

Mortality surveillance threshold

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Key points

- Substantial elevations in mortality (two- to ten-fold the baseline) are common, particularly during the acute phase of an emergency
- Accurate population estimates (denominator) are required to measure mortality rates. This may be difficult to calculate in urban and rural settings. Other methods of mortality estimates may be applied
- It is essential to obtain good mortality data (numerator) using different methods from multiples sources including from health facilities and community (deaths at home, grave counting etc.)
- Collect and analyze data on health problems and risks in order to target the major causes of excess mortality and morbidity
- Prioritize health services that effectively reduce excess morbidity and mortality

1. Overview

Humanitarian emergencies have significant impacts on the health and well-being of forcibly displaced populations, often leading to high number of deaths from both preventable and treatable causes. Forcibly displaced populations are at an elevated risk of death in the period immediately before, during and after displacement, including as they settle in refugee camps, informal settlements, or in host community settings. This elevated mortality risk can be a result of either direct causes (i.e., injury and death due to violence from the crisis), or indirect causes (i.e., deterioration of living conditions, food insecurity, lack of potable water, poor shelter, hygiene and sanitation, and disruption to health care services). Moreover, in humanitarian emergencies, the health system may be overwhelmed and/or fragmented and its ability to respond may be limited, which exacerbates the potential for excessive loss of life.

2. Relevance for emergency operations

- Population mortality is an essential public health metric of a crisis' impact, and, by implication, of the need for humanitarian public health services.
- UNHCR is committed to supporting timely and effective public health interventions, to improve emergency response capacity, and save lives.
- The primary goal of public health interventions, and every emergency response, is to prevent excess morbidity and mortality.
- The two main public health risks that cause excess mortality are disease outbreaks and malnutrition.

3. Main guidance

Emergency Phase

The most useful indicators to monitor and evaluate the severity of a crisis are the crude mortality rate (CMR) or crude death rate (CDR) and the more sensitive under-five mortality rate (U5MR) or under-five death rate (U5DR). **A doubling or more of the baseline CMR or U5MR indicates a significant public health emergency and requires an immediate response.**

Baseline mortality and emergency thresholds are context specific. Where available, national or regional mortality rates from country of origin of refugees should be used as baseline reference in the acute emergency phase. In any case, the most recent and reliable source of data including surveys should be used.

Historically, a crude mortality rate (CMR) of 1/10,000/day or an under five mortality rate (U5MR) of 2/10,000/day was used as a standard emergency mortality threshold. But because baseline mortality rates have fallen considerably since that standard was established in 1985, this threshold may be too high to be applied to assess the adequacy of a humanitarian response. The current 1 death/10,000/day threshold currently corresponds to four times the average mortality rate in Sub-Saharan Africa.

The key factors to consider are **how elevated the mortality rate is** (i.e., the excess death rate compared to a plausible baseline), **how long this elevation lasts for**, and **how many people experience this elevation**. These three parameters multiply to yield the excess death toll.

A doubling or more of the known or estimated pre-emergency baseline CMR or U5MR, or the crossing of a certain context specific, pre-established threshold, is considered to indicate an acute emergency.

Where available, national mortality rates from countries of origin or asylum should be used as the baseline reference.

Mortality rates can be expressed by calculation deaths per person-time. The unit used in the acute emergency phase when mortality rates are changing rapidly, is generally deaths/10,000/day and deaths are reported on daily or weekly.

Post emergency phase

In the post emergency phase, baseline estimates could be taken from the host country of refugees or displaced population.

The unit used in the post emergency phase is deaths/1,000/month, when deaths are reported on monthly basis.

Mortality Surveillance checklist

- Establish a general framework for planning, implementation and adaptation of a mortality surveillance system.
- Coordinate planned activities with the surveillance coordination team or committee.
- Develop or adapt data collection tools for both facility and community-based surveillance.
- Identify, train and install the cadre of workers (health staff, community health workers/volunteers, etc.) who will collect mortality information.
- Conduct introductory focus group discussion to sensitize the community to mortality surveillance activities.
- Map the camp/settlement and its health facilities for planning and implementation of facility-based mortality surveillance.
- Conduct baseline household census if there are no other sources of reliable population data.

4. Standards

[UNHCR Guidelines for mortality surveillance 2023](#)

[UNHCR, Operational guidance: community health in refugee-settings 2022](#)

[Sphere standards, 2018](#)

[Estimation of population mortality in crisis-affected populations - 2018](#)

[UNHCR Integrated Refugee Health Information System \(iRHIS\)](#)

Annexes

[UNHCR Operational Guidance: Community health in refugee settings, 2022](#)

[The Sphere Handbook, 2018](#)

[Francesco Checchi, Estimation of population mortality in crisis-affected populations - Guidance for humanitarian coordination mechanisms, 2018](#)

[UNHCR Standards and Indicators Guide, 2019](#)

[UNHCR Guidelines for Mortality Surveillance. A Practical Guide for Collecting, Reporting, and Using Surveillance Data for Estimating Mortality in Refugee Settings, 2023](#)

5. Links

[UNHCR Guidelines for Mortality Surveillance](#) [UNHCR Operational Guidance: Community Health in Refugee Settings 2022](#) [The Sphere Handbook, 2018](#) [Health Cluster Estimation of population denominators for the humanitarian health...](#) [UNHCR Integrated Refugee Health Information System \(iRHIS\)](#)

6. Main contacts

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