



**JULY 26, 2010**

## **HEALTH ADVISORY**

### **Increased Potential for Dengue Infection in Travelers Returning from International and Select Domestic Areas**

*\*The following information was adapted from an official CDC Health Advisory*

**Summary:** Dengue virus transmission has been increasing to epidemic levels in many parts of the tropics and subtropics. Travelers to these areas are at risk of acquiring dengue virus and developing dengue fever (DF), or the severe form of the disease, dengue hemorrhagic fever (DHF). The Centers for Disease Control and Prevention (CDC) strongly advises that health-care providers in the United States should (1) consider DF and DHF when evaluating patients returning from dengue-affected areas (both domestic and abroad) who present with an acute febrile illness within two weeks of their return, (2) submit serum specimens for appropriate laboratory testing, and (3) report all presumptive and confirmed cases of DF and DHF to their state health department.

#### **Background**

Dengue transmission has been increasing to epidemic levels in many parts of the tropics and subtropics where it had previously been absent or mild. Dengue-affected areas are widely distributed throughout Africa, Asia, the Pacific, the Americas and the Caribbean. This calendar year, more than 50 countries have reported evidence of dengue transmission, including 17 countries in Asia, 17 in the Americas, 10 in Africa, seven in the Caribbean and one in the Pacific. With an extensive dengue outbreak occurring in Puerto Rico and evidence of continued transmission in Key West, Florida, travel to certain domestic locations also may pose a risk for the traveler. The mosquitoes known to transmit dengue virus, *Aedes aegypti* and *Aedes albopictus*, are present throughout much of the southeastern United States, and infected returning travelers may pose a risk for initiating local transmission.

#### **Symptoms**

Dengue virus infections can manifest as a subclinical infection or DF and may develop into potentially fatal DHF. Dengue fever is a self-limited febrile illness that is characterized by high fever plus two or more of the following: headache, retro-orbital pain, joint pain, muscle or bone pain, rash, mild hemorrhagic manifestations (e.g., bleeding of nose or gums, petechiae, or easy bruising), and leukopenia. Because the incubation period for dengue infection ranges from three to 14 days, the patient may not present with illness until after returning from travel. Clinical management of DF consists of symptomatic treatment (avoid aspirin, NSAIDs and corticosteroids, as they can promote hemorrhage) and monitoring for the development of severe disease at or around the time of defervescence. A small proportion of patients develop DHF, which is characterized by presence of resolving fever or a recent history of fever, lasting two to seven days, any hemorrhagic manifestation, thrombocytopenia (platelet count  $\leq 100,000/\text{mm}^3$ ), and increased vascular permeability, evidenced by hemoconcentration, hypoalbuminemia or

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hypoproteinemia, ascites, or pleural effusion. Dengue hemorrhagic fever can result in circulatory instability or shock. Adequate management requires timely recognition and hospitalization, close monitoring of hemodynamic status, and judicious administration of intravascular fluids. There is no antiviral drug or vaccine against the dengue virus. Updated guidelines for the management of dengue can be found at [http://whqlibdoc.who.int/publications/2009/9789241547871\\_eng.pdf](http://whqlibdoc.who.int/publications/2009/9789241547871_eng.pdf).

**Recommendations**

- Health-care providers seeing patients with dengue-like illness who have recently traveled to Puerto Rico, Key West, Florida, or international dengue-affected areas (see world distribution of dengue maps at <http://wwwnc.cdc.gov/travel/yellowbook/2010/chapter-5/dengue-fever-dengue-hemorrhagic-fever.aspx>) should report cases to the state health department and send specimens for laboratory testing. DF and DHF are now nationally notifiable conditions in the United States. Please remember that apart from individuals traveling for tourism, individuals responding to international disasters (e.g., Haiti earthquake), participating in medical or religious missionary work, and visiting friends and relatives are often returning from dengue-affected areas and should be evaluated for dengue infection if they present with dengue-like illness during or after their travel.
- Reporting to state public health officials and consideration of hospitalization to initiate supportive care should not be delayed pending test results. Reporting suspected dengue cases will trigger a public health investigation and the implementation of prevention measures.
- **Specimens from patients with acute febrile illness, who returned from dengue-affected areas within the past 14 days, should be submitted for testing. The North Dakota Department of Health is asking providers to submit specimens to the department’s Division of Laboratory Services, which will then send the specimens to the CDC laboratory in San Juan. This will help to ensure the correct paperwork is completed, which will decrease the chance of delayed testing.**

Samples should be sent to:  
 North Dakota Department of Health  
 Division of Laboratory Services – Microbiology  
 2635 E. Main Avenue  
 Bismarck, ND 58506

- A completed CDC Dengue Case Investigation Form ([http://www.cdc.gov/Dengue/resources/DCIF\\_English\\_ColorSept1508\\_FINAL\\_.pdf](http://www.cdc.gov/Dengue/resources/DCIF_English_ColorSept1508_FINAL_.pdf)) must accompany the specimens for the appropriate testing to be performed.

Whenever possible, submit paired acute and convalescent specimens (2 ml of centrifuged serum). Accuracy is increased when both acute and convalescent specimens are available for testing. But providers should not wait and should submit acute specimens as soon as available; a convalescent specimen can be submitted when available.

<u>Type of specimen</u>	<u>Interval since onset of symptoms</u>	<u>Type of Analysis</u>
Acute	until day 5	RT-PCR for dengue virus
Convalescent	6 to 30 days	ELISA for dengue IgM

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Instructions for preparing and delivering specimens for dengue testing are available at [www.cdc.gov/Dengue/resources/TestpolEng\\_2.pdf](http://www.cdc.gov/Dengue/resources/TestpolEng_2.pdf). Additional information about dengue is available at: [www.cdc.gov/dengue](http://www.cdc.gov/dengue).

For more information, contact the North Dakota Department of Health, Division of Disease Control, at 800.472.2180 or 701.328.2378.

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*Categories of Health Alert messages:*

- *Health Alert conveys the highest level of importance; warrants immediate action or attention.*
- *Health Advisory provides important information for a specific incident or situation; may not require immediate action.*
- *Health Update provides updated information regarding an incident or situation; no immediate action necessary.*
- *Health Information provides general information that is not necessarily considered to be of an emergent nature.*

*This message is being sent to local public health units, clinics, hospitals, physicians, tribal health, North Dakota Nurses Association, North Dakota Long Term Care Association, North Dakota Healthcare Association, North Dakota Medical Association, and hospital public information officers.*