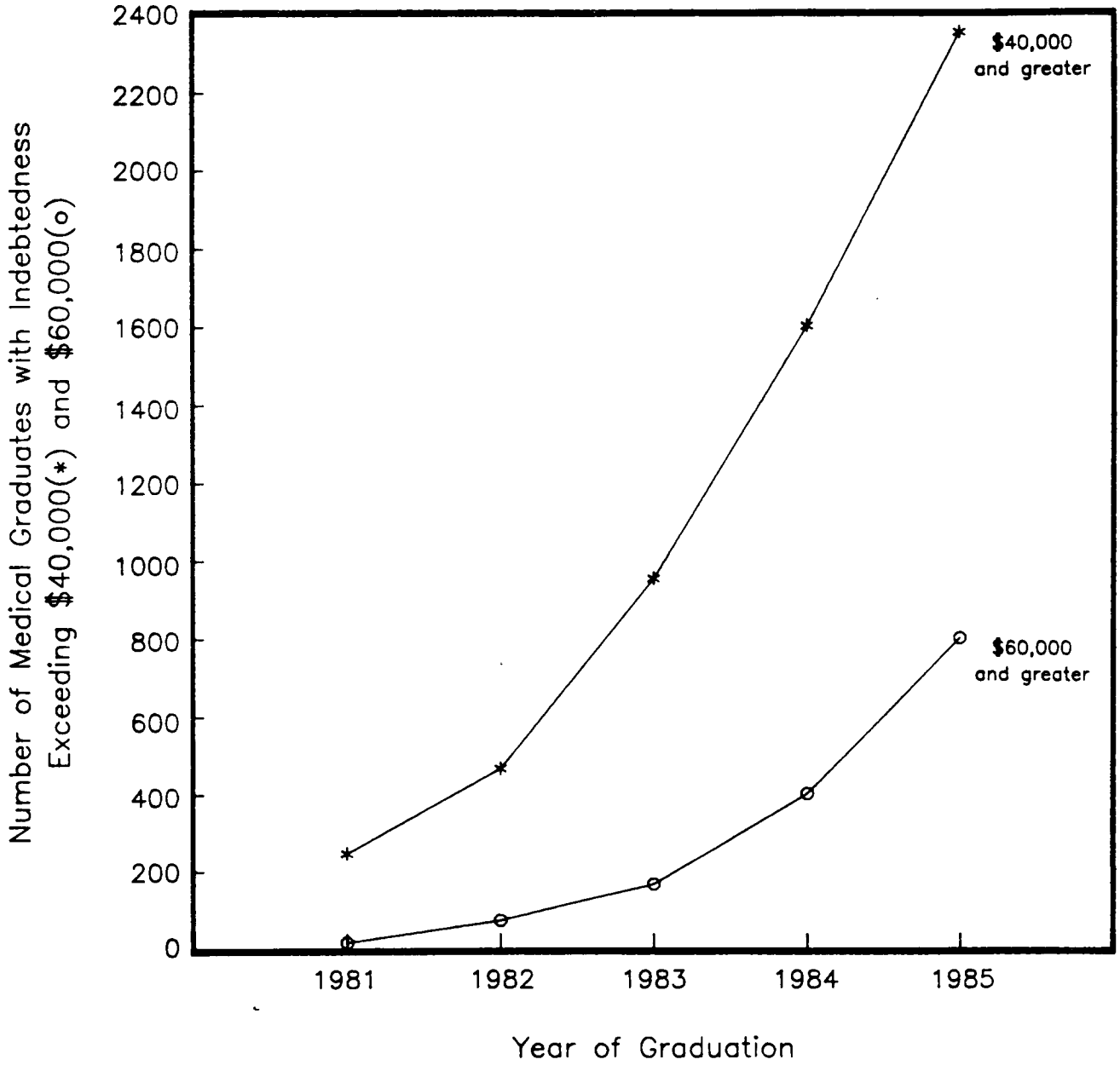
contributing to changing career interests during college away from medicine. The perception that the financial rewards of a medical career will not be as great as in the past may be one. The professional education expected of all physicians now spans a minimum of seven post-college years. The indebtedness incurred during this period is on the rise (Figure 2 and Table 5), due in large part to rising tuitions. Parallel to this are projections, widely publicized in the popular press, of an oversupply of physicians. Increased competition among physicians may be expected to affect negatively earning power. The cost/benefit ratio, considering foregone earnings from the long years of training coupled with increased educational costs, may not be perceived as favorable.

The malpractice insurance crisis is another phenomenon receiving attention in the press. The efforts of obstetricians and others who have seen their premiums increase dramatically have been instrumental in focusing public attention for the issue. While this may be a prerequisite to reform, a negative consequence of these efforts perhaps has been to portray medicine as a profession economically at risk.

Also to be considered are the cost containment initiatives and new modes of health care delivery that are transforming the nature of medical practice. One projection is that traditional fee-for-service practice of medicine will cover only 5 percent of the population by 1990. Health maintenance organizations (HMOs), particularly of the Individual Practice Association (IPA) type, and preferred provider organizations (PPOs) are expected to predominate. These new modes of delivery are seen as imposing

FIGURE 2

Indebtedness of Medical Graduates: 1981–1985



Source: LCME Questionnaire; Association of American Medical Colleges

TABLE 5

INDEBTEDNESS OF MEDICAL GRADUATES: 1981-1985

Number of Seniors with Indebtedness of:	YEAR OF GRADUATION				
	1981	1982	1983	1984	1985
$40,000-49,999	191	289	585	821	986
$50,000-59,999	41	106	201	378	569
$60,000-69,999	10	52	88	194	318
$70,000-79,999	5	15	45	110	178
$80,000 and greater	1	6	35	98	305
$40,000 and greater	248	468	954	1601	2356
$60,000 and greater	16	73	168	402	801
Average Indebtedness (for graduating seniors with debt)	$19,697	$21,051	$23,647	$26,496	$29,943
Percent of Graduating Seniors with Debt	77	83	86	88	87

Source: LCME Questionnaire and Graduation Questionnaire, Association of American Medical Colleges.

greater constraints on physician practice and lessened autonomy and control. Indeed, 40 percent of respondents to the 1985 AAMC Graduation Questionnaire expected to work in a salaried position, up from 33 percent in 1980.

