
Emergency and trauma care

Emergency care systems for universal health coverage: ensuring timely care for the acutely ill and injured

Report by the Director-General

1. This report has been prepared in response to the decision by the Executive Board at its 144th session in January 2019 to include an item on emergency and trauma care on the provisional agenda of the Seventy-second World Health Assembly.¹ In several previous resolutions, the Health Assembly prioritized integrated service-delivery models and identified the lack of access to timely emergency care as a cause of extensive and serious public health problems.²

ACCESS TO EMERGENCY CARE

2. Emergency care is an integrated platform to deliver time-sensitive health care services for acute illness and injury across the life course. The emergency care system that delivers these services extends from care at the scene through transport and emergency unit care, and it ensures access to early operative and critical care when needed. Many proven health interventions are highly time-dependent – they save lives, but only when delivered in time. By ensuring early recognition of acute conditions and timely access to needed care, organized emergency care systems save lives and amplify the impact of many other parts of the health system.

3. **People-centred care delivery for universal health coverage.** Emergency care is an essential element of universal health coverage, responding to a range of acute conditions in children and adults, including injuries, infections, acute exacerbations of noncommunicable diseases, and complications of pregnancy. It is the first point of contact with the health system for many people, providing timely recognition of time-sensitive conditions, resuscitation and referral for severely ill patients, and the delivery of definitive care for many others. Especially when there are barriers to accessing health care, people may seek care only when they are acutely ill or injured. Effective emergency care systems are

¹ See the summary records of the Executive Board at its 144th session, seventeenth meeting, section 1.

² Resolutions WHA56.24 (2003) on implementing the recommendation of the World report on violence and health, WHA57.10 (2004) on road safety and health (echoed by United Nations General Assembly resolution 72/271 (2018) on improving global road safety), WHA60.22 (2007) on health systems: emergency-care systems, WHA64.10 (2011) on strengthening national health capacities and the resilience of health systems, WHA68.15 (2015) on strengthening emergency and essential surgical care and anaesthesia as a component of universal health coverage, and WHA69.1 (2016) on strengthening essential public health functions in support of the achievement of universal health coverage.

designed to respond rapidly to people's acute needs even before a diagnosis is known, and they ensure continuity of care and safe transition from the primary to the secondary level of the health system.

4. **Time as a dimension of quality.** The effectiveness of many proven health interventions declines with delays to care, and timeliness is a critical dimension of quality. Maintaining an unbroken chain of care from the community to the hospital saves lives, but many of the early links in this chain have been neglected in current efforts to strengthen health systems. Implementing community-based education and first-aid training, certification for prehospital providers and 24-hour availability of emergency unit services at first-level hospitals save lives and maximize the effectiveness of later interventions. Well-organized emergency care is therefore a key mechanism for achieving a range of Sustainable Development Goal targets, including those on universal health coverage, road safety, maternal and child health, noncommunicable diseases, infectious diseases, disasters and violence. Strengthening emergency care meets the mandate of WHO's Thirteenth General Programme of Work, 2019–2023 to strengthen health systems, widen coverage of essential health services and improve integrated service delivery.¹

5. **Saving millions of lives.** Whereas primary prevention remains the mainstay of public health efforts to reduce the toll of injuries, infections and noncommunicable diseases, many deaths and much long-term disability can also be prevented through strengthening emergency care. The World Bank Disease Control Priorities project estimates that more than half the deaths and around 40% of the total burden of disease in low- and middle-income countries result from conditions that could be treated with prehospital and emergency care.² The lack of organized emergency care in many low- and middle-income countries leads to wide discrepancies in outcomes across the range of emergency conditions. People with similar severe injuries, for example, are substantially more likely to die in a low-income setting than they are in a high-income setting. Overall mortality rates from diabetic ketoacidosis have been documented in several studies as less than 1% in high-income countries but up to 30% in some low- and middle-income countries. Furthermore, based on the results of 15 studies, a recent systematic review estimates maternal mortality from pregnancy-related haemorrhage at 3/100 000 live births in higher-income countries and 132/100 000 live births in low- and lower-middle income countries.

STRENGTHENING EMERGENCY CARE SYSTEMS

6. **Adding the system to the services.** A common misconception is that emergency care services are too costly for health systems in low- and middle-income countries, but many high-impact improvements in emergency care can be made at very low cost. Implementing simple systematic processes can improve the quality of emergency care and save lives, even without input of other resources. For example, protocols that guide prehospital providers to transport patients to the most appropriate facility can reduce delays in giving life-saving treatment. Using a formal triage protocol in emergency units to prioritize care based on a patient's needs rather than the order of arrival improves outcomes even where resources are limited. Simple checklists can ensure that life-threatening conditions are recognized and that critical actions are taken. Furthermore, clear designation and organization of resuscitation areas ensure that available resources are within reach when they are needed.

