Case definitions
Case definition

• Essential tool in a surveillance system
• Consistency in reporting
• Surveillance ≠ patient management
• For each health event
• Different health events under surveillance
  ✓ Mutually exclusive case definitions
Elements of a case definition

- Clinical
- Laboratory diagnosis (if relevant)
- Criteria for place
- Criteria for person
- Epidemiological link (if relevant)
Type of case definitions

• Health events:
  ✓ disease (rabies)
  ✓ syndrome (AFP)
  ✓ public health issue (AMR)
  ✓ environment (animal vector)

• Clinical / Laboratory

• Multilevels
  ✓ Suspected
  ✓ Probable
  ✓ Confirmed

• Specific / Sensitive
Case definitions should be

- Simple / Clear
- Adapted to
  - ✓ Staff qualification
  - ✓ Available diagnostic
- Stable
- Standardized
- Available at all reporting levels
  - ✓ Health posts / health centres
  - ✓ Hospitals
  - ✓ Laboratories
Levels

- Suspected case
  ✓ Clinical signs and symptoms
  ✓ No laboratory evidence

- Probable case
  ✓ Suspect case + supportive lab (eg: single high titre)
  ✓ Suspect case + epi link (eg: contact with confirmed case)

- Confirmed case
  ✓ Laboratory evidence

- Cholera
  ✓ Suspected: Acute watery diarrhoea
  ✓ Confirmed: Isolation of *Vibrio cholerae*
Sensitivity

- Proportion of true cases detected
  = reported true cases / total true cases

- Ability to detect outbreaks, to monitor changes
  = detected outbreaks / outbreaks occurred
Sensitivity vs Specificity

- Higher sensitivity
  ⇒ lower specificity

- Depends on the objective

- Complex emergency, high sensitivity
## Predictive value of positive test

<table>
<thead>
<tr>
<th></th>
<th>Sick</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>True +</td>
<td>False +</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>False -</td>
<td>True -</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total notified**

**Total sick**

**Total not sick**

**PVP** = True+ / Total notified

Proportion of reported cases that have the health event under surveillance
Predictive value of positive test

- PVP depends on
  - sensitivity
  - specificity
  - prevalence of the condition in the population

- Consequence of a low PVP
  - frequent "false-positive" report
  - inappropriate follow-up of non-cases
  - incorrect identification of epidemics (artifacts)
  - wastage of resources
  - inappropriate public concern (credibility)
WHO standards

- 48 CD syndromes, conditions
  - same format
- Available
  - english, french, spanish
  - Arabic
- To be adapted to country needs

www. who.int/emc/surveill/index.html
CD workshop Baghdad, nov 2002