These trends are creating a pessimistic view of the future of medicine among established practitioners, one that is clearly evident from a perusal of the correspondence to major medical journals and magazines. Many career interests in medicine have been ignited by personal relationships with physicians. There is anecdotal information that established physicians are discouraging young people who express an interest in the profession. Harrison L. Rogers, in his presidential address at the December 8, 1985 meeting of the American Medical Association, highlights this point.

> Instead, I'm going to talk about a different kind. It is the one change I see that genuinely concerns me. I can get ready for everything else that is going on, but this one promises serious trouble for the medical profession and for our patients. It is the change I begin to see taking place in the attitude of physicians toward the future of their profession and toward their choice of profession. Not all of them, of course. But far too many.
>
> I am talking about the changed attitude of doctors who now say they are losing their close relationship with patients, doctors who say it will not be possible to continue to practice in view of the professional liability crisis, doctors who believe that hospitals' changing to for-profit status will somehow destroy patient care, those who see every new form of practice as a threat, who see in the new directions of government programs and changes in private health insurance programs nothing but defeat, doctors who say the greatest age of medicine is in the past, and most of all...the changed attitude of those who say they would advise their sons and daughters not to become doctors.

The consequences of any continued disaffection with a career in medicine are likely to be exacerbated in coming years by a decline in the population base. While freshmen college enrollment did not decline in 1980 as predicted from census data, the corner was turned in 1982 two year later. College enrollment is expected to continue to decline for a number of years. Without significant intervention, the number of medical school applicants can be expected to continue its descent begun in 1974.

Suggestions for Action

Several ideas have been suggested to deal with this problem. One is for the AAMC to be more active in mounting programs at the high school and college level to increase awareness of the challenges and rewards of a medical career and to counter any negative images of the future of the profession being portrayed. Given the continued underrepresentation of minority groups, others have pointed out that recruitment initiatives should be particularly focused on minorities and current programs to attract and prepare these students should be expanded and conducted with renewed vigor. The interface of the AAMC with health professions advisors is another area of interest. Improved cooperation with advisors could result in studies of the factors causing disinterest in the medical profession.

Others have focused on the need for medical schools to gear themselves for the inevitable decline in applicants. If current levels of first-year enrollment are maintained, an erosion of admission standards may inevitably result and the competition for students may lead to a lessened commitment to established traffic

rules, resulting in increased turbulence as matriculation time approaches. The solution offered is the systematic reduction of first-year positions at all schools. The renewal of Ph.D. to M.D. programs has also been suggested as a way of continuing to fill medical school places with qualified applicants.

Questions for Discussion:

1) Is the profession of medicine entering a new phase where the efforts made in the recruitment of applicants will match those in selection? Should the AAMC mount information, public relations, and marketing programs on a national scale?

2) Is the future of the profession portrayed in an overly negative fashion by the popular press? What should the AAMC do to preserve an attractive image for the profession?

3) Given the applicant trends and the continued underrepresentation of certain societal groups, should the AAMC place increased energy on attracting minority and rural students to the profession and ensuring their preparedness for medical school?

4) Would studies of college students who shift their career choices from medicine be useful in understanding the causes of declining interest patterns?

5) Given that steps to maintain the number of medical school applicants are unsuccessful, what should be done to prevent an erosion of admissions standards? Does the AAMC have a role?

6) Should attention be directed to the renewal of Ph.D. to M.D.

programs as a way of filling positions in medical school classes with qualified applicants?

7) Does a declining applicant pool leading to increased competition among schools for students portend a lessened willingness to abide by traffic rules and significant turbulence as matriculation time approaches? What should be done to prevent this from happening?

CORPORATE RESPONSIBILITY FOR MEDICAL STUDENTS' EDUCATION

CORPORATE RESPONSIBILITY FOR MEDICAL STUDENTS' EDUCATION

ISSUE:

Medical student education, considered by some to be heavily fragmented and to make extensive demands on students' time, is sometimes regarded as a by-product of the other activities of medical school faculties. The GPEP Report traced these concerns, in part, to the absence of an organizational unit within the institution with this as its primary mission and with sufficient command of resources to carry it out.

Do medical schools need to consider new approaches to organizing in order to meet their responsibility for providing general professional education?

The education of medical students is a responsibility properly delegated by the university or institutional (corporate) governing authority to the medical faculty. Degrees are awarded in the name of the institution on recommendation of the faculty. But, the authority within the faculty is often so dispersed that a coherent program is often neither defined nor implemented. The current and traditional structure of most U.S. medical schools tends to diffuse responsibility for medical students' education. Policy setting is delegated to a curriculum committee; administrative responsibility is assigned to deans and their associates; conduct and supervision of the actual teaching is lodged in the disciplinary departments. Even when medical school faculties were small and organized into only a few administrative units the number of disciplines and faculty members who had a stake in defining what medical students should learn often exceeded the ability of the governance and management structure of a school to impose coherence on the program. During the past quarter century the number of faculty members has increased five-fold and administrative units for subdisciplines and subspecialties have

proliferated, further compounding the problem of determining what should comprise the educational program for medical students.

It seems clear that corporate entities composed of several hundred individuals divided into fifty or more administrative units that have several missions competing for dollars, time, and space must have an administrative structure for each mission that is tailored for its effective accomplishment. For academic medical centers the three major mission categories are research, service, and education.

Research

Research is organized around both individual faculty members, who are expected to engage in scholarly inquiry and around teams of faculty members working together. As biomedical investigation has become more complex, program projects and centers focusing on specified research areas have been encouraged through NIH granting policies. Academic medical centers have organized interdisciplinary teams to compete for grants to support research that requires the combined talents of several persons. These centers often garner and control significant amounts of money and dedicated facilities and equipment. The assimilation of such centers into the corporate structure of the medical school may in some cases produce stress and dislocation, but the opportunity to pursue investigation in an area is generally considered a sufficient reason to accommodate to an organizational change.

Service

Clinical faculty members provide medical services consistent with their specialty and training. With advances in biomedical knowledge and the

concomitant introduction of complex technology, clinical services have been reorganized to provide medical and surgical services more effectively. Multispecialty clinical teams have evolved to provide the mix of talents that are required to provide the highest quality of patient care, and faculties have developed systems for the collection and distribution of revenues derived from their provision of services.

Education

Academic medical centers have adapted their organizational structures to stay at the forefront in research and patient care, but most maintain an organizational structure for their academic mission that has changed little during the past 50 years.

