

disease prevention news

The Latest Buzz on Mosquito-borne Disease in Texas

The January 31, 2000, issue of *Disease Prevention News* (DPN Vol. 60 No. 3) reported on the West Nile (WN) fever outbreak in the northeastern United States in the summer and fall of 1999 and the risk that WN virus will spread to Texas. This report provides an update of WN virus activity and efforts to reduce the spread of this virus into Texas. It also provides information regarding recent eastern encephalitis and dengue activity in Texas.

West Nile Virus Control Efforts: Update

West Nile (WN) virus, closely related to St. Louis encephalitis (SLE) virus, is transmitted by mosquitoes. Wild birds are the principal reservoirs of WN virus. Mosquitoes feed on birds infected with the WN virus and then transmit the virus to humans and animals such as horses. The virus has been isolated from over 40 mosquito species, predominantly of the genus *Culex*.

Where it is endemic, WN fever in humans is a flu-like illness. Following an incubation period of 3 to 6 days, there is abrupt onset of fever, headache, sore throat, backache, myalgia, arthralgia, fatigue, conjunctivitis, and retrobulbar pain. A maculopapular rash occurs in approximately half the cases. Aseptic meningitis or encephalitis (neck stiffness, vomiting, confusion, tremor of extremities, abnormal reflexes, convulsions, coma, and death) occurs in a small percentage of patients. Most fatal infections have been in patients older than 50 years of age.

Analysis of 677 blood donors in the northern Queens neighborhoods of Whitestone, Auburndale, Linden Hill and Murray Hill last October showed that 19 people had WN virus antibody. Extrapolating from those data, public health officials concluded that 533 to 1903 people (about 2.6% of the area's 46,000 residents), were infected with WN virus in 1999.

The 1999 WN fever epidemic in New York City is notable in that it represented the first known encroachment of this virus into the United States and demonstrated the ease with which it can move into new geographic areas. The outbreak took place during the peak southerly bird migration; it is not known whether WN virus was dispersed to other states, including Texas, by migratory birds.

However, during January-February 2000, three pools of overwintering *Culex* spp. mosquitoes collected at Fort Totten, New York, were positive for West Nile Virus (WNV) RNA by real-time reverse transcriptase polymerase chain reaction (RT-PCR) assay. One of the pools that was positive by RT-PCR yielded a live WNV virus isolate in a fluid vero cell culture system and confirmed by WN-specific monoclonal antibody staining of virus infected cells and virus gene sequencing.

The Texas Department of Health Zoonosis Control Division (TDHZCD) has developed guidelines for sending birds for WN virus testing and instructions for collection and shipment of animal carcasses for WN virus evaluation.

For over 30 years, Texas' arboviral surveillance program has focused on agents of mosquito-borne encephalitis in humans. In 2000 TDH would like to augment these efforts with WN virus surveillance. TDH will disseminate information regarding arboviral activity implement procedures for the laboratory diagnosis of WN fever and incorporate these procedures into the currently available test panels for eastern equine encephalitis (EEE), western equine encephalitis, Saint Louis encephalitis, and dengue.

Recent Dengue Activity

Dengue fever results from infection with one of four closely related dengue serotypes (DEN-1,-2, -3, and -4). This mosquito-borne illness is characterized by fever, headache, joint pain, muscle aches, and rash. The mosquitoes that transmit the dengue virus are *Aedes aegypti* and *Aedes albopictus*.

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Aedes mosquitoes breed in water containers such as flower pots, bird baths, and old cans or tires. In Texas, transmission generally occurs from July through December.

Due to an *Ae. aegypti* eradication campaign, dengue was uncommon in the 1950s and 1960s. Dengue reemerged after the campaign was terminated: there were 3 small outbreaks in Texas during the 1980s and first half of the 1990s. In 1980, 63 dengue cases were reported (23 patients acquired their illness in Texas) and in 1986, 17 cases were identified (8 were acquired in Texas). During both the 1980 and 1986 outbreaks, DEN-1 was the only serotype isolated from patients with locally acquired infections. In 1995, 29 dengue cases were identified (7 cases, in residents of Cameron and Hidalgo Counties, were locally acquired). DEN-2 and DEN-4 were isolated from patients with locally acquired illness. During the years between these outbreaks, only 10 dengue cases were reported; none were locally acquired. However, locally acquired cases continued to be reported from 1995 to 1999, indicating that the dengue virus has become established in Texas.

In 1999 another large dengue outbreak occurred. A total of 66 cases were reported; 62 cases were associated with the outbreak. Of the 66 cases, 32 were in Webb County residents. The remaining cases were in residents of Bexar (2), Cameron (7), Collin (1), Dallas (4), Galveston (2), Harris (1), Hidalgo (10), Nueces (1), Starr (1), Tarrant (1), Travis (2), and Willacy (2) Counties. The dengue patients included 26 males and 40 females aged from 7 through 86 years; 63 (95%) of the patients were Hispanic. Signs and symptoms included fever (98%), headache (77%), rash (74%), chills (70%), joint/bone pain (68%), anorexia (65%), malaise (53%), nausea/vomiting (48%), myalgias (42%), lumbosacral pain (32%), retroorbital pain (29%), dysgeusia (21%), and respiratory symptoms (17%). Sixteen patients were hospitalized, and one died from dengue shock syndrome.

