

A Surgeon' Perspective on Medical Graduate Education in China

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Abstract: This article gives a general overview of the evolution and current status of the medical graduate education system in China. Guilin Medical University began the medical graduate training program in recent years. However, many difficulties were experienced, including the capabilities of graduates, manpower resources, and a transition period of implementation. This paper reviews the experiences with medical graduate educational reform including preparation, implementation, the content and range of reform. After a series of education, clinical practice and system reforms, the problem-based learning curriculum is now performing routinely. The fact that the education reform was unique, and a hybrid curriculum was created. This article discusses the importance of graduate clinical training program and evaluates the long-term outcomes. Recommendations are provided that highlight the need for additional teacher training opportunities, the vigorous evaluation, and the need for better recognition and reward for teaching excellence within teaching hospital.

Keywords: Medical graduate, Education, Training.

INTRODUCTION

The healthcare is undergoing a major transition period in the world. The delivery of healthcare is also undergoing a major transition period in China. The world is changing, and the old model of medical education is no longer the most effective strategy for training tomorrow's physician.

There are several deficiencies in current medical graduate education models. For example, the existing training models were not designed to meet the needs of modern medical practice. In addition, different teaching hospitals offer residents different levels of exposure to clinical cases and case variety, which can result in discrepancies in the levels of experience and skills the graduates gain. A residency program should be designed to provide the rotations to optimally train physicians. This may vary from hospital to hospital based on local medical resources, although requirements would have to be developed. Despite these challenges, we tried to develop of a program to explore the issue of graduate training reform, with representatives from all surgeries as well as multiple related specialties to improve physicians training and patient care.

An overview of medical graduate education in China

In China, there were complex diversity of paths a doctor can follow to gain medical training and

become a practicing doctor since 1949. Chinese medical students can follow many paths to becoming a doctor, including curricula lasting three, five, seven or eight years [1]. For a long time, there are also lack of standardized residency programs, or graduate medical education. This is different from the United States, which enrolls the medical students obtained a four-year non-medical undergraduate college education.

The majority of Chinese medical students attend a five-year program after high school to earn a medical bachelor's degree. Then they serve in a one-year clinical internship before taking the nation's standardized medical licensure exams, which measure both knowledge and clinical skills. They can register as medical practitioners after they pass the exam. Those who pursue the more curricula gain additional training and research experience and earn more prestigious degrees (master's or doctorate respectively), before taking the same licensure exams as their bachelor's degree-earning colleagues.

Not surprisingly, medical education in China has been deeply influenced by both Western medical education systems and by the former Soviet Union's system. Merging the experiences of these two systems and adding China's uniqueness, which is based on

historical and cultural specifics, has made for an interesting model of medical education [2].

Learning in the clinical practice is to learn and master the mastery of complex skills that require performance up to professional standards in their work environment. The training in hospital is not always possible for many reasons of safety and costs, alternative ways are needed to achieve clinical excellence. The proper reform would meet with challenges, high costs of developing training programs, and concerns that such a move may increase the student' clinical ability, which could decrease the availability of surgeons within these specialties for on call emergency care. For example, institutions that are appropriate candidates for developing a cardiac surgery residency would offer exposure to the full range of cardiac procedures, from basic cardiac surgery to minimally invasive surgery as well surgery for congenital heart disease, valve heart disease, and coronary heart disease. The programs would be developed based on collaboration between cardiac and thoracic surgery divisions to promote a well-rounded educational experience. Ultimately, there could be independent departments of intern medicine surgery, with operative and no operative divisions.

By investigating the processes of the medical education through the of student-teacher relationships, medical educators may be able to harness the power of relationships to modify students' adoption of the prevailing premises of the medical culture. In other words, educators need more resource that fosters an understanding of the learning processes that will help graduates to gain control over the story that they are enacting. Although most medical schools continued the traditional 'teacher-centered' curriculum in clinical practice, a series of curriculum innovations have been carried out in some medical universities in the past two decades. Many Chinese educators believe the programs are overburdened with lecture sessions and an overemphasis on didactic teaching and examinations. This has resulted in a passive approach to learning by students. In addition, there is a lack of clearly stated educational objectives and poorly developed monitoring and assessment systems. Most innovative attempts to correct some of these problems have failed.

Challenges for reform of medical graduate education

The present challenge for both the government and the medical universities is to improve the quality of medical graduate education and to train qualified students who can both adapt to a rapidly changing healthcare and simultaneously meet the needs of the patients [3]. Therefore, some medical universities have recently modified their medical curriculum by incorporating integrated courses, small-group tutorials,

courses in humanities, ethics, society, the doctor-patient relationship, problem-solving skills, lifelong learning, and enhanced informatics including computer sciences and English learning.

In the past five years, we sought excellent young surgeon to improve the quality of educational experiences and enhancing the academic and professional excellence in our teaching hospitals. Changes in medical education are also promoted by a growing excellent medical profession.

In the near future, the great change range from the introduction of new technologies such as transcatheter aortic valve implantation (TAVI) and robotic surgery in cardiac surgery, to restriction in work hours of trainee doctors. Innovation in healthcare means that traditional methods are challenged in order to achieve higher standards. The dilemma of how to train doctors and allied health professionals in more specialized techniques, though in a shorter period of time, together with maintenance of the highest levels of patient safety and in a cost-effective manner is a new difficult question.