Medical school faculties basically have two educational missions. Their primary mission is the education of graduate students or residents in their discipline or specialty. The secondary mission is to educate medical students. The design and control of programs for the primary mission is the prerogative of each disciplinary department and division with little institutional oversight. The design and control of the program for the secondary mission is considered to be the prerogative of the entire faculty, but each discipline and specialty believes that its faculty should decide what its contributions to the medical student program should be. The result is an educational program about which everyone has something to say and no one knows or controls its content and scope.

Changing the organizational structure for the educational mission is difficult for several reasons. These are:

o Infringement on academic freedom

Many faculty members believe that academic freedom means that each disciplinary faculty should determine what will be taught to whom. Therefore, any effort to modify the traditional organizational structure for either their primary or secondary educational missions is resisted as a threat to academic freedom.

o Lack of a defined budget

There is no programmatically defined budget for medical students' education. Revenue from tuition and appropriations, although ostensibly garnered for medical students' education, are not clearly related to a defined program of study. The wide disbursement of these funds provides little budgetary control over the program and, thus, little fiscal leverage.

o Lack of a competitive stimulus

Faculties compete for research funds based on the merits of their grant proposals, and they modify and refine their research programs to enhance their likelihood of funding.

Increasingly, clinical faculties are competing for patients. New clinical programs for organ transplantation or the diagnosis and treatment of categorical disease are developed, at least in part, to attract patients.

Faculties also compete to attract the best graduate students and residents, and they hone their primary educational programs accordingly.

To date, faculties have not had to compete for medical students and improving their programs for this secondary educational mission to attract good students has not been necessary. This may change. The proportion of students who received acceptances from two or more medical schools increased from 38.4 percent in 1981 to 41.6 percent in 1985, suggesting an increasing competition among schools for a diminishing number of qualified applicants.

Finally, competitive external grant funds to improve medical students' education are miniscule. Even when funds were available during the 1960s and 1970s, they either were provided on a non-competitive basis through capitation awards or for narrow categorical programs that did not challenge an entire faculty to compete to restructure its program. Indeed, supplemental programs developed with categorical grants tended to place more demands on students' already over crowded schedules.

Will Corporate Responsibility for Medical Students' Education Lead to Improvement?

There is little reason to attack the problems outlined above unless changing an institution's organizational structure for medical students' education results in major improvements. Therefore, before considering organizational changes, the modifications that are needed must be identified. Each faculty will have its own list of defects that should be remedied. The defects the Panel on the General Professional Education of the Physician considered to be pervasive were:

- o fragmentation of the medical student program because of a lack of definition of what it is and a failure of communication among disciplines,
- o excessive concentration on the transmission of information by faculties and memorization by students,
- o lack of attention to having students acquire the fundamental skills and the values and attitudes that all physicians should possess,
- o the imposition of overwhelming schedules that allow little opportunity for independent study,
- o the involvement of too many faculty members, each of whom spends too little time with students,
- o erosion of clinical education by changes in teaching hospitals and the diversion of clinical faculties' efforts toward patient care and away from education,
- o excessive reliance on nationally standardized examinations for program design and student evaluation, and
- o the overall low priority faculties give to teaching medical students.

These defects cannot be remedied by simple curriculum changes. In fact, curriculum is probably not the central problem. The central problem is more likely a lack of definition of the study of medicine as a discipline distinct from the study of its subdisciplines and specialties. Lacking such a definition, curriculum revisions most likely will improve medical students' education only marginally, if at all.

A Prescription for Remediation

Antecedent to defining medicine as a discipline and designing a program for its study, a faculty's philosophy about and dedication to educating medical students must shift this mission from a secondary to a primary position. Persuasive leadership by deans, department chairmen, and senior faculty will be needed to achieve such a shift in priorities. If that can be accomplished, an organizational structure that is suited to planning and implementing a redefined, coherent program of study for medical students can be adopted. Who will have day to day responsibility will vary from institution to institution, but, in the GPEP Panel's view, whoever is responsible must also have authority over and budgetary control of the program.

QUESTIONS FOR DISCUSSION:

1. Is the foregoing a reasonable statement of a real problem to which the deans should direct their energies?

2. Should medical schools consider the establishment of organizational units within the institution with medical student education as their primary mission and with sufficient command of resources to carry it out? Is this a desirable objective? A feasible one?

3. What first steps might be taken to increase a faculty's commitment to educating medical students?

4. Can the study of medicine be defined as a coherent disciplines, distinct from the study of its subdisciplines and specialties? If so, would such

a definition set boundary conditions to delimit the content and scope of medical students' education?

5. To gain faculty agreement with the need to define and design a coherent program for medical students' education, which academic administrative posts must take the leadership?

6. What changes in intitutional governance rules would be needed for deans to assume greater authority over the medical students' program?

7. What changes in budgeting policies and procedures would be required?

8. How would you organize a system to exercise your authority and budgetary control?

9. Are the risks involved in attempting to change the corporate administrative structure for medical students' education too great to make the effort worthwhile?

CORPORATE RESPONSIBILITY FOR GRADUATE MEDICAL EDUCATION

CORPORATE RESPONSIBILITY FOR GRADUATE MEDICAL EDUCATION

Issue:

Authority for graduate medical education has traditionally been lodged in the residency program director subject to certain constraints: budgetary limits set by the funding authority, usually the hospital; certification requirements set by specialty boards; and programmatic review by RRC's and the ACGME. In 1981, at the AAMC's urging, the ACGME incorporated in the General Requirements certain fundamental principles requiring broader review by the program's institutional sponsor. Little effort has been made to monitor or enforce these requirements. Contemporary changes in the nature of the care provided in teaching hospitals, increasing constraints on traditional sources of funds for GME, and perceived threats to the academic nature of the GME experience argue for a re-examination of respective roles of the various participants in graduate medical education programs.

Who is responsible for residents' education?

Mitchell Rabkin, M.D., in his address to the AAMC Plenary Session in 1984, pointed out that teaching hospitals are becoming increasingly unsuitable for providing the full gamut of educational experiences for students and residents. Patients will be sicker, their stays shorter, their workups accomplished, their maladies diagnosed, and their course of treatment specified by the time students see them in the hospitals. This result is partially driven by the mechanisms for financing care. Alternative delivery systems, aptly termed "care avoidance systems," will tend to minimize hospitalization. Per case payment for hospital services, a la DRG's, will tend to reduce length of stays and services provided.

