disease prevention news

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Mosquitoes—More Than Just Pests

It's that time of year again when the balmy Texas weather brings out those pesky mosquitoes. With the rains many areas of the state have had recently, the conditions for mosquito breeding are likely to be especially favorable. Arboviral surveillance commenced this year in May, and activity was first detected in early June. This report provides summaries of recent human Saint Louis encephalitis (SLE) and dengue cases reported in Texas, as well as recent East Texas and Louisiana outbreaks of eastern equine encephalomyelitis (EEE) in horses and emus.

Mosquito-borne viral infections are a continuing public health threat in Texas. While explosive outbreaks of these viral diseases receive the most attention, scattered cases occur each year.

St. Louis Encephalitis

Four confirmed cases of SLE were reported to the Texas Department of Health (TDH) in 1998. Onset of all 4 cases was in August, and all 4 patients resided in Harris County.

The 4 patients' ages ranged from 31 to 50 years; 3 were men and 1 was a woman. Their symptoms included fever, headache, nuchal rigidity, nausea and vomiting, and myalgias. All 4 patients were hospitalized. Although none of the patients died, 2 had sequelae. In each case, the individual's employment or lifestyle activities placed them at heightened risk for *Culex* sp. mosquito bites. Their activities took place outdoors in the evening and none of the individuals used personal protective measures against mosquito bites.

The Harris County Health Department (HCHD) identified 22 *Culex* sp. mosquito pools that tested positive for SLE. HCHD epidemiologists reviewed all aseptic meningitis cases reported in Harris County at that time to rule out potentially unrecognized SLE cases.

Eastern Equine Encephalitis

In May of this year the Louisiana Office of Public Health began investigating EEE outbreaks in horses and emus in the Lafourche, St. Mary, and Terrebone Parishes (located 50 to 75 miles southwest of New Orleans. Of 20 reported equine cases, 5 were lab confirmed; all ill horses had classic EEE symptoms, which included lack of appetite, seizure, ataxia, drooling, staggering, hanging lower lip, profuse sweating, and high fever (up to 109°F / 42.78°C).

This was an unusually early onset of EEE in Louisiana, where equine cases, if present, typically begin to appear in late June or early July. A very mild winter may have contributed to this outbreak.

Last month the Texas Veterinary Medical Diagnostic Laboratory (TCMDL) isolated EEE virus from the brain of a Cherokee County horse that was euthanized on June 2. The horse had presented with a saw-horse stance, ataxia, depression, and head held low.

Dengue

Dengue fever is a mosquito-borne viral illness characterized by sudden onset, high fever, severe headaches, joint and muscle pain, vomiting, and rash following an incubation period of 3 to 14 days. It is easily confused with influenza and other rash illnesses such as measles, rubella, and typhus. Dengue can be treated with bed rest, fluids, and antipyretics; aspirin is contraindicated.

TDH confirmed 6 dengue cases in 1998. Three patients lived in Hidalgo County and the other 3 were from Cameron, Harris, and Hays Counties. Five patients were female; 1 was male. Patients ages ranged from 8 months to 72 years. Onsets of illness for these 6 patients occurred in October (2),

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November (1), and December (3). Symptoms for each of the patients included fever and rash. Other common signs and symptoms included headache, joint/bone pain, and severe malaise. Four patients were hospitalized; none of the patients died.

One of the patients, a baby from Cameron County, had not traveled during the 2 weeks prior to onset of illness; the other patients had traveled to Reynosa, Taumalipas, Mexico (3), El Salvador (1) and Jamaica (1) prior to onset.

Dengue should be considered in the differential diagnosis of all patients with symptoms listed above. Viral isolation and serologic testing are available at TDH. **For viral isolation and/or PCR,** serum collected within the first five days of illness should be refrigerated for several hours until clotted, centrifuged, and then placed on dry ice and shipped overnight. **For serologic testing**, serum specimens drawn in red top tubes during the acute phase of illness may be submitted at ambient temperature. Convalescent serum specimens collected 10 to 14 days later may be required to confirm recent infection. Specimens should be mailed with a completed G1 form to the TDH Laboratory, 1100 W 49th Street, Austin, TX 78756. This information should be included for all specimens: patient name; address, age and sex; disease suspected; date of onset; date of specimen collection; and name and address of physician.

Texas Activity in 1999

In addition to the recent EEE case, California encephalitis virus has been detected in mosquitoes in PHR 11 and SLE viral antibody has been detected in some PHR 3 sentinel chicken flocks. Additionally, an imported case of dengue was reported in PHR 6 in January. The patient was infected in Honduras.

An up-to-date summary of arboviral activity is available at the following TDH website: http://www.tdh.state.tx.us/ideas/track/track.htm. For diagnosis, prevention, and surveillance information, see the *Disease Prevention News* article, Endemic Arboviral Activity in 1997, in the July 20, 1998, issue (Vol 58, No. 15), which is also available online at http://www.tdh.state.tx.us/phpep/issues/dpn58n15.pdf.

TDH Surveillance

Surveillance of mosquito-borne encephalitis in Texas has been improved and expanded through a cooperative effort among the TDH divisions of Zoonosis Control, Infectious Disease Epidemiology and Surveillance, and General Sanitation and the Bureau of Laboratories. Numerous city and county health departments, public health regions, military installations, universities, and other local mosquito control programs send specimens to the Laboratory's Medical Entomology Section for identification. Known vector species are examined for encephalitis viruses by the Rabies-Arbovirus Section. Increased emphasis also has been placed on strategically establishing and routinely checking "sentinel" flocks of chickens to track encephalitis virus activity in an area.

