

## Competency Based Medical Education in India, a New Beginning: A Perspective

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**Abstract:** Medical education in India is faced with some unique challenges. One, there is gross disparity in terms of burden of disease versus number of qualified doctors in India. Secondly, there is also discussion on the quality of medical education. Many physicians who are graduated from India migrate to different parts of the world making a global impact. Considering this, reforms in medical education has been a topic of discussion for several years. The objective of this reform is to generate medical graduate who can effectively tackle the health situation in India and at the same time being globally relevant. Recently, Medical Council of India (MCI) has released a new curriculum "Competency Based medical Education" The implementation of this curriculum has just started from August 2019. In this article, we discuss our perspective about the new medical curriculum.

**Key words:** Competency Based medical Education, India, Medical Graduate

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### I. Introduction

The cross-cultural exchange between the people and their colonial rulers provides great insight into transformation of medicine and medical education in India. It traces the history of formation of Indian medicine in the backdrop of colonialism and hegemony [1]. In 16<sup>th</sup> century, western medicine was introduced in India by Portuguese. In 1822, medical training to Indians was started by Native Medical Institute in Calcutta in vernacular language. Later, medium of training was changed to English like in European countries. In 1835, Calcutta Medical College and Medical College in Madras were established. In Mumbai, General Hospital (today's Sir JJ Hospital) was started in 1845 [1] Course consisting both Ayurveda and Western medicine was started by Benaras Hindu University in 1920s.[1]

Since then, there has been significant transformation in medical education in India. Similarly, medical education system in India faces several challenges. One of the important challenges is number of available doctors versus existing burden of diseases in India resulting in gross disparity for access to healthcare. This challenge can be overcome by increasing number of medical schools and number of seats in each medical school for graduate and post-graduate level.[2] Second challenge is related to the quality of medical education.[3] Adequately trained medical graduates are required to tackle the changing scenarios in public health.[4]

Evolution of teaching methodologies, changing expectations of the stakeholders (patients and their relatives) and significant advances in technology necessitates their incorporation for upgrading curriculum of medical education and culmination of the professional growth of a medical graduate.

Curricular reform has been a topic of discussion since several years. Two major reports are Shrivastav Committee report [first published in 1975] [5] and the Bajaj Committee report [6]. Today, many physicians who graduate from India migrate to several other countries across the world, making a strong global impact.[7] Traditionally, medical curriculum is spread over 5.5 years. After 4.5 years of study, one year rotatory internship in different clinical subjects is necessary before a student gets medical degree.[7,8]

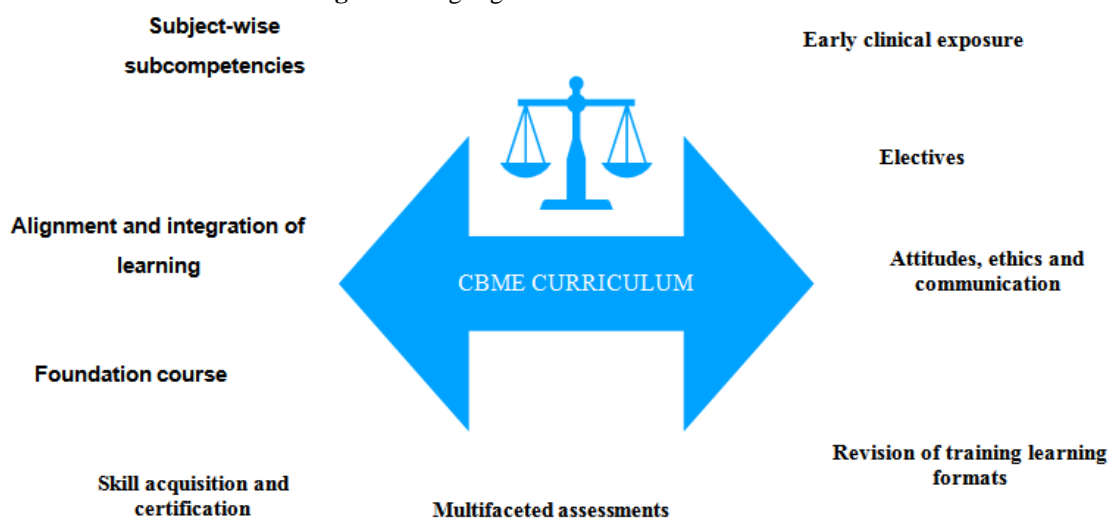
Evolution in science, patient expectations and changing societal needs constantly calls for curriculum update, proliferation of new aspects, reviewing standards for all medical schools, relook into the standards of evaluation of medical students and faculty development. With objectives of improving clinical competencies, communication skills, ethical literacy and justified attitude to gain the confidence of their patients updation of the curriculum and evaluation system is necessary to keep pace with the growth and evolution in the field of medicine and ensure higher patient loyalty and satisfaction. Medical Council of India (MCI) is constantly putting efforts for improvement of quality of medical education in India.[8] After two decades, [9] a new MBBS curriculum has been released by the Medical Council of India (MCI), titled "Competency-based Under-graduate Curriculum" for the Indian Medical Graduates.[10] This curriculum is being rolled out from August 2019 in all medical colleges across India. The revision in the new curriculum is mainly related to the teaching learning methodologies and slight alteration in the year wise program in the landscape of the four and half year teaching

