

Need to review anaesthesia curriculum and education!

INTRODUCTION

Medical education has been based on the inculcation of scientifically proven skills. On the other hand, medical science is ever-changing. With the advancement of technology and research outputs, today's best practice might turn into malpractice tomorrow. Further, research in medical education technology has provided a new horizon to the teaching-learning process. Problem-based learning, evidence-based practice of medicine, experimental learning, simulation-based teaching and training are gaining popularity with advantages over the traditional teaching-learning sessions.

Furthermore, the societal needs have changed, and so have the patient's expectations from the doctors. Interpersonal relationships, communication, and ethics are equally important nowadays, and the medico-legal aspect is another area of focus. Therefore, it is prudent to update the post-graduate curriculum and the time pertinent to the changing practice environment. We present here our opinion on the current post-graduate curriculum and education in anaesthesia, appraise and suggest changes that need to be incorporated in the curriculum in India.

CURRENT POSTGRADUATE EDUCATION SYSTEM

Post-graduate training aims to create specialists

who can provide safe and high-quality health care to people. The National Medical Commission of India has given guidelines for post-graduate training in anaesthesia.^[1] The curriculum includes all three, i.e., cognitive, affective, and psychomotor domains. The cognitive domain is a knowledge-based domain that includes knowledge of basic sciences applied to anaesthesiology. In contrast, the affective domain includes behavioural and attitudinal aspects of training, and the psychomotor domain includes the ability to use and demonstrate various technical skills required as an anaesthesiologist.

There is a transition occurring worldwide from a time-based residency programme to Competency-Based Medical Education (CBME).^[2] The National Medical Commission of India has issued guidelines for implementing the same (CBME) in India, including specific learning objectives, teaching, and learning methods to achieve the required knowledge and skills. CBME is a learner-oriented approach that emphasises achieving specific milestones or outcomes. It also suggests a time frame for the training of post-graduate students (PGs) and their formative and summative assessments.

In most medical schools, the actual teaching programme in anaesthesia consists of a three-year residency system for Doctorate [Doctor of medicine (MD) and Diplomate of National Board (DNB)] and a two-year course for Diploma. Further, super-speciality training in anaesthesia is also coming up in different aspects. Furthermore, there is also a need to delineate the grey area between trauma and emergency medicine, palliative care medicine. The new curriculum

needs to address all these aspects. Traditionally, knowledge-based teaching methods such as seminars, didactic lectures, problem-based learning, and journal clubs have been employed. The timing of assessment is not strictly followed in the traditional curriculum. Many medical institutions conduct internal assessments throughout the postgraduate course, whereas in other institutes, the residents are assessed only at the final examinations. There is no uniformity in the assessment of post-graduate students amongst medical colleges. The final examination is centred on the resident's overall impression and performance on the day of the examination rather than an outcome-based assessment. The traditional examination uses essay-type theory questions, the long case, short case, and viva-voce to assess factual knowledge, which is insufficient to represent good clinical practice.

In India, patient care takes the upper hand, and most of the duty time of the residents is spent on patient care for clinical departments. Even in institutes established as of national importance, where the research activities and teaching-training are allocated extra weightage, there is a high patient load in the hospitals attached to government medical colleges, and this leaves little time for the teaching and training activities in the anaesthesia department. It is usual to find that most post-graduates will be (read as bound to be) busy performing patient care in Operation room (OR) even during the seminar hours if time is allocated. The operation theatre duration analysis indicates that the anaesthesia faculties and PGs are not getting enough time for research-related work during the duty hours throughout their postgraduate tenure. Therefore, time allocation for theory and academics, learning clinical anaesthesia as patient management, and research and related works like thesis write-up and publications should probably deserve equal weightage. However, as research work in clinical subjects like anaesthesia is often directly related to patient care, some overlap is expected.

