June 2016

Uchunguzi (Journal Watch/Montre de Journal) June 2016

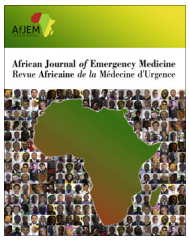
Benjamin Wachira
Aga Khan University, benjamin.wachira@aku.edu

African Journal of Emergency Medicine (2016) 6, 100–102

African Federation for Emergency Medicine

African Journal of Emergency Medicine

www.afjem.com
www.sciencedirect.com



REGULAR FEATURE

Uchunguzi (Journal Watch/*Montre de Journal*)

Benjamin W. Wachira

Accident and Emergency Department, The Aga Khan University – Nairobi, Nairobi, Kenya

Available online 13 May 2016

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.

When seconds count

When someone telephones for an ambulance, an interaction ensues which should be efficient and effective to facilitate a speedy dispatch of the appropriate level of vehicle, equipment and personnel to where it is needed. The process in South Africa begins with a three-part opening sequence which typically identifies the organisation, introduces the call-taker (CT) and invites the caller to proceed with the business of the call. In a recent project conducted in a South African emergency service, the researchers aimed to ascertain the impact of the CT's identification sequence on the progression of the call and to determine whether there was a means of streamlining the interaction in order to ensure efficient communication and dispatch time. The greeting sequences in 105 calls were initially analysed following which a trial modification to the openings from the prescribed three-part opening to a two-part opening with the following words: 'Ambulance service, (name) speaking', was implemented and analysed. The mean length of calls in one 12-h shift (1100) was compared with the mean length of calls for the same shift (1170 calls) for the day before (derived from the data base) for seven CTs who were present on both days. A mean 4 s advantage was achieved in the duration of calls after the intervention and for Priority 1 calls, an improvement was also noted in the dispatch time under 5 min and the response time under 15 min, (indices of performance used by the centre). This improvement in Priority 1 calls was, however, not significant on this sample size. The findings clearly demonstrate how efficiency in a system where shaving off even a few seconds may have life-saving consequences can be improved by research and simple interventions.

Penn C, Koole T, Nattrass R. When seconds count: A study of communication variables in the opening segment of emergency calls. *J Health Psychol* 2016. http://dx.doi.org/10.1177/1359105315625357.

New paediatric ETAT guidelines

Deaths of children in hospital often occur within the first 24 h of admission. Many of these deaths could be prevented if very sick children were identified and appropriate treatment started immediately upon their arrival at the health facility. WHO, in 2005, published guidelines and training materials for paediatric emergency triage, assessment and treatment (ETAT) for use in low-resource settings. These guidelines aimed to identify children presenting with airway obstruction and other breathing problems, circulatory impairment or shock, severely altered CNS function (coma or convulsive seizures) or severe dehydration. These children require urgent appropriate care to prevent death. Since the first edition, new evidence has become available and a number of international guidelines have changed and WHO recently published it's updated guidelines prepared by a panel of international experts and informed by systematic reviews of evidence. The updated guidelines make recommendations on: when to start and stop oxygen therapy; oxygen flow rates and humidification in severely ill children with emergency signs; which intravenous fluids, at what rate and for how long, should be used in the management of infants and children presenting with impaired circulation or shock; and anticonvulsant medicines for children with acute seizures when intravenous (IV) access is and is not available; second-line anticonvulsant medicines for children with established status epilepticus; pharmacological interventions as prophylaxis to prevent recurrence of febrile seizures in children; and diagnostic tests that should be performed on infants and children presenting with seizures with altered consciousness. The recommendations in this publication complement or update guidance in published WHO ETAT materials and therefore

Peer review under responsibility of African Federation for Emergency Medicine.

http://dx.doi.org/10.1016/j.afjem.2016.05.004

do not reflect all WHO recommendations on paediatric ETAT but only those identified areas of care needing to be updated in line with the new evidence and international consensus.

World Health Organization. *Updated guideline: paediatric emergency triage, assessment and treatment*. Geneva: World Health Organization; 2016.

Smart burns

Each year more than 10 million people worldwide are burned severely enough to require medical attention, with clinical outcomes noticeably worse in resource poor settings. Although some countries have burn centres, most victims do not get rapidly diagnosed and treated. Low-cost smartphones and affordable mobile broadband packages are bringing more and more people online in Africa, opening up novel mobile health (mHealth) based solutions that could help remedy this huge public health problem. The user interface of a smartphone can, for example, allow the user to mark the injured surfaces on a body diagram and a three dimensional avatar can potentially provide more accurate estimations than conventional visual inspection. In addition, the recent substantial improvement of mobile phone cameras is likely to facilitate the clinical application of wound photography especially in a telemedical setting. A project has been initiated in the Western Cape of South Africa, where an mHealth application has been developed in order to facilitate rapid diagnosis and adequate care of patients with acute burns. Key components of the solution detailed in this paper include a smartphone based application, a server-side system for relay of information between the point-of-care and burns specialists, a web-interface, as well as storage of data and pictures. Remote evaluation of burn injuries by experienced physicians has been shown to be more precise and correlate more closely with face to face assessment than estimates by less experienced health care professionals at the point-of-care. This system will hopefully provide a solution for remote consultation in acute burns that can be integrated into routine clinical care in the emergency setting.

