Ibrahim Med. Coll. J. 2010; 4(2): i-ii

Editorial

MEDICAL EDUCATION IN BANGLADESH – PAST, PRESENT AND FUTURE

Through its journey from the prehistoric era, medicine has evolved itself into a social system heavily bureaucratized and politicized and truly commercialized. Medical education has also traversed a long way from the ancient medicine in India, China, Egypt, Mesopotamia and Greece to the middle ages and finally to the present day medicine. The explosion of knowledge during the last two centuries has made medicine more complex and rendered medical education more and more difficult. And more difficult is to take the benefit of medical knowledge to the common people and truly to the disadvantaged communities. Let us think of our old traditional medicine. Usually, a disciple learnt from his / her teacher (guru /ostad) and served as a philanthropist and the physician's position was "next to God". The days are gone. Colonization made a great change in our medicinal practice. We lost our glory of contribution to medical science by the celebrated authorities – Atreya, Charaka, Susrata and Vagbhatt. We lost our glory as history goes, in the time of East India Company, the British physicians learnt the art of rhinoplasty and the instruments for microsurgery, then widely used in India.

Throughout the colonial rule of two hundred years, we had no choice other than to accept the westernized medicinal practice. In fact, during this period, Europe and America experienced a revolutionized stage of development in culture, science and industry. And so is the medical science and medical education. The medical schools opted primarily on an apprenticeship model of education.[1] The medical education curricula started with the basic medical sciences during the first two preclinical years. The preclinical subjects were anatomy (including histology and embryology), physiology (including biochemistry), pharmacology, pathology, and bacteriology. With the advancement of research and discoveries in the twentieth century, new areas of knowledge were added. Immunology, virology, and genetics were increasingly loaded with enormous input though stayed within the discipline-oriented structure.[2] Thus, the old model of 'basic science education' faced challenges increasingly with the rapidly generated new information and that necessitated a change in medical education.

In the mid twentieth century, Western Reserve School of Medicine recognized and pioneered an *organ-system based structure* to its curriculum in the second year but maintained a discipline oriented structure. However, there were many variations on this theme.[3] At this juncture, an accrediting body for medical schools, the Liaison Committee on Medical Education (LCME), felt the need of "coherent and coordinated curriculum". The essence of the content of this curriculum was, in fact, a horizontal and a vertical integration within and across the academic periods of study.[4]

Many more changes and variations were undertaken to deal with the newly emerged situation for medical education. Finally, the Medical Curriculum Committee at Brown Medical School approved a vision for curriculum transformation that would build upon the competency-based curriculum. The curriculum was found effective and was implemented in 1996, incorporating five essential elements – *1. integrated coursework*; *2. patient-centered focus*; *3. small group active learning methods*, *4. an educational environment that is both humane and conducive to learning, and 5. fuller and more robust integration of new technology*.

Thus, the old concept of basic medical sciences during the first two preclinical years was replaced by integrated medical curriculum (IMC). The approach in IMC is different. "Learning facts is easier when those facts are learned in a relevant and meaningful context. This premise led to the development of problem-based learning (PBL), accepted by most medical schools. Students are presented with a case study of a patient with a problem, discuss the case to determine the explanation of the problem and know only a small amount about the problem from their previous knowledge and decide what more they have to learn, divide the learning objectives up among the group, research their assignments, then reassemble to put what they've learned together to solve the problem".

The old model of preclinical basic science (anatomy, physiology, biochemistry) has no chance of developing PBL and no practice of exercising previous knowledge. As a result the students can not decide what more they have to learn. Conversely, in the integrated model, courses supposed to be taught as disciplines like histology, anatomy and physiology are taught as part of the integrated teaching in each block. For example, understanding ischemic heart disease and heart failure, during the circulation and respiratory block, students will learn the anatomy, histology and physiology of the heart and blood vessels including lungs that they would have previously learned in separate courses. Additionally, they will also be introduced to information from other disciplines as appropriate. Another example, learning about staphylococcus as a prototypical Gram-positive bacterium during the infectious disease block cellulitis is described. They learn about the general principles of the inflammatory response at the same time, thus incorporating material that is currently taught in the general pathology course. Principles of pharmacology may also be introduced early as with specific pharmacological agents, with the level of understanding increasing over the two years with repeated exposures.

