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COMMENTARY

Obstetric and Emergency Anesthesia in Somalia: Patient Safety Challenges in a Fragile Health System

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Abstract: Somalia continues to face an exceptionally high burden of maternal mortality within a fragile health system shaped by prolonged conflict, infrastructure constraints, workforce shortages, and uneven access to emergency obstetric services. Safe obstetric and emergency anesthesia is a critical but often underexamined component of this challenge. This article is an evidence informed commentary based on published literature, organizational reports, and contextual clinical experience in anesthesia practice in Somalia. Key concerns include shortages of trained anesthesia personnel, inconsistent access to oxygen, monitoring, blood products, drugs, and postoperative critical care, as well as weak governance and limited standardization of practice. In obstetric emergencies, these gaps may amplify the risks associated with difficult airway management, aspiration, spinal hypotension, delayed transfusion, hemorrhagic shock, and perioperative deterioration. This commentary argues that anesthesia safety should be treated as an essential component of maternal and emergency care quality in fragile settings. Practical priorities include strengthening nonphysician anesthesia training with supervision, continuing professional development, expanding access to minimum monitoring and oxygen systems, improving preparedness for airway and hemorrhage emergencies, and embedding anesthesia within national surgical and maternal health planning. Nationally compiled Somalia-specific data remain limited in the accessible published literature, but the available evidence is sufficient to support urgent, evidence-informed action.

Keywords: obstetric anesthesia, patient safety, maternal mortality, fragile health systems, Somalia, emergency anesthesia

Introduction

Somalia remains one of the countries with the highest maternal mortality burdens globally. Recent modeled estimates still place the maternal mortality ratio well above 500 per 100,000 live births, underscoring persistent structural weakness in maternal and emergency care systems.[1,2] In fragile settings, potentially preventable perioperative harm can carry especially serious consequences because delays in transport, shortages of blood and oxygen, limited monitoring, and constrained critical care capacity narrow the margin for safe rescue when complications arise.[2,3]

Safe anesthesia is therefore central to maternal survival, not merely an adjunct to surgery. In low-income settings, anesthesia-related maternal mortality remains substantially higher than in high-income settings, and adverse outcomes are disproportionately associated with emergency surgery, general anesthesia, limited monitoring, and inadequate perioperative support.[3,4] In obstetric care, the major clinical pathways of harm are well recognized: failed or difficult airway management, aspiration, inadequate oxygenation and ventilation, severe hypotension after neuraxial block, delayed recognition of deterioration, and poor hemorrhage control in the context of restricted transfusion capacity.[3,5] These mechanisms are especially important in resource constrained hospitals where a single provider may be managing induction, resuscitation, and intraoperative monitoring simultaneously.

This article is an evidence-informed commentary that draws on published literature, organizational reports, and contextual clinical experience in anesthesia practice in Somalia; it does not report primary empirical research or

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structured qualitative interviews. Nationally compiled data remain limited in the accessible literature, which itself is an important indicator of health system fragility and a barrier to more precise planning.[2,6]

In practice, much anesthesia care in fragile and low-resource settings depends on nonphysician anesthesia providers. This reality is not inherently unsafe, but safety depends heavily on the quality of training, supervision, scope definition, access to drugs and equipment, and systems for referral and escalation. Where staffing is thin and clinical governance is weak, providers may be required to manage high-risk cases with limited backup. In such environments, the risks of delayed airway rescue, untreated hypotension, incomplete monitoring, medication error, and avoidable perioperative deterioration are magnified.[3,7]

Infrastructure limitations compound these workforce gaps. Safe anesthesia requires reliable oxygen delivery, pulse oximetry, blood pressure monitoring, suction, essential drugs, intravenous fluids, and the ability to respond rapidly to hemorrhage or cardiorespiratory compromise. The WHO-WFSA International Standards for a Safe Practice of Anesthesia define these as foundational expectations rather than aspirational extras.[8] Yet in fragile systems, these basics may be inconsistent. When oxygen supply is unreliable, blood products are delayed, or postoperative observation is inadequate, even a technically successful anesthetic may be followed by preventable harm. This is particularly relevant to obstetric emergencies, in which physiological reserve may already be narrowed by hemorrhage, sepsis, severe anemia, hypertensive disease, or prolonged obstructed labor.[2,5]

Clinical Mechanisms of Risk and Patient Safety Implications

Obstetric anesthesia in Somalia should be viewed through the lens of both access and safety. The goal is not to lower cesarean section use indiscriminately, because underuse and delayed access to life-saving surgery remain serious threats in fragile settings. Rather, the aim is appropriate, timely, and evidence informed anesthesia care when operative delivery or emergency surgery is required. In such settings, potentially avoidable operative risk can magnify perioperative morbidity, financial burden, and inequities in access to safe childbirth care.[2,3]

Spinal anesthesia is often the preferred anesthetic for cesarean delivery in resource-limited settings because it avoids airway instrumentation and can be delivered with relatively modest equipment requirements. However, spinal anesthesia is not intrinsically low risk when monitoring, vasopressors, intravenous access, and rescue capacity are inadequate. Severe neuraxial hypotension may compromise maternal perfusion and fetal oxygenation, especially in women with hemorrhage, sepsis, or profound anemia. Failure to recognize a high block, delay in vasopressor treatment, or inability to convert safely when the block is inadequate may lead to catastrophic deterioration.[3,4]

