Case Definitions
and
Line Listings

FETP
Field Epidemiology
Training Program

October 2015

Learning Objectives

When you have completed this session, you will be able to:

- Determine whether a patient meets a case definition

- Classify a case as suspect, probable, or confirmed

- Put data into a line listing

What is a Case Definition?

Definition

A uniformly applied set of criteria for deciding whether to classify a person as having a particular disease, injury, or other health related condition

Used In

- Public health surveillance
- Outbreak investigations
- Epidemiologic studies

IDSR Case Definition for Chikungunya

- Suspected case:
  - Any person with acute onset of fever >38.5°C and severe arthralgia/arthritis not explained by other medical conditions

- Confirmed case:
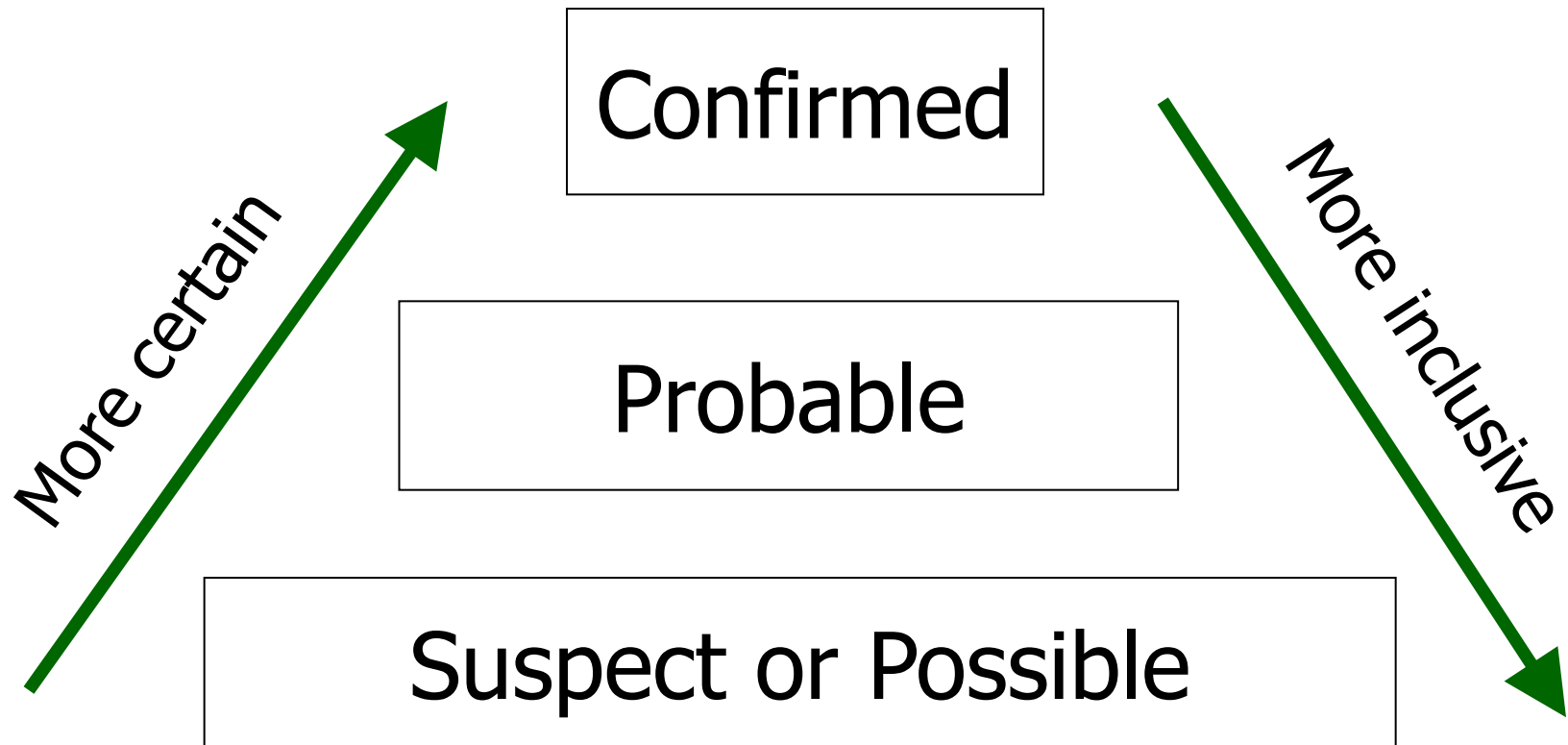 - A suspected case with laboratory confirmation

IDSR Case Definition for Cholera

- Suspected case:
  - In a patient age 5 years or more, severe dehydration or death from acute watery diarrhea

- Confirmed case:
  - A suspected case in which *Vibrio cholerae* O1 or O139 has been isolated in the stool

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Technical Guidelines for IDSR in the African Region, 2nd ed., 2010

IDSR Surveillance Case Definitions

- Most IDSR case definitions are "tiered" based on certainty of diagnosis (suspect vs. confirmed; possible-probable-confirmed)

- Available in print in *Technical Guidelines for IDSR in the African Region, 2nd ed.*

