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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.

Manufacturing a 'Lean' ED

Lean manufacturing techniques, designed to improve processes through the scientific method, have been effective in decreasing emergency department length of stay, patient waiting times, numbers of patients leaving without being seen and door-to-balloon times for ST-elevation myocardial infarction in developed health systems. Building partnerships with local colleagues, obtaining and maintaining senior institutional support, choosing manageable initial projects and team problem-solving techniques were just some of the lessons learned in Ghana that worked without modification in the low-resource system. These advanced operations management techniques will hopefully aid future development of efficient emergency health care systems, especially in low- to middle-income countries.

Optimizing clinical operations as part of a global emergency medicine initiative in Kumasi, Ghana: Application of Lean Manufacturing Principals to low-resource health systems. Acad Emerg Med 2012;19(3):338–47.

Prehospital intubation. . .Are we in?

Out-of-hospital intubations remain a novelty in Africa mainly due to lack of resources and adequately trained personnel. In an analysis of the success rate of endotracheal tube (ETT) placement by paramedics in the out-of-hospital setting in Johannesburg, South Africa, the author detected 3% unrecognized, mal-positioned intubations and 9% right main bronchus positioning. Endotracheal tube placement was confirmed mostly via auscultation or direct laryngoscopy with less than 20% being confirmed by end-tidal carbon dioxide detection (ETCO2) or pulse oximetry. Emergency department medical practitioners used capnography to detect ETCO2 in only 4% of the out-of-hospital intubated patients. As this is the first

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known study to evaluate ETT placement by emergency medical service personnel in South Africa, more studies are needed in resource-limited, developing countries to confirm the findings and evaluate accurate cost effective strategies for confirming ETT placement where expensive ETCO2 detectors may not be readily available.

An analysis of paramedic out-of-hospital endotracheal intubation success in Johannesburg, South Africa. http://wiredspace.wits.ac.za/handle/10539/11093?show=full. Last accessed 16th April 2012.

Emergency medicine TV...

Telesimulation is a novel concept coupling the principles of simulation with remote internet access to teach procedural skills. With internet access being a rapidly growing commodity in Africa and as connectivity continues to improve, telesimulation could be the key to teaching and developing emergency medicine on the continent. Physicians in Gaborone, Botswana, via telesimulation with a simulator based in Toronto, Canada, were successfully taught how to insert intraosseous (IO) needles. The session improved physicians' knowledge, comfort level and self-reported confidence in inserting an IO needle, with 95% of the physicians feeling better prepared to manage pediatric resuscitations. As instructors and trainees can see one another, see inside each other's simulators, and communicate in real time, this novel approach has the potential to develop a practical and affordable alternative to teaching emergency medicine in Africa using foreign faculty and allowing the sharing of ideas via the World Wide Web.

Telesimulation: an innovative and effective tool for teaching novel intraosseous insertion techniques in developing countries. Acad Emerg Med 2011;18(4):420–7.

The new diagnostic tool every ED in Africa must have...

As affordability, portability and durability improve, bedside clinician-performed ultrasound is increasing in usage in low- and middle-income countries (LMICs) across the world. Physicians, nurses and medical officers have demonstrated the ability to perform and interpret a large variety of ultrasound exams, and a growing body of literature supports the use of point-of-care ultrasound in developing nations. In this review article, the authors review, by region, the existing literature in support of ultrasound use in the developing world as well as currently used training guidelines, and highlight indications for emergency ultrasound in LMICs. With studies done in Rwanda, Cameroon, Egypt, Gambia, Tanzania, Zambia, Malawi, South Africa and other LMICs, ministries of health, several non-governmental organizations and the World Health Organization have recognized ultrasound as a valuable diagnostic tool for resource-limited settings.

Review article: use of ultrasound in the developing world. Int J Emerg Med 2011;4:72.

Surviving sepsis – guidelines for the resource-limited setting

Ninety percent of the worldwide deaths from pneumonia, meningitis or other infections occur in less developed countries with the majority of deaths in neonates and infants occurring in Asia and sub-Saharan Africa. In 2004 and 2008, the Surviving Sepsis Campaign released guidelines for severe sepsis and septic shock management which together with timely administration of essential therapies (e.g., fluid resuscitation, antibiotics, and source control measures) improved management and outcome. Despite their benefits, these guidelines cannot be implemented in most low- or middle-income countries due to a lack of resources. The Global Intensive Care working group of the European Society of Intensive Care Medicine and the World Federation of Pediatric Intensive and Critical Care Societies have come up with new guidelines that systematically weigh the available scientific evidence for its applicability in resource-limited settings and make recommendations specifically based on affordable and commonly available resources in middle- and low-income countries.

Recommendations for sepsis management in resource-limited settings. Intensive Care Med 2012;38(4):557–74.

Pain free ED procedures...

The relief and avoidance of pain is central to our role as humane professionals providing quality health care. Procedural sedation and analgesia (PSA) is a skill commonly required when dealing with patients in the emergency department (ED). Typical procedures performed under PSA in the ED setting are reduction of fractures and common dislocations, incision and drainage of abscesses, laceration repair in children, foreign body removal, and evacuation of retained products of conception. In this original research article looking at PSA in a Level 1 hospital in Cape Town, South Africa, the authors demonstrate the safe practice of PSA in the ED by medical officers with no formal training in emergency medicine or anesthetics. Safe provision of PSA is dependent on adherence to local PSA guidelines, and knowledge of drugs and basic airway management skills; all of which doctors working in the ED can acquire through training and practice.

Safety and efficacy of procedural sedation and analgesia (PSA) conducted by medical officers in a level 1 hospital in Cape Town. S Afr Med J 2011;101:895–8.

Rethinking pediatric trauma care

Reports from Africa on trauma in the pediatric age group are few and most have been a single center's experience. In many low-and middle-income countries, the death rates from trauma in the pediatric age group exceed those found in developed countries. Much of this mortality is preventable by developing suitable preventive measures, implementing an effective trauma system and adapting interventions that have been implemented in developed countries that have led to significant reduction in both morbidity and mortality. This review of literature on pediatric trauma from different centers in Africa aims to highlight the challenges faced in the care of these patients and proffer solutions to the scourge.

Pediatric trauma in sub-Saharan Africa: challenges in overcoming the scourge. J Emerg Trauma Shock 2012;5(1):55–61.

Status epilepticus – safe, rapid, effective prehospital treatment

Early termination of prolonged seizures improves outcomes but establishing intravenous (IV) access in patients who are having seizures in the prehospital environment can be chal-

lenging and time-consuming. The Rapid Anticonvulsant Medications Prior to Arrival Trial (RAMPART) conducted in the United States, demonstrated that at the time of arrival in the emergency department, seizures were absent without rescue therapy in 73.4% subjects in the intramuscular (IM) midazolam group versus 63.4% in the IV lorazepam group (absolute difference, 10%; 95% CI, 4.0–16.1) with corresponding median times to active treatment of 1.2 and 4.8 min. Adverse-event rates were similar in the two groups. The authors suggest from these findings that IM administration of midazolam by emergency medical services is a practical, safe, and effective alternative to the IV route for treating prolonged convulsive seizures in the prehospital setting.

Intramuscular versus intravenous therapy for prehospital status epilepticus. N Engl J Med 2012;366:591–600.