The financial squeeze hits from other directions as well. As noted in the Business Meeting agenda materials, both legislative and regulatory proposals will limit direct funding of GME as a part of Federal programs. Price competition will limit the willingness, even the ability, of hospitals to finance educational expenditures from patient charges. Non-hospital based residency programs--family practice programs, for example--have required a

state, Federal, or institutional subsidy to survive. Education in an ambulatory setting presents important educational challenges, but it has also generally exacted substantial patient care productivity costs as well. Ironically, as specialty care becomes increasingly less capable of subsidizing primary care, primary care providers will become increasingly important to the maintenance of the patient base of specialty physicians and hospitals.

The need to develop predictable referral patterns and to maintain the patient base has led to more aggressive development of vertically integrated systems of care. Such systems will be able to internalize savings from increasing efficiency of operations, and thus will, be able to enhance their competitive positions. Will there be a role for education in such systems? How shall it be governed?

What is the role of the hospital and its chief executive officer in GME? Historically, as the primary site for most GME activities the hospital's role has been key. Because of the intimate link between residency programs and the level, quality and extent of care that a hospital was able to provide, they have figured importantly in the hospital's strategic decisions regarding its patient services mission. They have had an important impact on the hospitals' bottom line and, thus, have been significant factors in the CEO's budgetary strategy. Recent changes in financing, and potential changes in the locus of educational activity portend a change in the hospital's influence over the scope and structure of medical education programs. In what ways will this new role evolve?

Manpower consideratons may affect the answer to that question. The New York State Commission on Graduate Medical Education, in order to influence physician distribution, proposes that residency programs be provided by

consortia consisting of a medical school and affiliated teaching hospitals. Conceptually bearing some resemblance to the corporate responsibility principles of the AAMC, this proposal would assign responsibility for educational matters to the medical school. Its impact on hospitals is appropriate to reflect upon. Hospitals in the consortium, by virtue of their ability to participate in GME, are in a different competitive position from those outside. This may be to their advantage or to their disadvantage. Furthermore, hospital members of the consortium, unless part of an integrated system, remain competitors in the patient care arena. But medical school influence may compound or distort that competition. If "second class" citizenship develops, it may not be to a hospital's advantage to remain in the group.

This, of course, raises questions about the role of medical schools. Are the medical school department chairmen, hospital service chiefs and program directors the same person? In some cases, but undoubtedly not all. Where they are the same, which hat should they wear for what decisions? Where they are different, what is the impact of the defused authority? If graduate medical education must migrate from the hospital to other settings, is there an integrating entity available to serve as sponsor? Do new ones need to be created or is the medical school the appropriate candidate? As an academic enterprise with an educational mission and a faculty to carry it out, and with the ability to play an important role in a variety of medical care settings, the medical school is in a good position to assume a leadership role. However, because the faculty often earns its income through professional medical practice, its role as medical staff of a hospital may be of greater significance than its role as faculty. When academic and service interests

compete or conflict, can the school really call the shots? Finally, what sources of funds can medical schools call upon to support this new role?

What role should specialty societies and specialty boards play? The action of the pathology board to lengthen the training requirements by one year was overwhelmingly opposed by academic pathologists. Nevertheless, there was no effective system of review to prevent it. Since there was no change in the "Special Essentials," there was no review by the RRC, nor by the ACGME or its sponsoring organizations. The AAMC's motion to amend the bylaws of the American Board of Medical Specialties to require approval by that body of amendments in certification requirements that would lengthen programs was defeated; a proposal to hold a conference on the subject was adopted instead. The conference has come and gone and there is no action on the issue. Meanwhile, anesthesiology proposes a similar resource consuming change.

What is the proper role of academic institutions in programmatic review and accreditation? RRC's are controlled by the AMA and specialty boards--sometimes they include specialty society representatives. Deans and hospital directors are not involved at the RRC level. Through AAMC participation, medical centers are represented on the ACGME. While by no means insignificant, this organization now has a role limited to reviewing decisions and hearing appeals. It has delegated accreditation decisions to the RRCs.

QUESTIONS FOR DISCUSSION:

1. Who should be responsible for what aspects of graduate medical education?

2. What should be the role of the hospital and its chief executive officer?

3. What should be the role of the medical school and its dean?

4. Should program directors operate with substantial institutional autonomy or should there be corporate programmatic review mechanisms?

5. Do teacher and care giver roles conflict? Do the roles of academic leader and medical practice leader conflict? What are the implications for varying combinations of medical faculty and medical staff membership?

6. If not in the hospital, where and how shall GME be conducted? Financed? Who shall be in charge?

7. What is the appropriate role of specialty societies and specialty boards?

8. What role should academic institutions play in external review and accreditation organizations (RRC's and ACGME)?

ATTACHMENT A

INSTITUTIONAL RESPONSIBILITY FOR GRADUATE MEDICAL EDUCATION

Background

A 1968 CAS conference on the role of the university in graduate medical education resulted in the adoption of an AAMC position that was articulated in 1971.

> The Association of American Medical Colleges endorses the concept that graduate medical education ultimately should become a responsibility of academic medical centers. Through this endorsement the Association urges the faculties of academic medical centers to develop, in conjunction with their parent universities and their teaching hospitals, programmatic plans for taking responsibility for graduate medical education in a manner analogous to presently established procedures for undergraduate medical education.
>
> Assumption of this responsibility by academic medical center faculties means that the entire faculty will establish mechanisms to: determine the general objectives and goals of its graduate programs and the nature of their teaching environment; review curricular and instructional plans for each specific program; arrange for evaluating graduate student programs periodically; and confirm student readiness to sit for examinations by appropriate specialty boards.
>
> The Association encourages hospitals with extensive, multiple graduate education programs which are not now affiliated with academic medical centers to develop their own internal procedures for student selection, specific program review, and proficiency examinations. The accrediting agency is urged initially to accredit the entire graduate program of these hospitals. Ultimately, these institutions should either develop affiliations with degree-granting academic medical centers or seek academic recognition as free-standing graduate medical schools.
>
> The Association urges that the Liaison Committee on Medical Education, the Residency Review Committees, and the Specialty Boards establish procedures which will provide for adequate accreditation of an entire institution's graduate medical education program by one accrediting agency.

The Association further urges that the specialty boards continue to develop test instruments for measuring achievement of individual candidates that avoid superimposing rigid program requirements on the academic medical centers.

It is essential that all related components (including hospitals) of academic medical centers jointly develop appropriate financing for the program costs of graduate medical education.

Based upon this position, the AAMC, in 1974, succeeded in having the Coordinating Council for Medical Education and its five sponsoring organizations adopt the following policy statement.

