

BMJ Open Quality Consensus-based quality standards for emergency departments in Palestine

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ABSTRACT

Objectives The present study aimed to establish appropriate quality standards for emergency departments (EDQS) in Palestine.

Methods The study comprised four phases. First, a comprehensive literature review was conducted to develop a framework for assessing healthcare services in EDs. Second, the initial set of EDQS was developed based on the review findings. Third, local experts provided feedback on the EDQS, suggesting additional standards, and giving recommendations. This feedback was analysed to create a preliminary set of EDQS. Finally, an expanded group of local emergency care experts evaluated the preliminary set, providing feedback on content and structure to contribute to the final set of EDQS.

Findings We identified quality domains in EDs and categorised them into clinical and administrative pathways. The clinical pathway comprises 39 standards across 7 subdomains: triage, treatment, transportation, medication safety, patient flow and medical diagnostic services. Expert consensus was achieved on 87.5% of these standards. The administrative domain includes 64 consensus-based standards across 9 subdomains: documentation, information management systems, access-location, design, leadership, management, workforce staffing, training, equipment, supplies, capacity-resuscitation rooms, resources for a safe working environment, performance indicators and patient safety-infection prevention and control programmes.

Conclusion This study employed a rigorous approach to identify QS for EDs in Palestine. The multiphase consensus process ensured the appropriateness of the developed EDQS. Inclusion of diverse perspectives enriched the content. Future studies will validate and refine the standards based on feedback. The EDQS has potential to enhance emergency care in Palestine and serve as a model for other regions facing similar challenges.

BACKGROUND

The quality of care in healthcare organisations can be greatly impacted by effective management, given the complexity of these systems.¹ According to healthcare quality pioneers, quality of care comprises technical, interpersonal and organisational factors.² The definition of quality of care is challenging and >100 definitions have been presented in the literature,³ but the most broadly applied definition for quality of care according to WHO is ‘the degree to which health services for individuals and populations are effective, safe and people-centred’,

WHAT IS ALREADY KNOWN ON THIS TOPIC

⇒ Limited studies in the Eastern Mediterranean region on issues of continuous quality improvement and patient safety in the EDs. Lack of measurement systems and standards to determine quality of emergency healthcare in Palestine. Expected to pave the way for the institutionalization of the quality system across EDs in Palestine.

WHAT THIS STUDY ADDS

⇒ The EDQS has potential to enhance emergency care in Palestine and serve as a model for other regions facing similar challenges. The multiphase consensus process ensured the appropriateness of the developed EDQS.

HOW THIS STUDY MIGHT AFFECT RESEARCH, PRACTICE OR POLICY

⇒ The establishment of evidence based EDQS in Palestine has significant implications for research, practice, and policy. The identified standards provide a benchmark for assessing and improving emergency care services in the region.

and based on this definition, quality indicators are defined as ‘quantitative measures that provide information about the effectiveness, safety and/or people-centeredness of care’.⁴ Furthermore, they outlined six domains of quality care, which are: safety, effectiveness, patient-centeredness, timeliness, efficiency and equity.⁵ Standards, which are the ‘optimum levels of performance’,⁶ are essential for evaluating quality of healthcare and its dimensions. Fundamentally, healthcare quality principles are the same for all healthcare systems, including emergency care.⁵

The role of emergency care systems in preventing a significant proportion of death and disability is increasingly acknowledged.^{7,8} However, in many regions, the provision of high-quality, coordinated emergency care is still in the early stages, including in many low-income to middle-income countries (LMICs).⁸ Emergency care is defined as ‘an integrated platform to deliver time-sensitive healthcare services for acute illness and injury across the life course’.⁷ It is a common misconception that emergency care services are a financial

burden on health systems in LMICs. However, there are many interventions that can be made to improve the quality of emergency care services in emergency departments (EDs) with minimal resource investment. Examples of those include the introduction of clinical protocols, process tools and standards to guide emergency care providers.⁷ The quality of healthcare has emerged as a growing concern worldwide. In LMICs, poor quality care results in more deaths than lack of access to care, and up to 60% of deaths may be due to poor quality of care.⁹ Therefore, measuring the quality of emergency care delivery is essential to improving the overall quality of healthcare in this context.⁸

