

Podcast Script

Chapter 2.1 - Using epidemiological principles to assess impacts of emergencies and disasters

Hello and welcome to this podcast in our audio series for the WHO Guidance for Research Methods on Health Emergency and Disaster Risk Management. My name is Claire Allen from Evidence Aid and I am one of the authors of the Guidance. Today I will be discussing Chapter 2.1, which is titled *Using epidemiological principles to assess impacts of emergencies and disasters*. In the next few minutes, I'll outline some of the key disaster epidemiology techniques that are used in Health EDRM.

One of the ways to quantify the impact of disasters is to look at the effects on humans and society. Understanding the health effects of disasters can help with planning risk-reduction measures before, during and after emergencies. This can be achieved by using epidemiological principles to study the effects of disasters on humans, provide evidence for effective Health EDRM, and analyze capacities to manage risks and hazards. The main objectives of disaster epidemiology are to prevent or reduce the number of deaths, illnesses and injuries caused by disasters; to provide decision-makers with timely and accurate health information; and to provide a body of evidence to use for research and evaluations. The key techniques to achieve these goals are needs assessments, health surveillance, incident investigations and the use of disaster databases. I will discuss each of these in turn now.

Needs assessments use surveys and population sampling to determine the health needs of people affected by disasters and may need to be done rapidly if they are to inform the immediate response to a disaster or emergency. When conducting such surveys, it's important to ensure that the population sampled is representative of the wider population. Using epidemiological methods can help prevent dependence on limited or unreliable data. One example of a needs assessment tool is the multi-cluster/sector initial rapid assessment, or MIRA, which can be used to provide epidemiological data about an affected population and their needs.

Another key epidemiology technique for disasters is health surveillance. Public health surveillance is necessary for collecting data to help plan, implement and evaluate public health practice. It can also serve as an early warning system and to track the impact of an intervention. The World Health Organization's Early Warning, Alert and Response System, or EWARS, is an example of a surveillance tool, which was created to improve disease outbreak detection in emergency settings.

Disaster epidemiologists also use standard epidemiological methods to investigate disasters caused by natural hazards and disease outbreaks. The descriptive and analytical techniques used for this can help, for instance, with understanding the source of a disease, how it spreads, how to control it and what interventions might be beneficial.

Finally, databases holding disaster data are important for epidemiological research. The two main disaster databases are the Emergency Events Database, or EM-DAT, and DesInventar. While such databases are important tools for disaster epidemiology, there are some challenges that come with them. Namely, there is a lack of standardization in the methods used to collect the data and definitions, as well as an absence of a reliable source of verified data. Some of these problems can be overcome by using the Sendai Framework Monitor, which we discuss in detail in the chapter.

I'll finish by thanking you for listening to this brief introduction for Chapter 2.1 in the WHO Guidance on Research Methods for Health EDRM. If you would like to delve deeper into this topic and learn more about using epidemiological principles in Health EDRM, please do read the chapter, which can be accessed for free on the WHO Knowledge Hub website. Thanks, and goodbye for now.