¹ Thirteenth General Programme of Work, 2019–2023. Geneva: World Health Organization; 2018; as contained in document A71/4 (http://apps.who.int/gb/ebwha/pdf_files/WHA71/A71_4-en.pdf?ua=1or, accessed 19 March 2019) and adopted in resolution WHA71.1.

² Thind A, Hsia R, Mabweijano J, Romero Hicks E, Zakariah A, Mock CN. Prehospital and emergency care. In: Disease control priorities (third edition): Volume 1, Essential surgery, edited by Debas HT, Donkor P, Gawande A, Jamison DT, Kruk M, and Mock CN. Washington, DC: World Bank; 2015.

7. **Effective and cost-effective.** Many recent studies have ranked components of emergency care as among the most cost-effective public health interventions. Strengthening of prehospital care through training of community-based providers and use of staffed community ambulances has been estimated to cost less than US\$ 100 per disability-adjusted life year averted or per life saved, and has been shown to reduce mortality by 25–50% in some low- and middle-income country contexts. For instance, establishing a dedicated emergency unit with formal triage in one hospital in Malawi halved inpatient mortality at a cost of US\$ 1.95 per patient; and in Papua New Guinea the introduction of a new method for delivering oxygen and simple monitoring of oxygen levels in children with pneumonia cost US\$ 116 per disability-adjusted life year averted and decreased mortality risk by 35%. All these are extremely cost-effective compared with many other widely-accepted public health interventions.

8. **Emergency care workforce.** Every day, frontline health workers of all cadres provide care for the acutely ill and injured, often without the benefit of dedicated training in the management of emergency conditions. Most emergency care around the world is not provided by specialists. Effective expansion of emergency care systems requires educational and planning initiatives to cover the full range of providers who deliver emergency care. Because prehospital services must be delivered where and when they are needed, and emergency units must remain accessible to all who need them, ensuring the safety of emergency care providers is a challenge. Prehospital and hospital emergency units should have both dedicated plans in place to protect providers, patients and infrastructure from violence, and clear protocols for the prevention and management of hazardous exposures.

9. **When data save lives.** Most documented experience on strengthening emergency care systems comes from high-income countries, and little is known about the current reality of emergency care in low- and middle-income countries. Improving outcomes requires understanding the potential and actual utilization of emergency care, and that this usage be taken account of in planning and allocating resources. Existing data often fail to characterize undifferentiated presentations and their level of acuity. Among children with pneumonia, for example, there are vital differences between the resource needs of a child presenting with cough and fever and those of a child presenting with respiratory failure. National assessments can identify high-yield targets for system-level policy changes, while registries and standardized clinical forms for emergency care visits can facilitate consistent and accurate documentation and a systematic approach to management and improvement of quality. WHO has standardized tools available for use with each of these processes.

10. **Serve the vulnerable.** Emergency care systems promote equity by providing non-discriminatory access to all people in need of timely care, without regard to ability to pay or other socio-cultural factors. In many countries, the emergency care system serves as the major health system safety net and is the primary point of access to the health system for marginalized populations with limited access to services. In addition, emergency care systems fulfil the obligations of several United Nations and other rights-based treaties, including those dealing with the rights of women, children, munitions victims, people with disabilities, migrants and refugees. Ensuring access to timely emergency care is critical to meeting WHO's commitment in its Thirteenth General Programme of Work, 2019–2023 to serve in particular the most disadvantaged, marginalized and hard-to-reach populations, including those affected by emergencies, to ensure that no one is left behind.

11. **Ordinary systems and extraordinary events.** In addition to meeting the individual health needs reflected in Sustainable Development Goal 3 (Ensure healthy lives and promote well-being for all at all ages), a strong and well-prepared emergency care system is also vital for mitigating the impact of mass casualty events associated with Goal 11 (Make cities and human settlements inclusive, safe, resilient and sustainable) and Goal 16 (Promote peaceful and inclusive societies for sustainable development,

promote access to justice for all and build effective, accountable and inclusive institutions at all levels).¹ During armed conflict, natural disasters and outbreaks, emergency care systems can be overwhelmed by increased demand or directly compromised by the impact of such events. When emergency care systems collapse, both direct mortality from the acute event, and preventable mortality from everyday conditions (“secondary mortality”) increase dramatically. Besides meeting the everyday health needs of the population, a well-organized, prepared and resilient emergency care system has the capacity to maintain essential acute care delivery throughout a mass event, limiting direct mortality and avoiding secondary mortality altogether. Everyday emergency care systems are an essential substrate for effective emergency response.

RECOMMENDED ACTIVITIES

12. **Recommended activities for Member States.** Emergency care services respond to a range of health conditions that account for more than half of deaths in low- and middle-income countries. Well-designed emergency care systems ensure timely recognition, resuscitation and referral, and increase efficiency and effectiveness across the health system. All Member States, regardless of available resources, can take steps towards strengthening their emergency care systems. Because so many emergency care interventions are both effective and cost-effective, developing an integrated platform for emergency care delivery can both save lives and maximize the return on investments across the health system.

