

Role of anesthesiologists in emergency & trauma care: Indian perspective

Abstract

Emergency Medicine (EM) in India is in the process of a critical transformation, from being a vaguely defined service to becoming an organized specialty. In this regard, anesthesiologists with their fundamental areas of competency in acute care, airway management, critical care, and resuscitative interventions are best poised to meet most of the short-term needs of Emergency Departments (EDs), especially where formally trained EM physicians are in short supply. Based on historical precedents, clinical evidence, and national policy trends, this article discusses the natural synergy between Anesthesiology and Emergency Medicine. It presents the epidemiological imperative, highlights important skill alignments (e.g., POCUS, thrombolysis etc), and suggests structural and teaching reforms for anesthesiologists' integration into EDs. By integrating anesthesiologists into EDs, India's healthcare system can consolidate acute care delivery, particularly in resource-constrained settings, while also expanding the specialty's clinical reach and professional status.

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Introduction

Emergency Medicine in India has historically lacked structured recognition and dedicated training pathways. This changed with the Medical Council of India's (MCI) landmark 2008 notification mandating the establishment of EM departments in all medical colleges, under the supervision of Anaesthesiology departments, until they evolved independently.¹ Despite this directive, India still grapples with an acute shortage of formally trained EM physicians, particularly in government institutions and rural sectors. Meanwhile, the demand for acute care services continues to rise due to increasing road traffic accidents, strokes, cardiac events, and other time-sensitive conditions.² This paper argues that Anaesthesiology, by its intensive training in acute interventions, critical care, and high-pressure environments, can act as a backbone specialty in developing a robust Emergency Medicine infrastructure in India.

Historical role of Anaesthetists in emergency care

Anesthesiologists have long functioned as silent warriors in acute care—managing perioperative crises, leading resuscitations, and providing critical care support. During the COVID-19 pandemic, their leadership in ventilator management and ICU triage reaffirmed their role as frontline clinicians in life-threatening situations.³ The 2008 MCI mandate formally recognized this potential by placing the initial responsibility for EM development on the shoulders of Anaesthesiology departments.⁴

Institutions such as Christian Medical College (Vellore), St. John's Medical College (Bangalore), and Sri Ramachandra Medical College (Chennai) had already initiated EM training before the MCI's directive. However, nationwide implementation of EM as a specialty has remained inconsistent, and in many hospitals, anesthesiologists continue to fill the vacuum created by the shortage of EM-trained professionals.⁵

Epidemiological evidence

India's emergency health burden is immense and growing. According to the Ministry of Road Transport and Highways (MoRTH), 1,46,133 people died due to road traffic accidents (RTAs) in 2015, a

figure expected to rise to 250,000 annually by 2030 if preventive and responsive systems are not improved.^{6,7} Hospital records also show that:

- Up to 15% of ED admissions are trauma-related.
- Approximately 26% of all emergency patients require intensive care interventions during their hospital stay.
- Common presenting conditions include acute coronary syndromes, ischemic stroke, respiratory failure, seizures, sepsis, and obstetric emergencies—all of which require immediate and skilled interventions that anesthesiologists are trained to provide.

Expertise in resuscitation and critical care

Anesthesiologists bring a highly specialized skill set to EM teams. Their ability to perform advanced and basic life support, manage complex airways (including difficult airway scenarios), initiate ventilator support, provide hemodynamic stabilization, and administer advanced organ support makes them integral to emergency resuscitative care.⁸ It is worth noting that the WFSA has accepted the "Role of Anesthesiologists in Medical Emergencies," as its Annual Theme for the year 2025, emphasising that the anesthesiologists are central to Preparedness & Response in medical emergencies.⁹ They are adept at peripheral, central, and arterial cannulations; fluid and blood resuscitation; and intensive monitoring. These competencies significantly improve the prognosis of critically ill patients in the emergency setting.

Use of ultrasonography and POCUS

Anesthesiologists have mastered ultrasonography (USG), originally for regional anesthesia and vascular access, and now extensively used in trauma and critical care. They are proficient in:

- E-FAST (Extended focused assessment with sonography in trauma):** For assessing blunt and penetrating injuries.
- POCUS (Point-of-care ultrasonography):** Used routinely to evaluate cardiac function, pulmonary status (e.g., pneumothorax), deep vein thrombosis, guide endotracheal tube placement, and confirm central line insertion.

Such hands-on expertise enables anesthesiologists to complement and often lead trauma and emergency assessments alongside Emergency Physicians.¹⁰

Role in thrombolysis services

Timely thrombolysis is critical in managing ischemic strokes and acute myocardial infarctions (MIs). In accordance, it is now considered as a front-line treatment for these critical emergencies. Studies show that outcomes improve significantly when thrombolysis is administered within 90 minutes to 6 hours (ideally within 4.5 hours for stroke and up to 12 hours for MI).^{11,12}

Anesthesiologists are well-positioned to lead in-hospital thrombolysis services, especially where neurologists and cardiologists are not readily available. A well-equipped “Thrombolysis Room” within the ED should include:

- a) ECG machine, NIBP monitors
- b) Point-of-care tests (e.g., CT scan, RBS, cardiac troponins)
- c) Thrombolytic agents like Alteplase or Tenecteplase

Their familiarity with drug pharmacokinetics, parenteral administration, and critical monitoring makes anesthesiologists ideal for initiating and managing thrombolysis in emergencies, including pulmonary embolism.

Challenges and opportunities

Despite their clear suitability, anesthesiologists have historically underrepresented themselves in Emergency Medicine leadership. The COVID-19 pandemic illustrated both their capabilities and the missed opportunity to project their clinical excellence at a broader institutional and policy level. There is now a unique opportunity for anesthesiologists in India to fill the EM workforce gap, particularly in regions lacking trained emergency physicians. By actively engaging in the development and administration of Emergency and Trauma units, anesthesiologists can expand their professional roles—from resuscitators and intensivists to clinical leaders and administrators in EM.

Recommendations

- a) **Formal integration:** Establish pathways for anesthesiologists to transition into Emergency Medicine through fellowship programs and cross-specialty certification.
- b) **Thrombolysis units:** Develop protocol-driven thrombolysis services within EDs under an anesthesiologist's supervision.
- c) **Ultrasound training:** Promote E-FAST and POCUS training as core competencies in anesthesiology residency programs.
- d) **Policy support:** Engage with institutional leadership to advocate for anesthesiologist-led Emergency Departments, particularly in resource-limited settings.

- e) **Collaborative practice:** Foster multidisciplinary team-based care involving anesthesiologists, surgeons, internists, and emergency physicians for comprehensive EM services.

Conclusion

India's emergency healthcare infrastructure is in urgent need of skilled acute care professionals. Anaesthesiologists—with their unmatched expertise in critical interventions, procedural efficiency, and stress resilience—are well-positioned to fill this gap. By integrating them formally into Emergency Medicine frameworks, healthcare systems can improve outcomes, reduce response times, and make optimal use of an under-recognized but highly capable workforce. Multicentre prospective studies and national-level audits are now essential to quantify the real-world impact of anesthesiologist-led emergency interventions, paving the way for structural reforms in medical education and hospital staffing.

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