WHO suggested outbreak case definition

From WER 23, 2021, 96, 238-40

Suspected case:

- Clinical presentation suggestive of plague:
  - sudden onset of fever, chills, headache, severe malaise, prostration, painful swelling of lymph nodes
  - cough with blood-stained sputum, chest pain, difficulty in breathing

  AND

- Epidemiological context suggesting possible exposure to plague:
  - Exposure to infected humans or animals
  - Residence in or travel to a known endemic focus within 10 days prior to onset of the disease

Probable case:

- A suspected case
  AND
  - ONE of the following:
• F1 antigen positive in bubo aspirate, sputum, blood, or post-mortem tissues by F1RDT or DFA
• Single anti-F1 serology positive without evidence of previous Y. pestis infection or vaccination
  ▪ Direct microscopy in a clinical sample, positive for gram-negative coccobacilli that display bipolar staining with Wayson or Giemsa stain
Confirmed case:

- A suspected case
- and
- AND at least ONE of the following criteria:
  - Isolation of Y. pestis from a clinical sample - must have appropriate colony morphology and be identified as Y. pestis based by at least two of the following:
    - phage lysis at 20-25ºC
    - biochemical profile
    - F1 antigen detection
  - Seroconversion or a 4-fold difference in anti-F1 antibody titer in paired serum samples drawn at least 2 weeks apart
  - Y. pestis DNA positive by species-specific PCR on either clinical sample or culture according to standard practice

DFA: direct fluorescence assay; DNA: deoxyribonucleic acid; F1RDT: rapid diagnostic test based on F1 antigen; PCR: polymerase chain reaction.

WHO surveillance case definition

- Integrated disease surveillance and response technical guidelines: Booklet Two: sections 1, 2, and 3, 3rd ed (Brazzaville: WHO Regional Office for Africa; 2019).

WHO other definitions

Definition of a contact of a case:


“Persons who have come in contact within a closed space (e.g., room, vehicle, barrack, jail) with the suspected pneumonic plague patient during the two days prior to the development of symptoms in the suspected pneumonic plague patient until two days after the suspected pneumonic plague patient has started appropriate antimicrobial...”

Encounters with plague: tracing and preventing illness (World Health Organization; 2017)

Definition of a Not a case /discarded case

Suspected case AND either:

- at least TWO of the following laboratory tests (F1RDT, DFA against F1 antigen, direct microscopy, convalescent serology, culture, PCR) are conducted AND they are negative

OR

- When no confirmatory tests can be performed, TWO negative F1RDT on two clinical specimens collected with 24 hours interval

Data collection tools
• Case investigation form: Not available.
• Line list: In: Chapter 8: Managing an outbreak in *Operational guidelines on plague surveillance, diagnosis, prevention and control* (New Delhi: WHO Regional Office for South-East Asia; 2010), p. 57.
• Electronic tools: Not available.

**Laboratory confirmation**

• Chapter 5: Laboratory in surveillance and diagnosis: *Operational guidelines on plague surveillance, diagnosis, prevention and control* (Regional Office of South-East Asia: World Health Organisation; 2010) pg. 24-33
• Use of rapid diagnostic test based on the F1 antigen (F1RDT) for plague: *WHO guidelines for plague management: revised recommendations for the use of rapid diagnostic tests, fluoroquinolones for case management and personal protective equipment for prevention of post-mortem transmission* (Geneva: World Health Organisation; 2021)

**Response tools and resources**

• *Operational guidelines on plague surveillance, diagnosis, prevention and control* (New Delhi: WHO Regional Office for South-East Asia; 2010)
• Use of fluoroquinolones and doxycycline in management of plague: *WHO guidelines for plague management: revised recommendations for the use of rapid diagnostic tests, fluoroquinolones for case management and personal protective equipment for prevention of post-mortem transmission* (Geneva: World Health Organisation; 2021)

**Training**


**Other resources**