Institutions, organizations and agencies offering programs in graduate medical education must assume responsibility for the educational validity of all such programs. This responsibility includes assuring an administrative system which provides for management of resources dedicated to education and providing for involvement of teaching staff in selection of candidates, program planning, program review and evaluation of participation.

While educational programs in several fields of medicine properly differ from one another, as they do from one institution to another, institutions and their teaching staffs must ensure that all programs offered are consistent with their goals and meet the standards set forth by them and by voluntary accrediting agencies.

The governing boards, the administration, and the teaching staff must recognize that engagement with graduate medical education creates obligations beyond the provision of safe and timely medical care. Resources and time must be provided for the proper discharge of these obligations.

The teaching staff and administration, with review by the governing board, must (a) establish the general objectives of graduate medical education; (b) apportion residency and fellowship positions among the several programs offered; (c) review instructional plans for each specific program; (d) develop criteria for selection of candidates; (e) develop methods for evaluating, on a regular basis, the effectiveness of the programs and the competency of persons who are in the programs. Evaluation shoud include input from those in training. Facilities and teaching staff shall be appropriate and sufficient for effective accomplishment of the educational mission of each program. If outside facilities or staff are needed to fulfill program needs, the primary sponsor must maintain full responsibility for the quality of education provided.

The revised General Requirements of the Essentials of Accredited Residencies, which were ratified in 1981 after five years of debate, incorporated the fundamentals of this policy statement as requirements that institutions sponsoring graduate medical education programs must meet if their sponsored programs are to be accredited by the ACGME. Now, five years later, the ACGME is just beginning to develop methods to determine whether sponsoring institutions are in compliance with the General Requirements.

Thus, 15 years after the Association proposed that institutions should assume responsibility for all dimensions of the quality of their residency programs, institutional responsibility remains a hollow concept. Why?

TRANSITION TO GRADUATE MEDICAL EDUCATION

TRANSITION TO GRADUATE MEDICAL EDUCATION

The attached discussion papers were developed for the September, 1985 meetings of the AAMC Administrative Boards (Dr. Norma Wagoner, et.al.) and the Southern Council of Deans (Dr. Philip W. Felts).

Extracted from these two papers are the six questions below, focusing on issues directly under the aegis of the medical schools and the Association. Concerted effort of the medical schools in these six areas could reduce significantly the disruption of medical students' general professional education resulting from their pursuit of residency positions and the related recruitment and selection practices of diverse graduate medical education program directors.

1. Are all medical schools willing to establish a date prior to which they will not release dean's letters or transcripts? October 1st was recommended by the AAMC Task Force on Graduate Medical Education in 1981.

2. Are all medical school deans prepared to establish a colloquy with clinical department chairmen and gratuate medical education program directors at their own institutions to discuss:

   a. their selection policies and procedures?
   b. their recruiting practices and how these practices affect medical students at their own and other institutions?
   c. what can be done to move organizations of department chairmen and program directors to work together at the national level to reduce these disruptive forces?

3. Are medical schools prepared to limit the number of electives that can be taken for credit in a single specialty and to limit the number of electives that can be taken at other medical schools?

4. Should the AAMC and its constituent institutions and organizations petition the Liaison Committee on Medical Education and the Accreditation Council for Graduate Medical Education to require all graduate medical education programs to use the National Resident Matching Program for selection of graduating seniors as a condition for accreditation?

5. Should the AAMC's Universal Application Form become the standard form used by all students and accepted by all programs? Should participation in the NRMP require the use of the universal form?

6. Should the AAMC and its constituent institutions develop a centralized common application system, modeled after AMCAS, for graduates of LCME accredited medical schools?

TRANSITION TO GRADUATE MEDICAL EDUCATION: ISSUES AND SUGGESTIONS

A Report to the
Administrative Boards
Association of American Medical Colleges
September 11-12, 1985

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TRANSITION TO GRADUATE MEDICAL EDUCATION: ISSUES AND SUGGESTIONS

I. Graduate Medical Education and the Selection Process

A. Issues

A number of recurring questions and concerns center around the selection process and the associated matches:

- o With the limitation in positions, do program directors need to begin to define the population to whom they will give major consideration in the selection process?
- o We have yet to see the impact of the for profit hospital corporations on the recruitment and selection of medical students for positions funded by those corporations in certain medical centers.
- o Does any organization have the right to prevent, restrict or constrain any groups of individuals from establishing their own match process? Will the for profit hospital corporations move in that direction?
- o The NRMP has been in continual evolution since the late 1950's; does the system need further revision to accommodate contemporary needs?

Consideration of these questions and concerns have led to the identification of the following problem list for the graduate medical education selection process:

1. Too much splintering of specialty interest groups into their own match processes: Colenbrander matches, military matches, Urology match, and individual hospital or specialties which operate outside the boundaries of any match process (the no-match group).
2. No uniformity of applications. Some programs use the uniform application, while others use one that has been developed by their own hospitals. This creates enormous pressures on students who may need to submit 30 to 50 applications to one, two, or more specialties.
3. Points of entry into graduate training are many and varied, leading to massive communication problems for all participants.
4. The algorithm and terminology of the NRMP are complex and not easily understood even by the most experienced.

5. In the competitive specialty programs, selection committees are insisting that candidates come for interviews (without any assurances) in order to be given consideration.

6. There is no composite information on available options through all forms of selection processes. This leads to difficulties in communication about entry points for postgraduate training. Each entity administering a match carries out its own form of advertising.

B. Suggestions

Short Term Changes

1. Request that NRMP review and evaluate current information that is being disseminated to program directors and students, including descriptions of the match algorithm and the types of positions offered.

2. There is a definite need for some entity (perhaps the AAMC) to develop comprehensive materials on the residency selection process. A prototype example might be the Medical School Admission Requirements handbook. Explore how this information can or should be communicated.

Long Term Changes

3. Consider a thorough examination and evaluation of the current NRMP process and staffing needs. The NRMP Board of Directors is the group with this responsibility. Perhaps the recently created advisory board could work with the NRMP to provide input from each specialty.

4. Consider development of centralized application service. While there is a uniform application, there is no agreed upon useage. If the program directors could be furnished a reduced administrative workload through such a service (e.g. AMCAS), the system could become sufficiently widely used to furnish a basis for the development of "traffic rules" (e.g. uniform dates).

