



association of american medical colleges

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FROM: Administrative Board
Organization of Student Representatives

Enclosed for your information and review is the completed version of our Organization of Student Representatives issues paper 'Critical Issues in Medical Education.' This paper is the culmination of a request by the Councils at the Executive Council Retreat in December 1984 for an OSR 'Issues Paper' to complement the papers produced by the three councils in 1984. This paper was written as a draft by the 1985 OSR Administrative Board, reviewed and commented on by the OSR membership at the 1985 annual meeting, and finalized at the January meeting of the 1986 Administrative Board.

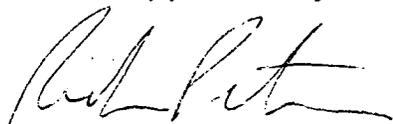
The paper is written to provide the Association with OSR consensus on critical areas in need of review within medical education. We are not the first to present these critiques, nor are our suggestions for change entirely new. We do feel, however, that our position has often been misunderstood or misinterpreted, and we have structured this paper in an effort to explain what we feel and why we feel that way. We wish to communicate that our interpretations and interests are more closely aligned with our senior colleagues than has been assumed in the past.

We wish we could dispel, once and for all, the insipient fear prevalent in the CAS and our basic science faculties that a call for changes in medical curricula is not a call for fewer teachers or less teaching time. We will continue to reiterate that we want more teaching, not less. We do not, however, desire to sit in large lecture halls with our peers and listen to repetitive recitations of what could be more easily read. We

want you to teach us the joy, beauty and eloquence of medicine and medical science. We want you to enjoy the experience and have it enrich your own life and careers. We hope for an era when medical students can truly be 'graduate' students.

To this end we request the help of the COD, COTH and CAS in discussing and implementing some basic changes in medical education consistent with all of our beliefs in quality and integrity of the health care system. We are strong believers that national policy and concensus holds more sway than isolated local efforts.

We appreciate your taking the time to read this paper.



Richard M Peters Jr
for the Administrative Board
Organization of Student Representatives

CRITICAL ISSUES IN MEDICAL EDUCATION

**ORGANIZATION OF STUDENT REPRESENTATIVES
ASSOCIATION OF AMERICAN MEDICAL COLLEGES**

'We must not overlook the important role that extremists play. They are the gadflies that keep society from being too complacent, or self-satisfied; they are, if sound, the spearhead of progress.'

Abraham Flexner

PREFACE

In conjunction with the self-examinations conducted by the three councils of the Association of American Medical Colleges, the OSR Administrative Board has collaborated with the OSR membership to produce the following paper in order to clarify the views and concerns of the Organization of Student Representatives. The intent is to define problems and outline possible solutions to issues confronting medical education.

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INTRODUCTION

The unwillingness of today's medical students to subordinate external interests and concerns to the single minded study of medical science has been misread by many in medical education as a lack of devotion, interest, and ambition. We have tended to be perceived as naive and misguided in our call for a more humanistic approach to medical education. We are often deemed hedonistic, anti-intellectual and anti-science. This interpretation of student views is symptomatic of a basic misconception concerning the relationship between science and humanism in medicine. This misconception is directly reflected in the problems currently confronting medical education. Science and humanism hold equal bearing in the development of medicine. We have destroyed them both in our senseless reliance on facts.

Most medical students enter medical school imbued with a notion that medicine is a balance of science and art; an art not to be saddled with pat definitions as are painting and sculpture, but an art of interpretation, skill and inquiry. It is an art wholly compatible with science, because good science is not the product of unthinking reflex minds. Students are faced with an untimely disappointment. At the root of this disappointment lies the failure of medical education to teach the art of science and promote the humanism that makes such art effective in the clinical or research setting.

Dr. J. Michael Bishop, in his Plenary Address at the 1983 AAMC Annual Meeting, eloquently outlined the dichotomous attitudes of scientists and humanists in medical education. Paradoxically, however, he has ascribed to students precisely the same position that students ascribe to their faculties.

'The contrary view that science in medicine is antipathetic to humanism is simple poppycock so widely held among students of my acquaintance as to reduce me to tears.'

J. Michael Bishop, MD

While students accuse their faculty of being anti-humanistic and faculties accuse students of being anti-scientific we avoid a confrontation with the real issues. We have all, faculty and students, been misled by our educational system and are victims, not perpetrators. We

have fine tuned ourselves to the acquisition and use of facts in our education, research and clinical practice at the expense of the ability to synthesize and interpret them.

Our assessment of the current situation is that a limited perspective on the goals of physicians has produced a professional with a limited ability to serve medicine and society. No amount of rote memorization will compensate for underdeveloped analytical skills. No degree of sleep deprivation alone will turn an intern into a health scientist capable of true understanding and learning.

We soundly concur with the Council of Academic Societies Working Group on *General Professional Education of the Physician, Physicians for the Twenty-First Century Follow-up* 'that the general preparation and education of physicians must always represent a balance of scientific and humanitarian principles, skills, and attitudes, developed in concert to increasing levels of sophistication and effectiveness throughout medical education.' We also concur with the Working Group's further assertion that 'presently physicians are not sufficiently educated scientifically.' We are insufficiently educated at all levels. We believe, however, that 'more of the same' is not likely to remedy these qualitative shortcomings. Science is not exemplified by complacent acceptance of facts. It is exemplified by questioning and inquisitive minds searching for new information and new approaches to perplexing questions. The scientific mind must be continually critical of dogmatic assumptions.