Emergency care services in Palestine are a priority due to the high burden of non-communicable diseases and injuries, both routine and those associated with the protracted conflict related to the territory's occupation.¹⁰ For many years, work within the area of quality of care and quality improvement (QI) has been a continuous process in healthcare, both nationally and internationally. In Palestine, for many years governmental efforts have been focused on improving the quality of the health service delivery system. Their focus has been mainly given to hospital care delivery through the implementation of several internationally recognised standards-based initiatives, including the patient safety friendly hospital initiative, baby friendly hospital initiative, safe surgery saves lives, infection prevention and control, antimicrobial stewardship, primary healthcare quality and ISO 15189:2012 for medical laboratories.¹¹

There are limited studies in the Eastern Mediterranean region on issues of continuous QI and patient safety in the EDs. In the Palestinian context, there is a lack of research in emergency care quality and patient safety. Some studies have focused on the occupational safety of ED workers including burnout among workers in EDs,¹² violence towards workers in EDs¹³ and another study on the knowledge about the administration and regulation of high alert medications among nurses.¹⁴ The Ministry of Health (MoH) has focused a randomised evaluation process on the infrastructure, equipment and staff and evaluation using the WHO standards for the patient safety friendly hospital initiative.^{10 15} There is a need for further research into quality in the EDs, including developing contextual quality standards to suit the ED setting in Palestine.

The literature review did not find any study on quality standards and accreditation in EDs, the majority of which are about quality and performance indicators that are

used to measure continuous improvement. There were no studies on intentional quality standards being used proactively to build a quality emergency care system, or on evaluation, benchmarking or accreditation. There is also a lack of measurement systems and standards to determine quality of emergency healthcare in Palestine. This study aimed to develop contextual quality standards appropriate to the Palestinian setting. It is expected to pave the way for the institutionalisation of the quality system across EDs in Palestine. The MoH has provided support for this study, which will ensure the sustainability of these standards. The MoH recognises the importance of these standards as a reference tool for evaluation and improvement.

METHODS

Study design

The study was conducted in four distinct phases: (I) a comprehensive review was conducted to develop a framework of standards from the literature; (II) generate a first draft of quality standards for emergency department (EDQS); (III) stakeholder engagement with a limited set of local experts to refine and expand the draft of EDQS and (IV) expanded stakeholder engagement and finalisation of the EDQS. [Figure 1](#) summarises the procedure of this study.

Phase I: literature review

We conducted a literature review on a global, regional and local scale. A search strategy was developed using keywords that centred on: “Emergency Department”, “Emergency Services”, “Quality”, “Standards”, “Assessment”, “Evaluation”, “Performance Indicators”, “Measures”, “Accreditation”, “Patient Safety” and “Method Validation”. The literature search was performed using multiple research databases, including PubMed, Google Scholar, WHO Site, Agency for Healthcare Research and Quality (AHRQ), Institute for Healthcare Improvement (IHI) and international and regional standards agencies ([figure 2](#)).

Inclusion and exclusion criteria

Strict criteria were used to select relevant literature for this study on the selection of EDQS. The inclusion criteria involved choosing studies published within the last two decades, written in English and specifically focused on EDQS. To ensure the credibility and reliability of the findings, primary research articles, systematic reviews and published accreditation standards for EDs were included. Conversely, studies that solely focused on non-emergency

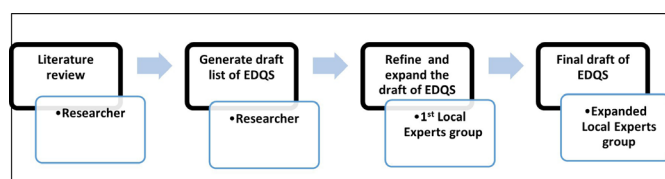


Figure 1 Summary of the study procedure. EDQS, quality standards for emergency department.

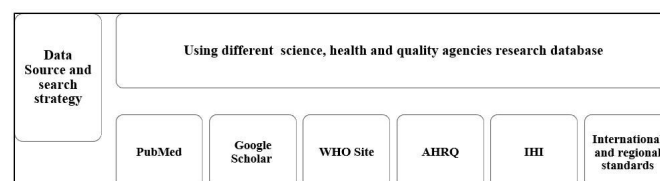


Figure 2 Literature data source and search strategy.