Whatever we advocate in favor of IMC some limitations need to be adequately addressed – a) students won't learn

basic sciences, b) optimum learning moves from basics to more complex structures, c) integrated curriculum is superficial, d) knowledge belongs in discrete categories, and e) teachers don't know enough.

Undoubtedly, our medical education in Bangladesh has failed to produce efficient professionals considering the need of the people and time. The proofs are plenty. Many a people opt to get medical treatment abroad if their financial ability permits to. There are substantial reports that have criticized medical education for emphasizing scientific knowledge over biologic understanding, clinical reasoning, practical skill, and the development of character, compassion, and integrity. More and more frustrations have been expressed in the Dailies almost frequently and regularly. How did this situation arise, and what can be done about it?

The Bangladeshi medical students are no less meritorious than those of the other western or neighboring countries and also no less studious or industrious. Possibly, the reverse is true though the outcomes are not satisfactory; but why? We must address this issue seriously. Possibly, there are a number of causes or weaknesses and time has come to identify them to be removed or corrected.

Obviously, one of the important causes of this adverse outcome is the education model that we are running. We must feel the need to change the hundred years' old model to IMC. Successful implementation of an integrated curriculum may face serious obstacles. Sufficient time and determination for faculty to meet together to plan the curriculum is the most critical ingredient for success. The departments and faculties are likely to feel pressure to spend time on obtaining research grants and clinical activities. If these constraints on faculty time and allocation can be mitigated, then the likelihood for success is high.

Secondly, we are to introduce psychosocial and community issues in more detail with practical exposure in field practice as in primary health care at community level.[5] The issues include economic, behavioral, and community factors which influence a patient in his or her compliance and/or response to disease and wellbeing. The students use that understanding to collect and incorporate appropriate psychosocial, cultural, family, and community data into an appropriate patient care plan. Exposure to such planning help students developing attributes of integrity, honesty and empathy and allow students to accept the moral and ethical responsibilities involved in providing care to individual patients and communities; to appreciate the unequal balance of power in the doctor-patient relationship and the need to always act in the patient's best interest safeguarding patient safety and maintaining confidentiality and appropriately sharing of information.

Thirdly, assessment of competence and performance of a medical student is another flaw. Competence is not an achievement but rather a habit of lifelong learning.[6] Assessment plays an integral role in helping physicians to identify and respond to their own learning needs. Ideally, the assessment of competence (what the student or physician is able to do) should provide insight into actual performance (what he or she does habitually when not observed), as well as the capacity to adapt to change, find and generate new knowledge, and improve overall performance. We have no mechanism to assess competence and performance of medical professionals.

Finally, the quality and integrity of the medical educators and trainers are questioned. How many of us (the teachers) employed in medical education maintain honesty in teaching and assessment? How many of us envision to involve the students in research addressing our commonly encountered health problems? Here lies the root of all flaws. So, it is of utmost importance to investigate and evaluate the assessment mechanism and the integrity and honesty of the assessors (teachers).

To conclude let us review our glorious history of medicine and the apprenticeship and the philanthropic behavior of the physicians of the past. Let us accommodate the new knowledge in medical education curriculum on a scientific basis. Let our medical students be exposed to primary health care in the community and to be actively involved in research on our own health issues. Let us develop mechanism for the assessment of competence and performance. Let ourselves (the teachers) exercise our honesty and integrity in academic performance, research activities and assessment skill so that our medical students develop attributes of medical professionalism – capable of transmitting knowledge, to impart skills and to inculcate the values of the profession.

M Abu Sayeed
Professor, Department of Community Medicine
Ibrahim Medical College

References

1. Bonner TN. Becoming a Physician: Medical Education in Britain, France, Germany, and the United States, 1750-1945. Oxford, Oxford University Press, 1995.
2. Flexner A. Medical Education in the United States and Canada: a Report to the Carnegie Foundation for the Advancement of Teaching. Science & Health Publications Washington, DC: 1960; 61.
3. McGaghie WC, Miller GE *et al*. Competency-based curriculum development in medical education: an introduction. Geneva, World Health Organization, 1978.
4. Liaison Committee on Medical Education http://www.lcme.org/standard.htm
5. Fragstein MV, Silverman J, Cushing A, Quilligan S, Salisbury H, Wiskin C.UK consensus statement on the content of communication curricula in undergraduate medical education. *Medical Education* 2008; **42**: 1100-1107.
6. Ronald M. Epstein, M.D. Assessment in Medical Education. *N Engl J Med* 2007; **356**: 387-396.