In asking for changes in admission requirements, inclusion of ethics in the curriculum, and less reliance on rote memorization, we are not seeking to make entry into or passage through medical school academically easy. Rather, our efforts are intended to promote an educational environment more in keeping with the values that led us to a career in medicine.

We are committed to and concerned about our chosen profession. Our concern is not limited to ourselves. We think of those who will follow in our footsteps, and are concerned for the public as recipient or victim of our craft. Public service is the primary role of medical schools and teaching hospitals. It is the public that is being done a disservice when the current system of medical training provides an inadequate education that results in suboptimal care of patients. It is precisely that consideration which motivates our desire to improve medical education.

These concerns are shared by many individuals involved in medical education, as well as by those who labored so long on the *GPEP* report.

The *GPEP* report is applauded by students as an accurate statement of some of the problems within medical education. We are active across the country in encouraging the implementation of basic concepts contained within the *GPEP* report. We feel that global statements, with global support, foster an atmosphere of contemplation, discussion and gradual change. We appreciate the attention paid by the writers of the report to student input, yet in this paper we feel it is important that we consider not only those issues raised by *GPEP*, but other issues not directly addressed. We have read the Issues Papers from the Council Of Deans, Council of Academic Societies and Council of Teaching Hospitals and have heard considerable local and national debate on aspects of *GPEP*. Our comments in this paper are intended to provide further student input on many of these issues.

We need a comprehensive integrated approach towards changing the medical education process. We cannot continue to compartmentalize the elements of our education. It is not correct to think of the basic science years as a separate entity from the clinical years because such arbitrary separation is the basis of many problems itself. We need to stop adding material and years to our programs in an attempt to reach some ill-defined goal. We must define the goal and then look back to what might be the most effective method to reach it.

We should stop relying on historical precedent in medical education as justification for maintenance of the status quo. That is unscientific. We encourage and endorse significant changes in our understanding of physiology, pharmacology and medical management and deny the wholesale progress wrought in the disciplines of teaching and education. The fact that there are striking similarities between the *Flexner* and *GPEP* reports is an indictment of our educational system's inability to evolve in the face of a changing environment. Much of the hesitation in endorsing the *GPEP* report is the result of the continued misinterpretation of the call for humanism in medical education as a call for less science and fewer teaching positions. The call is for more and better teaching, not fewer teachers. Young minds are discouraged from a career in medicine by the prospect of a painful, disorganized and protracted education. The public is turned away from teaching hospitals where they perceive residents and medical students as overworked and undertrained.

Within the complexity of problems confronting medical education we feel there are several recurrent themes that are central to an understanding of our current state:

- an overreliance on the teaching and testing of facts not principles
- a dehumanization of the doctor-patient relationship
- a change in clinical education facilities from public service to competitive business

In writing this paper we wish to demonstrate their impact at all levels of medical education. Alternatives we propose cannot be easily accomplished, but we offer ideas as goals towards which we might set a path in the gradual process of change.

CRITICAL ISSUES IN MEDICAL EDUCATION

RECRUITMENT AND ADMISSIONS

In discussing the problems of recruitment and admissions to medical school we wish to underline the importance of the following factors cited by the 'Council of Deans Issues Paper' for the decline in interest in a career in medicine. They are both accurate and alarming.

- '- perceptions of a loss of status of the profession
- difficulty in financing an education
- concern that physician surplus will constrain practice opportunities and limit ability to repay sizable debts
- fear that physician numbers will require a competitive lifestyle, highly entrepreneurial and marketing oriented
- observation that specialty choice may be constrained
- alternate career paths that are competitively attractive and fulfilling
- questions of sociological and economic diversity of those entering the study of medicine persist. Many minority students have experienced both personal and financial difficulties in attempting this career and fewer students from under-represented backgrounds are selecting it, probably because of pragmatic considerations.'

We wish to add the following:

- concern that the undergraduate curriculum is restrictive and rigidly prescribed
- perception that medical education itself is competitive, restrictive and lock-step
- perceptions of residency training as archaic, inflexible and overly time-intensive

To change the perceptions of undergraduate students concerning medical school and the profession of medicine, there must be a change in institutions and the practice of medicine. We agree with many of our faculty that medicine is already losing many of its potentially brightest stars.

Many of us have been disappointed by introductory speeches during our first few days of medical school, saying how proud we should be of our achievements. There is a perverse tendency for schools to begin our medical education with a pep talk attempting to instill the notion that we are the best and the brightest products of the American educational system. It is a strange introduction for a group of mildly idealistic young minds who are wary of the inflated self interest so predominant in the profession of medicine. Although we are the products of very competitive undergraduate programs, most of us are averse to being identified with the pervasive competitive values. Many of us have been unwilling participants in an educational system that is in conflict with the values which led us toward a career in medicine.

We are products of an undergraduate environment in which we saw many of the most intelligent, insightful, and empathic of our classmates dismayed by the process long before applying to medical school. They chose careers and professions in which, rightly or not, they felt they could better maintain their intellectual interests, ideals, and perspectives. Those left within the pre-medical ranks were not necessarily the most capable students of each undergraduate institution. Medical students are intelligent and hard working, but so are many others who perhaps had more to give than just their time spent with books. There is a consensus from the OSR membership that we need to lower the barriers to non-traditional students and move away from a set list of 'requirements' for admission.