Forty-eight of the 66 patients had traveled outside the continental United States during the two weeks prior to onset of illness. Two patients had been to Brazil and one each had been to Honduras and Puerto Rico. The

others with a travel history had been to Mexico. Eighteen (27%) patients acquired their illness as a result of living or traveling in Cameron, Hidalgo, Starr, Webb, or Willacy County. Thus, dengue appears to be established in South Texas and enhanced control measures are needed to prevent further spread of this disease.

Early Arrival of Eastern Equine Encephalitis

After a mild winter, Louisiana already has reported its first case of EEE ("sleeping sickness") in a 6-year-old unvaccinated Shetland pony in Vernon Parish, adjacent to Texas' Newton County. In addition to horses, donkeys, and mules—many species of birds (such as emus, ostriches and rheas) also are susceptible to the EEE virus.

Encephalitis cases in equine signal public health authorities that infected mosquitoes are or have been in the vicinity. Although no cases have been reported in Texas in 20 years, humans also can contract the virus from infected mosquitoes. EEE symptoms of the infection in humans include fever, headache, vomiting, lethargy, neck stiffness, convulsions, and coma.

To protect animals and humans from mosquitoes, health officials recommend the following ordinary precautions:

- control pests
- wear mosquito repellent.
- keep window screens in good condition
- drain rain gutters and outdoor containers
- change water in birdbaths frequently.

Send specimens for testing along with G-1 specimen submission form to the TDH Laboratories. Further information on mosquito-borne disease is available from the following sources:

Texas Department of Health (TDH) Zoonosis Control Division: 512/ 458-7255; FAX 512/ 458-7454; joe.garrett@tdh.state.tx.us

TDH Infectious Disease Epidemiology and Surveillance Division: 512/458-7676, FAX 512/458- 7616; Julie.Rawlings@tdh.state.tx.us

Texas Animal Health Commission: 800/550-8242, ext 710.

Perspectives in Public Health: Texas Department of Health (TDH) Quarterly CME Conference

On Friday, June 16, 2000, from 8:00 AM to 4:00 PM, the Texas Department of Health (TDH) will present its Perspectives in Public Health: TDH Quarterly CME Conference. Designed for public health and primary care physicians, the conference will be held at the North Austin Medical Center, in the Decherd Auditorium, 12221 Mopac Expressway N. in Austin, Texas. The program will consist of lectures supplemented by audiovisual slide presentations.

After attending this conference, the participants will be able to

- ♦ prevent, detect at an early stage, treat, control, or take remedial action against specific medical conditions that may adversely affect the health of individuals and populations in Texas;
- ♦ identify policies, processes, and products that promote and protect the health of people and preserve environmental quality; and
- ♦ establish relationships with other physicians concerned with public health and preventive medicine issues through dialogue with presenters and other participants.

Topics covered at the upcoming conference include

- ♦ **Putting Prevention Into Practice: The Diabetic Foot**
Lawrence B. Harkless, DPM, Professor and Louis T. Bogy Professorship in Podiatric Medicine and Surgery, Department of Orthopedic Podiatry Service, University of Texas Health Science Center, San Antonio, Texas
- ♦ **Pharmaceutical Costs: 2000 Update**
Barry A. Browne, PharmD, Associate Professor of Medicine, College of Medicine, Texas A&M University Health Science Center, Temple, Texas
- ♦ **The Ethics of Managed Care**
J. Russell Hoverman, MD, PhD, Medical Director, Managed Care, Physician Reliance Network, Inc., Clinical Practice of Hematology & Oncology Management, Texas Oncology, PA, Austin, Texas
- ♦ **Medical Newsdesk**
W. S. Riggins, Jr., MD, MPH, Director, Public Health Region 8, Texas Department of Health, San Antonio, Texas
- ♦ **Arthritis Update (2 Hours)**
Jeffrey Jundt, MD, Associate Professor, Division of Rheumatology, College of Medicine, Texas A&M University Health Science Center, Chief Rheumatologist, Scott & White Clinic, Temple, Texas

This CME activity provides one hour of ethics and/or professional responsibility content.

The Texas Department of Health designates this educational activity for a maximum of 6 hours in Category 1 credit towards the AMA Physician's Recognition Award. Each physician should claim only those hours of credit that he/she actually spent in the educational activity.

This program has been reviewed and is acceptable for 5.75 prescribed hours by the American Academy of Family Physicians.

The Texas Department of Health is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians. The Texas Department of Health takes responsibility for the content, quality, and scientific integrity of this CME activity.

For further information and to register, call the TDH Public Health Professional Education Program at (800) 252-8239, Press 4, or (512) 458-7677. You may pay the registration fee at that time by credit card or you may send a check with the completed form located on the back page of this issue.



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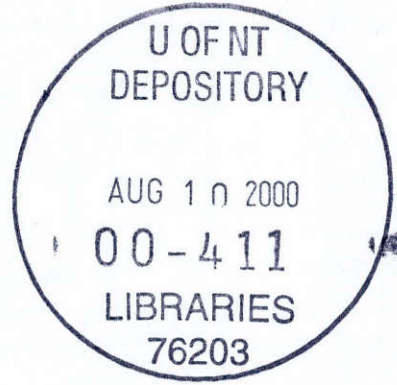
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 4C423-001 Registration Form DPN

**Perspectives in Public Health: Texas Department of Health Quarterly CME Conference
 Friday, June 16, 2000 8:00 AM - 4:00 PM**

Registration Fee: \$50 Regular \$25 Residents/Fellows (with verification letter) Please call me regarding special needs

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 Space Is Limited - Reservations Must Be Received By March 17, 2000

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