

EDITORIAL

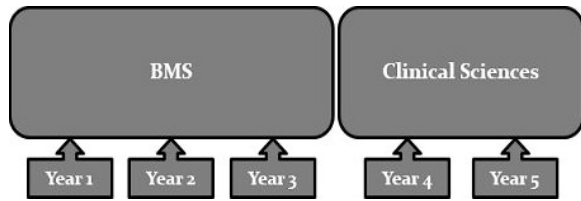
LEARNING BASIC MEDICAL SCIENCES AS FOUNDATION OF MEDICINE: A CHALLENGE

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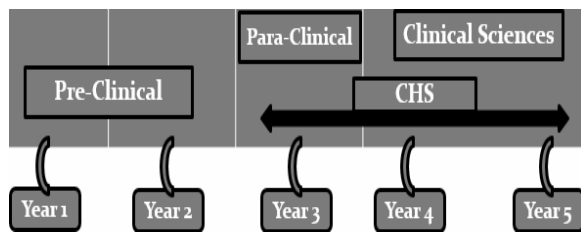
The process of learning is never static and always progressive. It's an innovative process and is subject to improvisation till the Day of Judgment. There's a famous adage 'seek knowledge from cradle to grave' and according to the new version it is narrated as 'be a lifelong learner'.

Traditionally, the Basic Medical Sciences (BMS) were learnt in the initial three years of MBBS studies and the last two years, Clinical Subjects were learnt in Pakistan.



Traditional Outline/Skeleton of MBBS Curriculum

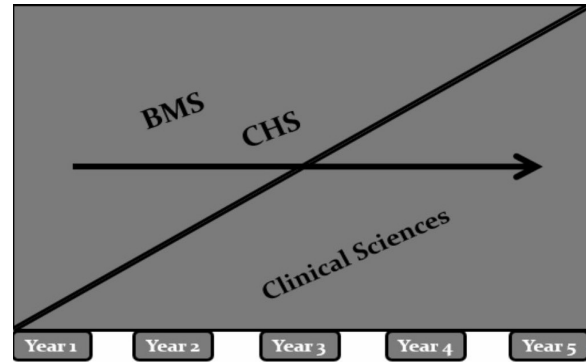
Then reframing of pacing and spacing was made in mid60's and first two years were specified to preclinical (Anatomy, Physiology, Biochemistry), the 3rd year to para-clinical (Pharmacology, Forensic Medicine, Toxicology, Pathology and Therapeutics) and the last two years clinical subjects (Community Medicine, ENT, Eye, Medicine, Surgery, Paediatrics, Obstetrics & Gynaecology) were learnt as follows:



Reframed Outline/Skeleton of MBBS Curriculum

Later, medical education gained momentum and emphasised on educational philosophy and objectivity of learning medicine. It also differentiated the learning processes and mechanisms of pure science and medical or health sciences. The medical educationists' globally and so in Pakistan introduced the improvised map of MBBS learning. That revealed that BMS may taper and clinical sciences may increase in quantum from year 1 to 5 of MBBS learning, whereas, Community Health Sciences (CHS) may be learnt across the board in 5 years. The medical colleges/institutions/universities in Pakistan vary in capacity both in quantity and quality in terms of faculty,

infrastructure, finances, facilities, research and students. Some of the innovative colleges adopted this model fully, whereas, less-established adapted it partially. The map is given below:



Improved map of MBBS Curriculum

The conventional model of learning teaches Anatomy, Physiology, Biochemistry, Pharmacology, and Pathology as individual subjects. That means, cellular system, musculoskeletal system, haemopoietic system, cardiovascular system, respiratory system, gastrointestinal system, urinary system, endocrines system, reproductive system, nervous system and special sensory systems are taught 'in isolation' by Anatomists, Physiologists, Biochemists, Pharmacologists and Pathologists.

But now-a-days the focus has been given to spiral integration that is the combination of both horizontal and vertical integration that unifies curriculum across time and disciplines for both basic and clinical sciences. It blends basic and clinical sciences in such a way that the traditional divide between preclinical and clinical studies is diluted.

The medical education as outlined in the benchmarks of the curriculum under the abbreviation of SPICES (Student-Focused, Patient-Directed, Integrated, Community-Oriented, Elective-Driven, and Systematic). Furthermore, Ronald M Harden advocated 11 steps for integration of learning (Isolation, Awareness, Harmonisation, Nesting, Temporal Coordination, Sharing, Correlation, Complementary Program, Multidisciplinary, Interdisciplinary, and Transdisciplinary). It was also advised that medical education may focus more on contextual (relevant) learning than on content overload of the individual subject(s).

In view of rationalisation, the curriculum be designed accordingly to epidemiology of diseases in the region and its delivery may be focussed around the symptoms of the patient(s) like headache, vomiting, pain in chest, lack of menstruation, pus in urine, diarrhoea, persistent cough, breathlessness, easy tiredness, rowdyism and so on.

The relevance of the system(s) is worked out by the symptoms of patients (as happens in real situation) and an integration step/grades of Ronald M Harden integration is made according to capacity of the college/institute/university. Thereafter, the symptoms in conjunction with systems are taught jointly and collaboratively by the Anatomists, Physiologists, Biochemists, Pharmacologist, Pathologist and Physicians.

The above approach, if adopted after having been given thorough deliberations, may remove the 'isolation' of BMS from clinical subjects and may enhance harmony of BMS with the clinical subjects. The objectives of learning BMS are briefed:

- a. To learn BMS as foundation of medicine
- b. To understand underpinning pathophysiological principles of diseases (not the disease itself)

This approach may also lead to reduce the contents overload and promote contextual (relevance) learning.

Recently, World Federation of Medical Education (WFME) has defined broad standards in the process, structure, content, outcomes/ competencies, assessment and learning environment of basic medical education. Those standards include: a) Mission and outcomes, b) Educational programme, c) Assessment of students, d) Students, e) Academic staff/faculty, f) Educational resources, g) Programme evaluation, h) Governance and administration, i) Continuous renewal.

Global standards for basic medical education, as for other phases of medical education, must be specified, modified or supplemented in accordance with regional, national and institutional needs and priorities. WFME stresses that there can be no benefit in fostering uniformity of educational programmes and learning activities and hereby jeopardising social accountability. Moreover, quality assurance of medical training programmes must give emphasis to improvement, and provide guidance for advancement, instead of simply advocating 'fulfilment of standards' as the ultimate goal. It is the prerogative of any national accrediting body to determine the level that will be examined for recognition/accreditation.

BMS makes foundation of Preventive, Promotive, Personalized, Curative, Rehabilitative, Restorative, Indigenized, and Academic Medicine. The delivery of BMS, if made cohesive with clinical sciences may trigger, energise, re-energise and enlighten medicine. The medics may make conscious efforts to make learning homogenised, collaborative, linked and merged in order to adopt a holistic approach for betterment of the ailing community.

REFERENCES

1. Hays R. Integration in medical education: what do we mean? *Educ Primary Care* 2013;24:151-2.
2. Quintero GA, Vergel J, Arredondo M, Ariza MC, Gómez P, Pinzon-Barrios AM. Integrated Medical Curriculum: Advantages and Disadvantages. *J Med Educ Curric Dev* 2016;3:JMECD.S18920. doi: 10.4137/JMECD.S18920.
3. Ronald M Harden. The Integration Ladder: A Tool for Curriculum Planning and Evaluation. *Med Educ* 2000;34(7):551-7.
4. Tehseen Iqbal. Integrated medical curriculum: a review of university of health sciences curriculum. *Pak J Physiol* 2018;14(3):1-2.

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