Furthermore, in India, exposure to research and research methodology is very poor or negligible in some centres during the undergraduate teaching-training period. The Indian Council of Medical Research-National Institute of Epidemiology has recently started an online course on Basic Course in Biomedical Research for post-graduate students and teachers in line with the National Medical Commission (NMC) of India mandate.^[3] Even the Indian Society of Anaesthesiologists has taken up

the issue and conducted workshop-based research methodology programmes during conferences. Further, through their research committee, some institutes conduct a few classes over one to two days. However, the impact of such online training, didactic lecture-based training, or even workshop-based training on knowledge acquisition and retention is variable.^[4,5] Practical performance and the research output of such training have yet to be evaluated. Therefore, it is prudent to emphasise and include a module on research methodology in the curriculum beyond the mandatory training for a day during the first year of postgraduate residency. While it is mandatory to do a thesis (dissertation) during the MD or DNB courses in India, the involvement of students and even teachers beyond the thesis in the research activities is limited. Even so, the quality of the research is often poor.^[6] Therefore, it is desirable to have a research sub-unit in each department under the institutional multi-disciplinary research unit. The sub-unit could take responsibility for conducting research-related theory classes, encouraging and engaging the students and senior residents in the research activities, conducting a periodical research work audit, and re-evaluating the module to adapt with time. The in-charge of the departmental research subunit should also be relieved to a reasonable extent from clinical work so the person can devote time to make the programme successful.

INCORPORATING CHANGES IN THE PG CURRICULUM

While didactic lectures are beneficial, they have limitations, particularly in student engagement in the lecture, which is a difficult task. Further, textbooks and journals are freely available at present on the internet. Therefore, the incorporation of problem-based learning along with theory classes could be attempted. A study shows that problem-based learning sessions allow active learning and better understanding and retention of knowledge by students.^[7] The only disadvantage of problem-based learning is that a lot of time and resources are spent in preparing course material, and there is a need for more staff to take an active role in facilitation and group-led discussion.

OR teaching has been the mainstay in anaesthesia education. However, many students fail to get their doubts cleared. Often, operating surgeons get irritable, consider it a disturbance and are sceptical about the possible impact on the surgical procedure. Therefore, along with OR teaching, it is necessary to

find a suitable time for micro-teaching in a simulated environment where the doubts can be discussed and cleared. Microteaching is a teacher-training technique, and it helps teachers who are relatively novice.^[8] The limitation of microteaching in the Indian scenario is that it is time-consuming with administrative and logistical problems as the number of students is significant. Further, the number of anaesthesia faculties in India is disproportionately low.

Simulation is slowly becoming an integral part of the teaching-learning process. While a few centres have access to high-fidelity simulations at the institute level, at least one medium-fidelity simulation should be available at the department level. A simulation-based staged learning process that goes from “knows” and “knows how” to “shows how” and “does” might allow residents the practice of crisis management without any risk to patient safety.^[9,10] At a minimum, simulation for basic and advanced life support, ultrasound, central vein cannulations, and difficult airway mannequins should be considered and used for the training of the residents.

Most of the focus of PG training has been on teaching technical skills, but it has become increasingly evident that non-technical skills (NTS) are equally important, especially in crisis management.^[11] Training the post-graduates in core non-technical skills like situational awareness, decision making, communication skills, teamwork, leadership, stress, and fatigue management is essential in modern complex healthcare delivery systems. In a multicentred study, interventions to increase NTS in medical training were associated with decreased perioperative mortality.^[12] Further, good communication might even avert medico-legal issues to some extent.

Assessment of PGs' knowledge and performance is also variable across the different institutions. It is difficult to find a universal method of assessment in medical education. One such method called 'Objective Structural Clinical Examination' (OSCE) is widely considered as highly reliable and effective in assessing medical professionals. OSCE comprises of a series of stations through which a resident rotates on a timed basis. It is a performance-based and interactive test that prepares students to deal with real-life patients and situations and enhances their self-confidence.^[13] Furthermore, Direct observation of procedural skills (DOPS) aids to recognise lacunae in

performance and imparts a structured feedback. DOPS is discerned as an efficacious tool for assessment and teaching-learning by faculty and PGs.^[14]

SUMMARY

In summary, the transition from a time-based three-year residency programme to a competency-based medical education programme will be a challenging process. It will require the PGs' and the teachers' acceptance and strong administrative support. Nevertheless, it will better equip the PG student to learn and provide the complex care that Anaesthesiology as a speciality demands.

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Conflicts of interest

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