

Emergency and Trauma Care

To improve outcomes of emergency and trauma care services, the whole continuum of care needs to be addressed in an integrated fashion from prehospital care through facility-based care to rehabilitation.

KEY MESSAGES

- Prehospital care is one of the most effective and cost-effective platforms for reducing trauma deaths. In low- and middle-income countries (LMICs), most individuals who die from trauma die before ever reaching the hospital. Improving formal measures of prehospital care, such as ambulances, are useful. There is also a growing body of evidence on the value of scaling up less formal approaches, such as training likely first responders, and that these approaches are very cost-effective.
- Many essential surgical services rank among the most cost-effective of all health interventions. Feasible and affordable measures can greatly increase access to surgical care and improve safety and quality.
- Improved access to essential surgery should be implemented early in the path to universal health coverage. Essential surgery, especially trauma care, should be part of the essential benefit package.

Approximately 1.25 million people die from road traffic injuries each year, more than 75 percent of whom are young males in their productive years. More than 50 percent of all deaths in LMICs are pedestrians and cyclists. For every death, it is estimated that 20 people are injured; of these injured, one will experience some form of permanent disability.

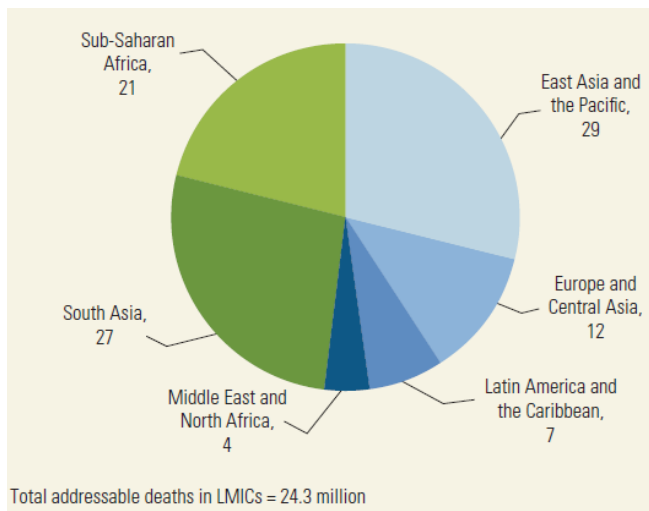
A trauma system encompasses the entire spectrum of services that a country or region has in place: prehospital care, initial emergency care, definitive hospital care (care provided after initial resuscitation to definitively treat injuries), and long-term rehabilitation of injured survivors.

Prehospital Care

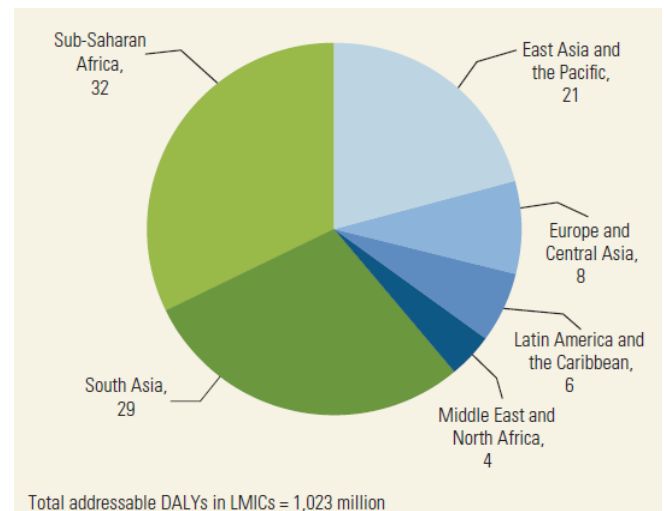
In LMICs, patients with acute medical conditions may face delays of hours or even days before reaching the nearest medical facility or provider. Transportation may be provided by ambulance, but more often it is provided by laypersons using the handiest mode of transport available. Health care before arrival at health facilities may be provided by trained paramedics or by laypersons; quite often, however, no health care is provided. A strong prehospital system has the potential to address death and disability from a range of health conditions, including trauma caused by road traffic injury (Figure 1).

Figure 1 Burden Addressable by Prehospital Care

Regional Distribution of Deaths Addressable by Prehospital and Emergency Care in LMICs



Regional Distribution of DALYs Potentially Addressable by Prehospital and Emergency Care in LMICs



**Note: All figures are percentages. These graphs include all deaths and DALYs avertable by prehospital care, not just those from road traffic injuries.*

Tiers of Prehospital Care

Tier One. Prehospital care encompasses the care provided by the community—from the scene of injury, home, school, or other location—until the patient arrives at a formal health care facility. The most effective strategies are basic and inexpensive; the lack of high-technology interventions should not deter efforts to provide good care.

Tier Two. The second tier comprises paramedical personnel who use dedicated vehicles and equipment and are usually able to get to patients and take them to hospitals quickly; this care is not always available in LMICs. Although providing advanced life-saving measures in the prehospital environment may be beneficial in some cases, these benefits may be negated if such measures divert scarce resources from more basic interventions that can benefit far larger numbers of patients.

Facility-Based Trauma and Emergency Care

The *DCP3* Essential Surgery volume identifies the following list of cost-effective procedures that can serve as a reasonable starting point for an essential surgical package in LMICs. The interventions are organized by suggested service delivery platform, however health systems in different countries have diverse structures, and what might be suitable at the various levels of facilities will differ. For this list, a community facility has primarily outpatient capabilities, whereas primary health center implies a facility with overnight beds and 24-hour staff. First-level hospitals imply fairly well-developed surgical capabilities with doctors with surgical expertise.

Community facility and primary health center

- Resuscitation with basic life support measures
- Suturing laceration
- Management of non-displaced fractures

First-level hospital

- Resuscitation with advanced life support measures, including surgical airway
- Tube thoracostomy (chest drain);
- Trauma laparotomy
- Fracture reduction
- Irrigation and debridement of open fractures
- Placement of external fixator, use of traction
- Escharotomy/fasciotomy (cutting of constricting tissue to relieve pressure from swelling)
- Skin grafting
- Burr hole