

**Module:** Public Health Disaster Planning for Districts

**Organization:** East Africa HEALTH Alliance, 2009-2012

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# Epidemics



PD-GOV CDC

Compiled by the Eastern Africa Disaster Management Training Core Team  
Narrated by Dr. Roy William Mayega

What do you understand by the term 'Epidemic' or 'Outbreak' ?

## **Feed-back:**

An epidemic (or outbreak) is the occurrence of a disease in excess of what is expected in a particular community, for a particular groups of people, within a certain period of time

# Other Terms

- **Endemic** it refers to the constant presence of a disease or infectious agent within a given geographic area or population group. It is the usual or expected frequency of disease within a population
- **Pandemic** refers to an epidemic occurring simultaneously in multiple locations world-wide

# The example of your country

- Epidemics are the commonest Public Health emergency in our districts
- In Uganda for example, 6 outbreaks occurred in 8 months: Cholera, Meningitis, Hepatitis E, Marburg, Plague and Ebola
- Can you name 5 outbreaks that have occurred recently in your district?



 WisGuard Pics, flickr

# Common Epidemic prone diseases

- Diarrhoeal diseases including watery diarrhoea, Cholera, dysentery and typhoid are likely to occur in many districts
- Outbreaks of immunisable diseases like measles are common because immunisation coverage is low
- Malaria is endemic in most parts of Eastern Africa especially in low land areas; however outbreaks can occur in both low and highland areas



# Other Epidemic prone diseases

- Sexually Transmitted Infections including HIV/AIDS, Syphilis, Gonorrhoea etc
- Plague
- Hepatitis E
- Massive chemical poisoning (e.g. poisoning from illicit alcohol)

# Detecting an outbreak: Case Study 1

- Let a volunteer read Case Study 1 (Refer to the introductory part of this session in your manual)
- Questions for brainstorming:
  - *Is this a scenario that could occur in your district?*
  - *How did the district authorities establish that there is an outbreak?*

# Detecting an Outbreak

- **Obtain initial notification of the outbreak**
  - We receive information about the likelihood of an outbreak from:
    - The community
    - Cases coming to health centres
  - Local leaders
  - Every rumour must be investigated!

# Detecting an outbreak

- There must be a Case Definition for the diseases and it should be known by the health workers at all levels
- There must be an un-expected rise in new cases of these diseases beyond the expected level

# Examples of case definitions

- Take 5 minutes to read the case definitions for the following diseases as attached in the reader marked “Extension Activity 1.2: Standard Case Definitions for some Epidemic Prone Diseases”:
  - 1. Polio
  - 2. Measles
  - 3. Cholera
  - 4. Ebola
  - 5. Bacterial Meningitis
- NB: Case definitions may be changed according to the locality and the nature of the symptoms.

# Examples of case definitions

- The District RRT can develop a working case definition where there is no standard one depending on common symptoms and risk factors
- Can you suggest a case definition for the following?
  - An outbreak of sudden alcohol related illness and deaths in zone X
  - An outbreak of dysentery in camp Y
  - An outbreak of sudden food-related illness and deaths in a village Z

# Thresholds for detecting an outbreak

- Some epidemic prone diseases exist in the community even without an outbreak
  - Outbreaks occur when there is a sharp rise in cases (e.g. Malaria)

# Thresholds for detecting an outbreak

- Some epidemic prone diseases do not exist normally in the community
  - The occurrence of just one confirmed case is considered an outbreak (e.g. Cholera)



# Thresholds for detecting an outbreak

- Some epidemic prone diseases are rare and highly deadly when they occur
  - We do not have to wait for confirmation of a case
  - Just one suspected case is enough to consider an outbreak (e.g. Ebola)

# Thresholds for detecting an outbreak

- Therefore, thresholds differ from disease to disease
  - Cholera – One confirmed case
  - Ebola – One suspected case
  - Measles – A cluster of 5 or more suspected cases OR at least 3 confirmed positive cases in a catchment area of a health facility in a month
  - Malaria – A sharp seasonal rise in cases beyond the usual number of cases

# Case Study 2:

- Let a volunteer read Case Study 2 (Refer to the introductory part of this session in your manual)
- **Questions for general discussion:**
  - *How do you think the District and Ministry of Health officials went about investigating the outbreak?*
  - *What do you understand by the term ‘early response’*

# *Steps in investigating an outbreak*

In some of your districts, you have responded to outbreaks; think of a recent suspected outbreak that occurred in your district: what steps did you go through to respond to it?

# Step 1:

- **Initial response and confirmation of outbreak**
  - Assemble team and prepare for an initial field visit as soon as possible
  - Choose a working case definition and confirm cases
  - Find cases systematically
  - Confirm whether there is an outbreak by comparing occurrence of cases with thresholds
  - Describe who is affected, when and where?

# Step 2

- **Identify and manage cases**
  - Establish a district task force and allocate them their responsibilities
  - Use the working case definition to find cases
  - Set up a treatment centre

# Steps 3

- **Set up immediate control measures**
  - Treat cases to interrupt transmission and reduce deaths
  - Consider vaccination, disinfection and protective wear
  - Provide health education to those at risk
  - Communicate clearly to reduce panic

# Step 4

- **Address the resource gaps**
  - Ensure adequate medical supplies and logistics to handle cases
  - Look for additional resources to address the gaps
  - Contact Ministry of Health and partner agencies



# Step 5

- **Determine responsible factors and make a report**
  - Analyse available information to establish the risk factors
  - Prepare a report and disseminate it
  - Recommend and implement priority control measures



"The Salmonella probe widens" cartoon removed.

# Step 6

- **Surveillance: Be on your guard**
  - Strengthen existing system to be able to find cases actively
  - Learn from this outbreak to respond better in future
  - Put in place measures to prevent other outbreaks in future

# End!

# Additional Source Information

for more information see: <http://open.umich.edu/wiki/CitationPolicy>

Slide 3, Image 4: CDC, "Outbreak Investigation", <http://blogs.cdc.gov/publichealthmatters/2011/09/outbreak-investigation-a-cheat-sheet/>, Public Domain - Government

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Slide 25, Image 4: "The Salmonella probe widens" cartoon removed.