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# Uchunguzi (Journal Watch/ Montre de Journal) June 2017

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## REGULAR FEATURES

### Uchunguzi (Journal Watch/ *Montre de Journal*)

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Uchunguzi means investigation in Swahili and provides a summary of some of the most recent international literature as presented in other leading journals, but with an emphasis on what is relevant to our continent.

#### The long road to emergency care in Cameroon

The purpose of an effective emergency care system is to provide universal emergency care to all regardless of socioeconomic status, to stabilise patients who have a life-threatening illness or injury, and to reduce consequences of preventable mortality, morbidity and disability. Unfortunately, the limited availability of resources remains a significant barrier to the development and implementation of emergency care systems in low- and middle-income countries (LMICs). In this recent study from Cameroon, of 3201 participants from 619 households surveyed, 1113 (34.8%) had experienced one or more emergency conditions in the previous year. Despite this high incidence of emergency conditions, only 7% had accessed emergency centres; the primary reasons for not seeking healthcare being economic issues (37.2%) and use of complementary medicine (22.2%). Increased usage of emergency care systems and better public health may be achieved in LMICs by improving access to emergency care systems, affordability, reasonable payment systems for emergency care, and training highly skilled personnel with enhanced life-saving capability.

*Reference:* Ro YS, Shin SD, Jeong J, Kim MJ, et al. Evaluation of demands, usage and unmet needs for emergency care in Yaoundé, Cameroon: a cross-sectional study. *BMJ Open* 2017;7(2):e014573.

#### Prioritising training to prioritise

Triage in the emergency centre (EC) is necessary to prioritise and assign relatively scarce resources to the medical needs of patients for efficient and timeous treatment according to the severity of their condition or acuity on presentation. In 2004, the South African Triage Scale (SATS) was developed to be used as a nurse-led, in-hospital triage tool. It has since been adopted by numerous EDs. This study was conducted in a tertiary hospital ED in Gauteng Province, South Africa that uses a nurse-led triage system aimed to identify how often patients were allocated to the correct SATS triage category and the extent to which they were incorrectly pro-

moted or demoted (including the main reasons for errors). Of the 1091 triage forms reviewed, the triage category allocations were correct 68.3% of the time. Of the incorrect category assignments, 44.4% of patients were promoted, mostly routine patients (29.4%) and 55.6% demoted. Very urgent cases were most commonly demoted (35.0%). Trauma patients were more likely to be incorrectly promoted and non-trauma patients to be incorrectly demoted. Mistakes were mainly due to discriminator errors (57.8%), followed by numerical miscalculations (21.5%). The leading omitted discriminators were 'abdominal pain', 'chest pain' and 'shortness of breath'. This study highlights the need for standardised training at the outset, and continual evaluation of triage performance once rolled-out – not only as part of quality assurance but to ensure timely institution of patient management in the ED.

*Reference:* Goldstein LN, Morrow LM, Sallie TA, Gathoo K, et al. The accuracy of nurse performance of the triage process in a tertiary hospital emergency department in Gauteng Province, South Africa. *S Afr Med J* 2017;107(3):243-7.

#### There's an ambulance near (8.7% of) you

People in Africa bear a disproportionate burden of preventable and excess deaths before arrival at a health facility (the prehospital setting) even when compared to LMICs elsewhere. While the aetiology is complex and multi-factorial, under-developed prehospital emergency care systems contribute significantly to this excess morbidity and mortality. To help address the burden of acute disease and injury in Africa, the World Health Assembly (World Health Organization, Geneva, Switzerland) has called for the development of integrated, formal, emergency care systems throughout Africa. To help inform this development, this study aimed to improve the understanding of the current state of EMS systems in Africa, in the context of the regional burden of acute disease, using a questionnaire-based survey of African EMS experts between 2013 and 2014. Information was retrieved for 91% of countries, and the existence of 25 EMS systems in 16 countries was substantiated, meaning less than one-in-three African countries has an EMS system in place. Furthermore, nine of these 25

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systems were private and utilized a fee-for-service model, which almost certainly poses a financial barrier to the populations served. Overall, only 8.7% of the African population fell within the jurisdiction of at least one EMS system. These results highlight the need for investments in, and development of, publicly-accessible EMS systems in Africa to improve outcomes for African patients with acute conditions. Systems should be tailored to local burden of acute disease, integrated into existing health care systems, and adapted to conduct efficient inter-facility transports. Robust and standardized data collection will also help harmonize and advance EMS development in the region.

*Reference:* Mould-Millman NK, Dixon JM, Sefa N, Yancey A, et al. The state of Emergency Medical Services (EMS) systems in Africa. *Prehosp Disaster Med* 2017. <http://dx.doi.org/10.1017/S1049023X17000061> [Epub ahead of print].

