

Editorial

Simulation: The Way Ahead!

Medical simulation originated in ancient times when models of human patients built-in clay and stone were first used to demonstrate the clinical features of disease in humans.¹ Modern medical simulation began in the 1960s with the manufacture of Resusci-Anne, the most widely used mannequin of the twentieth century. Resusci-Anne and Harvey, the cardiology patient simulator represent major milestones in medical simulation. Simulation is invaluable to a speciality like anesthesiology since there is hardly any room for error. The situation of an anesthetist is very similar to that of a pilot manning an airplane flight. Safety is the highest priority. A faultless performance demands extensive practice. It is not ethical to provide such training to residents on actual patients. A simulated environment allows trainees to practise repeatedly without endangering a real patient. It is vital for the trainees to learn the management of certain infrequent scenarios and simulation is the only solution in such cases.



The Medical Council of India has emphasized the introduction of Competency based medical education (CBME) in the Vision 2015 document. Assessment in CBME requires the learner to demonstrate the skills acquired and simulation will play a major role in such evaluation. Management of a 'cannot intubate, cannot ventilate' situation in case of a difficult airway needs to be mastered. Psychomotor skills of cricothyrotomy and fiberoptic intubation can be learnt effectively on a high fidelity simulator. Adherence to a difficult airway algorithm and proper team coordination skills can also be taught and evaluated with the help of simulators.² Use of ultrasound for the conduct of regional blocks is becoming increasingly popular in our country. Simulation can be used to train residents in ultrasound guided regional anesthesia techniques in adults as well as children. Obstetric anesthesia can present several challenging scenarios like difficult airway and massive hemorrhage. Simulation can assist in the acquisition of not only psychomotor skills like placement of epidural or central lines but also the team skills required in a crisis.

The fidelity of a simulator is the degree to which the simulator replicates the real environment. No patient simulator can imitate the human body perfectly irrespective of the technology used. Yet, simulators have come a long way with advances in technology over the last few decades. There is a need to determine the accuracy and validity of a simulator. Currently available simulators are aplenty and cover airway management, CPR, injection and ultrasound techniques. Most simulators are either screen based to teach cognitive skills or hardware based to teach psychomotor skills.³ High fidelity simulators are more expensive than low fidelity simulators. An expensive high fidelity simulator may not always prove to be superior to a low fidelity one. The choice should be determined by the skills to be taught. With the help of more advanced computers, virtual reality may allow us to create virtual operating theatres in the near future. Simulation can also be used to learn and assess communication skills and team management. These nontechnical skills are highly relevant in our country to promote a better image of the physician. Thus simulation is the way ahead for a skill based speciality like anesthesiology. It will lead to a higher level of confidence, better clinical performance and hopefully, safer patient outcomes. Improved patient outcomes will result in reduced litigation.

References

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