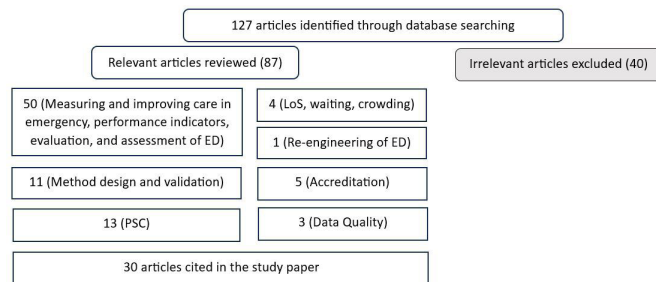


Figure 3 Summary of literature review. ED, emergency department; LoS, length of stay; PSC, patient safety culture.

healthcare settings or did not directly address quality standards in the ED were excluded.

Through database searching, a total of 127 articles and chapters from related books were identified. Out of these, 87 articles were found to be relevant and were reviewed whereas 40 irrelevant articles were excluded. The research yielded the following results: 13 articles assessed patient safety culture among workers in the ED, 50 articles discussed methods of measuring service quality and indicators for improving performance in EDs, 4 articles concerned the length of stay and overcrowding, 3 articles focused on data quality and 11 articles were about assessment methods validation. In addition, 5 books on accreditation standards and re-engineering of the ED were found, and 30 articles were cited in the study (figure 3).

Data analysis

Key quality standards identified from the literature review classified and analysed according to their scope, applicability, evidence base and level of implementation across different EDs on the regional and international level.

Phase II: generate a first draft of EDQS

After being generated from the literature review, the set of EDQS was processed and organised into 16 relevant subdomains. The initial phase of this process involved identifying 2 standard domains, clinical and administrative, along with 115 specific standards that were subsequently categorised into these subdomains.

Phases III and IV: stakeholder engagement

In the first round, a purposive sample of four local experts, selected based on predetermined inclusion criteria, reviewed the EDQS to assess their appropriateness, suggest additional standards and provide other recommendations for change. The feedback received from the experts was processed and analysed to develop a preliminary set of EDQS. In the second round, an expanded group of up to 11 local emergency care experts, including those from the first group, reviewed the preliminary set of EDQS to evaluate their coverage of all domains of quality in the ED, provide feedback on content and structure of the QS and contribute to the final draft of the EDQS.

Sample and sampling

Purposive sampling was used to identify experts that were consulted in the development of the EDQS. To improve diversity of the sample and the sample size, snowball sampling was employed.¹⁶

Two local expert groups were selected based on their experience in the field of hospital-based emergency care and healthcare quality, as well as key persons who represent emergency services in the MoH (doctors and nurses). In the first round, the first group of experts comprised four emergency doctors and nurses from the MoH's directorate of emergency services who have >10 years of experience in the field of emergency care in Palestine.

Eleven experts were selected for the second round of discussion based on inclusion criteria from ED doctors and nurses at MoH and private hospitals with at least 5 years of experience, including the initial set of experts.¹⁶

Study instrument

A list of the EDQS generated from literature review was used for the first experts meeting (online supplemental appendix 1). Then a modified list of quality standards and set of guiding questions were used to collect data and conduct the discussion of the second group of experts (online supplemental appendix 2). All comments, discussions, verbal and written feedback were documented. In-person meetings were conducted where the discussion sessions were conducted in Arabic and the participants' responses were collected and translated later.

Data analysis

The content analysis process began by generating a verbatim transcript of the complete expert group discussion. These data were then analysed using a deductive-dominant content analysis approach that involved referencing comments and information related to each guided question, standard or domain that were obtained during the discussion sessions.¹⁷ The analysis was conducted systematically, with a strong focus on fulfilling the study's objectives, and involved meticulous review and comprehension of the comments and data. The results of the analysis were subsequently articulated in a clear and concise manner while ensuring that the original intended meaning was retained. This rigorous process was essential to ensuring the accuracy and dependability of the outcomes obtained.^{17 18}

All comments and recommendations were collated in a Microsoft Excel sheet (Microsoft, Redmond, Washington, USA) for categorisation and interpretation. Data were limited to what was said in the discussion sessions by group participants and reflected in the findings of the appropriate standards. Additionally, a series of consensus statements were developed by analysis responses to guided questions.