5. Develop materials by specialty (including details of specific programs within each specialty) which could be sold at cost to students. Such materials should include the following types of information:

   a. Types of candidates that each program seeks. If possible, a greater specificity about the range of backgrounds sought: LCME graduates only, East coast schools only, AOA, National Board Part I scores of 550 or better, etc. This could reduce the "shot-gun" approach to program selection which currently exists and could markedly reduce the work-load of all parties concerned. If a book of this type is to be developed,

program directors must be convinced that it helps them cut their own costs of communicaton, and reduces their work load.

b. Range of stipend. This may become increasingly important as students amass high debts. Students will need to know if they can afford particular programs.

c. Range of benefits - malpractice insurance, health benefits, etc.

d. Expected background -- "desirable to have electives in....."

e. How the interview process is administered.

f. Whether they have special programs: primary care track, research track, and other special features of the program.

6. Have teaching hospital directors assume authority over the recruitment and selection procedures of the programs sponsored by their institutions. The diversity of specialties and the sheer number of programs (over 5,000) makes the achievement of uniform policies and procedures almost impossible. In addition, the development of useful information about institutions' programs for students would be simplified if reliable communications were estabished with the institutions that sponsor programs rather than with each program director. The AAMC has pressed for greater institutional responsibility for graduate medical education since the late 1960s. The assumption of authority over recruitment and selection policies and procedures by the directors of COTH member hospitals, which provide more than 60 percent of residency positions, could set a precedent that other hospitals would follow.

II. Graduate Medical Education and the Clinical Curriculum

A. Issues

Another major dimension of the transition process is its impact on the clinical education of the medical student, as is evidenced by the following questions and concerns:

- o Do residency directors unduly influence the medical school curriculum now that students are being recruited and selected as early as the third year?
- o Are program directors suggesting (or even stating) to students that unless they take an elective in their hospital, they will not be interviewed or fully considered for a position?
- o Has the use of external examination scores (NBME Parts I and II) become a major selection factor, when it is known that

these scores measure only a small fraction of the attributes necessary for the practice of quality medicine?

A careful review of these and related questions lead us to the following delineation of problems in the clinical education of medical students:

1. Students seeking positions in the very competitive specialties (particularly the surgical specialties, but also, ophthalmology and emergency medicine) are reported to be taking three and four identical electives in the specialty area of choice at various hospitals in the hope of bettering their selection chances. This compromises the general professional education of the physician.

2. A good portion of the fall of the senior year is devoted to completing multiple applications and seeking interviews. There appears to be little interest in assisting the students by grouping interviews for traveling to a particular region of the country. Often times students must make multiple trips back to an area because of the inflexibility of the interview process.

3. The cost of travel associated with the selection process discriminates against less affluent students and, if incorporated in the approved educational costs, increases their indebtedness.

4. The focus on education and learning is being lost in the increasing emphasis on preparing for the residency selection process.

5. Schools are being forced to change their third year curricular structures to accommodate pressures on their students for early exposure to various specialties. Similar pressures in the fourth year are acting to distort elective programs as students undertake earlier specialization.

6. Earlier selection and preparation for selection are forcing premature decisions about career choices upon students.

7. Because low or average NBME scores may preclude a student from being interviewed, schools now need to furnish considerable time for students to prepare for and/or to provide support services to assist them in preparation for these examinations.

8. The pressure upon schools to place their graduates is causing a grade inflation problem, thus lessening the credibility of grades as a measure of competence.

B. Suggestions

Short Term Changes

1. Ask the program directors to work with the AAMC to facilitate communication with medical schools: traffic rules, general guidelines, uniform applications, interview time frames.

2. Undertake research to determine which selection factors provide the best residents. This may increase the quality of selection factors beyond those now currently being used.

Long Term Changes

3. Reduce the number of medical students commensurate with the reduction in residency positions.

4. Development of an examination of clinical skills which is both more comprehensive and more oriented to problem solving. Such an examinaton might well include a "hands on" performance evaluation.

5. Consider a fifth year of medical school. By the fifth year, students would have narrowed their specialty interest to three and would spend three months in each area. The three remaining months of that year would be devoted to a Match process with high quality evaluation techniques being utilized to provide maximum information about the students' skills, abilities and suitability for a particular professional area.

6. Consider extending medical school through four years of clinical education, incorporating residency training into the fourth, fifth, and sixth years of a pre M.D. program.

III. Graduate Medical Education and the Counseling Process

A. Issues

A third series of questions and concerns exemplify another area affected by the transition: the role of Deans of Student Affairs and the problems of counseling in residency selection.

- o In transmitting information to program directors, should Deans of Student Affairs be a student advocate or a factual reporter? Do they have an obligation to see that all medical students have a graduate medical education position?

- o In times of more limited resources, Deans of Student Affairs are being asked to take on greater responsibilities in the residency placement process, including working with graduates who are one, two, or more years out of medical school. How far in time does institutional responsibility extend?

- o What responsibility does an institution have to develop a comprehensive advising system? Should such a system include financial planning and debt counseling since graduates may

have debts which are excessive in relation to residency salaries?

- o Advising is a demanding job and advisors need to have broad knowledge of programs, hospitals, specialties, understanding of selection factors and knowledge of financial matters. Is it realistic to expect our medical schools to expand the staffing for these advising functions?

These questions suggest the following problem areas which might be addressed:

1. In the past, medical students have usually been able to obtain a position in the specialty they wanted. Now, with fewer positions available, Deans of Student Affairs are being placed increasingly in the position of encouraging students to apply for two or three specialties. This emphasis on getting students placed, comes at the expense of the "career fit" counseling process.

2. A related problem with yet to be determined consequences is the possible effect of reduced funding for graduate medical education on the remuneration available and the possibility of significant variation in compensation levels.

3. Early Deans' letters for special matches often require supplemental letters for subsequent matches, compounding the administrative load.

4. Training new and or part-time Deans of Student Affairs in the development of counseling systems and in keeping up with changes in the selection process.

5. Advising the students who find themselves in difficult ethical dilemmnas regarding match situations. The ethics of the marketplace appears to be prevailing, and the sense that anything goes is creating major problems with agreements about current procedural guidelines. This is particularly true for the unmatched student who is seeking a competitive specialty. When very few places are available, the temptation to cheat increases.

6. Helping students reduce the anxieties involved in a competitive selection process where their years of work may not achieve a result supportive of their career goals. This may contribute to a loss of idealism about the practice of medicine and about themselves as practicing physicians.

B. Suggestions

1. Offer a national institute where program directors, Student Affairs Deans, and selected students can meet to develop some strategies and goals for increasing the effectiveness of the selection process.