- Available online at
  http://www.cdc.gov/globalhealth/dphswd/idsr/pdf/Technical%20Guidelines/IDSR%20Technical%20Guidelines%202nd%20Edition_2010_English.pdf (Annex 1a)

- Individual countries can modify the case definition

3-Tiered Case Definitions

Confirmed

Probable

Suspect or Possible

More certain

More inclusive

Case Definitions

Possible Case Definitions for Hepatitis E

1. Acute onset of jaundice
2. Acute onset of jaundice OR fever
3. Acute onset of jaundice AND fever
4. Acute onset of jaundice AND fever, without other explanation (e.g., malaria)
5. IgM and IgG against HEV in serum or HEV RNA in serum or stool samples

Which definition is most inclusive (would include the largest number of cases)?

Which definition is most certain?

Which definition is most reasonable (best compromise)?

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Use the following case definition for measles (modified from WHO/IDSR) to determine which, if any, of the five patients meet the definition for suspected case of measles.

Suspected case

Any person with fever and maculopapular (non-vesicular) generalized rash and cough, coryza or conjunctivitis (red eyes)

Line Listings

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A Line Listing Organizes Your Data

Case no.	Date of Symptom Onset	Signs/Symptoms			Labs	Demographics	
		Diarrhea	Vomiting	Fever >37°C	Positive stool culture	Age	Gender
1	22/07/14	Y	Y	Not done	Y	19	M
2	25/07/14	N	Y	N	N	17	M
3	22/07/14	N	Y	N	Y	23	F
4	27/07/14	Y	?	?	Pending	18	?
5	23/07/14	N	Y	N	Y	21	M
6	21/07/14	Y	Y	Y	Not submitted	18	F

Line Listings

Line Listing: Cases of Anthrax Found Through Surveillance, U.S., 2001

Table 1. Demographic, clinical, and exposure characteristics of 22 cases of bioterrorism-related anthrax, United States, 2001

Case no.	Onset date, 2001	Date of anthrax diagnosis by lab testing	State[a]	Age (yrs)	Sex[a]	Race[a]	Occupation[a]	Case status[b]	Anthrax presentation[b]	Outcome	Diagnostic tests[a]
1	9/22	10/19	NY	31	F	W	NY Post employee	Suspect	Cutaneous	Alive	Serum IgG reactive
2	9/25	10/12	NY	38	F	W	NBC anchor assistant	Confirmed	Cutaneous	Alive	Skin biopsy IHC+ / serum IgG reactive
3	9/26	10/18	NJ	39	M	W	USPS machine mechanic	Suspect	Cutaneous	Alive	Serum IgG reactive
4	9/28	10/15	FL	73	M	W, H	AMI mailroom worker	Confirmed	Inhalational	Alive	Pleural biopsy IHC+ / serum IgG reactive
5	9/28	10/18	NJ	45	F	W	USPS mail carrier	Confirmed	Cutaneous	Alive	Skin biopsy IHC+ and PCR+ / serum IgG reac.
6	9/28	10/12	NY	23	F	W	NBC TV news intern	Suspect	Cutaneous	Alive	Serum IgG reactive
7	9/29	10/15	NY	0.6	M	W	Child of ABC employee	Confirmed	Cutaneous	Alive	Skin biopsy IHC+ / blood PCR+
8	9/30	10/4	FL	63	M	W	AMI photo editor	Confirmed	Inhalational	Dead	Cerebrospinal fluid culture +
9	10/1	10/18	NY	27	F	W	CBS anchor assistant	Confirmed	Cutaneous	Alive	Skin biopsy IHC+ / serum IgG reactive
10	10/14	10/19	PA	35	M	W	USPS mail processor	Confirmed	Cutaneous	Alive	Blood culture + / serum IgG reactive
11	10/14	10/28	NJ	56	F	B	USPS mail processor	Confirmed	Inhalational	Alive	Blood PCR+ / pleural fluid cytology IHC+ / serum IgG reactive
12	10/15	10/29	NJ	43	F	A	USPS mail processor	Confirmed	Inhalational	Alive	Pleural fluid IHC+ / bronchial biopsy IHC+ / serum IgG reactive

First 12 of 22

Line Listings

Jernigan et al. Anthrax, U.S. 2001. EID, 2002

Exercise 5: Develop a Line Listing

On your own:

1. Review the health center register.

2. Label the top row of the table with the data elements you think should be included in a line listing.

3. Make a line listing for cases of malaria or pneumonia.

Summary

- Case definitions are tools to ensure that cases are classified the same way

- In Africa, IDSR provides standard case definitions for all notifiable diseases and conditions

- Many case definitions have "tiers" that reflect the certainty of the diagnosis (e.g., suspect vs. confirmed)

- A line listing, either paper- or computer-based, is a convenient and helpful tool for organizing data from several cases

Workshop 1 Review Sheet

TOPIC	HOW I CAN USE IT AT MY JOB
Collecting Data	
Case Definitions	
Data Quality	
Summary Statistics	
Displaying Data	
Interpreting Data	
Taking Action	
Monitoring & Evaluation	
Other	

Case Definitions