There needs to be a total reevaluation of what is essential in the pure

introductory sciences of biology, physics, chemistry and biochemistry in the premedical curriculum and in the basic science years in medical school. There should be a stated consensus on whether these requirements are intended to foster the learning of scientific principles and concepts, are intended as parameters of evaluation, or whether there is actually a large body of factual knowledge that must be acquired from these disciplines. Our feeling is that scientific principles and concepts are just as easily learned through studying medical science as they are studying general science. There is also doubt about whether principles are learned or retained from undergraduate science courses.

As parameters of evaluation, undergraduate science grades have been shown to correlate with scores on the MCAT and National Boards Part I, but have shown no correlation with clinical competence, selection for residency positions, propensity for an individual to enter academic medicine, quality of teaching, quality of research, or even ability to obtain grant approval. Over-reliance on a detailed and prescribed basic science background limits the educational breadth available to undergraduates interested in medicine. Most students will never again have the time and access to the diversity of programs and disciplines offered by undergraduate colleges and universities.

The undergraduate perceptions of difficulties in a medical career cannot be separated from the perceived financial problems of financing a medical education. Financial aid is essential, but it cannot be separated from questions of excessively high tuition, student loan abuse and high default rates. The presently prevailing sentiment at the State and Federal levels that we are a privileged few entering a socially and economically privileged profession is used to justify the notion that governmental resources should not support any debt students might incur in the educational process.

It is also important to note that while the contribution of tuition to the operating budgets of institutions has stayed relatively constant at 6% it represents an inordinate contribution to the debt incurred by students. Comparing 1960-61 to 1983-84, median private school tuition has risen from \$1,050 to \$12,104 and public school tuition has risen from \$498 to \$3,652. Even after adjusting for inflation, the real increases were 340% for private and 220% for public medical schools. While there certainly were profound changes in the cost of providing a medical education during that time period, not all of that increase is justifiably transferable to tuition increases saddling students with debt.

Appeal for financial aid funds needs to be based on the concept that government supported aid be reserved solely for those students with clear financial need. Students and financial aid officers must take some of the blame for past abuses of loan funds and programs. Regrettably, legislation might be more carefully and restrictively worded in the future to control distribution of funds. In relation to past default, assistance should be requested in the collection of bad debt from treasury and judicial branches of government. Current borrowers are paying high insurance rates based on past default.

We must continue to decry the current legislative rationalization that reducing access to government secured loans, grants and guarantees will decrease the number of physicians in the era of a so-called 'physician glut.' It will only decrease access to the poor. In light of such rationalizations we need to continue to advocate the reinstatement of service contingent loan programs. We applaud the continued search for new and innovative ways of financing medical education, exemplified by the proposed 'Coordinated Medical Student Loan Program.'

There is still significant underrepresentation of minorities and women in the medical profession and the OSR feels we must continue to address the question of access at the scholastic, as well as the financial level. Inequities in the educational background of the underrepresented are inevitable until we have a successful national effort to provide equal access and equality of educational experience at all levels. In the interim, students with poor scholastic backgrounds are going to need significant assistance in meeting essential educational goals early in their medical education to bring them up to par with their over-educated classmates. It is no credit to our faculties that these students end up at the bottom of the scholastic heap. The evidence shows that medical students from a disadvantaged background are more likely to practice in a setting that serves disadvantaged populations. If there is no consensus as to whether or not there is a physician glut, there is a consensus that there is a maldistribution of physician manpower. We need physicians to meet the needs of the disadvantaged, but we also need increased minority participation in academic medicine, medical research, and health care administration.

In light of our interests in changing the admission criteria and selection process, and in light of a perceived change in attitude that has already occurred at some institutions, we need to develop better methods of disseminating information to the various undergraduate campuses and

pre-medical advisors. The importance and influence of advice and guidance from undergraduate advisors and pre-medical committees must not be discounted. There needs to be timely and accurate information on criteria and philosophy provided by each institution's admissions committee, and we feel there should be direct interchange between undergraduates and their advisors with medical students and house staff.

PRECLINICAL EDUCATION

'Unfortunately, the present system of organization is not well configured to sustain coherent and integrated planning and presentation of the curriculum leading to the MD degree.'

Daniel C. Tosteson
Dean, Harvard Medical School
Letter to Alumni 1984

The information overload must be treated as fact not a matter of opinion. We are unlikely to solve the problem of information overload by merely slashing time and material from the curriculum. Institutions need to establish the fund of knowledge they intend to impart to their students while decreasing the amount of didactic teaching and reliance on rote memorization. This 'fund' does not need to be a written description of the 'basic essential facts of medicine,' but there needs to be some overall evaluation of what each institution wishes to convey. There is a false assumption that this fund of knowledge will have to shrink from its current scope. Students actually want and need to learn more and need to learn it in a way that contributes to retention and future use. We need to be taught with methods that foster independent learning, insight and problem solving. Facts are items to append to a scientific structure of which the basis, framework and proper use are the principal concepts to be taught and tested. Facts are invariably superceded by new facts. We should not assume that because there are more facts there is more knowledge and because there is more knowledge all of these new facts must be taught. We are confronted with clinicians and researchers who collect vast quantities of facts but can neither interpret or correctly utilize them.

Medical research has brought about a fantastic evolution in the understanding of basic science and clinical problems. In the current environment, however, too much emphasis is put on quantity of research at the expense of quality. It is overused as an example and method of teaching, and is overused as a milestone for academic advancement and recognition. This contributes to the overwhelming volume of scientific literature out of proportion to what it provides in the way of new knowledge. Many of us who consider ourselves scientists shudder when reading articles that are poorly written, are based on poor experimental design, or are possibly fraudulent. Too many of these articles are relied upon and quoted.

