

Detection of Cholera Outbreaks



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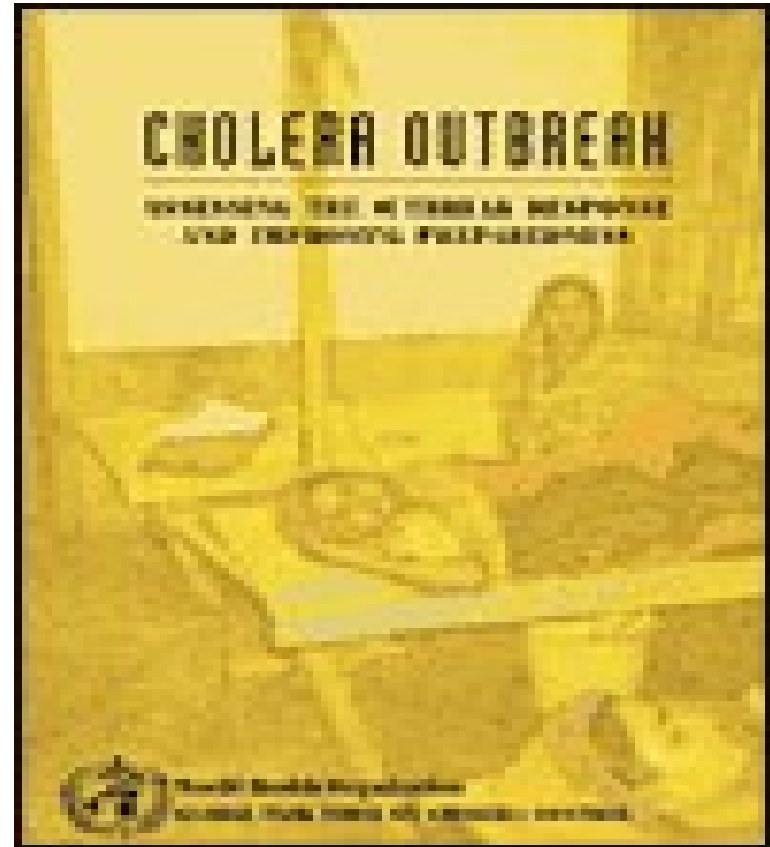


Overview

- Surveillance approaches to RAPIDLY identify an outbreak of cholera
- Laboratory testing for cholera
 - Test types
 - Timeline for each

14 Steps in Cholera Investigations*

- **Detection**
- **Confirmation**
- Response
- Information
- Treatment, Mortality
- Hygiene
- Community
- Water, Food, Sanitation
- Funeral, **Surveillance**
- Partners



*Source: *Cholera Outbreak: Assessing the Outbreak Response and Improving Preparedness*. (2004). WHO Global Task Force on Cholera Control.

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WHO Cholera Outbreak Manual

- Introduction
- 1. Outbreak detection & confirmation**
- 2. Organization of the response
- 3. Management of the information
- 4. Case management: treatment & reduction of mortality
- 5. Hygiene measures in health care facilities
- 6. Involvement of the community to limit the spread of the disease
- 7. Control of the environment: safe water & safe food
- 8. Control of the environment: sanitation
- 9. Funeral practices
- 10. Surveillance**
- 11. Involvement of international partners

Outbreak Detection

- First cases could be reported by any one of the following
 - Surveillance system
 - “Hot tip” in newspaper, on television
 - Information sources (local doctor, nurse, or infection control unit)
- Ensure communication channels for reporting cases are well established

Outbreak Detection

- First case(s) may present as
 - A local clinician from your country who traveled to an endemic area to help care for patients
 - Persons from an endemic area with recent travel to and from your country
 - Local person who recently had family visit from an endemic area

Outbreak Confirmation

- First cholera cases (or suspect cases) may be
 - Laboratory confirmed
 - Meet clinical case definition only
 - Epidemiologically linked to a person who meets the clinical case definition

Rapid Verification/Response Team

- When an outbreak is suspected, it may be important to send the following into the field to investigate:
 - Medical Dr
 - Microbiologist
 - Epidemiologist
 - Water & sanitation expert
 - Information, Education, Communication Expert

WHO Case Definition: Suspect Cholera Case

- In areas where there is no endemic cholera, a suspect case is a patient **aged > 5 years with severe dehydration or dies due to acute watery diarrhoea**
- In areas where there is a cholera epidemic, a patients aged > 5 years with acute water diarrhoea with or without vomiting

WHO Case Definition: Confirmed Cholera Case

- A case is confirmed when **Vibrio cholerae 01 or 0139 is isolated** from any patient with diarrhoea.
- Note: consider adopting case definitions that are appropriate for your population
 - Standardized within the region
 - Publicized with clinicians (worry that 1 person's suspect case = rice water stool while another = vomiting alone in a traveler from Haiti)