13. Recommended activities include the following:

- create policies to ensure sustainable funding, effective governance and universal access to emergency care for all;
- conduct a WHO emergency care system assessment or other standard national assessment to identify gaps and priorities for context-relevant action;
- develop essential processes and clinical protocols as identified in the WHO Emergency Care Systems Framework;
- implement mechanisms for standardized data collection in order to characterize the local burden of acute disease and identify high-yield mechanisms for improving quality of care;
- provide emergency care training for all relevant health provider cadres, for instance through the creation of speciality training programmes, training frontline providers in basic emergency care, and integrating dedicated emergency care training into undergraduate nursing and medical curricula;
- ensure that prehospital and hospital emergency units have plans in place to protect providers, patients and infrastructure from violence, and clear protocols for the prevention and management of hazardous exposures.

¹ World health statistics 2018: monitoring health for the SDGs, sustainable development goals. Geneva: World Health Organization; 2018 (<https://apps.who.int/iris/bitstream/handle/10665/272596/9789241565585-eng.pdf>, accessed 19 March 2019).

14. **The Secretariat's activities.** WHO has defined a framework of essential emergency care functions and an associated assessment tool that allows policy-makers to draft action plans that are best suited to their national contexts. Each system will achieve these essential functions in different ways, depending on available resources. WHO's emergency care system assessment process has identified shared challenges affecting many low- and low-middle income countries, including:

- very limited coordination of prehospital and facility-based care;
- limited or no coverage of prehospital systems, especially in rural areas;
- critical gaps in emergency care services at first-level hospitals;
- lack of fixed staff assigned to emergency units, thereby limiting coordinated action to improve care and implement standardized processes such as triage;
- limited data on acute presentations and emergency care delivery and poor links of existing data to system planning and efforts to improve quality;
- lack of standards for clinical management and documentation;
- gaps in dedicated and sustainable emergency care training across the health system, and lack of its integration into formal curricula and ongoing certification requirements;
- insufficient funding and lack of dedicated funding streams;
- lack of security for prehospital and facility-based emergency care staff.

15. In addition to the assessment resources mentioned above, the Secretariat offers a range of resources for training, as well as standards for essential emergency care services and resources at each level of the health system. The tools, including the Basic Emergency Care course, triage tools, checklists and a range of other process guidance,¹ have been implemented by ministries and international partners in countries around the world. Most recently, it has launched the WHO International Registry for Trauma and Emergency Care in order to support countries to implement WHO's existing guidance on quality improvement.² The platform is being used by various countries to understand better the burden of acute conditions and to identify areas where simple changes in process can save lives. To facilitate collaborative efforts and ensure that programme outputs best serve countries' needs, WHO also coordinates a global network of government focal points and international experts in emergency care,

¹ Emergency care. Geneva: World Health Organization, see <https://www.who.int/emergencycare/en/> (accessed 19 March 2019) for links to: Basic emergency care: approach to the acutely ill and injured – participant workshop; see also WHO, International Society of Surgery and the International Association for the Surgery of Trauma and Surgical Intensive Care. Guidelines for essential trauma care; Prehospital trauma care systems. Geneva: World Health Organization; 2004 (<https://apps.who.int/iris/handle/10665/42565>) and WHO. Strengthening care for the injured: success stories and lessons learned from around the world. Geneva: World Health Organization; 2010 (https://apps.who.int/iris/bitstream/handle/10665/44361/9789241563963_eng.pdf;sequence=1).

² WHO, International Association for Trauma Surgery and Intensive Care, International Society of Surgery. Guidelines for trauma quality improvement programmes. Geneva: World Health Organization; 2009 (https://apps.who.int/iris/bitstream/handle/10665/44061/9789241597746_eng.pdf;sequence=1, accessed 13 March 2019) and WHO International Registry for Trauma and Emergency Care (<https://www.who.int/emergencycare/irtec/en/>, accessed 13 March 2019).

as well as serving as the secretariat for the Global Alliance for Care of the Injured.¹ In December 2018, WHO launched the Global Emergency and Trauma Care Initiative – with financial support from the AO Foundation – with the objectives of considerably expanding its technical support to Member States and conducting global coordination and awareness-raising activities.²

ACTION BY THE HEALTH ASSEMBLY

16. The Health Assembly is invited to note this report and provide further guidance.

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¹ Global Alliance for Care of the Injured (<https://www.who.int/emergencycare/gaci/en/>, accessed 13 March 2019).

² Global Emergency and Trauma Care Initiative (<https://www.who.int/emergencycare/global-initiative/en/>, accessed 13 March 2019).