

The Changing Shape of a Medical College

Naeem Aon Jafarey
Ziauddin Medical University, Karachi.

The past two decades have seen major shifts in the way medicine is practised. This in turn has impacted on the medical curriculum and the instructional strategies used.

The most powerful force behind these changes is the exponential growth of new information in the field of Bio-medical sciences and Information Technology.

Amongst the changes, the most significant curricular changes are: 1) a move away from the 'traditional' subject based curriculum to integrated curricula, and 2) a move away from exclusive hospital based teaching to community based settings, 3) Problem based learning and 4) Developments in Information Technology which are reshaping the instructional strategy and the use of different modalities for storing and accessing information.

The developments in molecular medicine, the emergence of cell biology and genetics now cut across all the basic science subjects, Anatomy, Biochemistry, Physiology, Pathology and Pharmacology. These are some examples of why the subject based approach to medical education is being replaced by an integrated approach.

A Medical College with an integrated, community based curriculum, using problem based learning strategy needs a different type of physical and social structure. For medical institutions with only an undergraduate programme in basic sciences a unified basic sciences department is all that is needed. Professors, Associate Professors and Assistant Professors in the six basic sciences are still needed but they all work as a single teaching unit. This way the need for separate laboratories, museums and lecture halls and separate group of Demonstrators/Instructors are not needed. Two multidisciplinary laboratories and a combined museum which is part of a centralised Learning Resource Centre is all that is needed.

Learning Resource Centre (LRC) is another new feature which has come up with the changing needs of medical education. LRC is an amalgamation of the Library (Books and Journals) with models, anatomical and pathological specimens, X-rays etc. and a bank of computers. As the name states all learning resources are under one roof. The student does not have to run from one museum to another with restrictions imposed on movement of books from one resource to other. LRC is very cost effective in terms of space and staff and very practical from the point of view of users.

With the pressure of emerging subjects like genetics, cell biology and community health sciences the 'traditional' subjects are being asked to review their contents and bring them in line with what is relevant to the overall objectives of the MBBS programme which is to produce a general purpose physician. This type of decision cannot be made by the subject specialist alone. This type of review requires a very broad based group consisting of all disciplines/subject specialist plus those directly involved in health delivery i.e., Family physicians/General Practitioners. This is the kind of change in the social structure of a medical college that is now needed. The power of the individual specialist over the curriculum and examination has to give way to a broad based committee. The emphasis is on a team rather than an individual.

The disciplines which have been most effected by this kind of review are the basic sciences. As a consequence of scientific advances in basic sciences, the content of knowledge in each subject is enough by itself to need the five years of MBBS. Hence the need to select what is relevant for family practice. This needs a review of the current contents and the teaching practices in use. I will give examples from Anatomy and Pathology as to why we need to rethink what is needed.

Pathology as it is still being taught in Pakistan is divided into General and Special Pathology. A terminology and division which is not useful anymore and is part of history. In my view the undergraduate course of Pathology should focus on the various mechanisms of disease production, so that when the students see patients with symptoms they can visualise the underlying events taking place within that patient. Deriving out of this is the need to know which tests to order and how to interpret them. They also need to know how and when various specimens are to be collected, and how they are to be transported. This is the Pathology that they will need to practice as physicians.

The medical graduate should also know the sources of error in testing. In Microbiology and Parasitology the emphasis should be on the disease spectrum i.e. sources of infection/infestation, pathogenesis, signs and symptoms, methods of diagnosis and methods of prevention. The morphological characteristics and laboratory methods of identification are too highly specialised areas for the non specialist and the undergraduate. The current need for studying slides under the microscope can now be better achieved by

achieved by showing the pictures on videos or through multimedia. Excellent collections of gross and microscopic pictures are available on Internet and CDs which the students can be shown in class sessions or they can study them on their own.

At present the bulk of the time given to Anatomy is for dissection. A critical review of whether every undergraduate student needs to dissect a human body is needed. Fifty years back the only available way of learning the make up of the human body was dissection. Atlases and diagrams gave only a two dimensional view. Methods of visualising the internal organs were also limited to a two dimensional X-ray. All this has changed. Now we have so many different techniques of imaging which provide three dimensional views and movement. It is this living Anatomy which we need to teach¹, because this is what the students will see when they practice. Again, excellent models which can be taken apart, videos of dissection and CDs like Adams are available both for class room and individual learning. I

do not understand why individuals who have so readily adopted mobiles and internet are hesitant about replacing dissection by use of current technology. Agreed that those who want to become surgeons need to dissect. Such facilities should be available for the surgical post graduates or as electives to those who are keen to do so. There is no need for making the whole undergraduate class spend hours doing something which they could do equally well by other means. The savings in space and staff that a new medical college can make by this one change will be immense.

Similar critical reviews of the laboratory work in Physiology, Pharmacology, Pathology and Biochemistry from the view point of current and developing technology will help the planners of a new medical college, establish a State of the Art institution. The integration of Basic Science departments alone will bring substantial savings in terms of space.

Reference

1. Jafarey NA. The anatomy of the living. J Pak Med Assoc 2004;54:29-30.