On the other hand, exposure to different aspects of quality medical research is of primary importance to medical education. Research can be important for its instructional benefits in providing an introduction to the uncertainty and rapidity of change in medical science, and to entice future researchers from the ranks of medical students. The medical curriculum needs to adopt an educational approach that enhances comprehension of research methodology and evaluation, in lieu of teaching solely the factual aspects of research. This can be facilitated by greater encouragement of research by interested medical students, early in their career, with inclusion of independent study or thesis options in the curriculum. There should also be greater emphasis in curricula on reading and evaluating scientific literature, and inclusion of instructional time in the style and mechanics of scientific writing (i.e. the proper use of the English language). We need to encourage undergraduate applicants to break from the scientific fold and take more courses in literature and writing.

Medical research is a skill, as are surgery, clinical diagnostics and interpersonal interactions. We need to get away from the absurd notion that these are skills that can be taught to anyone. Medical education, clinical medicine and medical research need to begin to recognize this and develop criteria for selection and evaluation of these skills. Grades, class rank and National Board scores make a mockery of the attempt to find and encourage people who will be skilled and innovative participants and practitioners in the future of medicine. No self-respecting graduate science program, outside of medicine, relies on numeric criteria to evaluate their students or their program.

There needs to be a halt to the insidious concept that applicants to competitive graduate medical education programs need to have done sophisticated research in the 'specialty of their choice' while in medical

school. In the same light we need to continue the search for alternative criteria for evaluating faculty for promotion. The "need" to do research is foisted upon all who are interested in an academic career as if research and not teaching was the principal goal of academic institutions. Through changing the way we educate physicians and researchers, and by changing the process of review and incentive, there will be a positive change in the quality and productivity of the overall research environment.

Currently employed didactic teaching methods are a product of an era preceding the explosion in technology of data storage and information access. Medicine depends upon quick access to relevant up to date information from a data base that is changing daily. Medical education needs to encourage the utilization of computers and their technology for information access. It is not the brand or complexity of the gadget that is important. It is important that equipment be available and that its use be encouraged.

Large class size has taken the blame for a decrease in the quality of faculty/student interaction. This has led to a further assumption that large class size has diminished the quality of the educational experience by influencing the need for didactic teaching in large lecture halls and the use of machine scored multiple choice exams. It is apparent that class size at some institutions is large and unwieldy. Reality, however, must be separated from assumptions of cause and effect. The Council of Deans, in the introduction to their Issues Paper, state that in the last 20 years the number of medical students has increased by 100 percent while the number of faculty has increased by 300 percent. While faculty/student interaction is decreasing there is an abundance of faculty members. Certainly these faculty members bring in research money and prestige to institutions, but are they directly contributing to the educational goals of medical schools?

Remuneration and advancement for faculty should be based on quantity and quality of teaching in addition to current reliance on research productivity and provision of clinical care. Evaluation of teaching criteria is certainly less exacting, but incorrect criteria are invalid no matter how easily quantified. In this light, faculty need to be provided with assistance in developing their pedagogical skills. They need a better understanding of the techniques and technologies that are available as teaching tools. Development of these skills would contribute to the faculty member's own growth and to more efficient and productive use of faculty time. Education needs to be promoted as a beneficial experience

for all those involved.

Within medical education instruments of evaluation reflect current methods of teaching. The predominance of multiple choice exams merely reinforces rote memorization of facts. While decrying multiple choice examinations and encouraging alternatives throughout medical education, we acknowledge the need for licensing exams to maintain standards of competence in practioners. The 'classic' example of misuse of the multiple choice exam is, none the less, the National Boards which are intended as licensing exams. Efforts by the National Board of Medical Examiners to develop an interactive and conceptual examination should be applauded, but recent changes in the reporting of scores by the NBME is antithetical to these concerns. NBME scores are incorrectly used for inter- and intra-institutional evaluation of students and curricula. This is a false incentive for schools to orient their curricula towards multiple choice performance that stifles development of innovative curricula. There is also an increasing tendency to use NBME scores to evaluate students for advancement or for selection to residency programs when no correlation has been found between NBME scores and clinical or research performance. We strongly believe that there should be pass/fail reporting of NBME scores to students and schools without breakdowns or mean scores.

There is a strong consensus within the membership of the OSR that there needs to be an early integrated introduction to clinical medicine as a basis for forming clinical problem solving skills and to bring some cohesiveness to needlessly fragmented and compartmentalized preclinical years. Retention of concepts is enhanced by incorporating them into a more cohesive composite. Improvement in skill and efficiency will accelerate the learning curve and help in provision of care during the clinical years. There does not need to be an overemphasis on therapeutics or invasive and procedural clinical skills. A solid basis in clinical principles, problems and interpretation is needed long before one has to deal with therapeutic and procedural dilemmas. Patients are needlessly endangered and the quality of care is eroded when students are thrust from the basic sciences into the interventional clinical setting. Curricula need to encourage development of conceptual tools and problem solving skills early in medical education and not leave these to trial and error during the clinical years.

CLINICAL EDUCATION

Regardless of individual interests in the field of medicine, clinical medicine is the *raison d'etre* and focus of most physicians-in-training. By all statistics, provision of clinical care is the intention of the majority.