Quantitative data were analysed by calculating the percentage of experts who agreed on the appropriateness of each standard. The consensus rate was set at 75%,

Table 1 Characteristics of study participants

No.	Title/Profession	Workplace/Organisation	Field/Work experience
Experts panel—group 1			
E1	Doctor	MoH	Emergency medicine for >15 years
E2	Nurse	MoH	Emergency departments and ambulance services for >15 years
E3	Nurse	MoH	Emergency departments for >10 years
E4	Administration	MoH	>20 years
Experts panel—group 2			
E1	Doctor	MoH	Emergency medicine for >15 years
E2	Nurse	MoH	Emergency departments and ambulance services for >15 years
E3	Nurse	MoH	Emergency departments for >10 years
E4	Administration	MoH	>20 years
E5	Doctor	MoH—hospital	Emergency medicine for >18 years
E6	Doctor	MoH—hospital	Emergency medicine for >10 years
E7	Doctor	Private hospital	Emergency medicine for >10 years
E8	Nurse	MoH—hospital	Emergency departments for >15 years
E9	Nurse	MoH—hospital	Emergency departments for >20 years
E10	Nurse	MoH—hospital	ICU, quality, patient safety and IPC for >18 years
E11	Doctor	MoH—hospital	Hospital management and quality improvement for >25 years

ICU, intensive care unit; IPC, infection prevention and control; MoH, Ministry of Health.

and every standard that did not obtain consensus was excluded from the list of standards.

Ethics Approval

The study received approval from the University of Cape Town Faculty of Health Sciences Human Research Ethics Committee (reference number 014/2022) and local approval by Palestinian ministry of health.

RESULTS

Characteristics of participants

In the first round, four local experts from the Emergency General Directorate at the MoH were invited, and they all responded (100%). In the second round, 12 local experts were also invited, of whom 11 out of 12 (92%) responded.

The expert group was made up of five nurse cadres with competence in emergency nursing, quality and patient safety, representing 45.5% of the participants; five physicians, representing 45.5% of the participants and one from administration background, representing around 12.59% of the participants (table 1).

Consensus statements regarding quality standards in the Palestinian context

All guided questions used for opening the second round were answered by experts, and there was consensus on the importance of developing EDQS, as it is important to unify concepts and work mechanisms. They also suggested clear examples of some standards needed by

EDs, such as, but not limited to, documentation, the necessity of protocols, human resource development and others. The experts also highlighted opportunities for improvement, obstacles, challenges and needs, the role of the local community and the impact of the political situation and crises on the services provided in EDs. Online supplemental appendix 3 summarises the expert group's consensus answers.

Emergency department's quality standards

In the first round of discussion, the EDQS that were derived from the literature review were presented and agreed on with the first group of experts, which consisted of four experts (table 1). These standards were organised into two primary domains: the clinical pathway domain (A) and the administration pathway domain (B).

The clinical pathway domain (A) comprised eight subdomains, namely patient triage, treatment and transfer of patients, documentation and information system, guidelines, policies and procedures, medication safety, ambulance services, patient flow and waiting time and diagnostic services. These subdomains were labelled A.1 to A.8 and consisted of 51 standards.

The group of experts unanimously agreed on the appropriateness of the eight subdomains within the administrative pathway domain. These subdomains were design and access, management and leadership, workforce and training, equipment and supplies, recovery room, work

Table 2 Standards and subdomains within clinical and administration pathway domains

Domain code	Subdomains code	Subdomains	No. of standards
Clinical pathway domain (A)			
A	A.1	Triage	7
A	A.2	Treat or transfer emergency patients	9
A	A.3	Guidelines, protocols and policies	5
A	A.4	Medication safety	6
A	A.5	Ambulance services	6
A	A.6	Patients flow and length of stay	3
A	A.7	Medical diagnostic services	3
Total	7	/	39
Administration pathway domain (B)			
B	B.1	Documentation and information management system	7
B	B.2	Access, location and design	13
B	B.3	Leadership and management	5
B	B.4	Workforce staffing and training	9
B	B.5	Equipment and supplies	8
B	B.6	Capacity—resuscitation rooms	5
B	B.7	Resources to support a safe working environment	7
B	B.8	Performance indicators	3
B	B.9	Patient safety-infection prevention and control programme	7
Total	9	/	64
Grand total	16	/	103

environment safety, performance indicators, patient safety and infection control.

In the second round of discussions with a larger group of 11 experts ([table 1](#)), a set of guided questions were used to facilitate the discussion (online supplemental appendix 3).

The experts unanimously agreed on the appropriateness of seven out of the eight subdomains within the clinical pathway domain (ie, the proportion of appropriateness is 87.5%), and recommended that the documentation and information systems subdomain be transferred to the administrative pathway domain. The resulting modifications, mergers and reformulations led to a total of 39 standards within the clinical domain, as presented in [table 2](#). The response rate for the second round of discussions was 92%.