Technologies that can shorten and flatten the learning curve for traditional and advanced surgical procedures include the use of simulation, supervised practice and objective assessment of performance. Basic surgery skills have been utilized for approximately more than one hundred years, initially for training in basic skills such as knot-tying and suturing. More recently, with the increase in image guided procedures, there has been a concomitant increase in the development of computer-based simulation for laparoscopy, endoscopy and interventional radiology. The possibility for graduates to practice basic skills and complete procedural tasks in teaching hospitals has not been fully exploited to date.

A new surgery residency pathway focused specifically on training future surgeons should be developed to meet the changing needs of modern surgery practice and address inconsistencies in surgery training. There have been momentous changes in graduate medical education in China in the past few years. While the standardization of residency training programs has been a topic of national conversation for decades, the Chinese Medical Association under the commission of the Ministry of Health released mandatory residency training standards in 2012 [4].

China's recent efforts to standardize residency training reflect a tremendous desire to invest in the healthcare of its people. The government has taken a large step forward in issuing training standards for residency programs, but these standards have not necessarily created quality programs. While residents at

high level teaching hospital perceived the essential elements of a program in place, they also described many areas for additional development. Furthermore, given the recent standardization of training programs, many other training programs may be facing the same problems. The residency training still has a long way to go before it is truly “standardized” [5]. The recent development of national licensure regulations for physicians is one example of the desire to improve the standards of medical education.

Globalization and the modernization of medical education

Now the teachers and students of the medieval universities have seen internationalization in medical education [6]. Chinese medical graduates' English is not so good, which also limits their access to the latest medical knowledge. In thinking about internationalization of medical education, three variables should be considered—the student, the teacher, and the curriculum—along with the interrelationships between these variables. In the past, the concept of the international teacher was defined in terms of spatial location; the teacher was physically present in the host institution in the overseas country. Different models for internationalization of medical education is exemplified in the global context rather than the context of a single country.

One established area of international cooperation in medical education has been the attachment of a scholar or teacher for a variable period of time to an institution in a different country. The academic may have responsibilities in the host institution for teaching students, in addition to pursuing research. Such attachments have been long recognized as a valuable way to bring an international dimension to a medical graduate curriculum. This movement of teachers corresponds to the concept of internationalization of medical education represented. Developments in information technology, however, have made possible the virtual teacher and thus the international teacher located at a distance— even in a different country from the student. The contribution of teachers, through textbooks and other learning resources, to the learning of students in other countries is not new.

The internet developments in medical learning have further fostered the use by graduates of learning medical resources in China, provided and facilitated by the teachers. The internet provides a rich source of information and materials. The internet has done much to improve international medical science communication. A move has occurred from using the internet primarily as a medium for distributing information to using global networks as social places to bring people together and support learning [7]. This

new method includes providing partnerships between teachers and students that are not defined by spatial constraints. Despite the majority of respondents believed that e-learning modalities can be a useful tool to address some of the problems in medical education in developing countries, a lack of English language skill and learning motives have restricted the potential benefits. On the other hand, there are many wrong medical information on the internet. For example, despite the effort placed in creating Wikipedia medical articles by many hardworking volunteers, many articles had knowledge deficiencies, were not accurate, and were not suitable for medical students as learning resources [8].

The role of the clinical teacher is diverse; including acting as facilitator, role model, information provider and planner [9]. Further to these roles, there is growing pressure on academic surgeons and medical educators to juggle their teaching duties and responsibilities of patient care, research and continuing professional development. An important issue is the development and maintenance of teaching skills in medical educators [10]. Few medical academics have formal qualifications in teaching and educational theory, as greater merit is usually given to clinical and research achievements. It was once assumed that teaching ability may be innate to all qualified medical practitioners; however, here is increasing recognition that faculty training in preparation for teaching is vital. ‘Faculty’ or ‘teacher’ training or ‘faculty development’ promotes knowledge and understanding of effective teaching strategies. It can be defined as teaching reform that increases the teacher’s knowledge and skills in teaching, research and administration [11]. It is an important component within medical graduate education, a discipline in its own right that is concerned with the education and training of future and existing medical professionals.

CONCLUSION

Consequently, the major direction of new way of medical graduate education is student-centered, problem-driven medicine, with proactive study, and lifelong learning. We hope that we can exert a subtle influence on the medicine education reform and exchange our experience with others to allow further improvements in medical graduate education in China. We must give them the skills necessary to practice as clinicians and doctors within the 21st-century global village in which we live.

AUTHOR’S CONTRIBUTION

Haiyong Wang and Zhenzong Du wrote the paper. Jihong Bai, Jing Ma, Yong Li, Xuwei Xia, Jianfei Song and Jiangbin Sun supervised the composition of the paper. All authors read and approved the final paper.

ACKNOWLEDGEMENTS

This work was supported by Innovation Project of Guangxi Graduate Education [JGY2015127]. We thank Jing Ma and for her contribution to this article.

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