Any solutions to problems within clinical training are inherently complex. Clinical education is based on an archaic, behavioral system that pervades all aspects of our clinical teaching centers. The prevailing sentiment is that historical precedent justifies maintenance of the status quo. This view ignores the fact that there are now a vast number of clinical parameters to interpret and increasingly complex therapeutic decisions to be made. The era when clinical dilemmas could be pondered and therapeutic decisions be based on an informal synthesis of experience and judgment is dwindling. The hierarchical system of teaching this 'judgment' through 'experience' is outmoded. We do not advocate cookbook medicine based on laboratory or diagnostic criteria, rather we advocate a breakdown in the hierarchy with increased exposure of physicians-in-training at all levels to our clinical faculty, where we can better learn the irreplaceable human component to medical decision making.

Clinical education is arbitrarily compartmentalized. The transitions are set not by criteria of knowledge or proficiency but by historical decisions dictating arbitrary lengths of time for each segment. Although based on the principle of gradual acquisition of knowledge, there has been a breakdown in the vertical integration. The transition from matriculation to practice should be relatively smooth and logical. Applicants to medical school should be selected for the ability to deal with difficult, stressful and complicated situations. This ability is not successfully instilled by an archaic system that fosters the ego rather than an intelligent acquisition of knowledge. It is much better to build confidence through knowledge. False confidence, built upon defense mechanisms, does not belong within medicine. Medicine is so diverse and specialized, and changes so rapidly, that one cannot and should not attempt to go it alone as a rugged individualist. Cooperation and consultation among physicians is critical to the provision of comprehensive care. Competition between services, reinforced by a historical tradition of independence and set hierarchy, has no place in modern clinical care.

The solution to the problems of transition and compartmentalization involves the restructuring of both graduate and postgraduate clinical education. There is a direct correlation between the uneven quality of our

clinical training and the widely variable clinical care available in teaching hospitals. Physicians-in-training are overworked, underutilized, and leave the training period inadequately prepared and overspecialized. This is the principal area where academic and administrative groups should come together with house officers and students to work out a new course. The specialty boards need to reevaluate certification requirements and restructure their thinking in accordance with the changing nature of clinical practice. The AAMC, with the COD, COTH, CAS, and OSR is an excellent forum for such discussions.

We have to look beyond maintenance of the status quo. There is little justification for certain aspects of the treatment and working conditions of medical students and house officers in the present clinical setting. It is specifically not fair to subject patients, who are willing or unwilling recipients, to suboptimal care by overworked and undertrained primary providers. The patients most likely to suffer under the present system are the poor and the medically indigent. The continued maintenance of this system represents, in less than subtle terms, the medical profession's form of discrimination against the poor.

The most glaring example, prevalent throughout this country, is to have primary responsibility for critical care of ICU patients fall on the shoulders of junior house officers.

'Critically ill patients require the same level of skill, knowledge, and supervision as do the patients in the operating room. The problems of the critically ill patient also frequently demand immediate attention and cannot wait until the surgical team is free. The result is that in many circumstances the least skilled individual, the intern or first year resident, is dispatched to make complex life or death judgments without appropriate supervision. Eighty-one percent of the programs surveyed (278) assign PGY-1 (postgraduate year) and PGY-2 residents to the ICU . . . training program directors must make a commitment that supervision of trainees in ICU care will be at the same level as supervision of trainees in the operating room.'

'The surgeon and intensive care'
Pre- and Postoperative Care Committee
of the American College of Surgeons
Bull. Am. Coll. Surg., April 1985

Many of the fundamental problems with clinical education are central to the economic difficulties and damaged reputations of teaching hospitals. It is felt that the COH and hospital administrators need to be given greater input into discussions of educational questions and curricular issues to improve hospital efficiency, quality of care, and reputation. We need to emphasize the public service role of medical educational institutions and teaching hospitals. Government needs a rational basis for support of teaching centers. Academic medical centers should complement the private sector by providing services that are not generally available within the community. If they must compete for paying patients, teaching hospitals must provide the best and most advanced care.

Students need to be better trained in clinical problems and provision of care before entering the hospital. Assistance from institutions is necessary for efficient use of time, knowledge and energy of physicians-in-training. Academic and financial matters need not be separated at the clinical level. If provision of care is efficient and of good quality, clinical teaching centers should make money. Improving public perceptions and reputation for individual academic medical centers and hospitals will go further in solving financial difficulties than will any legislative action.

Physicians-in-training support and encourage clinical income and faculty 'practice plans' to augment salary income for academic physicians. There is a realization that economics enters into career decisions within medicine and there is a need in academic institutions to compete for the best physicians within a given community. Physicians-in-training are opposed, however, to 'private' faculty clinics and private hospital wards within teaching hospitals where house staff and students are barred from participation in the care of patients. Physicians should enter the practice of academic medicine with the principal desires of public service, teaching and research. These ideals are directly in line with the ideals of teaching hospitals. If physicians desire large private practices they should be associated with teaching centers as clinical faculty and not hold full-time appointments. Physicians-in-training should be cognizant and respectful of individual patient needs for privacy, but we are opposed to institutional policy as to who can or cannot see a specific 'type' of patient. It also should be acknowledged that house officers contribute a significant amount to faculty practice plan income.

In parts of the country some non-academic community GME programs are gaining respect among physicians-in-training for treating medical

students and residents well and providing efficient ancillary staff. The prevailing patient population at these programs are private-paying patients who generally do not seem to mind the direct involvement of medical students and residents in their care. There is an historic sentiment that where there were physicians-in-training there could also be found the most advanced and up to date medical care. There is still a large segment of the population who believe this.

