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Times Are Changing, So Is Medical Education In India

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India is globally recognized as a seat of ancient wisdom with encryptions about a sound anatomic knowledge and medical practice from even pre-Vedic times. From 23 medical colleges in pre-independent times, medical education service in India has grown today to one of the largest in the world, with about 70,978 MBBS seats in 529 colleges all over the country. Medical teaching in India has a considerable impact on global health scenario because of its large emigrating physician work force. More than 10% of international medical graduates are of Indian origin and are considered to have the highest level of professional competence.

Still within the country, our profession has been subject to considerable flak in the recent times. But as Abdul Kalam has stated, “adversity always presents opportunities for introspection” and considerable thought has been given to revamping the medical education system in India. There are several challenges to modern medical practice in India that stems from changing societal demands, emergence of newer diseases like the latest Corona pandemic and an age-old method of medical teaching that is insensitive to modern teaching-learning methods. For years and years, we have been following an outdated rigid curriculum that follows a Halstedian apprentice model for teaching doctors. Where the old “see one, do one, teach one” doctrine was assumed to be working fairly well, especially in large group teaching, the issue of competence of the MBBS graduates was never addressed. Still, the recent criticisms on medical profession has raised serious concerns about the quality of the doctors who are passing out of the various medical schools [1].

As per the Graduate medical regulations 2012, the “Indian Medical Graduate (IMG) should be one possessing requisite knowledge, skills, attitudes, values and responsiveness, so that he or she may function appropriately and effectively as a physician of first contact of the community, while being globally relevant [2]”. In order to fulfill this goal, the IMG must be able to effectively carry out their various roles in life, as - Clinician, Leader and member of the health care team and system, Communicator, Life-long learner and a Professional. Looking back, we have seen many of our teachers, seniors and peers display most of these attributes, but not all. Never before have the pre-requisites of a doctor so lucidly been laid down. So, how do we fulfill the goal of transforming our medical students, who are solely focused on acquiring postgraduate degrees, whose competencies were hitherto unknown,

who are passing out from medical schools in the diverse private and public institutions of urban and rural areas with non-uniform teaching methods? This calls for a Herculean task of changing the curriculum, introducing new teaching and assessment methods and also bringing about an overall change in the attitude of the medical community.

Sadly, this call for change and curricular reforms spans over 50 years. In 1970s, the Srivastava committee [3] had first advised reorienting medical education in India to meet the national needs. In 1986, the Bajaj committee noted that the medical school faculty were effective clinically, but were deficient as educators. In 1993, Kacker & Adkoli stressed on an updated course content and innovative teaching and their recommendations led to the development of medical education units in all medical colleges of India. These recommendations were emphasized by Majumdar in 2004, who called for a political commitment and leadership to revamp medical education system on the basis of evidence-based medicine. The need for faculty development was also recognized with three National teacher training centers established in 1974 and later the US based FAIMER (Foundation for Advancement of International Medical Education and Research) centers being set up.

The Medical council of India (MCI) established in 1934 under ministry of Health and family welfare, was largely responsible for regulation of medical school curriculum as well as setting accreditation standards. The challenges over the years was the exponential increase in the number of medical colleges in India, lack of uniformity in admission criteria, maldistribution in resource allocation in different colleges and faculty shortage. Periodic revisions in the graduate and post graduate medical regulations and the Vision 2015 [4] document were harbingers for the substantial changes that were brought to the undergraduate curriculum in 2019. These changes are being implemented through the 11 nodal centers and 20 regional centers of medical education technologies in India which are conducting faculty training through curriculum implementation support programs (CISP). The centers also conduct the mandatory sessions of medical faculty development programs through the basic and advanced courses in medical education technologies, keeping them updated to the new teaching - assessment methods and research [5]. The MCI was superseded by the National Medical Commission in 2019 but the MCI Academic cell under the Board of Governors is still in charge of the structured implementation of the new curriculum.

The Academic cell has now revised both the postgraduate (2018) and undergraduate (Aug 2019) curricula based on “Competency based medical education (CBME)” [6]. This concept has been in vogue in many of the universities abroad for over three decades but it had to be sufficiently modified to suit the Indian system. CBME substantially involves attainment of observable abilities by students in a time-independent, learner-centric manner. Learning should cover the knowledge, skills, attitude domains with emphasis on the outcomes, which in turn should be certifiable. In essence, a competent doctor should have the knowledge as well as the ability to translate that knowledge into action in his or her daily practice.

