



DENGUE

1. **Agent:** Dengue 1, 2, 3, and 4, four serologically related viruses.
2. **Identification:**
 - a. **Symptoms:** Acute onset with fever, headache, body ache and often a maculopapular rash. Illness generally is self-limited and lasts about one week. Minor or severe bleeding manifestations occasionally occur. Dengue hemorrhagic fever, also called dengue shock syndrome, is a distinct clinical entity seen mostly in children with plasma leakage as its major finding. A platelet count < 100,000 and evidence of hemoconcentration are required for the diagnosis. Dengue shock syndrome frequently is fatal unless supportive treatment is given.
 - b. **Differential Diagnosis:** Dengue is easily confused in non-epidemic situations with common viral illnesses, e.g., enterovirus infection, influenza, measles, and rubella. Dengue hemorrhagic fever (dengue shock syndrome) may resemble bacterial sepsis, e.g., meningococemia or rickettsial disease.
 - c. **Diagnosis:** Virus may be isolated from acute serum or detected by PCR; demonstration of a 4-fold antibody rise by testing paired sera (EIA hemagglutination inhibition, complement fixation) may also confirm the diagnosis.
3. **Incubation:** Usually 4-7 days, range 3-14 days.
4. **Reservoir:** Humans and mosquitoes, and perhaps monkeys in the jungle of the Malay Peninsula.
5. **Source:** The mosquito becomes infectious 8-12 days after the viremic blood meal and remains so for life.
6. **Transmission:** Dengue virus is transmitted by the bite of infected *Aedes* mosquitoes, principally *Aedes aegypti*. *A. albopictus*, recently introduced to the U.S. from Asia,

has the potential to become an important vector in this hemisphere.

7. **Communicability:** Not directly communicable person to person. Patients are usually infective for mosquitoes from shortly before to the end of the viremic period, an average of about 3-5 days.
8. **Specific Treatment:** None. Aspirin may exacerbate bleeding symptoms. Patients with dengue shock syndrome should be hospitalized and treated vigorously with fluid support.
9. **Immunity:** Permanent immunity for a specific virus, but infection with other serotypes can occur.

REPORTING PROCEDURES

1. Report any cases or suspected cases by phone immediately (Title 17, Section 2500, *California Code of Regulations*).
2. Telephone report of case or suspect case is required to ACDC and Morbidity Unit.
3. ACDC reviews laboratory data before district investigation.
4. **Report Forms:**

DENGUE CASE INVESTIGATION DHS 8670 (11/03).

DENGUE CASE INVESTIGATION REPORT—Spanish version (CDC 56.31B, 9/02).

5. **Epidemiologic Data:**
 - a. Place of residence (be specific with regard to address, city and state) and travel history during the 2 weeks prior to onset of illness. A history of travel is important in interpreting results of serologic test.
 - b. History of mosquito bites, noting time of day of bites. (*Aedes* mosquitoes are daytime biters.)



- c. Additional cases among household members, neighbors, fellow travelers.
- d. Previous dengue infections, and yellow fever and Japanese B encephalitis vaccination status.

CONTROL OF CASE, CONTACTS & CARRIERS

Investigate within 24 hours so that information can be shared with appropriate state or international vector control agencies. Telephone ACDC.

CASE:

Precautions: Patients should be kept in a screened room for at least 5 days after onset.

CONTACTS: No specific measures other than case finding and education. No vaccine is presently available.

PREVENTION-EDUCATION

1. Reduce exposure to mosquitoes by using protective clothing, repellents, and avoid outdoor exposure at dawn and dusk.
2. Remove water on a regular basis from potential mosquito larval habitats, e.g., potted plants, old tires and pet watering dishes.

DIAGNOSTIC PROCEDURES

Clinical and epidemiologic history is required to aid the laboratory in test selections.

1. **Serology:** Paired acute and convalescent venous or capillary sera required.

Collection: serum separator tube.

Test Requisition and Report Form H-3021 or online request if electronically linked to the Public Health Laboratory.

Procedure: Collect first (acute) blood as early as possible, preferably within 7 days after onset of rash. Collect second (convalescent) blood 10-14 days after first blood is drawn. Label all specimens with name of patient.

Storage: Refrigerate if necessary. Send each specimen to the Public Health Laboratory as soon as possible.

Amount: 8-10 ml.

2. **Virus Identification:** Blood samples collected within the first 5 days of illness must be transported immediately under refrigeration to the Public Health Laboratory for shipment to the State

Collection: Red top tube.

Laboratory Form: Test Requisition and Report Form H-3021 or online request if electronically linked to the Public Health Laboratory.

Storage: Refrigerate immediately. If unable to deliver within 48 hours, centrifuge and freeze serum (-70°C is preferable). Keep frozen until delivered to Public Health Laboratory.