

Arboviral Activity in Texas, 2002

A great deal of attention has been paid recently to West Nile Virus (WNV). However, Texas physicians should keep in mind that a wide variety of arboviruses circulate in Texas and should therefore include arboviral infections in their differential diagnoses. This report provides information on the activity of various arboviruses in Texas in recent years and a profile of the signs and symptoms of the various encephalitis infections they cause.

Already, 2002 has been a banner year for arbovirus activity. To date this year, St. Louis Encephalitis (SLE) has infected 6 persons residing in either Harris, Jefferson, or Orange counties. Various mosquito pools positive for SLE have been identified in Harris and Nueces Counties. Only 1 human case of eastern equine encephalitis (EEE), which was imported from Florida, was reported in 2001. Before 2001, the last reported human case of EEE was identified in 1985. EEE has been detected in 14 equines so far in 2002. Western equine encephalitis (WEE) has not been reported in humans since 1985. Mosquito pools positive for WEE have been identified this year in El Paso.

West Nile Virus was first detected in Uganda in 1937 and has spread rapidly worldwide. Commonly found in humans, birds, mosquitoes, and horses throughout Africa, Eastern Europe, West Asia, and the Middle East, the virus was not detected in the Western Hemisphere until 1999 when it was identified in New York. From the summer of 1999 through the fall of 2000, West Nile infection was detected in 1,273 birds (10 live), 400 mosquito pools, 2 bats, 28 horses, various other animals, and 14 humans. There was 1 human fatality. Since then West Nile virus has been detected in 34 states.

Most people infected with WNV are asymptomatic. A very small number progress to serious illness such as meningitis or encephalitis. Symptoms include fever, weakness, headache, and altered mental status. Skin rash, lymphadenopathy, conjunctivitis, abdominal pain, cough, dyspnea, and diarrhea may also be present. Illness in adults is

usually more severe than in infected children; fatalities are rare and are most common with elderly. Positive laboratory detection of the virus **and** signs and symptoms consistent with meningitis or encephalitis is considered a confirmed case. The first human case of WNV in Texas was reported from Harris County in July 2002. As of August 28, 2002, 38 human cases have been reported including 1 fatality. Of the reported cases, 23 were in males and 15 in females. The patients' ages ranged from 20 to 85 years. The onsets of illness occurred July 3 through August 17. The counties of residence were as follows: Harris (20), Orange (6), Montgomery (2), Galveston (1), Jefferson (2), and Trinity (1)—all in the southeastern part of the state. Four WNV patients were from northeastern Dallas County, 1 resided in the northern part of the state in Haskell County, and 1 in the western part of the state in Tom Green County.

As previously noted, Texas physicians should include a wide variety of arboviral infections in their differential diagnoses. Nonarboviral viruses that should be included in the differential diagnoses for endemic patients with neurological signs and symptoms include herpes viruses, rabies, and lymphocytic choriomeningitis. The differential diagnoses for febrile patients with acute mental status changes also include serious but treatable bacterial and fungal causes of meningitis and/or encephalitis.

Continued ☞

Also in this issue:

Distance Learning Course on AIDS Education
Consumption Advisory: Walleye Bass

The most common types of mosquito borne illnesses found in the United States are St. Louis encephalitis (SLE), eastern equine encephalitis (EEE), and western equine encephalitis (WEE). SLE, found only in the Americas and the Caribbean, was discovered in 1933 during a large outbreak in St. Louis. SLE is the most common cause of viral encephalitis in the United States. SLE syndromes include febrile headache, meningitis, and encephalitis. Headache, fever, myalgias, malaise, nausea, vomiting, photophobia, sore throat, dysuria, and urinary frequency are early signs of SLE. Ataxia, cranial nerve palsies, and tremors are frequent. Convulsions may occur, particularly in children. A nonspecific febrile prodrome is common.