course. The new curriculum focuses on the competencies that are expected to be acquired by the undergraduate medical student using appropriate teaching-learning methods.

### **Competency Based Medical Education (CBME) and its potential benefits**

Figure 1 shows important components of the new MBBS curriculum recommended by the MCI. The expected benefits of these components are discussed in the subsequent sections.

**Figure 1: Highlights of new MBBS curriculum**



### **Foundation Course**

Foundation course is a new introduction in the medical curriculum. The foundation course at the beginning of the first phase of the course enables the new entrants to understand the expectations from the medical graduate and acclimatize students to the completely new professional life and academic environment while embarking the journey of becoming an Indian Medical Graduate. It provides a more comfortable glimpse into the upcoming university life. Students toured around the campus and made well aware of the facilities offered at the institute makes them confident in the new environment.

Foundation course gives better understanding of specific set of skills and knowledge essential for all the subsequent phases in MBBS course and later on their medical practice and career. This targeted preparation may make studying easier and prepare them better for overall undergraduate studies. This short orientation course is designed such that it is systematic enough to grasp by all. Students coming from different geographical areas and backgrounds are benefitted because of revision of some of the basic concepts of science learnt in 11th and 12th grades.

Emphasis is also laid on stress and time management, language, communication, use of information technology, national health policies, management of biomedical waste, clinical research, first aid and basic life support and medical ethics and professionalism.

### **Focus on Competencies:**

Physicians are expected to practice medicine that is fundamentally oriented to improve patient outcomes and have competencies derived from an analysis of societal and patient needs. The new curriculum promises greater accountability, flexibility, and learner-centeredness.[11] Expected competencies in each medical subject are predefined. In order to achieve those competencies, Specific Learning Objectives (SLOs) are prepared. Objectives are classified into those requiring only knowledge alone or ability to understand and explain a concept, demonstrate the skill or perform the activity independently. [12]

### **Skill Acquisition**

There have been significant changes in medical education across the world primarily because of the concern related to patient's safety. Medical errors can result in injury to the patients and increase cost of care. Considering this, importance is given to clinical skills instead of just acquiring medical knowledge. In foreign countries, competency of medical students is analyzed using Objective Structured Clinical Examinations (OSCEs) with focus on clinical skills. [3] In this regard, skill stations and simulation based training can help students in acquisition of clinical skills without causing any harm to the patient.[13]

Established skill laboratory in a medical college shall provide students opportunity to learn skills on the skill trainers and develop confidence of performing procedures and minimize the possibilities on errors while performing these procedures on patients in real life. Different skills such as suturing, administration of medicines by different route, catheterization, nasogastric tube administration, endotracheal intubation etc can be learned on the skill trainers.

Skill training is one of the facets of simulation based learning. Simulation is an artificial representation of a real world scenario to achieve educational goals through experimental learning. It utilizes simulation aides to replicate clinical scenarios. It allows the acquisition of clinical skills through deliberate practice. Simulation tools serve as alternative to real patients and help them learn from their mistakes without the fear of harming the patient. Medical simulation enhances clinical competence at undergraduate and postgraduate levels.[14] Simulation based learning shall have a positive impact in improving the learning outcomes. Simulation can also be used for assessment and feedback, direct observation, and assessment of clinical encounters mimicking real life. Well established simulation laboratories with high fidelity manikins can be useful for students to learn clinical skills as well as develop non-technical capabilities such as decision making, team work and communication skills by creating scenarios faced by clinicians in real life practice.