Physicians-in-training must be included in detailed discussions of the mechanics of teaching hospitals. It is our contention that graduate medical education does not necessarily decrease productivity or cost monies out of proportion to what it can earn. If students and house staff are to participate in health care that is on the one hand superlative and on the other cost conscious they must be consulted concerning the difficulties they confront. Physicians-in-training are willing workhorses in teaching settings, but they need an adequate opportunity to study and learn, and should not be exploited solely for economic benefit.

Our principal concern is for a good teaching environment in an institution that provides quality care to individuals in need whether that care is directly compensated for or not. We are aware that public and private non-academic hospitals have increasingly shifted indigent care to the teaching centers without regard to historical precedent that the burden of such care should be shared by all providers. Provision of indigent care should be a principal concern in all discussions of the economics of teaching hospitals, but students and house officers should not be the other principal culprit. To blame physicians-in-training for overzealous workups, excessive tests and procedures ignores the fact that we are undersupervised and poorly trained. The additional argument that physicians-in-training necessitate additional attending faculty, clerical and ancillary staff is contradicted by actual experience on the wards, and not supported in the literature. We need to strongly encourage the development and implementation of much more sophisticated computer-based clinic and hospital information systems that will assist in routine record keeping, admission and discharge, diagnostic scheduling, reporting of diagnostic results, coupled with ready access to the latest medical text and literature. If we can assist the physician, at any level of training or practice, by decreasing the amount of time necessary for getting our patients into and out of the system and by providing timely diagnostic information, we can open up a significant amount of time for teaching, learning and research at the same time we provide appropriate,

efficient and economical patient care.

Early clinical exposure and teaching in the first two years, with vertical integration of material of clinical significance in the form of problem solving skills and patient management, would vastly improve the junior and senior year clinical experience. It would also improve patient care and clinical efficiency and thus provide time to learn more than acute patient management. There is strong consensus from the OSR membership that we need to implement so-called 'problem-based' learning on a broad scale and move away from didactic teaching and the testing of rote-memorization skills. This is a fruitful avenue to begin the early integration of basic science and clinical medicine and erode the false distinction that has developed.

When it comes to structured clinical clerkships we need systematic policies that provide a clear statement of goals and a consensus as to hours and call schedules. Feedback needs to be provided to students and faculty in an orderly, proscribed fashion at frequent intervals, not only at the end of each rotation. Supervision of clerks should come from senior faculty to allow students to identify role models and learn from those individuals with the most to teach. The current practice of assigning the majority of clinical teaching responsibilities for medical students to junior house officers must be altered. Junior house officers are overworked and they are not in a position to provide the broad multidisciplinary clinical education needed by medical students. Students have much to learn from assisting their house officers in the provision of care, but their reference and guidance must come from clinical faculty. Students and faculty need to become a more integral part of the clinical team.

Specialization and specialty career choice should be delayed. The fourth year of medical education has been eroded from its original intent of providing a comprehensive clinical experience. We readily acknowledge that student anxiety has generated pressure for early specialization in light of the competitive atmosphere of graduate medical training, but we should work to alleviate the problems rather than adapting to them.

The fourth year should be a period of elective independent study with intensive clinical, basic science and research experience. The independence of the fourth year is another point of strong consensus among OSR membership. It should not be a period of specialization or a return to didactic teaching. The current necessity and desire for a lightened load and long vacations is directly related to perceptions of

future hardships during residency training. We have to look at the fourth year in relation to the entire spectrum of medical education and realize that an independent fourth year is an excellent idea that is being eroded by external pressures and conflicts. Students want to learn all aspects of medicine. Clinical medicine needs to be integrated into all four years. The fourth year needs to be a time when skills and interests coalesce and students have some freedom to broaden their experience and exposure to areas in which they will not have the opportunity to work in in the future.

External pressures on the third and fourth year must be addressed. The residency selection process needs a thorough reevaluation. It is our consensus to end the separate match programs and to delay applications, interviews and final match selection until late fall and early winter, with all specialties in the same match in early spring of the senior year. We would like to see all PGY-I and PGY-II programs participate. It is essential, in this day and age, that detailed guidance and career counseling be provided at all institutions. The average medical student cannot possibly know all of the implications or nuances of a career choice. There also needs to be better advice on the appropriate marriage of skills and interests in each student.

Selection factors for residency programs must undergo a change with discouragement of reliance on grades, research experience, and NBME scores. Integration of clinical teaching throughout the four years of medical school, and delay of interviews and final match until later in the senior year, would allow selection committees to make decisions based more closely on clinical ability and knowledge. This would also allow students to better assess their own interests and abilities. We need to put considerable thought into new ways to interpret and assess clinical skills and acumen.

In making career decisions there should be no legislative or artificial interventions to control access to medical specialties. In order to change the distribution of physicians across geographical or specialty boundaries, we need to change the selection factors for admission to medical school and the process of medical education, both of which currently foster interest in the specialties.

The establishment of new specialties and subspecialties should be controlled. Increased specialization is impairing medical education, particularly by fragmenting the preclinical and clinical experiences and by limiting exposure to certain specialty aspects of medicine. It can also be detrimental to the public as it unnecessarily fragments the provision of

health care.

