

Introduction to Medicine: Do Freshman Medical Students Need to Flounder?

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INTRODUCTION

Like many other medical schools across the United States, the University of Utah School of Medicine heeded the growing chorus of reports from various organizations calling for a review and revision of the process and content of the medical school curriculum.¹⁻³ Four years ago we set out to design a new medical school curriculum that was built both upon valid principles of adult education and capable of giving our students the knowledge and skills they need to practice medicine in the dynamic health care environment of today. In the process of introspection and information gathering, we identified many of the same problems and reached many of the same conclusions of others who had blazed the trail of reform before us.^{4,5}

Thus, we too relied heavily on passive learning formats and assessment procedures that emphasized rote memorization over true understanding. In general, no efforts were being made to integrate related material across courses and to structure its presentation in ways that made it relevant, consistent and interesting. We could see that our students were in class for so many scheduled activities that they had little time to contemplate what was learned and why it was important. In addition, we concluded there was insufficient opportunity for students to develop life-long learning skills.

We also came to agree with a conclusion previously raised by the AAMC report, *Physicians for the Twenty-First Century*,⁶ that "... medical education should be viewed as a continuum that spans premedical preparation, medical school, residency training and continuing medical education." Fourth-year subinternships and first-year residency orientations help prepare medical school graduates to assume the new roles and responsibilities of being house officers. Many residency programs offer practice management courses to senior-level housestaff to prepare them for medical practice. However, we were not doing enough to help incoming freshmen adjust to the rigors of medical school.

On the transition between baccalaureate education and medical school, little has been said or written despite the fact this transition is important to the long-term development of physicians-to-be. This is an extremely exciting, challenging, and stressful time for students. Rather than allowing students to flounder with basic science course work on the first day of school in the kind of "sink or swim" approach our traditional curriculum employed, we decided to take a different approach. It was calculated to take advantage of the commingled sense of wonder, excitement, and anxiety we all see in our freshmen students in the early days of their medical education. We designed and implemented a new course in the fall semester of 1997, titled "Introduction to Medicine." This four-week course begins on the first day of medical school and ends four weeks into fall semester *prior to* the beginning of the first year basic science coursework. As described in this following report, it is specifically intended to serve as a bridge between college and medical school.

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TRANSITIONS

The Introduction to Medicine course is an explicit acknowledgment that the starting of medical school is an important transition. In fact, it is no exaggeration to say that beginning medical school is a life-altering event. In most cases, students have worked and dreamed for years about reaching this point. The beginning of medical school is an important milestone, the symbolic welcome to an ancient and honorable profession. As such, it is also an opportunity to socialize and educate students about the roles and responsibilities of physicians. A "White Coat Ceremony" is held during the first week of medical school to mark this transition and begin imprinting the idea of the physician as a professional. During this ceremony, each incoming student receives his/her first white coat.

Another transition experienced by students is that of advancing from undergraduate to professional school. This is impor-

tant in two ways. First, students will be called upon to deal with a workload they have most likely never experienced before. Many are aware of this reality of course, and it manifests itself in anxiety and apprehension. Second, several of the educational techniques employed such as problem-based learning and hands-on clinical activities are foreign to many students, and they may not understand their roles and responsibilities in these learning formats.

To address these issues a number of activities have been designed to acquaint students with their educational responsibilities and to provide them with some "coping skills". Thus, on the first day of school an "active learning orientation" is held in which educational formats that will be used and what students will be expected to do in each format are described. In addition, this session introduces the idea that students are primarily responsible for their own education, and therefore, must take an active rather than a passive role to receive the most from their experiences.

Introduction to Medicine also incorporates time management, study skills and stress management workshops. To encourage a sense of community and shared purpose among the class, a team building exercise is also included, modeled on similar programs developed for industry. A number of social activities are spread throughout the month to encourage students to get to know each other and the faculty that will guide them through the rigors of the curriculum.

GOAL

Introduction to Medicine is the only course students take during the first four weeks of medical school. Its goal is to set the tone for the entire four years of undergraduate medical education that follow. Thus, it is intended to familiarize and gradually acclimatize students to what will be expected of them academically and professionally. In addition, the course introduces and establishes a number of key themes that feature prominently in later courses and run concurrently throughout the medical curriculum. They include (1) professional and ethical development, (2) humanism/humanities, (3) personal health and fitness, (4) information management, and (5) evidence-based medicine/the health of populations. These five themes are the fundamental foundation upon which the new curriculum rests. Some examples of the reappearance of these themes in future curriculum include the following. A Social Medicine course in which various psychosocial issues surrounding medical practice are addressed during the first two years. A Science of Medicine course in which students learn basic biostatistics and to critically read scientific articles taught during the first two years. A Topics in Medicine course in which rotation specific patient cases are discussed during third year hospital rotations. An Ethics course taught during the fourth year, and a required Rural Medicine Preceptorship during the fourth year in which students serve in an under-served area of the state and complete a health project in the community.

