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ORIGINAL ARTICLE

Emergency care capabilities in the Kingdom of Swaziland, Africa

Les capacités des services d'urgence au Royaume du Swaziland, Afrique

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ABSTRACT

Introduction: Emergency care is available in many forms in Swaziland, and to our knowledge there has never been a systematic study of emergency centres (ECs) in the country. The purpose of this study was to describe the characteristics, resources and capacity of emergency centres in the Kingdom.
Methods: The National Emergency Department Inventory (NEDI)-International survey instrument (www.emnet-nedi.org) was used to survey all Swaziland ECs accessible to the general public 24/7. EC staff were asked about calendar year 2014. Data were entered directly into Lime Survey, a free, web-based, open-source survey application. Responses were analysed using descriptive statistics, including proportions and medians with interquartile ranges (IQR).
Results: Sixteen of 17 ECs participated (94% response rate). Participating ECs were either in hospitals (69%) or health centres (31%). ECs had a median of 53,399 visits per year (IQR 15,000–97,895). Fourteen (88%) ECs had a contiguous layout, and the other two (12%) were non-contiguous. Overall, eight (53%) had access to cardiac monitors and 11 (69%) had a 24/7 clinical laboratory available. Only 1 (6%) EC had a dedicated CT scanner, while 2 (13%) others had limited access through their hospital. The typical EC length-of-stay was between 1 and 6 h (44%). The most commonly available specialists were general surgeons, with 9 (56%) ECs having them available for in-person consultation. No ECs had a plastic surgeon or psychiatrist available. Overall, 75% of ECs reported running at overcapacity.
Discussion: Swaziland ECs were predominantly contiguous and running at overcapacity, with high patient volumes and limited resources. The limited access to technology and specialists are major challenges. We believe that these data support greater resource allocation by the Swaziland government to the emergency care sector.

ABSTRACT

Introduction: Les soins d'urgence sont disponibles sous de nombreuses formes au Swaziland, et à notre connaissance, aucune étude systématique des services d'urgence (SU) n'a jamais été réalisée dans le pays. L'objet de cette étude était de décrire les caractéristiques, ressources et capacités des services d'urgences dans le Royaume.
Méthodes: L'Inventaire national des services d'urgences (NEDI) - Instrument d'enquête international (www.emnet-nedi.org) a été utilisé pour recenser tous les SU swazis accessibles au grand public 24 h/24, 7 j/7. Le personnel des SU a été interrogé sur l'année civile 2014. Les données ont été directement entrées dans Lime Survey, une application de recensencement en open source gratuite et disponible sur internet. Les réponses ont été analysées à l'aide de statistiques descriptives, en incluant les proportions et médianes, et les intervalles interquartiles (IIQ).
Résultats: Seize des 17 SU ont participé (taux de réponse de 94%. Les SU participants se trouvaient soit dans des hôpitaux, soit dans des centres médicaux (31%). Les SU totalisaient une médiane de 53 399

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visites par an (IIQ compris entre 15 000 et 97 895). Quatorze (88%) SU étaient attenants à une structure de soins, les deux autres (12%) ne l'étaient pas. Au total, huit (53%) avaient accès à des moniteurs cardiaques et 11 (69%) disposaient d'un laboratoire clinique disponible 24 h/24, 7 j/7. Un seul (6%) SU disposait d'un CAT scan, et deux autres (13%) n'y avaient qu'un accès limité par l'intermédiaire de l'hôpital auquel ils étaient rattachés. La durée moyenne de séjour au SU variait entre une et six heures (44%). Les spécialistes les plus fréquement disponibles étaient les chirurgiens généralistes, neuf (56%) SU les ayant à disposition pour des consultations individuelles. Aucun SU ne disposait de chirurgien esthétique ou de psychiatre. Globalement, 75% des SU indiquaient fonctionner en surcapacité.

Discussion: Les SU au Swaziland étaient essentiellement attenants à une structure de soins et fonctionnaient en surcapacité, avec un volume élevé de patients et des ressources limitées. L'accès limité à la technologie et aux spécialistes constituaient des défis majeurs. Nous considérons que ces données viennent appuyer une allocation plus importante de ressources par le gouvernement swazi au secteur des soins d'urgence.

African relevance

- Emergency care is delivered differently across Sub-Saharan African hospitals.
- Analysing current emergency care practices in a country is needed prior to improvement efforts.
- Emergency care related practices in Swaziland are largely unknown.

