December 2016

Uchunguzi (Journal Watch/Montre de Journal) December 2016

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

Follow this and additional works at: http://ecommons.aku.edu/eastafrica_fhs_mc_emerg_med

Recommended Citation
Available at: http://ecommons.aku.edu/eastafrica_fhs_mc_emerg_med/7
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.

**Smart emergency care**

The worldwide shift to mobile technology is occurring rapidly in both low/middle-income countries (LMIC) and high-income countries (HIC). In Africa, mobile phone use is now commonplace: in Kenya, for example, over 80% of the population now have access to a mobile phone (increased from only 10% in 2002). For professional health workers who might be most interested in mobile-based learning, smartphone adoption has accelerated sharply in the past 2–3 years. Already 28% of people in Kenya with secondary-level or higher education now own a smartphone, as do 88% of Nairobi medical students. This offers an opportunity to explore mobile-based training apps as potential tools with which to improve access to emergency care training for health workers in these settings. As an example, a particular challenge in the emergency clinical setting is the ability to correctly sequence a complex series of actions appropriate to situational cues in real time, as in the resuscitation algorithm. Opportunities to practice such sequences of fast, accurate cue-response activity can be relatively rare in the clinical setting and expensive using high-fidelity simulator technology; mobile devices could enable rehearsal and assessment of both speed and accuracy of algorithm recall, easily repeated to reinforce learning. In this article, a team working to develop mobile technology-assisted training in the field of paediatric emergency care in LMICs suggests the following principles that may be useful both for other developers and for those considering using such tools in their professional lives: adoption of a development strategy appropriate for the rapidly moving world of mobile technology, partnership and collaboration between high-income and low-income settings, ambition to evaluate effectiveness in the medium- to long-term, and recognition of the limitations and qualifications of mobile technology. As yet little evidence exists on how to do this most effectively, and what success might look like, the authors urge developers and clinicians to produce training tools and evaluate them rigorously, in partnership with learners, in order to maximise their effectiveness and improve global health.

**mHealth...say Cheese!!**

Mobile health (mHealth) is increasingly acknowledged as a means to improve healthcare delivery globally. Image-based mHealth in particular is an area that is developing rapidly, allowing clinicians at point of care to take and transmit pictures to seek expert advice. The practice is valuable for pictures taken of existing ECGs or radiological images and in conditions like ophthalmology, dermatology and burns, where pictures can be taken of a specific body region of concern. In this prospective study, 18 images covering both clinical (dermatological conditions, images of ECGs and standard plain film X-rays) and non-clinical subjects were viewed in a random order on three different display devices (a laptop computer, a tablet and a smartphone) by 27 participants (four South African burn surgeons and 23 emergency medicine specialists practicing in Sub-Saharan Africa or in the USA). Overall, the images were rated good or very good in most instances and more so for the smartphone (83.1%, mean score 5.7) and tablet (78.2%, mean 5.5) than for a standard computer (70.6%, mean 5.2). Both handheld devices had significantly higher ratings than the computer screen, even after controlling for image type and participants' characteristics. Nearly all experts expressed that they would be comfortable using smartphones (n = 25) or tablets (n = 26) for image-based teleconsultation. By speeding up and facilitating access to expert advice, mHealth can contribute to effective treatment, reduced referral rates and ultimately reduced costs for both healthcare systems and patients which may have a promising impact on the reduction of inequalities in access to healthcare.

**Reference:** Boissin C, Blom L, Wallis L, Laflamme L. Image-based teleconsultation using smartphones or tablets: qualitative assess-

---

Peer review under responsibility of African Federation for Emergency Medicine.

E-mail addresses: benjawambugu@hotmail.com, benjamin.wachira@aku.edu

http://dx.doi.org/10.1136/archdischild-2016-310875 [Epub ahead of print].


Reference: Boissin C, Blom L, Wallis L, Laflamme L. Image-based teleconsultation using smartphones or tablets: qualitative assess-

---

http://dx.doi.org/10.1136/archdischild-2016-310875 [Epub ahead of print].

2211-419X© 2016 African Federation for Emergency Medicine. Production and hosting by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/).