Initially, eastern and western equine encephalitis viruses were isolated in the brain of ill horses. Several years later, the same viruses were discovered in humans. EEE has been documented in eastern North America, Central and South America, and the Caribbean. WEE has been documented in North, Central, and South America. Most human cases of WEE have been reported from western and central United States. Persons presenting with EEE or WEE will experience headache, high fever, chills, nausea, and vomiting. Because of the attack on the central nervous system, persons with WEE may complain of backache as well. Confusion, seizures, and coma may follow initial symptoms. Others infected with WEE may also complain of vertigo, sore throat, and respiratory symptoms.

The TDH Laboratory performs the IgM capture ELISA on serum or CSF submitted for arboviral testing. Results are reported as reactive or nonreactive to various circulating arboviruses. Specimens serologically reactive by the IgM capture ELISA are repeated using serial dilutions of the sample and then tested for the presence of arboviral IgG. Since enzyme immunoassays for the detection of antibodies to flaviviruses (eg, WNV, SLE, and dengue) often exhibit cross reactivity between specific flaviviruses, all reactive specimens are forwarded to the Centers for Disease Control and

Prevention for confirmation by the plaque reduction neutralization test (PRNT). PRNTs take 2 weeks to complete and, in most cases, will serve as confirmation. However, if other arboviruses are circulating in the patient's geographic environment, it may not be possible to make a final determination of which viruses the patient is infected with. Results of the arbovirus IgM and IgG ELISA serve only as an aide to diagnose and should be interpreted in relation to the patient's clinical picture, other diagnostic findings, and epidemiological data.

For viral isolation and/or PCR, serum should be collected in a red top tube within the first 5 days of illness and refrigerated for several hours until clotted; serum should then be centrifuged, 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. During very hot weather, serum should be transported using wet ice or cold packs. Convalescent serum specimens collected 10 to 14 days later may be required to confirm recent infection. Specimens, along with a laboratory submission form (G-1), should be mailed to TDH Laboratory, 1100 West 49th Street, Austin, TX 78756. For more information call (512) 458-7598. Houston area physicians should contact the Houston Department of Health and Human Services Bureau of Laboratories at (713) 794-9181 for specimen submission information.

The Zoonosis Control Division has established a West Nile Virus information website that contains information regarding prevention of mosquito bites, as well as updated case information. The address is www.tdh.state.tx.us/zoonosis/diseases/Arboviral/westNile/westnile.asp.



Prepared by Pam Winscher, TDH Infectious Disease Epidemiology and Surveillance Division, and Jim Schuermann, TDH Zoonosis Control, with special thanks to Tim Kram of the TDH Microbiological Services Division for his assistance with the laboratory information.

Columbia University Offers Distance Learning Course on AIDS Education

The Distance Learning Project of the Columbia University Teachers' College is proud to offer a new course on AIDS Education. Because the current generation of young adults have never known life without the AIDS epidemic, their AIDS education needs are inevitably different than those of the previous generation. The health message and the optimal means of transmission also have changed. To meet this challenge, the current course was developed by Centers for Disease Control and Prevention (CDC) and Columbia staff with extensive experience in AIDS education, research, and policy.

The course will pose a series of questions and explore the contemporary status of key issues:

- Epidemiology of HIV/AIDS
- Basic biological structure of the HIV virus, including the mechanisms of exposure, infection, and progression to AIDS
- Influence of race, gender, community (including sexual and social identity), and socioeconomics
- Current therapies including antiretroviral treatments [ART] and protease inhibitors [PTs]
- Theoretical basis for prevention interventions and the role education plays in these efforts
- Policy issues that include HIV/AIDS education as an imperative

Further information, as well as online registration, is available at this Website:

http://dlp.tc.columbia.edu/visitor/news_AIDS.htm. *Participants may register for this 3 credit, graduate level course September 4-14, 2002. Additional information can be obtained by contacting Jena Curtis, MA, Distance Learning Project, Teachers College, Columbia University, by phone: 212/678-3493 or 888/633-6933, or by e-mail: jnc46@columbia.edu.*

Get Your Public Health News from *Disease Prevention News*

Whether its the latest news on TDH activities to prepare for a possible bioterrorist attack or the status of West Nile virus activity in Texas, *Disease Prevention News* has it covered -- sometimes even in advance of the media reports and always in greater depth. Your local newspaper is not the place to look for information today's concerned health professional needs to stay abreast of public health news.