Other Surveillance Points to Consider

- What system is in place to immediately report suspected cases from health facilities to the MOH?
- How will deaths due to acute gastroenteritis be reported to the MOH?
 - Question: is this currently reported?
 - Timeliness of reports

Surveillance

- For suspect and/or confirmed cases, review data according to person, place, and time
- Person - # cases per age group
- Place – look at spot map of residence of cases
- Time – plot cases by week to identify if trend is increasing or decreasing

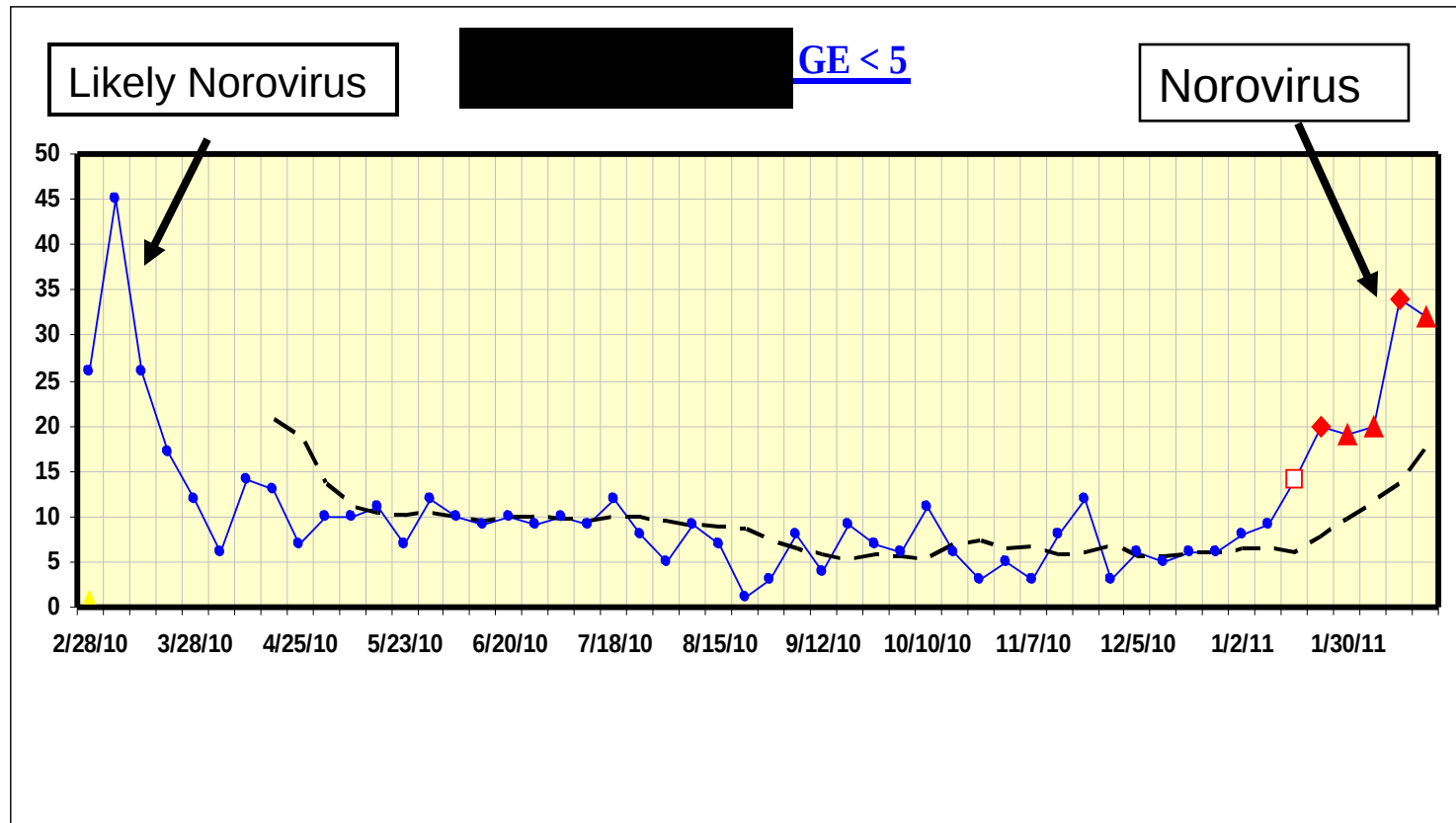
Surveillance

- Examine number of cases and deaths by
 - Area
 - Time period
 - Population subgroups
- Calculate attack rates (AR)
 - $AR = \# \text{ cases} / \text{population}$
- Calculate case fatality rates (CFR)
 - $CFR = \# \text{ case DEATHS} / \# \text{ cases}$

Syndromic Surveillance

- Health facilities report the # of people with syndromes each week
 - Gastroenteritis < 5 years and \geq 5 years
 - Fever & Respiratory < 5 years and \geq 5 years
 - Undifferentiated Fever < 5 years and \geq 5 years
 - Fever & Haemorrhagic
 - Fever & Neurologic
- Note increase or decrease each week for each country
- Could calculate rates per population served to narrow trends to certain areas

