

Debate

## Undergraduate medical education: Thoughts on future challenges

Philip O Ozuah

Address: Department of Pediatrics, Albert Einstein College of Medicine, Children's Hospital at Montefiore, New York, USA

E-mail: [pozuah@pol.net](mailto:pozuah@pol.net)

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### Abstract

**Background:** There is considerable uncertainty about the future of undergraduate medical education in the face of several important challenges. This paper highlights many of the complexities of the challenges facing medical school leadership today.

**Discussion:** A major challenge facing medical education in the United States is the erosion of the clinical environment, the loss of clinical revenues and all its attendant consequences, including pressures for increased faculty productivity in an environment that is increasingly managed. These pressures have squeezed the time for teaching out of the system. Another challenge is how to incorporate all the new and emergent domains of knowledge into the existing curriculum. There is also a need to incorporate technological advancements into the delivery of teaching.

**Summary:** Undergraduate medical education in the United States must respond to a multitude of challenges if it is to remain vibrant in the 21<sup>st</sup> century.

### Background

Medical education faces several important challenges. There is considerable uncertainty about the future of undergraduate medical education [1,2]. Changes in the health care system have had an enormous impact on the medical school clinical enterprise. In the past few years, several medical school-owned hospitals and medical school-affiliated hospitals have undergone mergers, acquisitions, or closures [3]. These events often have direct ramifications for medical students' clinical rotations. Clearly, medical schools are feeling the pressure to adapt to changes in the health care system while maintaining excellence in education [4]. Many have said that this is a time for strong academic visionary leadership in medical schools [4]. This paper will highlight many of the complexities of the challenges facing medical school leadership today. What is the best way to educate trainees in the current environment? How do we prepare today's student to become tomorrow's physician?

### Discussion

In recent years, several academic medical centers have reported drastic reductions in revenue streams [5–12]. Academic centers are the partners of medical schools. Thus, a top priority for medical education today is the erosion of the clinical environment, the loss of clinical revenues and all its attendant consequences, including pressures for increased faculty productivity in an environment that is increasingly managed. These pressures have squeezed the time for teaching out of the system. Consequently, the medical student suffers on two counts. First, he sees very busy clinical faculty with too many patients, working too long, working too hard, and spending too little time with patients. At the medical school, the students are taught how to take a good history, perform a proper physical examination, and interact appropriately with the patient and the patient's family. Out there in the real world, students see a busy, harried, worried, very often depressed faculty who appear to be in the middle of budgetary crises

all the time. This role modeling must have some impact on our students. It appears that managed care in some form or another will continue to exist along with the cost containment pressures. So in the face of this eroding clinical environment, how can we preserve the best qualities of the medical profession to make sure that there is a faculty who can take good care of patients and be role models for students? How can we preserve the best qualities of clinical education? Medical schools and their leaders must attend to these problems.

Another challenge is how to incorporate all the different subjects, new domains of knowledge, and emergent disciplines into the curriculum in order to produce a more complete physician – one that meets the needs of individuals and populations. What is the best way to integrate molecular medicine, genetics, palliative care, complementary and alternative medicine, nutrition, medical ethics, and information technology into the existing curriculum? We believe that the exclusion of these neglected areas of medical education produces an incomplete physician. However, the curriculum is already packed and no one wants to cut any piece of it out. It is not practical to simply add a bunch of new courses and several additional hours of instruction. Yet, there is a need for change. There are no easy solutions to this challenge. One approach is getting all the stakeholders together to think collectively about possible solutions. Currently, the Albert Einstein College of Medicine has several working groups and committees/subcommittees looking at these issues. We believe that this is the way to go.

Information technology is another big challenge that demands its own solutions. In many ways it is a moving target because the technology constantly changes, improves, gets faster, gets more wireless, gets more pervasive, and becomes all encompassing. We believe that medical schools have to be as innovative and demanding of ourselves as companies like Charles Schwab, which has developed probably the best web site for the brokerage business of any company in America. Medical schools do not use all the educational possibilities of information technology, either in the classroom or the non-classroom environment. While cost is a significant barrier, such innovations can have a big impact on the area of self-directed learning. Assuming that the physician of 2020 is going to be using computer technology much more than the physician of 2000, we have to train our students now for that world – a world where the physician obtains information in her own way from experts via computer technology, and not necessarily through classrooms. We should aim to educate students now in such a way that they use this technology in their efforts at self-directed learning. It is not just a question of technology but also a question of learning to

be critical in evaluating the information available through technology.

Another challenge facing medical education today is that we are training students to practice in an environment of managed care, yet many faculty members do not believe that this is the right environment for the practice of medicine. So how do we prepare students with the appropriate skills to be proficient in the current environment and yet teach them how to practice in an ideal environment? Currently, many schools are educating their students to function properly in a managed care environment. Should Einstein be doing that? Is that the environment we want physicians of the future to practice in? So, how should we prepare our students so as to know what the ideal patient-doctor relationship should be, and yet, prepare them for the real world? That is the challenge.

Proprietary medicine has made a come back and students are being placed in these environments. This is similar to the practice in 1900 when students were placed in apprenticeships physicians who were practicing in the community. Then came the idea of a full-time faculty and hospital affiliation. Now, it is all changing again. A lot of medical schools have thrown up their hands and said: let the students go out there and learn how to be a real doctor and how a real doctor practices. Is this the best approach? There is a clear need to train medical students in settings beyond the hospital wards. There is a need for rigorous ambulatory training. However, the concern is that many ambulatory practices are so tightly controlled and managed such that it is difficult to devote the optimal amount of time for each patient. Therefore, farming students out to such venues requires careful consideration and monitoring.

Finally, we believe that medical schools are going to have to confront the issue of distance learning in the near future. While it may not be possible to teach entire courses through distance learning, medical schools should explore the advantages of such technology. For example, during clinical rotations when students are dispersed at various clinical sites, there may be distance learning and video conferencing. Through this mechanism, students could come together and interact during the didactic aspects of clinical education. Distance learning technology could provide an avenue for doing this without losing travel time. But the challenge would be in developing curricula that take full advantage of the promise of distance technology while maintaining the important personal contact among students and between students and faculty.

## Summary

This paper has identified several major challenges facing medical education in the United States. These include the erosion of the clinical environment, the loss of clinical revenues and all its attendant consequences, as well as pressures for increased faculty productivity in an environment that is increasingly managed. We contend that these pressures have squeezed the time for teaching out of the system. There is also the challenge of how to incorporate all the new and emergent domains of knowledge into the existing curriculum, and the need to incorporate technological advancements into the delivery of teaching. While there are no easy solutions, these challenges can be met and even ameliorated by the application of creativity and diligence.

## Competing interests

None declared.

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