2. Develop a network of Deans of Student Affairs (computer bulletin board?) to provide a means for updating certain kinds of information. Such a network has been proposed by the NRMP for listing unfilled places throughout the year. This type of network might be extended more fully to provide a greater array of services through the NRMP office.

ATTACHMENT

TRANSITION TO GRADUATE MEDICAL EDUCATION
ISSUES AND SUGGESTIONS

A Recent Chronology

1983

A. A presentation by Jack Graettinger (NRMP) at the Northeast GSA, Spring Meeting - 1983, was instrumental in beginning the most recent round of discussions regarding this set of interrelated problems.

B. Howard Levitin (Yale) took the concerns of the NEGSA to the Thirteen School Consortium who through Dean Robert Berliner (Yale) wrote to Dr. Cooper requesting that the AAMC undertake a major initiative to develop solutions.

C. The Council of Deans discussed this as an agenda item at their Scottsdale meeting (Spring 1983).

*D. The AAMC decided to study the problem from the perspective of the program directors. Dr. Cooper (AAMC) wrote to the clinical societies within CAS asking of each society whether it had an established position on the matter of the selection of applicants into residency training programs.

*E. A plan of action was discussed by The Executive Council (June, 1983). The GSA Steering Committee was charged with the preparation of a "White Paper."

*F. As requested by the Executive Council, Joe Keyes wrote an analysis of the CAS responses for the Executive Council agenda, September, 1983. The Executive Council concluded that the Executive Committee of the AAMC should meet with officials of those clinical disciplines using early match dates. (See H, Below)

*G. This problem area was the major topic of the CAS agenda at the AAMC Annual Meeting, Fall, 1983.

H. Dec. 7, 1983; AAMC Executive Committee met with specialties operating outside NRMP. Libby Short (AAMC) designed for this special meeting a flow chart showing how the NRMP match could meet all of the objectives of those disciplines currently operating outside the match. Minutes of this meeting were circulated to all participants who were, in turn, asked to comment.

* Reference documents available

1984

*I. The minutes of the Dec. 7, 1983 meeting were adjusted for these comments and were mailed to the Executive Council with the agenda for the January, 1984 meeting.

J. The proposal developed by the Executive Council (September 1983) for an advisory committee to NRMP was vetoed by the AMA representative to the NRMP board. In late Spring, 1984, the advisory committee was approved, although it did not meet until Spring, 1985.

K. Spring and Summer of 1984, Dr. Cooper and Dr. Graettinger appeared before the Boards of some of the specialties which operate outside the match with the request that they participate in NRMP; little response.

*L. June, 1984, the CAS Administrative Board adopted a resolution supporting the position of a single match.

*M. September, 1984, the AAMC Executive Council approved a modified form of that resolution.

N. At the AAMC Annual Meeting, Fall, 1984, the Council of Academic Societies and the Council of Deans approved the Executive Council resolution.

1985

O. At the Spring, 1985, CAS meeting, a planned discussion on GPEP developed into a discussion of early match problems.

P. April, 1985, the Specialty Advisory Committee to the NRMP Board held its first meeting with Dr. Swanson representing the AAMC.

Q. April, 1985, new LCME guidelines approved; "Functions and Structure of a Medical School" (See R., below).

*R. Dean Arnold Brown (Wisconsin) requested further discussion at the Summer Meeting of the COD Administrative Board. The Board requested that AAMC Staff, GME officers, and GSA officers develop an Action Agenda for the September, 1985, meeting.

* Reference documents available

FOR

THE SOUTHERN COUNCIL OF DEANS

Opryland Hotel - September 21, 1985

"Transitionitis"

Preparing for the transition into internship and residency training has been labeled the "pre-residency syndrome" by Gus Swanson in his terse but thoughtful editorial in the Journal of Medical Education for March, 1985. Therein, he calls upon specialty boards and residency review committees to mend their ways and provide relief for the Fourth Year medical student in this country. While awaiting any initiative on their part, the DEANS in this country can take steps to help alleviate some of the problems program directors have created. Towards that end, this presentation is made.

"Transitionosis" as the more specific diagnosic label was considered, and the condition does have some of the characteristics of metastatic malignancy. The term "transitionitis," however, seems more appropriate since this is epidemic in proportion and acute in nature but both curable and preventable. The DEANS' therapeutic intervention is urgently indicated. Some problems are presented followed by possible solutions.

What we have lost from the Fourth Year educational experience:

By virtue of the residency-seeking process as it now operates, no longer is it feasible for Fourth Year medical students to use:

- their third summer in medical school for research;
- their third summer and early fall academic units for clinical experiences (clerkships) to help decide among fields of potential interest;
- their Fourth Year for general professional education, emphasizing areas other than their intended field of specialization;
- their Fourth Year in imaginative and innovative ways to broaden their education and enhance the liberal and humanistic side of their education.

What we have instead in the Fourth Year:

Not only have we lost the above, but no longer can Fourth Year students approach the transition into residency training in an orderly, deliberate and thoughtful manner. Instead, what we have is a group of students:

- who have to spend half of their Fourth Year in a high state of anxiety and frustration;
- who have to spend time in visiting clerkships as a prerequisite even to be considered for a particular residency program with the attendent costs in terms of time applying, arranging temporary housing, paying registrations fees and/or tuition, and the dollar expense of all of it;

- who have to spend a great deal of time and money in filling out applications, trying to schedule interviews, traveling to interviews, being interviewed, and paying for all of it;

- who have to compromise their own educational experience or risk not making the transition, which makes them indignant, dispirited and resigned.

The underlying problem:

- The real problem is the program director whose conduct is self-centered and self-serving, who disregards his role as chairman of a department or division in the medical school and his obligations to medical students, and who seems to have forgotten he, too, was once a medical student seeking a residency.

  As one of our junior faculty members in OB/GYN put it, "Our first priority is to get a good house staff rather than helping students get into the programs of their choice."

Specific problems:

- Programs which are not even in the Match.

  Such programs feel they are not bound by any constraints; they may not be the best programs; they are often the earliest to offer the student a position; and they are the most likely to pressure the student into premature commitment.

- Programs which are partially in the Match, offering perhaps half of their PGY-1 (or PGY-whatever) positions through the Match and keeping the other positions in their back pocket for under-the-table negotiations.

- Programs which are in the Match but do not abide by the spirit and intent of the Match.