### Trauma systems: For LMICs by LMICs

Every year, more than 5 million people die from injury; more than one and a half times the number of deaths from HIV, tuberculosis, and malaria combined – nearly 90% of these injuries occur in LMICs. Despite this, little context-relevant guidance exists to help policy makers set priorities in LMICs, where resources are limited and where trauma care may be implemented in distinct ways. This systematic review identified context-relevant reports from LMICs on specific trauma system components and characterized regional and topical research gaps. Some of the conclusions from the review suggest that:

- Task sharing may be an important mechanism for expanding the availability of services and improving quality and that training initiatives should be aligned with the frontline reality that emergency care for injury is delivered by a range of providers.
- Prehospital care system improvements must always take local resource availability, disease burden, and geography into account.
- The benefits of improved coordination between trauma system components may maximise the effectiveness of limited resources.
- Clinical protocols may have particular importance in limited-resource settings where clinical volume is high and junior providers must often practice with limited supervision.
- Access to specialty services (such as radiology, orthopaedics and neurosurgery) can be improved by a range of low-cost (team organization, communication protocols) and higher-cost interventions (creation of new health care facilities).
- Quality-improvement programs are integral to successful trauma care systems, are low-cost, and can be performed in nearly any setting where trauma care is provided.
- Incorporating lay providers into trauma care systems has been both clinically effective and cost-effective in multiple (and disparate) LMIC settings.
- Cost-based analysis will be critical to priority setting where resource limitations necessitate choices.
- Among the trauma system components identified in WHO guidelines, there are very few reports in the areas of rehabilitation, legislation and governance and paediatric-specific trauma care mechanisms.

Hopefully these results will help guide more efficient and effective trauma care system development in LMICs, as well as research and funding agendas.

*Reference:* Reynolds TA, Stewart B, Drewett I, Salerno S, et al. The impact of trauma care systems in low- and middle-income countries. *Annu Rev Public Health* 2017;38:507–532.

### Customise prehospital care for success

Prehospital care is one of the many issues that require addressing by LMICs where approximately 90% of global injuries occur. Poor prehospital care might be one of the causes of this high number of deaths; this is because the morbidity and mortality of road traffic accidents can be reduced by establishing well-organized prehospital care/Emergency Medical Services (EMS) and trauma care facilities. Furthermore, the prehospital emergency care is not always needed by traumatic and obstetric patients, but non-traumatic emergency patients, such as communicable and non-communicable disease patients, also require prehospital care, including transport to hospital. This report describes the establishment and management of EMS systems in LMICs. Some of the successful EMS stories in LMICs are attributable to (1) using local manufacturing products and equipment, especially for the vehicles; (2) strategic planning for ambulance station locations, which was based on response time rather than target population; (3) assistance from developed countries; (4) adopting the teaching and training to meet local needs; and (5) using a single command structure for all first responders, ambulance, rescue, and fire services. Additionally, empowering of the community can also enhance the quality of prehospital care. Financial issues, lack of training of staff, lack of public awareness, the condition of the roads, the traffic volume, and lack of road infrastructure were some of the obstacles faced by LMICs in implementing EMS systems. Bottom-line: the implementation of an EMS system is varied among LMICs and dependent on the characteristic of each country.

*Reference:* Suryanto, Plummer V, Boyle M. EMS systems in lower-middle income countries: a literature review. *Prehosp Disaster Med* 2017;32(1):64–70.

### ETAT+ Rwanda: Evidence-based interventions in reality

Evidence-based interventions are rarely implemented with perfect fidelity under real-world conditions. Healthcare systems in many low-income countries continue to face many challenges in terms of effectively delivering recommended life-saving interventions due to limited material and human resources, and gaps in knowledge among healthcare professionals working within the health care system. The Emergency Triage, Assessment and Treatment plus admission care (ETAT+) program – a locally adapted paediatric advanced life support management program – was implemented in Rwandan district hospitals between 2012 and 2013. A cross-sectional survey was carried out in a sample of eight (~20%) district hospitals during the same period to assess their capacity for providing emergency care for severely ill infants and children. With respect to human resources, three of the eight hospitals had at least one paediatrician. In all outpatient and emergency centres of the surveyed hospitals, there was neither a functional triage system, nor guidelines for triage to help identify and attend immediately to severely ill infants and children, and only one had a specific area with a dedicated physician for severely sick children during the day shift. Guidelines for neonatal resuscitation and management of malaria were available in five and seven of the eight hospitals, respectively; while those for management of neonatal sepsis, pneumonia, dehydration and severe malnutrition were available in three or fewer hospitals. Recognizing that not all missing items are necessarily equally important to providing emergency triage, assessment and treatment plus admission care for severely ill infants and children, priority should focus on items that are most needed e.g. establishing an adequate triage system which was the focus of the ETAT+ program, ensure appropriate dissemination of clinical practice guidelines, investment in capacity

building of health human resources and investing in critical resources required to implement ETAT+ (e.g., BVM for new-borns, intraosseous (IO) needles, paediatric giving sets, nebulizer/Metered Dose Inhaler (MDI) with spacer).

*Reference:* Hategeka C, Shoveller J, Tuyisenge L, Kenyon C, et al. Paediatric emergency care capacity in a low-resource setting: An assessment of district hospitals in Rwanda. PLoS One 2017;12(3): e0173233.