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# Emergency department overcrowding in low- and middle-income countries: extending the decalogue to resource-limited settings

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**Key words:** emergency department overcrowding; LMIC; patient safety; health systems; emergency medicine.

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Dear Editor,

We were very intrigued to read about the “decalogue” by Cipriano *et al.* that provides a plan to respond to the continuing problem of overcrowding and operational stress experienced within Emergency Department (ED). They present a well-timed, organized, structured plan that includes a number of systems-level recommendations to help reduce the persistent problem of overcrowding and operational stress in EDs.<sup>1</sup> While the strategies included in their article have significant relevance to high-resource settings, each strategy needs to be considered carefully for Low- and Middle-Income (LMIC) settings, as there are important contextual differences for LMIC settings when compared with high-resource settings. In LMIC settings, ED overcrowding may not only result from inefficient patient flow through the ED; rather, it may be reflective of deeper problems regarding the structure of and resources available to the healthcare system. Limited access to primary care, disjointed referral networks and inadequate prehospital systems all often lead to delayed presentations and more serious medical problems when patients eventually seek medical treatment. Therefore, EDs must function at a level that exceeds their expected role as acute care facilities and can be expected to act as an alternative to traditional primary care, and, in many cases, as extensions of critical care hospital services. Some components of the decalogue could be used in LMIC settings, specifically those that pertain to improved patient flow and inpatient capacity. Unfortunately, LMICs face significant challenges in relation to systems that limit the number of patients that can be admitted due to a limited number of inpatient bed and Intensive Care Unit (ICU) beds; this often results in patients experiencing prolonged periods of boarding in the ED with limited monitoring capabilities while waiting to be admitted to an inpatient bed.<sup>2-4</sup> Significantly contributing to resource saturation, this situation negatively impacts patient outcomes; crowding in EDs has been linked to increased mortality rates. Many studies have shown that if the ED is overcrowded or if the patients are in the ED for an extended period, there may be as much as a 5%–10% relative increase in the number of patients dying in the hospital during times of high ED occupancy and excessive long stays in the ED.<sup>2-4</sup> Operational variability also enhances these problems. Inconsistent triage systems and the variances in the amount of training an ED workforce may experience can cause delays in the timeliness of the prioritisation of care to patients in environments of high ED patient volume. Furthermore, there are serious concerns about patient safety, digni-

ty, and quality of care when patients are treated outside of designated treatment areas, such as corridors and waiting rooms, even though these experiences may not be able to be avoided. In order to prepare the decalogue for use in LMIC countries, we need to look at this issue with a more global view. Improving access to primary health care and better connecting primary health care to EDs through better-referring systems will help alleviate some of the unnecessary reasons for patients seeking care in an ED. If it is feasible, creating short-stay and/or observation units will help to reduce bottlenecks at the output end of the ED. Protocol-driven and pathway-driven management will help to improve the efficiency of providing appropriate resources in a resource-constrained environment. Investment in training the ED workforce, standardising triage systems, and using both will enable the EDs to provide safe, timely, and effective emergency care. To sum up, the ten recommendations for reducing overcrowding in the ED as proposed by Cipriano and colleagues offer a guide to help alleviate some of the issues associated with ED overcrowding; however, LMICs need to adapt the recommendations to fit their unique circumstances to successfully implement them. Future EMS systems in these countries must be coordinated around addressing various system constraints as a means of ensuring that emergency care is delivered equitably and effectively.

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Received: 3 April 2026; Accepted: 28 May 2026; Early view: 14 July 2026.

Contributions: Pratik Kanani, conceptualization; critical revision; Varsha Shinde, conceptualization; critical analysis; final approval, supervision; Keyur Bhimani, writing – review & editing; writing – original draft. All authors meet all authorship criteria and approve the final version of the manuscript.

Conflict of interest: the authors declare that they have no competing interests.

Funding: the authors received no external funding for this work.

Ethics approval and consent to participate: not applicable.

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