

# Disease surveillance thresholds

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## Key points

- In an emergency, surveillance systems may be underperforming, disrupted or non-existent which may delay the detection of and response to outbreaks
- Displacement, overcrowding, poor sanitation, lack of access to clean water and disruption of health services increase the risk of diseases transmissions in an emergency
- A disease outbreak occurs when the number of cases of disease exceeds what would normally be expected in a given community, geographical area, or season
- Establish a functioning surveillance system to rapidly detect and respond to epidemics and other public health emergencies

## 1. Overview

Effective disease control relies on an effective facility and community-based surveillance system which is an important epidemiological tool for early warning, alert and response (EWAR) to acute public health events with particular attention to nationally prioritized diseases/conditions.

All diseases of outbreak potential should be assigned a corresponding alert threshold, which defines the basis upon which an outbreak should be reported.

A disease's potential to cause an outbreak determines whether it should be under surveillance. An outbreak occurs when an infectious disease spreads rapidly to many people. An 'alert threshold' (or 'epidemic threshold') indicates the level of incidence above which a disease requires an urgent response. Every disease or condition under surveillance must have an associated case definition and a specific threshold that depends on its infectiousness, other determinants of transmission, the degree to which it is locally endemic and control strategies.

Disease control measures must be specifically developed to halt transmission of the disease

agent that causes the outbreak. Often, knowledge of the agent is already available to guide the design of appropriate control measures. In general, response activities include controlling the source or preventing exposure (for example, by improving water outlets to prevent cholera); interrupting transmission or preventing infection (by mass vaccination to prevent measles, or use of Long-Lasting Insecticidal Nets to prevent malaria); or modifying host defences (by prompt diagnosis and treatment, or chemoprophylaxis).

The below standards apply to refugee camps and to out-of-camp (including urban) situations.

## **2. Relevance for emergency operations**

Humanitarian emergencies often increase the risk of transmission of communicable diseases, resulting in increased morbidity and mortality, particularly from epidemic-prone diseases.

Therefore, one of the most urgent priorities in an emergency is to establish a functioning surveillance system to rapidly detect and respond to epidemics and other public health emergencies.

## **3. Main guidance**

### **Emergency Phase**

- Diseases for which a single case may indicate an outbreak e.g. cholera, measles, acute flaccid paralysis/polio, yellow fever, viral haemorrhagic fevers. This list is not exhaustive and other diseases may need to be under surveillance according to the context.
- Confirmed malaria: 1.5 times the baseline (average number of cases seen in the previous 3 weeks).
- Watery diarrhoea: 1.5 times the baseline (average number of cases seen in the previous 3 weeks).
- Bloody diarrhoea: 5 cases in one location in one day.
- Bacterial meningitis: 1 case in an overcrowded camp setting or 2 suspected cases per week in a population of less than 30,000 or 3 suspected cases per week in a population of 30,000 or more.

### **Post emergency phase**

The above standards apply to both emergency and post emergency phases.

## Disease surveillance and thresholds checklist

- Decide which priority diseases and conditions to include based on the epidemiological risk profile and context of the emergency.
- Strengthen or establish a context specific disease EWAR system with partners and agree on reporting units, data flow, reporting tools, case definitions and frequency of reporting.
- Define alert thresholds specific to each disease or condition under surveillance.
- Train healthcare staff and community health workers with emphasis on priority diseases, case definitions, alert, detection and response to potential outbreaks.
- Provide refugees and host populations with simple information on the symptoms of epidemic-prone diseases; inform them where they can go for help.
- Prepare an outbreak preparedness and response plan and ensure actions are triggered rapidly when an alert is generated, and samples can be tested by rapid diagnostic tests or laboratories to confirm an outbreak.

## 4. Standards

UNHCR [Case Definitions 2019](#)

[Sphere standards 2018](#)

World Health Organization. (2022). [Early warning alert and response in emergencies: an operational guide](#)

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

### Annexes

[UNHCR, Health information system case definitions, 2019](#)

[The Sphere Handbook, 2018](#)

[WHO, Early warning alert and response in emergencies: an operational guide, 2022](#)

## **5. Links**

[UNHCR case definitions Spere Handbook 2018 WHO Early warning alert and response in emergencies: an operational guide](#)

## **6. Main contacts**

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