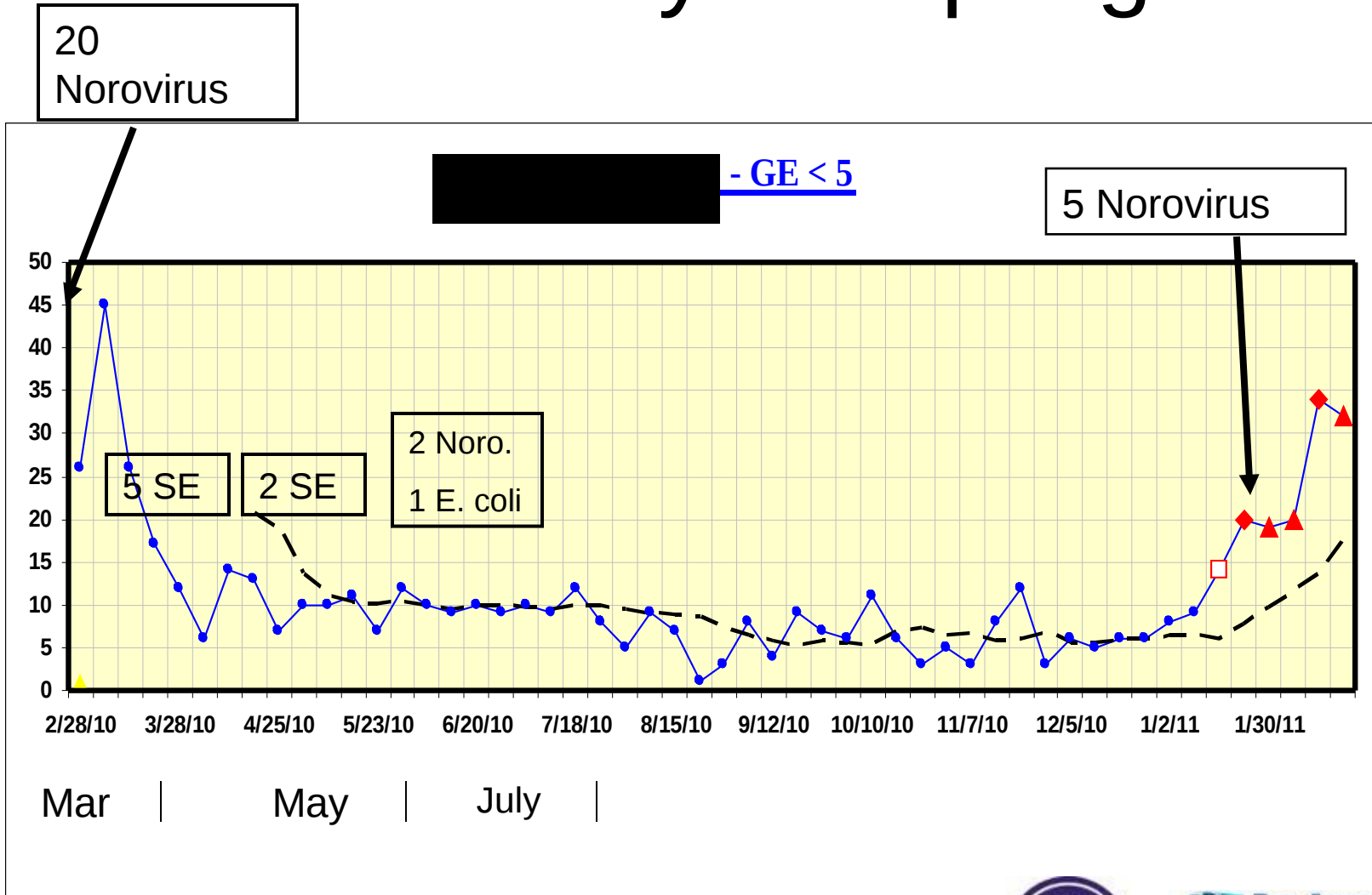
Syndromic Surveillance



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Laboratory Sampling



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Final Thoughts

- Current syndromic surveillance system yields important information – data should be monitored closely with enhancements
 - Publicize case definitions to clinicians
 - Request immediate notification to Health Department for all suspect cholera cases
 - Consult with CAREC Epidemiologists for background syndromic data
 - Consult with CAREC Laboratory to confirm initial cases

References

- CAREC www.carec.org
- WHO Cholera Outbreak Manual (last updated Nov 2011)
 - <http://www.who.int/cholera/publications/OutbreakAssessm>
- WHO cholera information page
 - <http://www.who.int/cholera/en/>
- PAHO cholera information page
 - http://new.paho.org/hq/index.php?option=com_content&task=blogcategory&id=3119&Itemid=3467

Thank you

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