Introduction

The Kingdom of Swaziland is a landlocked country in southern Africa with a surface area of approximately 17,000 km^2. The population is approximately 1.3 million people; 53% of the population being female [1]. According to the World Bank, Swaziland, with its gross domestic product of US$3350 per capita in 2014, is in the lower middle-income category of countries for this indicator [1]. The health status in Swaziland is below expectations, with life expectancy at birth estimated at only 53 years [2]. The number one cause of death in the country is HIV (27% prevalence, which is highest in the world) followed by lower respiratory infections, tuberculosis, stroke, and diarrheal illness [2,3].

With this heavy burden of disease, the Swaziland government has created public health strategies to improve mortality rates within the country. For example, as a response to having one of the highest percentages of road traffic accidents in the world, the Ministry of Health established the Emergency Preparedness and Risk Management Department (EPR) in 2008 to create a public pre-hospital care service to respond to emergencies and facilitate inter-department transfers [4]. It remains unclear what impact this has had on the mortality rates, but the EPR has brought attention to emergency care within the country. Although emergency medicine as a specialty is still non-existent, emergency care is available in many forms. Until the current study, there has never been, to our knowledge, a systematic study of emergency centres (ECs) in Swaziland.

The objective of this study was to describe the characteristics, resources and capacity of ECs in the Kingdom of Swaziland. Such information would provide a valuable benchmark for future efforts to improve the accessibility and quality of emergency care.

Methods

Ethical approval in Swaziland was obtained from the Swaziland Scientific and Ethics Committee of the Ministry of Health. The Partners Healthcare Institutional Review Board (IRB) also reviewed the study and determined it to be exempt.

This cross-sectional study utilised a series of surveys developed by the Emergency Medicine Network (EMNet) in Boston, Massachusetts (www.emnet-nedi.org) to assess emergency centre (EC) characteristics and capabilities in the international setting [5]. For the purpose of this study, we defined an EC as any emergency care facility that was open 24 h/day, 7 days/week and provided evaluation and management of critically ill and injured patients at the earliest stages of medical crisis. This included casualty units, medical and surgery units that received emergencies throughout the day. Specialty facilities (e.g. Swaziland's Psychiatric and TB hospital) were excluded given care was only provided to a specific population. A list of all emergency facilities in the country was provided by the Ministry of Health. Seventeen ECs were determined to meet these inclusion criteria. The matron (Senior Nursing Officer) of each EC or senior clinical officer (Medical Doctor) were identified from each EC to participate in survey. Research staff met with these individuals and administered a paper survey in-person. All questions were asked in reference to the calendar year 2014.

Data collected from individual paper surveys was entered by the principal investigator directly into Lime Survey (https://www.limesurvey.com); a free, web-based, open-source survey application for online data collection. Responses were exported into an Excel spreadsheet (Microsoft Corp, Redmond, WA) and descriptive analyses were performed using Stata 14.1 (Stata Corp, College Station, TX). Data are presented as proportions and medians with interquartile ranges (IQR).

Results

Sixteen of 17 Swaziland ECs completed the survey (94% response rate). Despite multiple phone calls and in-person visits, the one missing EC did not complete the survey. The participating ECs were located in either hospitals (69%) or health centres (31%). Fourteen (88%) ECs were contiguous (i.e., one unified area to see emergencies) and 2 (12%) were non-contiguous (Fig. 1). Among contiguous ECs, 11 (79%) treated emergencies in the hospital's outpatient department (OPD) and 3 (21%) in other dedicated emergency units. Overall, ECs had a median volume of 53,399 visits per year (IQ 15,000 to 97,895), with the highest patient volume being 206,265 per year. No hospital saw adults only or children only. A physician was available in-person 24/7 in 88% of ECs and a nurse in 94% of ECs. The median number of hospital beds was 51 (IQR 35-210) and EC beds 4 (IQR 3-12). Overall, 75% of ECs perceived being overcapacity.

EC length-of-stay varied; 38% of ECs had an average length-of-stay of less than 1 h, 44% with 1–6 h, and 19% with >6 h. Most (69%) ECs had <20% of visits come in by ambulance and most (63%) reported that $\geqslant$80% of hospital admissions came through the EC.

Available resources were limited (Fig. 1). Three hospitals reported having CT scanners, but only one hospital reported a dedicated scanner for the EC. No hospital had a respiratory isolation