Review Article

Implementation of Competency-based Medical Education in Forensic Medicine and Toxicology in Indian Medical Education — A Viewpoint on Challenges and Way Forward

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The changing disease burden, living conditions and anticipations of end-users in health care have resulted in the decision of regulatory bodies in the Indian medical education system to shift the MBBS curriculum from Traditional to Competency-Based Medical Education (CBME).The efforts taken by the National Medical Commission (NMC) erstwhile Medical Council of India (MCI) to successful implementation of the herculean task of shifting curriculum are praiseworthy. MCI initiated a National Faculty Development Programme (FDP) in 2009 in all medical colleges under its ambit.MCI started with five regional centres, which now expanded to 22 centres, out of which 12 are regional centres, and 10 are advanced nodal centres. Nearly 44932 faculties were trained till December 2018. Despite all the advantages of CBME & the efforts taken up by governing bodies, there are many challenges. Some are common for all subjects, but few are unique or specific to a subject. This article views the possible challenges and the way forward for the successful implementation of CBME in Forensic Medicine and Toxicology.

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The changing disease burden, living conditions & anticipations of end-users in health care have resulted in the decision of regulatory bodies in The Indian medical education system to shift the MBBS curriculum from Traditional to Competency-Based Medical Education (CBME). Frank and colleagues state that CBME is "an approach to preparing physicians for practice that is fundamentally oriented to graduate outcome abilities and the organization around competencies derived from an analysis of societal and patient needs[1]."

There is no doubt that the CBME is superior, valuable and essential in the present scenario for making a competent Indian Medical Graduate (IMG)[2]. The advantages of CBME are innumerable and a few to mention are that it focuses on outcomes, which ensures that the IMG is competent enough to practice. It deemphasises time-bound learning, which addresses the struggles of slow learners. Promoting student-centric training, which synergistically acts with the deemphasizes of time-bound learning[2].

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Editor's Comment :

- In the making of a globally competent Indian Medical Graduate to serve the community effectively, Competency Based Medical Education (CBME) introduced by National Medical Commission will play a significant role.
- Challenges will be there in the implementation of CBME But collaborative effort of all stake holders involved will bring out the desired outcome.

The traditional curriculum, which focuses on the cognitive domain, was replaced by CBME which gives balanced learning of all the three domains viz Cognitive, Psychomotor & Affective. More stress on learning skills and improving affective domain than on retention of mere knowledge. The efforts taken by the National Medical Commission (NMC) erstwhile Medical Council of India (MCI) to successful implementation of the herculean task of shifting curriculum are praiseworthy. MCI initiated a National Faculty Development Programme (FDP) in 2009 in all medical colleges under its ambit. MCI started with five regional centres, which now expanded to 22 centres, out of which 12 are regional centres, and 10 are advanced nodal centres. Nearly 44932 faculties were trained till December, 2018[3].

The long-awaited shift of Forensic Medicine and Toxicology subject to third MBBS was possible with introducing a new curriculum. An increase in the University examination marks and an increase in the teaching hours from 100 to 125 hours are all welcome changes.

Despite all the advantages of CBME & the efforts taken up by Governing bodies, there are many

challenges. Some are common for all subjects, but few are unique or specific to a subject. This article views the possible challenges and the way forward for the successful implementation of CBME in Forensic Medicine & Toxicology.

Challenges :

The challenges can be discussed under two groups viz, stakeholders & methodology.

Stakeholders : Policymakers, regulatory bodies, management/administration of colleges, faculty & students.

Methodology : The guidance provided by the regulatory body in the form of training, documentation of competencies, integration, assessment, AETCOM, etc.

Policy Makers :

Acquisition of competency is a critical component of CBME. In Forensic Medicine & Toxicology, conducting and preparing post-mortem examination reports of varied aetiologies in a supervised environment is the desired competency. To acquire these competencies, one should observe real cases under supervision in a mortuary. This particular competency cannot be acquired in a simulated environment.

Mere changing of curriculum & defining competencies without making specific guidelines mandatory will not change the ability of IMG to perform better. So, to make the best use of the CBME, specific guidelines like compulsory post-mortem work in all medical colleges, irrespective of government or private, should be made mandatory. There are approximately 250 government and 300 private medical colleges in India. Out of the 300 private medical colleges, less than 20% do post-mortem work. So, all the IMG's graduating from the rest of the private colleges will be incompetent.