The subdomain of documentation and information management was transferred from the clinical pathway

domain to the administrative pathway domain, resulting in a total of 9 subdomains in the administrative pathway and a total of 64 standards. Therefore, the combined total number of standards in the clinical and administrative pathways is now 103, as shown in [table 2](#).

A summary of the domains, subdomains and standards for EDs extracted from the literature and discussed in round 1 and round 2, as in [table 3](#).

DISCUSSION

This study aimed to develop appropriate EDQS in Palestine, guided by a comprehensive literature review and consensus from experts.¹⁹ The results show that the experts agreed on 39 standards for the clinical pathway domain and 64 standards for the administration pathway domain, distributed into 7 and 9 subdomains, respectively. These findings highlight the importance of establishing

Table 3 Number of domains, subdomains and standards before and after consensus by experts

Domains	First round—before consensus			Second round—after consensus		
	Subdomains code	Subdomains no.	Standards no.	Subdomains code	Subdomains no.	Standards no.
Clinical pathway (A)	A.1–A.8	8	51	A.1–A.7	7	39
Administration pathway (B)	B.1–B.8	8	64	B.1–B.9	9	64
Total	/	16	115	/	16	103

context-specific standards for EDs that encompass both clinical and administrative processes.

The consensus among experts on the identified standards reflects the urgent need to improve the quality of emergency healthcare services in Palestine. These standards can serve as a valuable tool for healthcare organisations in Palestine to monitor and evaluate their performance, identify areas for improvement and ultimately enhance the quality of care provided to patients.

The established standards align with the current literature on global and regional ED standards, including those formulated by reputable organisations such as WHO,²⁰ Joint Commission International²¹ and other entities.^{6 22–24} These standards share many similarities with the developed standards, such as patient triage, treatment and transfer, documentation and information systems, medication safety, patient safety and infection control.

However, the developed standards were designed to address the specific needs and challenges of the Palestinian healthcare system, encompassing ambulance services, patient flow, waiting time and diagnostic services. In contrast, regional and international standards for EDs are usually embedded in hospital quality or accreditation standards, lacking in-depth coverage of ED areas, unlike the developed standards. Therefore, the developed standards are expected to be more effective because they are well-suited to the Palestinian context.

The findings of this study have significant implications for enhancing the quality of emergency care in Palestine, where local experts unanimously endorse the necessity of implementing ED standards. To determine the impact of these standards on the quality of ED care in Palestine, future research should focus on their application and evaluation.

The clinical pathway domain in EDs is composed of seven subdomains, including triage, assessment, diagnosis, treatment, referral, transfer and discharge. The 39 quality standards identified in this domain cover a wide range of clinical processes, such as the timely assessment of patients, the use of evidence-based clinical protocols, the appropriate use of medications and diagnostic tests and the provision of appropriate referrals and transfers.

One example of a quality standard in the clinical pathway domain is the availability of trained and qualified staff to provide emergency care.²⁵ This standard is particularly important in the Palestinian context, where access to healthcare services can be challenging, and where there is a shortage of healthcare professionals.²⁶ This highlights the critical need for a substantial team of healthcare professionals with diverse specialties to operate around the clock, 24 hours a day, 7 days a week in ED.²⁷ Another example is the use of evidence-based protocols for the management of common emergency conditions such as chest pain management and stroke. The implementation of these protocols can improve patient outcomes and reduce the length of hospital stays.²⁴ Symptoms concerning for acute coronary syndrome such as chest pain and dyspnoea are some of the most common

reasons for presenting to an ED, so there is an evidence about improving the outcome of patients by adoption of a history, ECG, age, risk factors and troponin score-based protocol. Discharges from the ED increased with a corresponding decrease in admissions for cardiac evaluations as well as cost.²⁸

The administration pathway domain is composed of nine subdomains, including leadership and management, human resources, infrastructure, supplies, information management, quality management, risk management and patient safety. The 64 quality standards identified in this domain cover a range of administrative processes, such as the development of policies and procedures, the availability of essential medical supplies, the implementation of QI programmes and the management of risks and patient safety.