Each theme is treated in several different ways over the duration of the Introduction to Medicine course. The traditional curriculum of this school typically began by giving students important basic science content information before they had any idea of why the information was important or where it fit into

the context of being a physician. Our hope is that by introducing these five themes early on, when students are most accepting and open minded, they will begin to develop (a) a framework of attitudes and principles about medicine and its place in society, and (b) a context in which they may place specific information that will follow.

In general, the academic work load for students during Introduction to Medicine is fairly light; however, it does increase in intensity as the month progresses so that students begin to appreciate the task they will face when the basic science curriculum begins.

1. Professional and Ethical Development

As the practice of medicine has become more cost conscious, economic incentives are being used more overtly to influence physician behavior.⁷ In many cases these incentives are perfectly appropriate but some encourage physicians to "cut corners" that may compromise patient care.⁸ Often, the only bulwark standing against the erosion of the doctor-patient relationship that is the cornerstone of medicine is the professional ethic of the physician.⁹ Therefore, we believe the subject of professionalism bears early and repeated emphasis in the curriculum. The "White Coat Ceremony" previously described is the beginning of this process in Introduction to Medicine. There are also a number of other activities that develop this theme in the course. For example, a small group exercise is done where students are asked to develop their own code of ethics. They then compare the results of the various groups in a plenary session. Multiple sessions are devoted to talks and panel discussions presented by a variety of practicing physicians that discuss the roles, challenges and satisfactions of medicine in the 90's. Finally, a model of effective doctor-patient communication is presented, having a master clinician perform a history and physical examination of a patient in front of the class.

2. Humanism/Humanities

Social subjects have sometimes been regarded by medical students as "soft" and not important when compared to the hard sciences.¹⁰ However, students often lack the perspective to see that these social skills, in reality, comprise the true art of medicine and are essential to the profession. In the Introduction to Medicine course the concept is established that a caring approach to people is often the physician's most important disease-fighting or health-enhancing tool.¹¹ Several activities designed to highlight humanism have been included to encourage students to think seriously about this philosophy. For example, several patient panels introduce students to what it is like to struggle with chronic diseases and what patients like and dislike about the physicians they have encountered. These are extremely powerful sessions that students find very meaningful. The master physician examining the patient in front of the class, mentioned above, models a humanistic approach to the most personal of encounters in the doctor-patient relationship.

In addition, a series of lectures on the history of medicine places the role of physicians in western society into context. Sessions on medical anthropology and alternative medicine challenge students to think about the role of healers in other societies and about the role of nontraditional health practices in our own society.

3. *Personal Health and Fitness*

Little emphasized, but simple truth, is that physicians must be healthy themselves if they are to effectively care for their patients. Good personal health habits are certainly just as important for physicians as they are for patients. Patients find their physician's advice on lifestyle choices much more credible if those physicians model the expected behavior themselves.

Personal health is also important for medical students because many habits acquired in medical school are carried over into residency and practice. Many students who exercise regularly abandon the habit when they confront the time pressures of medical school. In the Introduction to Medicine course we emphasize that taking care of yourself as a physician is important and that healthy habits should not be abandoned. Eating correctly and exercising need not take a lot of extra time. Each student completes an individual personal health assessment consisting of aerobic fitness testing, body fat analysis, a personal habits and nutrition survey, and cholesterol and HDL screening. A plenary session is held to interpret the results of this testing for the students.

A panel of physicians who are recovered substance abusers address the students about the potential for and dangers of substance abuse in medicine. Finally, a stress reduction workshop provides practical tips on how to manage the stressful life of a medical student.

4. *Information Management*

As we learn more about how the human body works in health and disease we are required to be continuously selective about what we choose to teach our students. There is time to expose them to but a fraction of what is known today, and there is no way of knowing what unanticipated wonders we will discover tomorrow. The only practical approach is to focus not on content, which is ever changing, but rather on process. Thus, students must be taught how to approach problems.

Problem solving requires collecting, analyzing and synthesizing data, tasks for which the computer is the ideal tool. It is already impossible to imagine practicing medicine without the assistance of computers, and the 21st Century will no doubt see an acceleration of this inevitable trend. Medical education is also being revolutionized by the availability of Internet learning resources, sophisticated educational software and electronic syllabi.¹² Although these developments continue to unfold, the reality is that there are still many students who come to medical school knowing little about computers or how to use them. Because many courses in the new curriculum depend heavily on computer use, the Introduction to Medicine course provides training to ensure that all students acquire a minimum level of computer literacy. Students receive small group seminars in basic information management skills including e-mail, word

processing, data base searching, spreadsheet manipulation, and the use of audio visual and presentation software.

5. *Evidence Based Medicine/Health of Populations*

The use of the primary literature as a tool for patient management decisions, specifically evidence-based medicine, has recently been discussed and advocated.¹³ The information management revolution has, for the first time, made this practical. At the same time, medicine has been called to task for its lack of emphasis on the health of the population as a whole.¹⁴ Epidemiology and public health issues were afforded little importance or discussion in the traditional curriculum. The Introduction to Medicine course provides the necessary basic instruction in computer skills and epidemiology that will be built upon in subsequent coursework devoted to research methodology, medical literature analysis and evidence-based medicine.

