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EDITORIAL

Rethinking emergency theatre efficiency in South Africa

S Spijkerman

Department of Anaesthesiology, University of Pretoria and Steve Biko Academic Hospital, South Africa
Corresponding author, email: *sandra.spijkerman@up.ac.za*

Safe surgical care plays a critical role in advancing the 2030 Agenda for Sustainable Development which aspires to universal health and well-being.[1] Given that operating theatres constitute a major component of hospital costs, optimal theatre utilisation is essential to minimise wasteful expenditure.[2] The increasing burden of surgical disease in low- to middle-income countries is well documented, and with it, the rising imperative for more efficient surgical systems.[3,4]

In this context, the paper "*An investigation into the utilisation of available emergency theatre time at a tertiary academic hospital in South Africa*" by Venter et al.[5] in this edition of SAJAA, offers timely and crucial insights into a persistent but under-examined problem: the efficiency of emergency theatre utilisation (TU) in resource-constrained settings.

With a dataset spanning 1 663 emergency surgical cases over six months, the authors undertook an audit of theatre use at South Africa's second-largest tertiary hospital. Their findings revealed a sobering truth - less than 54% of available theatre time was actively used, with an average turnover time (TOT) of 2.51 hours, far exceeding international benchmarks.[6] This underutilisation equates to more than 2 300 hours of idle theatre time - resources lost in a setting where time is inextricably tied to patient outcomes, bed flow, staff fatigue, and institutional resilience.

Unlike elective theatres, emergency settings operate under non-linear conditions, with unpredictable caseloads and frequent reprioritisation. The authors acknowledge this complexity and rightly argue against using TU in isolation as a performance marker. Instead, they advocate for a composite approach that includes TU, TOT, and discipline-specific time metrics - an approach that could help identify actionable inefficiencies while respecting the fluid realities of emergency care. One could argue that additional theatre efficiency metrics such as first case on-time start and theatre cancellations could be added to such a composite approach.

To fully address the drivers of inefficiency, future research should consider anecdotal and evidence-based reasons for emergency theatre delays.[7] These include communication failures, such as between different surgical teams, surgeons and anaesthetists, and surgeons and nursing staff; human resource constraints compared to surgical demand such as insufficient theatre personnel (anaesthetists, surgeons, scrub nurses, anaesthetic nurses, recovery room nurses, porters, cleaners); and organisational issues like incomplete consent, outstanding special investigations, or inadequate preoperative preparation. Equipment shortages and infrastructure limitations, particularly intensive care unit and high care unit bed scarcity, further contribute significantly to ineffective emergency theatre flow.

These delays are not without consequence. They lead to clinical deterioration, infection, prolonged *nil per os* times with the risk of dehydration and further clinical deterioration. When emergency lists become too long, urgent cases are deferred to elective lists, resulting in elective case backlogs, extended hospital stays, and prolonged bed occupancy.

An important observation in the study by Venter et al.,[5] is the variability of theatre time usage across surgical disciplines, with gynaecological cases showing the least procedural time variability. This predictability forms the basis for the authors' recommendation to implement the Golden Patient Initiative (GPI) in emergency theatres - an evidence-informed practice shown to improve first case start times and reduce downstream delays.[8] Such a strategy could catalyse a broader operational shift within emergency theatre services in local contexts.

The study by Venter and colleagues is not without limitations. The retrospective design and reliance on manually recorded data raise valid concerns about documentation accuracy. More importantly, the study does not account for the causes of theatre delays which, if explored, could further refine interventions. These should be seen as opportunities for future research. As the authors suggest, delay forms, six-hourly data segmentations, and targeted GPI trials represent logical next steps for future investigations. In addition, other theatre efficiency metrics such as first case on-time start could be included in the exploration of emergency theatre utilisation.

In conclusion, this study is more than an audit. It is a call to action. In a country where surgical need outpaces capacity, inefficient use of existing resources is no longer just a logistical issue; it is an ethical one. By identifying theatre inefficiencies and offering implementable solutions, this research lays the groundwork for smarter emergency surgical care. Other institutions across South Africa should be encouraged to adopt similar audits. As we strive toward equitable, high-quality surgical care by 2030, let us respond to the Lancet Commission's call[3] for "available, accessible, safe, timely, and affordable surgical and anaesthesia care," also in our emergency theatres in South Africa.

ORCID

S Spijkerman https://orcid.org/0000-0003-4461-3370

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