### **Alignment and Integration of Learning**

The concept of integration includes complementary or multi-disciplinary teaching.[4] Trans-disciplinary integration allows discussion of a topic without individual disciplinary silos. Alignment and integration aims at improving understanding of the subject matter from the perspectives of different specialties.

The curriculum emphasizes the scope of horizontal and vertical integration by increasing the exposure to the preclinical sciences while students are undergoing the teaching / learning programs in the paraclinical or clinical sciences and vice versa.[12] With integration and alignment, repetition of the same subject in multiple disciplines can be avoided and a holistic picture of the disease presented to students with the problem-based exercises.

### **Early Clinical Exposure**

Considering benefits of early patient contact, a study from the USA reported that objectives of early clinical experiences should be defined and students should be offered options accordingly.[15] Early clinical exposure helps to develop comfort with patients and clinical settings,[15] inculcates training of the basic clinical skills [15] and promotes career interest in primary care and specialty understanding. It gives students a feel of clinical practice from day one and stresses the importance of respecting their patients from very early days in medical school.

It encourages active learning in preclinical settings and makes basic science curriculum more relevant. Early experiences help students to socialize to medicine helping them understand and align with patient and community perspectives.[16]

### **Multifaceted (Formative and Summative) Assessments**

Traditionally, summative assessments are practiced for assessment of medical student. Formative assessment during the course can help to find out areas of improvement in the student and strategies to target specific aspect of learning. The conclusions drawn from the formative assessments in CBME would be important for the trainee. Continuous, frequent, criterion-based assessments will guide the student's progress and a student would not be deemed competent, merely because he is better than the rest, but only if his performance matches a certain minimum required a standard of care. Hence, both (formative and summative) assessments will help to improve knowledge and skills of students in a more focused approach.

### **Electives**

Many students struggle to choose a right career option after graduation. Inclusion of electives in the new curriculum gives students a unique opportunity to understand different options for career after graduation. Based on the interest in a specific field, student may choose to gain experience by completing a short project. Electives shall provide experience in healthcare setting different than they are accustomed to studying.

### **Teaching Learning Formats**

There are reports which favor student-centered-active learning over traditional learning to enhance students' knowledge and learning skills.[17] Based on the objective of competencies and domain (knowledge, skills, attitude and communication) students can be assessed for their level of achievement as knows, knows how, shows how and perform.

Based on the competencies the teaching may involve large group or small group activities. (give ref) Small group discussions gives each student the opportunity to interact and actively participate and thus making

these discussions helpful. Emphasis is laid on student-centric (interactive and small groups) and interactive (problem-based, case-based, team-based) self-directed learning. The transition from lecture based education and traditional hands-on activity to the introduction of skill laboratories. Acquisition of skills by practicing the procedures in skill laboratory would be an enriching experience for the students. [15]

A greater use of multiple tools of assessment including work-place-based assessment tools such as mini-clinical evaluation exercise, direct observation, multisource feedback, and records of clinical work such as logbooks and portfolios.

Simple courtesies such as shaking hands, providing a patient hearing helps establish a good rapport with the patient and foster a healthy relationship. A compassionate view by the doctor certainly improves the quality of the medical service and this can be ensured by efficient teaching of the medical ethics to the medical students. Although, these are well known facts, a little more caution by the students and appropriate guidance by the teachers shall help them develop good skills. It may help to improve doctor patient relationship and reduce the number of increasing medico-legal suits filed against physicians in long term. [8]

### **Attitude, Ethics and Communication (AETCOM):**

The AETCOM module across the entire duration of MBBS course endeavors is the key to transition to CBME program. [18] It is a progressive step in recognizing and stressing the importance of soft skills like professionalism, communication and ethical behavior. Through this module, students shall learn bioethical issues, communication skills, and professionalism. [12]

It offers a competency based framework learning in the AETCOM domains that a medical professional must possess at the time of graduation to effectively fulfill the functions of IMG. Medical Ethics, behavioural science, communication and managerial skills are focussed upon, the part which is usually not so emphasized. Feelings, values, empathy, motivations and attitudes may be better learned through systematic approach. [18]

## **II. Conclusion**

Introduction of the CBME is a new beginning of revised medical education curriculum in India. Training of students with such a holistic curriculum is expected to generate compassionate, socially accountable clinicians who are not only experts in medical care but have qualities of a leader and good communication skills.

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