MBBS doctors are doing the majority of post-mortem work in the country[4]. Data regarding the number of autopsies done in India is not available. Total suicidal deaths in 2015 were 1,33,623, accidental deaths were 413457, including traffic accidents. Considering these numbers, at least 6-7 lakh autopsies in India might have been done in 2015. Out of these, the majority of autopsies have a little value or at times opposite effect due to them being done by incompetent doctors[4].

Many students of private colleges also do not have exposure to the examination of victims/accused of sexual offence cases.

Regulatory bodies (NMC / MCI) :

Why was 2019 selected for the shift from traditional to competency-based?

For students who aspire to pursue a medical career in foreign countries, one of the essential criteria is to graduate from an accredited medical school by (World Federation for Medical Education (WFME). The WFME has announced that from 2024 CBME curriculum will be taken into consideration for accreditation of medical institutes for ECFMG (Educational Commission for Foreign Medical Graduates)[5]. For this requirement and the welfare of the students, the regulatory body had to shift to a new curriculum in 2019.

Administrative (Managements) :

Not all private medical colleges are encouraging Medical Education Units & do not conduct faculty development programs. The regulatory body has recently amended the teacher eligibility qualifications in medical institutions and mandated completion of the Basic course in Medical Education Technology from Institution(s) designated by MCI to encourage private medical colleges for conducting faculty development programmes.Still, the majority of private medical colleges do not provide financial support to the faculty for registration, travel and accommodation[6].

Recruitment of additional faculty beyond minimum standard requirements to handle small group teaching may not be encouraged by some of the private institutions. Even if the Government grants permission to conduct medico-legal autopsies, most private medical college managements in Telangana may not be interested in taking up medico-legal autopsies as they are not profitable.

Faculty :

As per the National Medical Council website, the total number of faculty is 96649, out of which nearly 44,932 were trained in CBME. Hence nearly 50% are yet to be trained, a hurdle for successful, smooth implementation of the new curriculum. So active measures are required to increase the number of faculty trained in CBME. A reasonable number of faculty trained in the new curriculum are also not confident enough, as they were trained for or studied traditional curriculum. For them, the shift is a little cumbersome. Still, some are reluctant to adapt to the new shift.However, faculty should change their mindset and adapt to unlearn and relearn.

Students :

The new curriculum has advantages and lacunae. It is better structured and incorporates more critical skills, like basic life support, communication skills, and ethical issues, which benefits students. There is no clarity regarding the exit exam. To write a proper reflection, training the students is crucial. In CBME, not only does the teacher gives feedback to the student, but the student also gives feedback to the teacher in the form of reflective writing. Reflective writing is sharing

a student's experience of the session, which will improve in teaching in the future.

Competencies :

Competency is the ability to do something successfully or proficiently.[7]

The efforts to create and consolidate Undergraduate Curriculum, Volume I,II & III must be lauded, and many changes suggested are progressive and welcome, though there are some minor errors.However, it is unclear why the MCI has stopped providing only competencies and why not Specific Learning Objectives'? Another challenge was that a few of the essential documents related to the implementation of CBME were not provided before the onset of the process, which created confusion.

Specific Learning Objectives (SLOs) :

An SLO describes what the learner must do upon completion of educational activity. It should be specific, measurable, attainable, relevant and time-bound[8]. Many feel challenged to devise their own SLO's; most of them are prepared by a few and copied by the rest.

Teaching Learning Methods :

According to the new curriculum, there is more focus on small group teaching. Small group learning is defined as a process of learning that takes place when students work together in groups of 8-10. According to this definition, if 100 students are there in an institute, we may at least require 5-7 faculty to conduct a session of effective small group teaching[9]. Instead of increasing the faculty strength, the regulatory body has decreased the faculty strength in forensic medicine & toxicology. At the same time, to conduct small group teaching, we require proper infrastructure and teaching aids, which are not adequate in most government and private institutes.[9] The class can be divided into small batches and can be rotated among the second or third MBBS subjects, but faculty has to repeat, and there will be a class almost every day. The best possible solution to address this issue can be increasing the faculty strength in Forensic Medicine and Toxicology on par with other subjects.

Integration & Alignment :

Alignment implies teaching subject material that occurs under a particular organ system/disease concept from the same phase in the same time frame, ie, temporally.

Integration implies that concepts in a topic/organ system that are similar, overlapping, or redundant are merged into a single teaching session where subject-based demarcations do not exist.[10]

The main aim of integration & alignment is to prevent repetition and make the best use of time. However, the NMC has given no clear guidelines as to who has to take the topics of integration, leading to the defeat of the main objective of integration.

