

Chapter 2.2: Measuring the health impacts of disaster

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Further reading

1. Garfield R. Measuring humanitarian emergencies. *Disaster Medicine and Public Health Preparedness* 2007;1(2): 110-6.

Summary of this document: Measuring the health impacts of disasters is a challenge. The information in articles such as this can be used to show the importance of measuring the impact of disasters and how the data can help decision-makers understand the impacts and risks of emergencies and disasters.

This article highlights relevant data sources to elucidate elements of an operational definition of needs in a humanitarian emergency. It describes four measures of humanitarian need: (1) exposure to risks, (2) conflict deaths, (3) conflict displacement and (4) deaths and injuries from disasters caused by natural hazards. Each measure represents a unique indicator of need and can vary depending on the cultural and historical context of the setting of the emergency. The author shows how data from the four measures can be combined to help decision-makers understand humanitarian impact after a disaster.

2. Khan Y, Schwartz B, Johnson I. Surveillance and epidemiology in natural disasters: a novel framework and assessment of reliability. *PLoS Currents Disasters* 10 February 2014; 6.

Summary of this document: Surveillance in the setting of disasters caused by natural hazards can help identify health-related needs which, in turn, can lead to an evidence-informed deployment of resources to affected populations. Epidemiological research describing the causes and consequences of disasters can help decision-makers understand the impact of a disaster and plan for future ones.

This short article describes a framework and methodology for organizing relevant disaster epidemiology literature. This framework was created with a four-axis approach that accounts for: (1) disaster type, (2) disaster cycle phase, (3) impact and (4) key disaster outcomes. The target audience for the framework is local public health practitioners conducting emergency surveillance when preparing or responding to disasters caused by natural hazards. The authors also test the framework's reliability by cross-referencing expected impact with measured data from past disasters.

3. Logue JN, Melick ME, Hansen H. Research issues and directions in the epidemiology of health effects of disasters. *Epidemiologic Reviews* 1981;3(1): 140-62.

Summary of this document: Measuring impact is important for responding to a disaster and for planning for future events. Epidemiological research strategies describing the causes and consequences of disasters can help decision-makers with this.

This article from 1981 examined the nature of research on both short-term and long-term health effects associated with major disasters in the USA and other high-income countries around that time. The authors discuss the contributions of epidemiological studies and begin with a review of studies on disasters through 1981 before outlining common dependent, independent and mediating variables in

epidemiological studies. They conclude with a review of advances in disaster epidemiology up to that time.

4. Salazar MA, Law R, Pesigan A, Winkler V. Health consequences of Typhoon Haiyan in the Eastern Visayas region using a syndromic surveillance database. PLoS Currents Disasters 6 February 2017; 9.

Summary of this document: Case studies, such as this, which showcase systems that report on the health outcomes of disasters can help decision-makers to understand the impact of a disaster and plan for future ones.

This article analyzes Typhoon Haiyan's impact on the health system in a part of the Philippines using data from a syndromic surveillance database. The authors outline the use of the Surveillance in Post Extreme Emergencies and Disasters (SPEED) database to monitor communicable diseases, injuries and non-communicable diseases (NCDs) in typhoon-affected areas. They show how communicable diseases had the highest consultation rates followed by similar rates for both injuries and NCDs, and demonstrate that syndromic surveillance can help decision-makers better anticipate post-disaster healthcare needs.