There also needs to be a reevaluation of fellowships. Fellowships are traditional avenues to academic practice and research, they should be utilized principally for this purpose. In terms of our idealistic view of renaissance academicians, fellowships should be oriented towards the training of teachers and researchers whose interest is in an academic career, not towards providing specialty practitioners. The current role of fellowships is predicated on the need for subspecialization and further training secondary to a lack of exposure to the subspecialties in residency training programs. They also foster insecurity by making residents feel that they must take a fellowship to be competent and competitive. The 'physician surplus' is most glaringly apparent in the subspecialties, and the specialties are damaging their own future by contributing to the already over-trained pool.

Clinical education needs a multidisciplinary review with particular concern given to:

- transitions between stages in the educational process
- changing economics of health care and the impact on clinical training
- quality of the work environment, in particular as it impacts the quality and attitude of the product
- treatment of individuals, time demands, and responsibilities
- consideration of physician-in-training needs in planning for, and spending time with children and families

CONCLUSION

This is a selection of what we feel are critical issues confronting medical education. Though we are idealists, we are willing and interested participants in any discussion of simple, pragmatic steps which could be taken to improve medical education. What we've offered here is a background view so that others might understand our perspective.

IDEAS FOR AAMC FUTURE DIRECTIONS

In light of the current discussion, we feel there should be a format within the AAMC to provide for more informal interaction between constituents. There appears to be a consensus among the Councils that the AAMC should concern itself principally with questions of medical education. The OSR concurs with this consensus and offers the following as items for further discussion:

- Comprehensive review of clinical training with consideration of alternatives and innovations.
- Consideration of rational reductions in the number of medical students, residency positions, and faculty positions within our institutions.
- Further discussion of evaluation of individuals and institutions, with consideration given to the appropriate use of the MCAT, NBME, and FLEX examinations.
- Continuing discussion of how to address the under-representation of women and minorities in the medical profession.
- Discussion of the complex issues concerning Foreign Medical Graduates.
- Discussion of ways in which physicians can influence the current wave of economic change within our health-care system.
- Continuing refinement of medical school admission criteria, with philosophical consideration of what is desired in applicants.
- Multidisciplinary discussion of financial and procedural issues confronting teaching hospitals.
- Discussion of potential changes in education, review, and incentives for medical research
- Consideration of innovative curricular changes occurring at selected institutions.

- Discussion of ways to influence greater use of computers and new information technology in medical education, clinical care, and economic management.

- Discussion of ways to change our educational philosophy from an over-reliance on medical therapeutics towards an emphasis on preventive medicine and public education

APPENDIX

ROLE OF ORGANIZATION OF STUDENT REPRESENTATIVES IN THE AAMC

At the 1971 AAMC Annual Meeting the Organization of Student Representatives was created with the following intentions: to facilitate the expression of students' ideas and views; to incorporate students into the governance of the AAMC; to foster the exchange of ideas among students and other concerned groups; and to facilitate students' action on health care issues.

OSR holds two voting seats on the Executive Council and 12 on the Assembly. In addition, the OSR chairperson attends and reports on OSR activities at COD Administrative Board meetings. OSR also has input into the affairs of the AAMC through membership on various AAMC committees. Informal opportunities for information exchange with AAMC officers and staff occur during the quarterly meetings, when the OSR Administrative Board joins the Administrative Boards of the three Councils for luncheons, receptions and programs. At regional spring meetings there is the opportunity to establish ties between the OSR, GSA and GME. The OSR chairperson is a member of the GSA Steering Committee, and attends the quarterly meetings of the Consortium of Medical Student Organizations.

During its first 10 years of existence, the primary method employed by the OSR to generate, discuss, and present issues was via resolution. Individual members or regions would prepare resolutions before or during the annual meeting for consideration and subsequent action. Frustrations with this process stemmed from inflated expectations concerning actions that would follow from resolutions, and from repeated focus on language rather than issues. In 1982 the OSR began using the 'group process' method to select the issues on which to focus and subsequently discuss in small groups. The output from this process is in the form of reports prioritizing concerns and opinions. These reports are presented to the OSR as a whole and include assessment of positive and negative forces relative to progress in each particular area. This method appears preferable to the 'resolution' method because it allows greater information exchange among students and encourages refinement rather than repetition of issues. The Administrative Board finds the group reports more useful than 'resolved' clauses as a guide to its activities over the year.

The environment in which the AAMC and its associated institutions operate is diverse, but those elected to the OSR Administrative Board discuss the issues under consideration, and strive to provide thoughtful and appropriate input. Significant insight into issues before the AAMC is provided to the OSR through materials and reports from the AAMC staff.

The OSR sponsors programs at the AAMC annual meeting and GSA regional meetings. The OSR Administrative Board designs the annual and regional meeting programs for OSR members. The OSR Board also oversees the publication of the *OSR Report* which is distributed to all medical students at each AAMC member institution. The *OSR Report* deals with issues of interest and concern to students. A list of recent topics is contained under 'Recurring Issues Raised by the OSR.'