Wallis LA, Fleming J, Hasselberg M, et al. A Smartphone App and Cloud-Based Consultation System for Burn Injury Emergency Care. *PLoS One* 2016;**11**(2):e0147253.

Emergency obstetric ambulances in Ethiopia

Lack of access to emergency obstetric care (EmOC) is thought to be a significant factor contributing to high maternal mortality. Efforts to improve access to EmOC have focused on establishing a minimum number of EmOC facilities, improving the quality of care in such facilities, and mobilising communities to encourage women to use these services. However, overcoming transport barriers is another relevant aspect that is frequently neglected. In a recent retrospective study looking at ambulance referral for obstetric reasons in Wolisso, Ethiopia, a total of 528 ambulance referrals were recorded between July 1 and December 31, 2013. A significant majority of referrals (87.9%, $n = 464$) originated in rural areas, mainly from villages to health centers (59.5%, $n = 314$). This probably contributed to the higher proportion of deliveries that occurred at health centers during the study period (966 deliveries) compared to the same 6-month period the previous year (304 deliveries) and two other preceding 6-month periods examined. This clearly demonstrates that an ambulance referral system in a setting with very high maternal mortality could be of benefit, if the $18.47 cost per referred patient like in this study, were met.

Tsegaye A, Somigliana E, Alemayehu T, et al. Ambulance referral for emergency obstetric care in remote settings. *Int J Gynaecol Obstet* 2016. http://dx.doi.org/10.1016/j.ijgo.2015.11.012.

STEMI Africa

The World Health Organization estimated that in 2005, ischaemic heart disease caused approximately 361,000 deaths in the African region, and current projections suggest that this number will nearly double by 2030. The AFRICARDIO-2 conference (Yamoussoukro, May 2015) consensus statement which reviewed the ongoing features of acute coronary syndromes (ACS) in 10 sub-Saharan countries (Benin, Burkina-Faso, Congo-Brazzaville, Guinea, Ivory Coast, Mali, Mauritania, Niger, Senegal, Togo) identified key interventions, most of which were related to emergency care, that would optimise the management of patients on the basis of realistic considerations, given the healthcare facilities, organisations and few cardiology teams that are available. These recommendations included: increased awareness of and education about ACS symptoms to improve recognition, by both patients and first-line emergency healthcare providers or paramedics in rural areas; train rural-based healthcare professionals in preventive cardiology and the diagnosis of cardiovascular emergencies; first-line healthcare facilities in rural areas should have high numbers of general practitioners or experienced paramedics who are trained to provide health counselling and emergency care; they should be aware of the importance of reducing delays in managing patients with a suspected diagnosis of STEMI, thereby fast-tracking patients to receive appropriate electrocardiographic examinations and treatment in a first-line referral infirmary; first-line healthcare facilities or infirmaries in small cities or covering rural community areas should be equipped with an electrocardiogram (ECG) and be served by a physician trained in minimal ECG interpretation; transmission of the ECG to the referral cardiology department by mail, fax or mobile phone should be available suitable for appropriate analysis if required; early antithrombotic therapy with 250 mg intravenous aspirin and 300 mg oral clopidogrel should be administered after a diagnosis of ACS has been confirmed or is strongly suspected; and emergency rooms in larger towns or small cities should be able to make the decision to start fibrinolytic therapy associated with heparin.

Kakou-Guikahue M, N'Guetta R, Anzouan-Kacou JB, et al. Optimising the management of acute coronary syndromes in sub-Saharan Africa: A statement from the AFRICARDIO 2015 Consensus Team. *Arch Cardiovasc Dis* 2016. http://dx.doi.org/10.1016/j.acvd.2015.12.005.

EMS in LMICs

Prehospital care is an essential component in the continuum of emergency medical services (EMS). Yet, the formal availability of these services is limited in low- and middle-income countries (LMICs). Many South Asian countries, including India and Pakistan, are among those LMICs where systems of EMS are still fragmented, uncoordinated, and of poor quality. The challenges these countries face in establishing accessible, affordable and high-quality systems of EMS are considerable. Despite these difficulties, several models of EMS have been introduced in India and Pakistan in both public and private sectors. Given the shared characteristics of these two countries, such as high population densities, wide socio-economic disparities, weak infrastructure and mixed health systems, the cross-sectoral comparative analysis of these EMS providers in India and Pakistan, drew out key similarities and differences and useful preliminary lessons for EMS stakeholders working in LMICs. Applicable lessons for EMS stakeholders working in LMICs included: early advocacy for legislation; appropriate pre-entry qualifications; integration of female ambulance personnel; use of computer-aided dispatch systems; use of low cost and structured ambulance maintenance systems; use of a push system of distribution of drugs and equipment; conducting primary and secondary prevention trainings and finally community participation in the service. This cross-case comparison, the first of its kind in low- and middle-income countries, highlights key innovations and lessons, and areas of further research across EMS organisations in resource-poor settings.

Sriram V, Gururaj G, Razzak JA, et al. Comparative analysis of three prehospital emergency medical services organisations in India and Pakistan. *Public Health* 2016. http://dx.doi.org/10.1016/j.puhe.2016.02.022.