Delivering Emergency Surgical Services in Resource-Constrained Settings

Trauma has long been neglected as a public health priority in African health systems. Often in the shadow of infectious diseases, under-resourced trauma services are generally unable to respond effectively to an emergency. In a continent with the world’s highest road-traffic mortality rate – a “hidden epidemic” – where injury claims more children over five than HIV, TB and malaria combined, and where obstructed labour is a major contributor to maternal mortality, it is time to re-examine and re-imagine the ability of African health systems to provide emergency trauma care.

Of the severely injured, 36% take more than one hour to arrive at the hospital. As few as one-third of injured patients reach any care at all. The majority of deaths among the injured occur in the prehospital setting. Disability resulting from injury often contributes to reduced income, forced borrowing, and the selling of property.

Research in high-income countries shows that trauma systems can reduce medically preventable deaths by 50%. The challenge of building similar trauma systems in Africa rests on the interwoven variables of human resources (increasing both the quality and quantity of staff), infrastructure (building and maintaining facilities capable of offering surgery), and administration (increasing coordination and communication across the system).

Evidence and experience from projects across Africa reveal that these challenges are far from insurmountable. For these system-wide improvements in trauma and other emergency care to begin, policy-makers and health system managers must start paying particular attention to:

- **prevention**. While prevention is often the focus of discussions around disease (e.g. bednets against malaria), certain surgical conditions – particularly trauma – can be largely avoided with the proper prevention measures. Helmet laws, seat-belts, speed bumps and drink-driving laws are some cost-effective interventions that significantly decrease the number and extent of injury.
  - *In Ghana, the use of speed bumps and rumble strips reduced traffic crashes by 35%, fatalities by 55% and serious injuries by 76%.*

- **prehospital care**. In the absence of paramedic or emergency medical services, non-medical personnel such as police officers and taxi and bus drivers have typically provided front-line emergency care. One innovative and low-cost solution is training laypersons – such as commercial drivers – in the provision of prehospital trauma care (e.g. scene management, extrication, splinting, triage, transport).
  - Such training “should be locally devised, evidence-based, educationally appropriate, and focus on practical demonstrations”. The BESG has launched a prehospital training initiative in Uganda.

- **primary health care**. This would include improving staff capabilities to resuscitate, give first aid, and recognize the need for urgent transfer. Hospitals
need an increased ability to diagnose and provide definitive surgical care when appropriate.

- In Malawi, a successful pilot project to train COs in surgery imparted skills in the systematic review and management of trauma victims at the district-hospital level.

- referral and transportation: As very few patients in rural Africa have access to their own transport, inter-facility transfer is rare; transport systems typically do not function in ways that address patient needs. Incremental changes, such as ambulance provision, can begin to address these problems.

  - “The key issue is appropriate movement by appropriate transport teams so that the patient’s level of care constantly increases. Central to all of this is early recognition of conditions that have a high complication rate”.

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The Bellagio Essential Surgery Group

In collaboration with the WHO’s Global Initiative for Emergency Surgical Care (GIEESC), the Bellagio Essential Surgery Group (BESG) calls for national and international commitment to improve access to essential surgical services. The BESG is a forum of top surgeons and public health specialists that has met in Bellagio, Italy (2007) and Kampala, Uganda (2008). BESG members have discussed the many “alternative approaches” to improving access, and have become pre-eminent advocates of surgery’s role in strengthening health systems.

The BESG is committed to understanding the constraints and opportunities in developing trauma systems at the district level. In Uganda, the BESG has developed a model trauma system structured around a regional referral hospital. Under the oversight of a National Trauma Council – composed of various stakeholders from the Ministry of Health to the police force – this Trauma Demonstration Project is investigating a range of interconnected issues to better comprehend what an organized, model trauma system might look like. These include:

- Mapping the region’s injury epidemiology;
- Focusing on prehospital care: training first- and second-level responders, and creating an ambulance system;
- Providing certified trauma training for health care workers; creating incentives for providing trauma care; and integrating trauma care into primary health care.
- Reviewing existing prevention programs – e.g. enforcement of seat-belt laws;
- Raising safety awareness through an advocacy campaign.

For more information


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