ROLE OF OSR MEMBERS AT THE SCHOOLS

The 'OSR Rules and Regulations' state that 'members of the OSR shall be . . . selected from the student body . . . by a process appropriate to the governance of that institution.' The OSR Certification Form, which deans are annually requested to sign and return to the AAMC, asks for a brief description of the selection process. The activity levels and structure of student governments vary from school to school, and there is a wide variation in the selection processes for individual OSR representatives. Many methods are used, from screening of candidates by the student council with appointment by the dean, to selection by a student executive committee, to election by one class or by the total student body. In order to establish continuity of OSR representation from year to year and to stabilize the role of the OSR at each institution, schools are periodically encouraged to examine their selection process. Particularly desired are procedures encouraging recruitment of freshman for the position, terms of greater than one year, and selection of alternate or "junior" as well as the official OSR member to attend meetings for a year prior to becoming the school's official representative. Because these ideas can only be suggested to schools, and OSR is only one of a number of student organizations, many schools still limit the tenure of an OSR member to one year and do not encourage prior OSR exposure. Sharing of experience and advice between arriving and departing representatives helps to facilitate continuity.

OSR members are urged to share reports of AAMC/OSR activities with

their respective student bodies. They receive copies of the OSR Board minutes, the AAMC *Weekly Activities Report*, and other pertinent information and publications. Information is disseminated by placing reports in student newspapers, bulletin board postings, presentations at class or student government meetings, establishing an OSR file in the student affairs office or library, and by establishing information tables at orientation for incoming students. OSR members are also responsible for the distribution to each student of the *OSR Report*.

The OSR representative is urged to take the lead in generating student input to the LCME accreditation and school self-study process. Shortly after student representation was achieved on the LCME, a student guide to the accreditation process was prepared. An updated version of this handbook is distributed to OSR members at schools with impending site visits.

In order to assist potential and new OSR members, the OSR Administrative Board has prepared an updated description of OSR member duties and functions. This will serve as a supplement to the OSR Orientation Handbook and will be distributed to student affairs deans each fall with the OSR Certification Form. OSR members are periodically asked by the AAMC to generate letters, usually in support of financial assistance programs. In the recent past, many members have worked hard in cooperation with deans, financial aid officers, and other medical student groups to produce mail to Congress. During annual meetings in Washington, students receive background materials and guidelines and are encouraged to visit their elected officials. The OSR Administrative Board is improving its effectiveness on legislative matters by providing members with a more comprehensive education on lobbying techniques. Presentations on this subject continue at meetings, and a Board member serves as liaison with AAMC legislative analysts, and the legislative arms of the American Medical Students Association and the American Medical Association - Medical Student Section.

RECURRING ISSUES RAISED BY THE OSR

An examination of the minutes of the Annual Business Meeting provides a list of issues of continuing concern to the OSR. It is encouraging to note that many of the issues currently discussed in this paper have come under

prior consideration and active discussion within the OSR. Issues compiled from previous OSR meetings are divided into those addressed to: A) Medical Schools and B) The AAMC. It is important to understand that this is merely a descriptive list of topics that were discussed in detail within group sessions.

A) Medical Schools

- Improve the integration of basic and clinical sciences
- Reward excellence in teaching
- Increase emphasis on learning skills and use of alternative evaluation methods
- Improve access to computers and information sciences
- Improve counseling on selecting residencies, using the NRMP, and selecting extramural electives
- Improve financial aid and financial management counseling
- Discourage the use of the National Boards for promotion
- Foster the social awareness of medical students and seek evidence of this in applicants
- Establish liberalized policies on delayed matriculation and leaves of absence
- Promote greater curricular emphasis on primary care and preventive medicine
- Promote greater curricular emphasis on communication skills and human values
- Provide instruction in medical economics and medical ethics
- Improve "Introduction to Clinical Medicine/Physical Diagnosis" course
- Promote greater use of student evaluations of courses
- Encourage research to improve teaching and evaluation methods
- Create mechanisms to encourage medical students improve their own teaching abilities
- Create stress management programs
- Increase research opportunities for medical students

B) Association of American Medical Colleges

- Continue fostering government support of financial aid and assist

- schools in sharing information about innovative methods of financing medical education
- Endorse service contingent loans
 - Promote adoption of ethical guidelines for the clinical years
 - Encourage greater use of the University Application Form for residencies
 - Oppose Federal budget cuts affecting health care delivery to the indigent and request institutions to document the effects of budget cuts on the indigent
 - Support data collection and improved guidance in selection of specialty choice and career planning
 - Provide better detail on individual schools in Medical School Admission Requirements so that applicants can better differentiate among schools (e.g. percent of out-of-state applicants interviewed)
 - Create workshops for faculty to improve teaching skills
 - Improve exchange of information on successful medical school programs which encourage personal development (e.g. health awareness workshops and support groups)
 - Increase housestaff participation in the AAMC with greater attention paid to: a) the role of housestaff as educators and evaluators of medical students, b) the variable quality of resident supervision and education, c) the problem of increasing competition for graduate positions, and d) the excessive stress of residency with the need for support and counseling mechanisms.

The most tangible results of OSR deliberations are the products given national distribution. Good examples are *OSR Reports* devoted to: a) taking part in the health legislation process, b) a guide to financial planning, c) strategies for dealing with the residency selection process, d) facing the challenges of the physician manpower scenario, e) understanding stresses of medical education and practice, f) responsibilities of students in an era of rising health care costs, g) use of computers in medical education, h) the role of the National Boards in medical education, i) ethical responsibilities of medical students, and j) economic changes affecting medical practice.

Other products which have emerged in recent years which have been and are of continuing value at the medical school level are: a) model due process guidelines, b) model residency evaluation form (to create a file of alumni overviews to assist senior students in selecting residencies), c)

descriptions of innovative counseling programs on specialty selection, d) listing of medical Spanish resources, and e) listing of contact persons and basic information on extramural electives.