Field Investigation of a Suspected Epidemic of Cholera
Deciding When to Conduct a Community Investigation

Conduct an investigation whenever a suspected epidemic is reported

Through formal surveillance system
- Endemic area - increase in cases over the baseline
- Non-endemic area - a single case

Through informal sources
- travelers
- newspapers, etc.
Conduct a Community Investigation

*In Non-Endemic Areas*

- In **non-endemic** areas, investigate whenever a **single patient** meets the case definition

- Illness is likely to be more widespread than the single reported case, since:
  - people with mild illness do not meet the case definition
  - some ill people may not attend health facilities
Suspected Case of Cholera

where cholera is not known to be present

Any person aged 5 years or more, who develops severe dehydration or dies from acute watery diarrhea
Conduct a Community Investigation

*In Areas Where Cholera is Endemic-1*

When there is an increase in the number of cases over the baseline
Conduct a Community Investigation
*In Areas Where Cholera is Endemic*

- Must distinguish between a true increase and normal reporting fluctuations - look for:
  - sudden, large increase
    - 50% over endemic rate
  - persistent increase
    - more than one week
  - localized reports
    - cases reported from one location
When Informed of a Suspected Epidemic

■ Review reports of cases
  – do they meet the case definition?
  – what is the attack rate?

■ Alert nearby health facilities
  – have health workers seen cases?
  – remind health workers of clinical presentation and case definitions

■ Send an investigation team to the field

■ Send specimens for laboratory confirmation
Members of the Investigation Team

- Epidemiologist and / or clinician
- Hygienist and / or health educator
- Driver, community representatives, interpreters, general helpers
Investigation Team Duties

- Verify reported cases
- Investigate new cases to establish diagnosis
- Obtain laboratory specimens
- Get and analyze information about cases
  - determine size and characteristics of outbreak
  - create investigation register which contains a line listing of ill persons, including identifying and risk factor information
Investigation Team Duties

- Identify high risk groups and possible sources of contamination
- Assess local ability to respond
- Implement simple, on-site control measures
- Provide emergency treatment supplies and training
- Make recommendations & report findings to decision makers
Line Listing

- Create a line-listing of ill persons
  - get information from clinic register & community investigation

- List
  - identifying information (name, age, address, etc.)
  - details of illness & outcome
  - potential risk factors
Line Listing
Potential Risk Factors

- For each ill person, record:
  - recent travel history
  - contact with persons with diarrhea
  - recent attendance at a funeral (note cause of death of deceased)
  - water sources for
    - drinking
    - bathing
      - cleaning kitchen utensils
  - food history (next slide)
  - occupation
Line-Listing
Food History

- Has the ill person eaten:
  - raw fruits or vegetables?
  - fruit drinks?
  - room-temperature food from street vendors?
  - cooked foods containing grains (rice, millet, sorghum, maize, etc.), eaten at room temperature?
  - undercooked fish or shellfish?
Line-Listing
Interpret the line-listing

- Review each category on listing to identify characteristics that many cases share
  - (e.g., using a certain source of water)

- Characteristics that are more common among cases, than among persons who are well, may identify high risk groups or sources of infection

- N.B. - A characteristic that is common
  a. may be associated with risk of illness OR
  b. may simply be common in the community
Analyze Data from Investigation

- Person
- Place
- Time

Analyze the data while still in the field, so that control measures can be directed toward any high risk groups or sources of infection
Analyze Data from Investigation
- Person-

- How many cases and deaths?
- What is the attack rate?
- What is the case fatality rate?
- Are there groups at high risk of becoming ill?
- Analyze line listing for significant risk factors
Analyze Data from Investigation
- Place-

- Where are cases occurring?
- Is the outbreak spreading?
  - Are there accessible health facilities in the affected areas?
- Show location of cases on maps
- Indicate attack rates in different areas
  - helps follow progress of disease
  - helps plan control measures
Analyze Data from Investigation
-Time -

- When did cases and deaths occur?
- Is the number of cases increasing or decreasing?
- Make graphs showing the number of cases over time (by date on onset)
Assess Local Ability to Respond

- **Case Management**
  - Are cases being managed properly?
  - Are there enough supplies?
  - Is there enough staff?
  - Are Temporary Treatment Centers needed?
Assess Local Ability to Respond

Community Control Measures

- Is enough safe water available?
- Is food prepared and handled properly?
- Are excreta disposed of safely?
- Is health education reaching everyone?
- Have ineffective control measures been avoided?