Friend, follow, like, tweet, tag, share…

The exact origin of medical education can never be known. Over the past few years, there has been a rapid expansion in the use of online resources and social media in the field of emergency medicine education. The Free Open Access Medical education (FOAM) movement had its genesis as ‘educational social media for medicine’. The rapid growth and acceptance of this new way to teach and learn have resulted in the creation of an astounding 141 medical education blogs and 42 podcasts between 2002 and 2013. More and more emergency medicine practitioners use social media and online resources in their daily practice as well as for continued professional development, citing ‘active learning’, ‘enhanced feedback and collaboration’ and ‘career advancement and networking’ as the main reasons. In a recent online survey to describe the usage of various traditional and modern educational resources by members of the divisions of emergency medicine at Stellenbosch University and the University of Cape Town, South Africa, textbooks (n = 78, 89.7%), open access educational resources (n = 77, 88.5%) and journals (n = 76, 87.4%) were the most preferred resources. Emergency medicine trainees (n = 31, 92.1%) and respondents ≤30 years (n = 17, 94.4%) were more inclined to use social media mostly accessed via smart phones. International Emergency Medicine and Critical Care blogs were frequently being used by 71% of respondents. YouTube (35%) and podcasts (21%) were the most commonly used multimedia resources. Computers (desktop and laptop) were most frequently used to access educational resources except for social media. This study illustrates an opportunity for greater integration of online resources and social media in educational activities to enhance multimodal and self-directed learning. Specific training in the use of these resources and how to appraise them may further improve their utility.


Paediatric emergency care essentials

Emergency care of children is a special challenge for healthcare providers worldwide. There is also significant variation in the ability of hospital-based emergency centres (ECs) around the world to provide children with adequate emergency medical services. In an effort to decrease this variation, a document published in 2012 by the International Federation of Emergency Medicine (IFEM) delineated minimum standards of care for children (0–18 years old) cared for in emergency departments. Some of these standards remain unrealistic in many developing nations. In this study, a panel of experts from Africa (45%), Asia (18%) and Latin America (18%) with at least 10 years of acute paediatric care experience in resource-limited settings and/or multiple peer-reviewed research publications on emergency paediatric care in resource-limited settings identified 28 ‘Must Have Immediately’ variables necessary to provide safe and effective care for acutely ill children in resource-limited settings. These included;

- Every EC must be well equipped and organised with easy access to necessary equipment, supplies and medication needed for the care of acutely ill or injured children of all ages on a 24-h basis
- At any given time, all ECs must be prepared to deal with initial resuscitation of a child brought in unexpectedly
- A critically ill or injured child must be moved immediately to a suitable resuscitation area

The complete list may serve as a helpful guide for ECs to provide medical treatment for acutely ill children in resource-limited settings.


SAMU

Prehospital care is integral to emergency systems and includes proper management and timely transport of patients to an appropriate care facility. Unfortunately, prehospital care is not available in many resource-limited settings, despite recent evidence that prehospital systems can reduce mortality substantially in low- and middle-income countries (LMICs). In Rwanda, injury is responsible for 11% of annual deaths. In 2007, the Rwandan Ministry of Health (Kigali, Rwanda) created the only publicly funded prehospital emergency system in the region—Service d’Aide Medicale Urgente (SAMU)—in the capital, Kigali. Between December 2012 through November 2014, SAMU managed 3357 patients for traumatic injuries. Males were 76.5%, and the median age of all injured patients was 29 years (IQR = 23–35). The most common causes of injury were road traffic crashes (RTCs; 73.4%), stabbings/cuts (11.1%), and falls (9.4%), and the most common anatomic regions injured were the head (55.7%), lower extremities (45.0%), and upper extremities (27.0%). Almost one-fourth of injured patients suffered a fracture (24.9%). The most common mechanism of injury for adults was motorcycle-related RTCs (61.4%), whereas children were more commonly injured as pedestrians (59.8%). Centrally located sectors within Kigali represented common areas for RTCs. This highlights the importance of collecting accurate data on the burden of injury that can subsequently be used to allocate specific resources, institute preventative services (already underway in Rwanda), and develop functioning prehospital and trauma systems.


Triage category: very bad

An important part of emergency care organization is triage. Triage improves emergency care service delivery by optimizing the utilization of existing and often scarce resources among patients depending on their acuity. This process is particularly important in low and middle-income countries (LMICs), which often have limited human and physical emergency resource capacity. A recent study from the Komfo Anokye Teaching Hospital (KATH) in Ghana evaluated the reliability and validity of the South African Triage Scale (SATS) when used by providers not specifically trained in SATS and compared triage capabilities between senior medical students and senior house officers (initial two years post medical school training) to examine the effectiveness of a house officer training curriculum with regards to triage. A total of 2550
Triage assignments (59 medical student and 43 house officer triage assignments for 25 vignettes each; 1475 and 1075 triage assignments, respectively) were used. Both groups over-triaged vignette patients whose triage assignment was “routine” (medical students: 77%, 95% CI 75–79; house officers: 79%, 95% CI 76–82), and nearly half of vignette patients who were “urgent”. Alarmingly, both groups under-triaged most of the “emergency” vignette patients (80 and 82% for medical students and house officers, respectively). “Very urgent” vignette patients were under-triaged in around half of triage assignments (53 and 52% for medical students and house officers, respectively). This study highlights the fact that though triage scales have proven utility in a number of different settings in LMICs, their success relies on their use by trained providers. Given the large and growing burden of emergency conditions, training of current and future emergency care providers in triage is imperative.