An example of a quality standard in the administration pathway domain is the availability of a functioning continuous improvement programme that includes ongoing monitoring and evaluation of clinical processes and patient outcomes through specific indicators.⁸ This standard is particularly important in the Palestinian context, where there are limited resources and where it can be challenging to ensure consistent quality in healthcare delivery. The implementation of the patient safety initiative standards in government hospitals in the West Bank—Palestine has resulted in positive outcomes, including a culture of patient safety among hospitals staff and continuous improvement, as demonstrated through interventions from 2011 to 2016. This suggests that adhering to these standards has had a significant impact on promoting continuous improvement in hospital services in Palestine.²⁹

In terms of impact, the implementation of these quality standards has the potential to improve the quality of ED services in Palestine. By providing a benchmark for evaluating and improving ED services, these standards might help to reduce patient morbidity and mortality, improve patient satisfaction and enhance the overall quality of healthcare services in the country.

However, the implementation of quality standards in Palestinian EDs faces many barriers that require targeted strategies for effective resolution. A key contextual factor is the prevalent conflict and security concerns, including frequent Israeli attacks on healthcare facilities and staff, that require collaborative efforts with local authorities and international organisations to enhance security measures.²⁶ Resource limitations, including shortages of healthcare professionals and medical supplies, can be mitigated through regional and international partnerships, increased advocacy for funding and investments in training programmes to address staff shortages. Furthermore, language barrier related to disparities between staff members in terms of their ability to understand standards that are written in English that can be addressed by translating the standards and providing language proficiency training. Workplace violence impacting patient care and staff safety can be minimised through

the implementation of security measures and training programmes on conflict resolution.¹³ Additionally, job burnout and high work pressure among ED personnel in Palestine can negatively impact service quality and patient safety.³⁰ This would require prioritising the well-being of staff, implementing programmes that support mental health and advocating for work-life balance.^{12 25} Limited access to training programmes requires the development of accessible online modules and collaborations with international organisations. To overcome cultural sensitivity, actively involving local communities in developing standards that meet their needs is required. Addressing economic challenges involve advocating for increasing healthcare funding, exploring collaborations with the all relevant sectors and prioritising impactful initiatives. A collaborative, adaptable approach involving continuous monitoring and evaluation is essential to navigate and effectively address these barriers.

Limitations

This study has a limitation in terms of the number of experts who participated in the consensus process. While the experts who participated in this study were selected based on their high qualifications and experience, the small number of experts may limit the comprehensiveness and diversity of the identified standards. Future studies may consider engaging a larger and more diverse group of experts to develop a more robust set of EDQS in Palestine. This is also essential in order to be more representative of the national context.

Furthermore, this study only developed quality standards and did not assess their implementation or impact on the quality of care provided in EDs. Thus, future research should focus on evaluating the feasibility and effectiveness of implementing these standards in the Palestinian healthcare system. Such evaluations could provide valuable insights into the challenges and opportunities associated with implementing quality standards and inform efforts to improve emergency care services in Palestine.

CONCLUSION

The developed standards in this study provide a crucial step towards improving the quality of emergency care in Palestine. The context-specific nature of the standards can better address the unique challenges faced by the Palestinian healthcare system. The use of expert consensus provides a practical and cost-effective approach to developing standards that can be used by healthcare organisations to monitor and improve their performance. Further studies are needed to validate and pilot these standards in EDs in Palestine. In conclusion, the results of this study provide a valuable resource for ED administrators, clinicians and policymakers in Palestine. The quality standards identified can serve as a roadmap for improving ED services and can help to ensure that patients receive high-quality care. While there are challenges to implementing

these standards in the Palestinian context, the potential benefits of doing so are significant, and warrant further attention and investment.

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Contributors AB0: as the first author, I conceptualised and designed the study, conducted data collection and analysis and drafted the manuscript. WS (primary supervisor): provided guidance and oversight throughout the research process, offering valuable insights and critically reviewing and editing the manuscript. LW (co-supervisor 1): contributed to the study design, provided expertise in specific areas and participated in critical discussions regarding data interpretation. Also reviewed and provided feedback on the manuscript. MH (co-supervisor 2): offered valuable input during the study design phase, and played a crucial role in refining the manuscript through thoughtful review and editing. All authors have reviewed and approved the final version of the manuscript.

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Patient consent for publication Not applicable.

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Provenance and peer review Not commissioned; externally peer reviewed.

Data availability statement Data are available in a public, open access repository. All data relevant to the study are included in the article or uploaded as supplementary information. The final output of the research will be reported in several formats. These include research publications in peer-reviewed journals, and presentations to Ministry of Health (MoH) and emergency department leadership and staff. The article will be freely available on the University of Cape Town institutional repository. The MoH will be provided with all outputs of the studies, a valid assessment tool, recommendations and necessary interventions for improvement.

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