General anesthesia may be necessary in time critical situations, failed neuraxial block, coagulopathy, or uncontrolled bleeding. Yet the risk profile is less forgiving, especially where airway equipment, suction, trained assistance, and postoperative observation are limited. Difficult intubation, aspiration, inadequate preoxygenation, and unrecognized hypoventilation remain major mechanisms of anesthesia related maternal harm in low resource environments.[3,4] The African Surgical Outcomes Study also underscores the broader perioperative risk surrounding cesarean delivery in the region, where maternal mortality after cesarean section remains markedly higher than in high-income settings.[5]

Hemorrhage deserves particular emphasis. Obstetric bleeding can deteriorate within minutes, and safe anesthesia care in hemorrhagic shock depends on rapid team communication, access to blood products, careful hemodynamic management, and readiness to secure the airway when mental status or respiratory effort declines. Where blood banks are limited, laboratories are delayed, or ICU transfer is unavailable, the anesthetic team may need to provide prolonged resuscitative care in the operating room itself. In these circumstances, patient safety is shaped as much by system readiness as by individual technical skill.

Patient safety is also influenced by trust, communication, and the lived experience of emergency care. In fragile settings, women and families may encounter delays, rushed consent processes, inconsistent explanation of risk, and limited continuity between referral, surgery, and postoperative recovery. Respectful care and clear communication do not replace technical competence, but they remain essential to autonomy, trust, and safer decision-making. When families understand the urgency of intervention, the anticipated risks, and the plan for perioperative care, teamwork and timely consent may improve in high stake emergencies.

Practical Priorities for Safer Care

Several priorities emerge from the available evidence. First, anesthesia should be treated as an essential pillar of maternal and emergency care quality, not as a background technical service. This means incorporating anesthesia into surgical, obstetric, and critical care planning at national and facility levels, including workforce development, equipment procurement, oxygen strategy, referral pathways, and emergency preparedness.[6,8,9]

Second, Somalia needs continued investment in training, supervision, and professional support for the workforce that is actually delivering care. Given the present physician shortage, strengthening nonphysician anesthesia education, competency-based supervision, continuing professional development, and referral links is likely to be more immediately actionable than relying on specialist expansion alone. Such measures should be paired with a clear scope of practice frameworks and institutional support rather than unsupported task shifting.[6,7]

Third, minimum monitoring and emergency preparedness should be prioritized. Continuous pulse oximetry, non-invasive blood pressure monitoring, oxygen availability, suction, essential resuscitation drugs, and structured response to airway difficulty and obstetric hemorrhage are basic safety requirements. Even when advanced technology is unavailable, consistent implementation of minimum standards, checklists, emergency trays, and simple escalation protocols can improve readiness and reduce avoidable delay.[8,10] In the Somali context, these measures may be more feasible in the near term than highly equipment-intensive solutions.

Fourth, better data systems are needed. Nationally compiled data on anesthesia outcomes, workforce distribution, perioperative mortality, emergency cesarean safety, and facility readiness remain sparse in the accessible literature. This evidence gap should not delay action, but it does limit precision in policy design and evaluation. Strengthening routine reporting, workforce mapping, and perioperative audit would support more accountable improvement and help distinguish documented evidence from perception or anecdote.[2,6]

Finally, international and national partners should view anesthesia safety as part of the broader agenda of health system recovery in fragile settings. Maternal health, surgical care, oxygen systems, and critical care capacity are deeply interconnected. If anesthesia is omitted from planning, women requiring emergency cesarean delivery, laparotomy, or other urgent procedures remain exposed to preventable harm even when surgical access nominally exists.

Conclusion

Obstetric and emergency anesthesia in Somalia reflects a wider patient safety challenge at the intersection of workforce scarcity, fragile infrastructure, limited governance, and high acuity clinical needs. Available evidence indicates a severe shortage of physician anesthesia specialists and major system constraints, while more granular national outcome data remain limited.[2,6,11] Even so, the current evidence base is sufficient to support urgent action.

The most important priorities are pragmatic: strengthening the anesthesia workforce through education, supervision, and continuing professional development; ensuring minimum monitoring, oxygen, suction, and essential drugs; improving preparedness for airway emergencies, spinal hypotension, and hemorrhage; and integrating anesthesia into national maternal, surgical, and emergency care planning. This commentary does not argue for an indiscriminate reduction of operative delivery, but for safer, more equitable, and more accountable perioperative care when women and other emergency patients require surgery. In fragile health systems, safe anesthesia is not optional infrastructure. It is a core condition for safe childbirth, emergency care, and health-system trust.

Abbreviations

SAO, surgical, anesthesia, and obstetric; WFSA, World Federation of Societies of Anaesthesiologists; WHO, World Health Organization.

Ethics Approval and Consent

Not applicable. This article is a commentary and did not involve human participants, patient data, or identifiable personal information.

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Author Contributions

The author made a significant contribution to the work reported, whether that was in the conception, study design, execution, acquisition of data, analysis and interpretation, or in all these areas; took part in drafting, revising, or critically reviewing the article; gave final approval of the version to be published; agreed on the journal to which the article has been submitted; and agrees to be accountable for all aspects of the work.

Disclosure

The author reports no conflicts of interest in this work.

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