Faculty coordination has changed a lot, but it requires changing more to implement newer methodologies like integration & alignment successfully.

Assessment :

A robust assessment is key to the successful implementation of CBME. The focus from summative assessment has shifted to formative assessment with the change in curriculum. Feedback is an important integral part of formative assessment.

Many medical teachers are getting trained from the faculty development programmes but still, a reasonable number of them are not trained. The trained faculty are aware of the terminology of various activities in CBME, but to master them, it needs practice and time. For example, the art of giving feedback to students as it should be timely, practical, sufficient, and by using the sandwich technique.

Logbook *versus* Practical record :

The Logbook is a verified record of the progression of the learner documenting the acquisition of the requisite knowledge, skills, attitude and competencies[11].

It is still unclear whether the logbook is a replacement or an addition to the practical record and what entries need to be recorded in the logbook? Who will record the details in the logbook? If it is the responsibility of the faculty, then the faculty should first assess the student for an activity, enter those details into the logbook. If the student does not attain the desired level, then feedback should be given, suggesting remedial measures, reassessing the student till the desired level is achieved. However, with the available number of faculty in the Department, it will be a herculean task[11].

Skills Training :

The following are certifiable skills mentioned in Forensic Medicine & Toxicology specialty :

1. Documentation and certification of trauma (I)
2. Diagnosis and certification of death (D)
3. Legal documentation related to emergency cases (D)
4. Certification of medical-legal cases, e.g., Age estimation, sexual assault etc. (D)
5. Establishing communication in medico-legal cases with police, public health authorities, other concerned departments, etc[12].

There is no mention of medico-legal autopsies in the certifiable skills. Furthermore, as per data, more than

80% of Medico-legal autopsies in the country are done by MBBS qualified Doctors. There is a need to revisit the competencies and certifiable skills in the subject.

AETCOM :

In the old curriculum, the Forensic Medicine Department only dealt with medical ethics. To an extent, it is not tricky for forensic medicine faculty to teach medical ethics and law. However, due to the introduction of Attitude, Ethics & Communication (AETCOM) into the new curriculum, it is not clear whether MEU or any specific department is responsible for AETCOM. Are all faculty well trained to teach the different components of the affective domain is a big question? More clarity should come regarding what tools are used to assess the students in this domain?

Electives :

An elective is a learning experience created in the curriculum to allow the learner to explore, discover and experience areas or streams of her/his interest. Two choices of electives are offered to medical students before the commencement of III MBBS part 2, called Block 1 and Block 2. Each block is of 4 weeks duration and is allowed before the III MBBS, part 2. In the module released by NMC, there is mention of examples of block 1 & 2 learning experiences; however, Forensic Medicine & Toxicology topics have found no place in electives. It needs to be included in electives as well[13].

COVID-19 :

The pandemic has affected all walks of life, including medical education. No one anticipated or was prepared for such a scenario, but despite all the hurdles, everyone got adjusted to the virtual platform rapidly for teaching, assessment, CME's & treating patients. One of the learnings from the pandemic is a backup plan in the curriculum to deal with such situations. In addition to all the challenges described above, it was not possible to follow CBME or timelines since last year. Due to virtual sessions, many compromises have been made in teaching, learning, and assessment. There is a need for guidance on how these issues will be tackled in the ongoing pandemic time.

Way forward :

Despite all the challenges, collective proactive participation from faculty of all the Departments, students & administration will help in the successful implementation of the new CBME curriculum. The barriers between the departments should be erased, and each faculty, irrespective of the cadre, should be highly motivated to participate & identify their new role as facilitator.

NMC should take measures for successful implementation of CBME. Increasing faculty strength can be one of the strategies.

The administration should encourage Medical Education Units in their respective colleges and implement regular faculty development programmes. Teaching institutions must incentivize high-quality teaching and leadership that contribute to the professional development of trainees and reward engaged faculty, for example, promotion and monetary benefits.

Differences between Government & Private Institutions should disappear in the student's best interest. Uniformity across institutes among forensic departments should be attained.

There should also be training programs for the students in various new aspects like reflective writing, how to take feedback properly given by mentor, etc.;

Proper evaluation of the programme should be done at regular intervals to identify the lacunae and appropriate measures should be undertaken to fill the lacunae. CBME can raise the standards of medical education in India, but it can only achieve this goal if intensive planning and support from all stakeholders. Implementing any new programme will have hurdles, but those hurdles can become stepping-stones with collective effort.

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