- Programs which have banded together creating separate matching programs. The "Colenbrander matches" are the best examples:

  Ophthalmology (the original) — Neurology
  Otolaryngology — Neurological Surgery

  Dermatology and Colon & Rectal Surgery, although "Colenbrander" for a while, are now back with NRMP.

  The newest match but not "Colenbrander" is the First Annual (1985) AUA Residency Matching Program for Urology (For PGY-3 positions available July, 1988).

- √ There is new this year the "Central Application Service for Ophthalmology" from Colenbrander. The student must send to Colenbrander a completed Colenbrander "home-made" application form, the Dean's Letter, transcript, letters of recommendation and address list. All material is then photocopied and reduced for distribution. There is, of course, a fee ($35 for the first five addresses and $35 for each additional five) for the service.

At least one program (West Virginia) initially announced it would accept applications only if they had been processed through Colenbrander. That program has since recanted. Apparently this is a "pilot program."

While I understand such a service represents a "convenience" for students (and therefore must be a good thing) and perhaps the idea even sprung from students, I object to it for the following reasons:

1) The University transcript is not longer "official" if it is duplicated and does not bear the seal of the University;
2) The Dean's Letter is null and void if it does bear the signature of the Dean or his designee;
3) There is considerable doubt in my mind whether Colenbrander has the resources to guarantee authenticity of submitted material in the manner of AMCAS, for example, where constant vigil uncovers fraud and deception.
4) There is doubt in my mind whether Colenbrander has the staff capable of duplicating and distributing such material in a timely manner.
5) The service imposes yet an earlier deadline to meet.

This year, I advised my students not to participate; Dr. Colenbrander himself phoned to learn my objections; and he said that the folders of Vanderbilt students would have to contain a letter explaining our students' non-participation.

It is interesting that Colenbrander's "Service" is trying to accomplish the reduction of duplication of effort at the same time we have been unsuccessful in gaining widespread acceptance of the AAMC's APPLICATION FOR RESIDENCY, which our students refer to as the "universal application form."

- Programs which require the student to serve in a visiting clerkship before even being considered for a residency.

- Programs which have "pre-application" in order to get an application form.

- Programs which interview on only two days in the entire fall.

- Programs which interview on only one day of the week.

  Our Department of Surgery is a good example, seeing applicants only on Saturday mornings. I understand that surgeons may be operating the other five days, and maybe it is a good thing to put a ceiling on the student since there are only so many Saturdays in the fall. But, it makes scheduling difficult for students.

- Programs which establish unreasonably early deadlines for application.

  I can see no justification whatever for a deadline of August 15th when interviews are scheduled after the 1st of November.

- Programs which, although no early deadlines are announced, nevertheless have a cut-off at the first, say, 100 applications for their 2 positions and will not consider any applicants after that, regardless of their qualifications.

The process of applying for internships:

- The student writes off for descriptive material and application forms;
- The application folder must be "complete" with application, Dean's Letter, transcript, all recommendations and whatever, before it is submitted to "the committee" for review (this usually takes 2 weeks);
- The "invitation to interview" is extended either in writing or by phone, and the student must then schedule the interview date, interdigitating it with any other interviews already scheduled;
- In order to qualify for reduced airfare rates, the ticket must be bought at least 30 days ahead (adding another 4 weeks to the early deadline);
- On unlimited mileage tickets, the airline often requires the passenger to return to some focal point. For example, the student flying from Seattle to San Diego may have to fly to Denver first and then transfer. It is enormously time consuming.
- The student applying to PGY-1 and PGY-2 programs (most of the Surgical subspecialties, many Radiology programs, Emergency Medicine and others) simultaneously must invest at least twice the time and effort and money and two separate rounds of applications and interviews.

Vanderbilt's Dean's Letters:

Like approximately half of the medical schools in the country, Vanderbilt's Dean's Letters are written by a single individual. He enjoys the task but earlier and earlier deadlines place undue stress on the process. Another growing problem is the total number of applications being mailed out. Last year for 100 students, we sent out 1,850 Letters and transcripts. This year, we entered into a gentleman's agreement that a reasonable number of applications for the student applying to PGY-1 programs would be 15, and for the student applying to both PGY-1 and PGY-2 programs, a reasonable total would be 25. More than that, and we charge the student for each transcript. To show you how effective that agreement has been, we have one student this year applying for Orthopedics who has, to date, requested 94 copies of his Dean's Letter and transcript.

MATCH RELIEF, INC.:

"Created by medical students for medical students" is MRI, an entrepreneurial invention introduced this summer which, for a fee of $88, will perform some of the steps involved in NRMP application. We provide most of those for our students at no cost, such as addressing envelopes. It is designed to relieve "THE MATCH HEADACHE," but none of our students, to my knowledge, has used it.

Some possible solutions:

To combat the entropy threatening the entire transition process,
DEANS should agree that there are problems,
that the problems can and should be resolved, and
that the problems shall be resolved by collective,
concerted action on their parts.
Each DEAN should inquire of the program directors within his own institution
as to their policies with respect to the transition process,
realizing the solutions will not come from them individually
or from their specialty associations without external force.

- Have LCME accreditation of medical schools include full participation of all its affiliated residency programs in the NRMP;
- Insist that specialty associations, if they must have separate matches, do so through the auspices of the NRMP;
- Encourage specialty associations and specialty boards to reconsider the whole training process and the undesirabilty of such early commitment on the medical students' part to specialty careers. Delaying selection of candidates for PGY-2 and PGY-3 positions until, at least, midway in the internship year would result in surer selection and fewer wipe-outs along the line.
- Encourage NRMP to continue reconsidering the entire process and to seek innovative solutions for implementation with the full support of the DEANS.
- Insist on the elimination of individual application forms in favor of the GRADUATE MEDICAL EDUCATION APPLICATION FOR RESIDENCY provided by the NRMP and developed by the AAMC.
- Refuse to release Dean's Letters and official university transcripts to any other than bona fide residency training programs.
- Honor the recommendation of the AAMC's Task Force on Graduate Medical Education in 1981 that no Dean's Letters and transcripts are to be released prior to October 1st, and this should include the Armed Services as well.
- Consider recommending that program directors accept residency applications only from students in medical schools approved by the LCME.
- Consider limiting the Fourth Year medical student to two clerkships in the area he intends to specialize, only one of which may be a "visiting clerkship."
- Insist that programs remove even the suggestion that a "visiting clerkship" might be pre-requisite to consideration for residency.
- Refuse to accept any "visiting students" except those from LCME approved medical schools.
- Cut back on class size.

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