

**A95.9 Yellow fever**Case report universally required by *International Health Regulations***RATIONALE FOR SURVEILLANCE**

This mosquito-borne virus disease occurs in tropical regions of Africa and South America and is maintained by sylvatic transmission of virus involving forest-dwelling mosquitoes and monkeys. Transmission to humans may occur in forest transition zones and may subsequently enter an urban cycle through *Aedes aegypti*. Many cities are now threatened with epidemics as yellow fever is undergoing a major resurgence especially in the African region. Surveillance data allow for monitoring disease incidence, prediction and early detection of outbreaks and monitoring of control measures.

Strategies for yellow fever control include control of *Ae. aegypti* in urban centres, infant immunization, vaccination campaigns, outbreak prevention, epidemic detection and control.

Case reporting is universally required by *International Health Regulations*.

**RECOMMENDED CASE DEFINITION****Clinical description**

Characterized by acute onset of fever followed by jaundice within 2 weeks of onset of first symptoms. Haemorrhagic manifestations and signs of renal failure may occur.

**Laboratory criteria for diagnosis**

Isolation of yellow fever virus, **or**

Presence of yellow fever specific IgM or a four-fold or greater rise in serum IgG levels in paired sera (acute and convalescent) **or**

Positive post-mortem liver histopathology **or**

Detection of yellow fever antigen in tissues by immunohistochemistry **or**

Detection of yellow fever virus genomic sequences in blood or organs by PCR

**Case classification**

**Suspected:** A case that is compatible with the clinical description.

**Probable:** Not applicable.

**Confirmed:** A suspected case that is laboratory-confirmed (national reference lab) or epidemiologically linked to a confirmed case or outbreak.

**RECOMMENDED TYPES OF SURVEILLANCE:**

Routine weekly / monthly reporting of aggregated data on suspected and confirmed cases from peripheral to intermediate and central level. Zero reporting required at all levels.

Immediate reporting of suspected cases from peripheral to intermediate and central levels.

All suspected cases and outbreaks must be investigated immediately and laboratory-confirmed.

Case-based surveillance must be implemented in countries identified by WHO as being at high risk for yellow fever. Specimens must be collected to confirm an epidemic as rapidly as possible. Priority is placed on collecting specimens from new or neighbouring areas (other than the area where the epidemic is already confirmed).

**International:** Mandatory reporting of all suspected and confirmed cases within 24 hours to WHO.

**RECOMMENDED MINIMUM DATA ELEMENTS****Aggregated data for reporting**

Number of cases  
 Doses of yellow fever vaccine administered to infants, by geographical area  
 Completeness / timeliness of monthly reports

**Case-based data for reporting and investigation**

Unique identifier  
 Geographical area name (district and province)  
 Date of birth  
 Date of onset  
 Date of notification  
 Date of investigation  
 Ever received a dose of yellow fever vaccine? (1=yes; 2=no; 9=unknown)  
 Date acute blood specimen received in laboratory  
 Date convalescent blood specimen received in laboratory (if applicable)  
 Date histopathology specimen collected (if applicable)  
 Depending on which laboratory tests used:

- IgM (1=positive; 2=negative; 3=no specimen processed; 9=unknown)
- virus isolation (1=positive; 2=negative; 3=no specimen processed; 9=unknown)
- IgG (4-fold rise) (1=positive; 2=negative; 3=no specimen processed; 9=unknown)
- liver

Date IgM results first sent  
 Date virus isolation results first sent  
 Final classification  
 Date histopathology report first sent  
 Date convalescent blood specimen received in laboratory (if applicable)  
 Date histopathology specimen collected  
 Date IgG results first sent  
 Final classification (1=confirmed; 2=suspected; 4=discarded)  
 Final outcome (1=alive; 2=dead; 9=unknown)

**RECOMMENDED DATA ANALYSES, PRESENTATION, REPORTS****Aggregated data**

- Incidence rate by month, year, and geographic area
- Yellow fever vaccine coverage by year and geographic area
- Completeness / timeliness of monthly reporting

**Case-based data** same as aggregated data plus the following:

- Confirmed cases by age group, immunization status, geographic area, month, year
- Case-fatality rate
- Final classification of all suspected cases

**PERFORMANCE INDICATORS OF SURVEILLANCE QUALITY TARGET**

Completeness of monthly reporting	<b>target</b> ≥90%
Percent of all suspect cases for which specimens were collected	≥50%*
If IgM test is done: Laboratory results sent ≤3 days of receipt of acute blood specimen	≥80%
If virus isolation is done: results sent ≤ 21 days of receipt of acute blood specimen	≥80%
If IgG test is done: results sent ≤3 days of receipt of convalescent blood specimen	≥80%
*Target during non-outbreak periods. Once an outbreak is confirmed, the priority is to detect outbreaks in neighbouring areas and confirm them in the laboratory.	