



Philadelphia Department of Public Health
Division of Disease Control

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Health Notification

Dengue Fever Among Travelers

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Since November 2006, four new cases of dengue fever (DF) have been reported to the Philadelphia Department of Public Health (PDPH). None of the cases were epidemiologically linked. Cases occurred following travel to the Dominican Republic, Haiti, India, or Mozambique. DF is a viral disease transmitted by *Aedes* mosquitoes, usually *Ae. aegypti*. The spectrum of illness ranges from a nonspecific viral illness to severe, sometimes fatal hemorrhagic disease. In recent years, DF has become the most important human arboviral infection, and is now endemic in most tropical countries of Asia, South Pacific, the Caribbean, the Americas and Africa. Since PDPH typically receives one DF case report per year, four cases represent a notable increase.

This Health Notification is being issued to advise healthcare professionals of the increasing risk of DF. Providers should be alert to the possibility of infection in returning travelers, and should promote risk reduction activities in persons visiting endemic areas, particularly during rainy seasons.

Clinical Presentation

- Dengue fever is typically characterized by sudden onset of high fevers, severe frontal headache, and joint and muscle pain, after an incubation period of 4-7 days (range from 3-14 days).
- Many patients have nausea, vomiting, and rash. The rash appears 3-5 days after onset of fever and can spread from the torso to the arms, legs, and face.
- The disease is usually self-limited, although convalescence may be prolonged. Many cases present as a nonspecific viral syndrome, or even subclinical infection, but dengue may also present as a severe, sometimes fatal disease, with hemorrhagic manifestations and hypotension (dengue hemorrhagic fever/dengue shock syndrome).

Diagnosis

- Physicians should consider dengue in the differential diagnosis of all patients who have fever and a history of travel to a tropical area within 2 weeks of onset of symptoms.

Laboratory Tests

- Commercial tests are available for serologic diagnosis of DF, but their results must be interpreted with care. Sensitivity and specificity vary among manufacturers, laboratories, and over time. IgM positivity indicates a recent dengue infection, but IgG positivity may only indicate infection at an indeterminate time in the past. In addition, either IgM or IgG positivity may result from cross-reactivity with anti-West Nile, yellow fever, Japanese encephalitis, and other flavivirus antibodies.

- Virus may be identified in serum obtained in the first week of illness using PCR technology.
- Testing for DF is available at the Pennsylvania Department of Health Bureau of Laboratories, and at the Centers for Disease Control and Prevention's Dengue Branch. PDPH can facilitate access to these tests; call 215-685-6741 to obtain assistance. Serum samples should be accompanied by clinical and epidemiologic information, including the date of disease onset, the date of collection of the sample, and a detailed recent travel history.

Prevention Recommendations for Travelers

- Mosquitoes that transmit DF bite during the day. Use an insect repellent on exposed skin to repel mosquitoes, ticks, fleas and other arthropods. EPA-registered repellents include products containing DEET (N,N-diethylmetatoluamide) and picaridin (KBR 3023). DEET concentrations of 30% to 50% are effective for several hours. Picaridin, available at 7% and 15 % concentrations, needs more frequent application.
- DEET formulations as high as 50% are recommended for both adults and children over 2 months of age. Protect infants less than 2 months of age by using a carrier draped with mosquito netting with an elastic edge for a tight fit.
- When using sunscreen, apply sunscreen first and then repellent. Repellent should be washed off at the end of the day before going to bed.
- Other options include wearing protective clothing, such as long sleeves, long pants, etc.
- Stay in air-conditioned or well-screened housing, and/ or sleep under an insecticide treated bed net. Bed nets should be tucked under mattresses and can be sprayed with a repellent if not already treated with an insecticide.

All arboviral disease is reportable in Philadelphia. If you have questions about the information in this advisory, please contact the Division of Disease Control at 215-685-6741. After-hours, please call 215-686-1776 and ask to be connected to the person on-call for the Division of Disease Control. Additional information about dengue fever can be found at www.cdc.gov