DPN is the Texas Department of Health's bimonthly epidemiology newsletter that has served health professionals in Texas since the early 1920s. In addition to articles that report on public health research results, emergent issues, and TDH policy statements—*DPN* also provides timely reports on outbreaks and other adverse health conditions that occur without warning. At only 4 to 8 pages per issue, *DPN* allows busy physicians and other health professionals to spend only minutes a month to keep up-to-date on pressing public health concerns in Texas.

Sign up for the electronic notification service today.

As soon as the latest issue of *DPN* is online, you'll receive an e-mail that includes the current issue volume, number, date, list of contents, and a clickable Web address. To obtain *DPN* issues from 1995 to the present and to subscribe to the notification service, go to www.tdh.tx.us/phpep/ and click on *Disease Prevention News* in the left margin.



Disease Prevention News (DPN)
Texas Department of Health
1100 West 49th Street
Austin, TX 78756-3199
Phone: (512) 458-7677
Fax: (512) 458-7340
Email: dpn@tdh.state.tx.us

The electronic version of *Disease Prevention News*, the subscription form, and a searchable index of issues from 1995 are available at the following website:
www.tdh.state.tx.us/phpep/

Mario R. Andalzua, MD, Chair, Texas Board of Health
Eduardo J. Sanchez, MD, MPH, Commissioner of Health
Charles E. Bell, MD, Executive Deputy Commissioner
Dennis M. Perotta, PhD, CIC, State Epidemiologist
Mark V. Gregg, MA, Director, Public Health
Professional Education

DPN Staff

Kate Hendricks, MD, MPH&TM, Medical Editor
Susan Hammack, MEd, Managing Editor
Linda Darlington, Production Assistant

DPN Editorial Board

Suzanne S. Barth, PhD
Peter Langlois, PhD
Susan U. Neill, MBA, PhD
Sharilyn K. Stanley, MD
Lucina Suarez, PhD

TDH Publication #E59-10940

Elevated Levels of Mercury Found in Lake Meredith Walleye

On August 22, 2002, the Texas Department of Health (TDH) issued an advisory for people to limit consumption of walleye from Lake Meredith in the Panhandle because of elevated levels of mercury. The 16,500-acre lake on the Canadian River northwest of Amarillo spans Hutchinson, Moore, and Potter counties. TDH recommends that adults eat no more than two 8-ounce servings of walleye from the lake per month and that children eat no more than two 4-ounce servings per month.

Frequent consumption of mercury can harm the brain and nervous system. Fetuses and young children are especially sensitive to the effects of mercury, which can cause permanent damage to developing brains and nervous systems. Women who are pregnant or who may become pregnant certainly should follow the advisory.

Mercury is a naturally occurring element that gets into the air and water from the weathering of the earth's crust, the burning of fossil fuels, and some industrial discharges and emissions. There is no risk of mercury contamination from fishing, skiing, boating, swimming, or other recreational activities. Elevated mercury levels in the Lake Meredith walleye are the result of accumulation along the food chain, with larger walleye typically containing more mercury than do smaller walleye.

The advisory was issued after TDH laboratory tests of walleye, channel catfish, blue catfish, flathead catfish, largemouth bass, white bass, warmouth, and crappie from the lake revealed the elevated mercury levels in the walleye. Mercury levels in the other fish were low to moderate.

For more information contact Kirk Wiles, Director, TDH Seafood Safety Division, by phone at 512/719-0215 or by e-mail at kirk.wiles@tdh.state.tx.us.