Health Advisory:

Increased Potential for Dengue Infection in Travelers Returning from International and Selected Domestic Areas

July 23, 2010

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The Missouri Department of Health & Senior Services (DHSS) is now using 4 types of documents to provide important information to medical and public health professionals, and to other interested persons:

Health Alerts convey information of the highest level of importance which warrants immediate action or attention from Missouri health providers, emergency responders, public health agencies, and/or the public.

Health Advisories provide important information for a specific incident or situation, including that impacting neighboring states; may not require immediate action.

Health Guidances contain comprehensive information pertaining to a particular disease or condition, and include recommendations, guidelines, etc. endorsed by DHSS.

Health Updates provide new or updated information on an incident or situation; can also provide information to update a previously sent Health Alert, Health Advisory, or Health Guidance; unlikely to require immediate action.

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Health Advisory
July 23, 2010

FROM: **MARGARET T. DONNELLY**
DIRECTOR

SUBJECT: **Increased Potential for Dengue Infection in Travelers Returning from International and Selected Domestic Areas**

On July 22, 2010, the Centers for Disease Control and Prevention (CDC) issued a Health Advisory entitled "Increased Potential for Dengue Infection in Travelers Returning from International and Selected Domestic Areas." Pertinent sections of this document are reproduced below along with additional information for Missouri healthcare providers.

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). CDC, and the Missouri Department of Health and Senior Services (DHSS), strongly advise that health care providers 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 as described below, and 3) report all presumptive and confirmed cases of DF and DHF to their local public health agency (LPHA), or to DHSS at 573/751-6113 or 800/392-0272 (24/7).

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, 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 may also 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. DF 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 3 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 2–7 days, any hemorrhagic manifestation, thrombocytopenia (platelet count $\leq$100,000/mm^3), and increased vascular permeability, evidenced by hemoconcentration, hypoalbuminemia or hypoproteinemia, ascites, or pleural effusion. DHF 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.

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 their LPHA or to DHSS, 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 local 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. **Report cases to your LPHA (contact information for all LPHAs can be found at:** http://www.dhss.mo.gov/LPHA/PublicHealthAgencies.html**), or to DHSS' Bureau of Communicable Disease Control and Prevention at 573/751-6113 or 800/392-0272 (24/7).**

- Specimens from patients with acute febrile illness who returned from dengue-affected areas within the past 14 days should be submitted for testing.

- Specimens for dengue testing may be sent to the Missouri State Public Health Laboratory (MSPHL) Virology Unit, where they will then be forwarded to CDC for testing. **Please contact MSPHL for shipping instructions at 573-751-3334.** Instructions for sample processing can be found at http://www.cdc.gov/Dengue/resources/TestpolEng_2.pdf. A completed CDC Dengue Case Investigation Form must accompany the specimens for the appropriate testing to be performed. This form is found at http://www.cdc.gov/Dengue/resources/DCIF_English_ColorSept1508_FINAL_.pdf.

- Healthcare providers may also submit specimens directly to the CDC laboratory in San Juan, Puerto Rico.

  Centers for Disease Control and Prevention
  Dengue Branch
  1324 Cañada Street
  San Juan, Puerto Rico 00920
  Tel: 787/706-2399; Fax: 787/706-2496

  CDC offers free diagnostic testing for health care providers and confirmatory dengue testing for health department and private laboratories.

  Instructions for preparing and delivering specimens for dengue testing to the CDC Dengue Branch are available at www.cdc.gov/Dengue/resources/TestpolEng_2.pdf. A completed CDC Dengue Case Investigation Form must accompany the specimens for the appropriate testing to be performed. This form is found at http://www.cdc.gov/Dengue/resources/DCIF_English_ColorSept1508_FINAL_.pdf.

- 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.

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

For More Information

- Questions should be directed to DHSS' Office of Veterinary Public Health at 573/751-6113.
- Additional information about dengue is available at: www.cdc.gov/dengue.
- CDC has a toll-free information line, 800-CDC-INFO (800-232-4636) TTY: (888) 232-6348, available 24/7.