The level of learning for each stage can be set as “knows, knows-how, shows-how and does” as proposed by the Miller’s pyramid [3] from cognition to performance stages. Similarly, acquisition of skills, be it clinical, procedural or communication skills is also delivered in graded steps from novice to expert level as depicted in the elegant model of Dreyfus. This requires opportunities for guided practice whereby the learner can acquire the requisite competency. To provide safe environments for repeated practice, Skill labs with mannikins are being set up in all medical colleges. Newer teaching methods are being introduced like the flipped-classrooms, problem-based learning, clinical vignettes, one-minute preceptor (OMP) models, in addition to didactic lectures and bedside clinics. There is emphasis on promoting self-directed learning and more andragogic principles into medical education. The

traditional assessment methods of written theory exams and practical exams are also transitioning into structured essays, deconstructed scenarios like OSCE or OSPE and Work place-based assessments (WPBA) like the mini-CEX or DOPS methods. Simple log books are being replaced by 'portfolios' which includes an element of reflective thinking by the students. Needless to say, the faculty have to be trained not only to conduct the new teaching and assessment methods but also in giving feedback and mentoring the learners.

The new curriculum also introduces some new components into Indian medical education [7].

- *Foundation course*: Initial one month after joining is dedicated to orienting the new students to the medical course and its requirements. In a congenial environment, they are introduced to self-directed learning along with support for learning language, computer skills, sports, stress alleviation, time management and professionalism.
- *Electives*: For eight weeks at the end of Third MBBS part I, students are allowed to explore unconventional areas of their interest. Domains are opened for them to potential areas of research or future specialization. A list of electives is provided which includes educational, community and research project related, clinical super-specialty or laboratory electives.eg; bioinformatics, virology, sports medicine, ART, genetics, accident & emergency medicine etc.
- *Integrated learning*: Conventional departmental silos are broken down and faculty from different departments in the same phase (e.g. Phase I: Anatomy, Physiology, Biochemistry) or different phases (e.g. Phase I & III: Thyroid diseases taught together by phase I faculty with General Surgery/Medicine faculty) work together. 80% topics are 'temporally aligned', meaning taught at the same time without redundancy thereby saving the time required for each topic. Emphasis is given to problem-based learning with inclusion of clinical case vignettes or linkers across the departments. There is a special task team called alignment & integration team to see to it that at least 20% of topics are thereby integrated.
- *Early Clinical exposure*: Students are provided the feel of hospital environment and exposure to doctor-patient interactions from first year itself, thereby making study of basic sciences more relevant and contextual.
- *AETCOM module (Attitude-Ethics-Communication) [8]*: The module was introduced earlier and forms an integral aspect of the new curriculum where professionalism will be formally taught and assessed. Special teaching methods like immersion into clinical scenarios, role plays, case studies with ethical dilemmas and assessment by reflective portfolios are being carried out. Faculty need special training to teach AETCOM module. Needless to say, they have to be positive role models who can talk the talk and walk the walk, keeping in mind that their trainees would model their behavior [9].

The new three-volume undergraduate curricular framework [10] contains list of several competencies an IMG should possess at the end of training from each department with suggested teaching method and assessment method. The faculty of each departments in Phase I, II & III have the humungous task of breaking down the curricular competencies into learning objectives, fitting them into time tables and matching and implementing the new teaching - assessment methods. But the wheels are already in motion, with ample support from the MEUs and the Universities, the Phase I departments are already implementing their lesson plans successfully. There are several apprehensions about the transition from traditional to new curriculum, especially the time frame to finish, the faculty shortage, discrepancies in internal assessment and university exam policies. But with a good curricular governance, the initial apprehensions are being allayed and the medical education system is slowly embracing the change.

It is said that change can be beautiful when we have the courage to evolve with it. As Dr Avinash Supe, Chief Consultant of MCI Academic Cell remarked, if the reforms are successful, the impact of improving Indian medical education will be felt around the world in the coming years. We can hope that in near future, the new system will create competent Indian doctors, who are compassionate human beings first.

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