This surveillance program is designed for submittion of mosquito species known to be primary vectors of encephalitis viruses producing disease in humans. Historically in Texas, the primary vectors for SLE and western equine encephalitis (WEE) are *Culex quinquefasciatus* (common house mosquito) and *Culex tarsalis*, respectively. *Culiseta melanura* is a known enzootic vector of eastern EEE but is not often encountered during routine surveillance. *Aedes, Coquilettidia, and Culex* species may transmit EEE virus to both humans and horses. Although the most recent isolate of EEE was from *Anopheles crucians*, the importance of this and other potential EEE vectors has not yet been established.

The Asian tiger mosquito, *Aedes albopictus*, has become a common pest in a number of Texas counties following its first recognition in the Houston area during 1985 by Harris County Mosquito Control.

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Not previously known to be established in the Western Hemisphere, the Asian tiger mosquito was likely imported in used tires and is now widespread over much of the United States. This small, dark mosquito is very pesky, readily feeds on humans, and has now become the number one backyard biting mosquito in many areas of Texas. This mosquito, along with *Aedes aegypti*, is considered a potential vector of dengue. It is also thought to be an adequate vector of WEE, EEE, and LaCrosse viruses. Collecting larval samples for identification from standing water, such as in bird baths and tires, is a valuable means for determining the presence and density of the Asian tiger mosquito in a given area.

An effective means of controlling most mosquito species and reducing the potential for mosquito-borne diseases is to eliminate aquatic larval habitats. Cleaning bird baths, flower pot saucers, pet water bowls, and any other potential water receptacles at least once a week can have a dramatic impact on the numbers of mosquitoes found in residential areas. It may also be effective to use certain special control approaches, such as use of predator fish, when controlling larvae in larger or natural aquatic mosquito habitats that cannot be eliminated. However, disease outbreaks may necessitate use of pesticides to immediately drop the numbers of adults and thus reduce the potential for an expanding focus of human illness.

For more information call (800) 252-8239.

Reporting is required!
Human cases:
(800) 705-8868
Animal cases:
(800) 252-8239;
The.Vet@tdh.state.tx.us

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Gastroenteritis Outbreak in North Texas

On June 23 the Texas Department of Health sent a faxed alert to public health professionals statewide regarding an outbreak of gastroenteritis among teenagers in North Texas (Tarrant, Denton, Fannin, Hunt, and Collin Counties). In Tarrant County, 23 cases were associated with a camp held at the University of North Texas. All affected individuals are in the age group of 11 to 19 years.

The symptoms of this gastroenteritis include severe abdominal cramps, right lower quadrant pain (described as similar to appendicitis pain), possibly bloody diarrhea, and little or no fever. Two individuals have been hospitalized with hemolytic uremic syndrome. To date a pathogen has not been identified. However, many stool cultures were obtained after antibiotics were started.

From now until August 1, health providers who see newly presenting cases of bloody diarrhea in a patient who lacks a fever, are asked to submit a stool culture to be analysed for the normal enteric pathogens (*Salmonella* and *Shigella*) as well as for *Campylobacter*, *Yersinia*, and *Escherichia coli* O157:H7. *E. coli* O157:H7 is associated with hemorrhagic colitis but is not the only serotype of *E. coli* capable of causing this type of diease. Other serotypes do not possess an identifying biochemical characteristic such as the failure to ferment sorbitol that is used to identify *E. coli* O157:H7. If the bacteriologic studies performed in the laboratory fail to isolate a pathogen, even when sorbitol-MacConkey is used to screen for O157, then raw stool should be submitted by overnight shipment on ice to the TDH Bureau of Laboratories for toxin studies. These toxin studies will be capable of detecting other serotypes of *E. coli* which could be responsible for the hemorrhagic colitis. Please notify the TDH Laboratory prior to shipment of specimens at (512) 458-7582. A completed G1 form must accompany the specimen.

Report any new cases promptly to your local health authority by calling (800) 705-8868.

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The electronic versions of *Disease Prevention News* are available at the following locations:
http://www.tdh.state.tx.us/phpep/dpnhome.htm
TDH Healthy Texans BBS: (800) 858-5833

Errata

On Page 2 of the June 7, 1999, *DPN* (Vol. 59, No. 12), "That year, one case of *V. parahaemolyticus* was reported...." should read, "By June of 1999, one case of *V. parahaemolyticus* had been reported...." In Figure 1, the press release icon appeared over the 26th instead of the 25th. In addition, the cooking time and temperature for safe seafood preparation (Page 3) was incorrect and incomplete. Please substitute the following list of guidelines for those published on page 3.

Vibrio parahaemolyticus Prevention: Shellfish—Fit to be Fried!

- Cook all shellfish as follows:
  Fry in oil for at least 3 minutes at 375ºF, OR
  Broil 3 inches from heat for 3 minutes, OR
  Bake for 10 minutes at 450ºF.
- Do not use possibly contaminated seawater for cooking or rinsing shellfish or other foods.
- Do not allow possibly contaminated seawater to remain on cooking or food preparation surfaces.
- Thoroughly wash utensils used for cutting raw shellfish before using them to prepare other food.
- Properly refrigerate all raw or cooked shellfish before they are eaten.