The basics of the content domain of epidemiology are covered in four internally written problem-based learning cases spanning six three-hour sessions. These cases call for the students to use their information management skills to produce a series of assignments including a literature search, a paper on an important topic in epidemiology, and a fifteen-minute oral presentation using

audio visual aids and presentation software.

These assignments not only force the students to use their computer skills but also begin emphasizing the importance of learning interpersonal communication skills in medicine. In the problem-based learning sessions students have their first exposure to small group learning and practice skills of oral communication and self and peer assessment which are so important to successful group dynamics.

STUDENT ASSESSMENT

Students are graded exclusively on the epidemiology module, as this represents the most structured aspect of the Introduction to Medicine course. Epidemiology provides sustained contact of faculty and students through six three-hour sessions. Grades are given for the two major assignments: the paper and the oral presentation.

COURSE EVALUATION

Following the pilot course in 1997, 93 respondents from a class of 100 students evaluated Introduction to Medicine as the most popular of the six new courses in the curriculum (3.3 on a scale of 1-4). Again in 1998, the Introduction to Medicine course received good evaluations (3.1 on a scale of 1-4) from 99 respondents (see Appendix for evaluation instrument). Students especially appreciated the problem-based learning sessions, patient panels and physician professionalism sessions. They enjoyed the opportunity to interact and develop interpersonal relationships with faculty, staff and classmates. Specific suggestions were made

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regarding sessions to add, delete or modify which were incorporated into the 1998 version of the course. For example, the history of medicine content was reduced and several introductory anatomy classes were added to provide students a "head start" on this difficult course. Some of the required computer skills classes were made optional as computer background varied widely amongst the entering students. Finally, some additional sessions on professionalism and medical values were added to further emphasize the importance of this subject to students.

CONCLUSIONS

The Introduction to Medicine course at the University of Utah School of Medicine represents a unique opportunity to ease students into the rigors of medical school while exposing them very early to topics of great importance to the practice of medicine. Although other curricular designs also teach students these subjects, the advantage of the Introduction to Medicine format is students are presented this material at a time when not distracted by the demands of other courses. Some might argue that students have insufficient background at this early stage of their education to appreciate some of these subjects. We would respond that students always surprise us by knowing more than is expected, and it is never too early to plant seeds that will bear fruit in the future.

Another significant advantage of this course is that it provides students with a framework in which to begin considering what it means to be a physician. Placing the medical profession in a context they can understand, and to which they can relate, allows students to appreciate why basic science material they are learning is important and relevant to their development as physicians.

We anticipate that the gradual transition to medical school this course affords students will significantly reduce stress levels and academic adjustment problems that are so common early in the curriculum. Finally, we believe the use of team building exercises, social events, and small group learning sessions will help students get to know each other and contribute to a sense of shared mission that will encourage class cohesiveness. We hope this will result in the development of an informal peer support group that might also reduce academic problems.

The Introduction to Medicine course provides a unique

opportunity to establish a positive educational and supportive environment for the entire curriculum. Furthermore, the subthemes of professionalism, humanism, personal health, information management and evidence-based medicine that are established in this course are of fundamental importance to the practice of medicine. Although Introduction to Medicine is only the first in a series of exposures to these issues, their emphasis early in the curriculum sends a clear message that these subjects are integral to the type of physician graduate we strive to produce.

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APPENDIX I. Introduction to Medicine Course Evaluation, Autumn of 1998

The following ratings were used to evaluate the course:

- 4= I strongly agree; to a very great extent.
- 3= I agree; to a moderate extent; happened frequently.
- 2= I'm neutral.
- 1= I disagree; to a small extent; happened infrequently.
- 0= I strongly disagree; did not occur.

	<u>Mean</u>	<u>Respondents</u>
1. The course objectives were clearly defined.	3.2	98
2. The amount of material presented was appropriate.	2.9	97
3. Epidemiology concepts were adequately covered.	2.5	98
4. The clinical relevance of the subject matter was clearly demonstrated.	3.3	98
5. Overall, the grading system was fair.	3.5	98
6. Overall, this course was effectively presented.	3.1	97

ANNOUNCEMENT

Mayo Clinic To Joint-Sponsor Fifth Biennial IAMSE Conference

The IAMSE Executive Committee is pleased to announce that Mayo Clinic will Joint-Sponsor the Fifth Biennial Conference of the International Association of Medical Science Educators. Thomas Viggiano M.D., M.Ed., Associate Dean for Student Affairs, Mayo Medical School, will be our Site Director and Host for this event that will be held in Rochester, Minnesota, U.S.A. on July 21-24, 2001. Preparations for this event have already begun with a call for nominations to create an International Program Committee posted to the IAMSE member e-mail broadcast list. As in the past, this committee will determine the central theme of the conference and have responsibility for developing all aspects of content. All nominees for this committee should send a letter stating their interest and areas of expertise to Robert Carroll, Ph.D., Secretary of IAMSE <carroll@brody.med.ecu.edu> This request for background information has become necessary since the selection committee routinely receives between 6 and 8 applicants for each of the 7 positions on the conference Program Committee.

For further information and to follow our progress as it happens, please visit the 2001 conference website at http://www.iamse.org/conf5_menu.htm