

**A90, A91 Dengue fever (A90)  
including Dengue haemorrhagic fever (DHF)  
& Dengue shock syndrome (DSS, A91)**

**RATIONALE FOR SURVEILLANCE**

Dengue fever, including DHF and DSS, is the most significant arthropod-borne viral disease worldwide. It occurs in over 100 countries and territories and threatens the health of over 2 500 million people in tropical and subtropical regions. Dengue fever is a severe disease with high epidemic potential. An estimated 500 000 patients, 90% of them below the age of 15, are hospitalized with DHF / DSS every year. WHO aims to accelerate the final development of an attenuated dengue vaccine.

**RECOMMENDED CASE DEFINITION**

**DENGUE FEVER**

**Clinical description**

An acute febrile illness of 2-7 days duration with 2 or more of the following: headache, retro-orbital pain, myalgia, arthralgia, rash, haemorrhagic manifestations, leucopenia.

**Laboratory criteria for diagnosis**

**One or more** of the following:

- Isolation of the dengue virus from serum, plasma, leukocytes, or autopsy samples
- Demonstration of a fourfold or greater change in reciprocal IgG or IgM antibody titres to one or more dengue virus antigens in paired serum samples
- Demonstration of dengue virus antigen in autopsy tissue by immunohistochemistry or immunofluorescence or in serum samples by EIA
- Detection of viral genomic sequences in autopsy tissue, serum or CSF samples by polymerase chain reaction (PCR)

**Case classification**

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

**Probable:** A case compatible with the clinical description with **one or more** of the following:

- supportive serology (reciprocal haemagglutination-inhibition antibody titre  $\geq 1280$ , comparable IgG EIA titre or positive IgM antibody test in late acute or convalescent-phase serum specimen).
- occurrence at same location and time as other confirmed cases of dengue fever.

**Confirmed:** A case compatible with the clinical description, laboratory-confirmed.

**DENGUE HAEMORRHAGIC FEVER**

A probable or confirmed case of dengue **and**

Haemorrhagic tendencies evidenced by **one or more of the following:**

- Positive tourniquet test
- Petechiae, ecchymoses or purpura
- Bleeding: mucosa, gastrointestinal tract, injection sites or other
- Haematemesis or melaena

**And** thrombocytopenia (100 000 cells or less per  $\text{mm}^3$ )

**And** evidence of plasma leakage due to increased vascular permeability, manifested by one or more of the following:

- $\geq 20\%$  rise in average haematocrit for age and sex
- $\geq 20\%$  drop in haematocrit following volume replacement treatment compared to baseline
- signs of plasma leakage (pleural effusion, ascites, hypoproteinaemia)

## DENGUE SHOCK SYNDROME

All the above criteria, **plus** evidence of circulatory failure manifested by rapid and weak pulse, and narrow pulse pressure ( $\leq 20$  mm Hg) or hypotension for age, cold, clammy skin and altered mental status.

## RECOMMENDED TYPES OF SURVEILLANCE

### **Areas where no dengue transmission has been detected but where *Aedes aegypti* occurs**

Surveillance of suspected cases with investigation of clusters of suspected cases for dengue.

### **Countries where disease is endemic with seasonal variations in transmission, and areas where epidemic dengue occurs**

Routine weekly / monthly reporting of aggregated data of suspected, probable and confirmed cases from peripheral to intermediate and central levels.

## RECOMMENDED MINIMUM DATA ELEMENTS

### **Case-based data at the peripheral level**

- Case classification (suspected / probable / confirmed), serotype, DHF / DSS present (Y/N)
- Unique identifier, name of patient, age, sex, geographical information
- Date of onset
- Hospitalized (Y/N)
- Outcome
- Travel history during past 2 weeks

### **Aggregated data for reporting**

- Number of cases by age group
- Number of confirmed (and serotype)
- Number of DHF / DSS cases by age group
- Number of hospitalizations and deaths

## RECOMMENDED DATA ANALYSES, PRESENTATION, REPORTS

Percentage of DHF / DSS cases and of hospitalizations.  
Case-fatality rate.

## PRINCIPAL USES OF DATA FOR DECISION-MAKING

- Target high risk areas for intervention
- Monitor changes in serotype and rate of DHF / DSS
- Monitor trends in endemic disease or re-emergence of disease

## SPECIAL ASPECTS

Parallel to disease surveillance, vector surveillance of both larval and adult populations of *Ae. aegypti* and *Ae. albopictus*.

## CONTACT

### **Regional Offices**

See Regional Communicable Disease contacts on pages 18-23

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