



## Update: West Nile Activities

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April 25, 2000  
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**While West Nile virus** slumbered this winter, experts in fields as diverse as bird migration, mosquito habitats and arbovirus detection came together with one goal in mind: to develop an arsenal of tools and a coordinated plan that minimizes the ability of West Nile virus to cause human illness in the Western Hemisphere.

Although good public health control measures are being used, **there may be some human cases of West Nile disease this year.** Nonetheless, the chances of becoming seriously ill from a mosquito bite are extremely low. Individuals can participate in the West Nile virus prevention effort by eliminating sources of stagnant water on their property and their communities. People can protect themselves from mosquitoes by applying insect repellent before going outside at dawn, dusk and during the evening.

CDC's major role is to work with other federal agencies to support local and state health departments as they implement recommended outbreak prevention and control plans. CDC's Dr. Stephen M. Ostroff will be leading the West Nile virus coordination committee, comprised of representatives from CDC, the Department of Interior's U.S. Geological Survey, the Environmental Protection Agency and the U.S. Department of Agriculture's Animal and Plant Health Inspection Service. CDC has been working on West Nile all winter with national and international experts from many disciplines to prepare for this spring. A sound public health control plan is now in place (federal, state, local).

### WINTER EFFORTS

- CDC distributed more than \$2.7 million to 19 state and local health departments on the eastern seaboard and Gulf of Mexico to assist in planning and implementing a program for West Nile virus surveillance and laboratory diagnosis.
- In November 1999, the CDC and USDA sponsored a national planning workshop on West Nile virus in the United States that was attended by many national and international experts and state and local public and animal health officials.
- National guidelines for surveillance, prevention and control of West Nile virus were developed. The guidelines, "*Epidemic/Epizootic West Nile Virus in the United States: Guidelines for Surveillance, Prevention, and Control*," emphasize that monitoring for the West Nile virus should be a high priority and offer guidance on the timing of surveillance based on geographic regions in the United States. Guidelines are available online at: [http://www.cdc.gov/ncidod/dvbid/arbovirus\\_pubs.htm](http://www.cdc.gov/ncidod/dvbid/arbovirus_pubs.htm)
- CDC provided support to Health Canada, the Pan American Health Organization and

other international partners to develop and implement surveillance for West Nile virus in the Western Hemisphere.

- CDC developed and distributed standardized laboratory testing protocols for state and local public health and veterinary laboratories. These new diagnostic tests will help communities, for the first time, to be able to diagnose or negate possible cases of West Nile encephalitis in their area.
- CDC scientists trained workers in 19 state or local public health laboratories to standardize diagnostic testing for West Nile virus. Standardized tests ensure greater reliability of results which are needed to help make critical public health decisions.
- CDC determined that chickens can be used safely as sentinel birds in West Nile virus surveillance systems. Live chickens will be monitored to determine whether mosquitoes have passed the West Nile virus to them. This is a widely used means to determine whether mosquito-borne viruses are present in the community before human illness is detected.
- CDC scientists developed new species-specific diagnostic tests for detecting West Nile virus antibody in horses and chickens. These diagnostic tests are critical in detecting the presence of West Nile virus in a community before human illness is detected. Early detection gives public health officials the opportunity to take targeted control measures that should help prevent outbreaks among humans.
- CDC developed a test for rapidly detecting West Nile viral antigen in mosquitoes. The test, antigen capture enzyme-linked immunosorbent assay (ELISA), is a rapid and versatile diagnostic method. By grouping antigens geographically for the test, CDC has reduced the number of antigens necessary for testing, which speeds the process for detecting the presence of West Nile viral antigen in mosquitoes.
- CDC developed new data management computer programs to facilitate rapid communication among and between CDC and the states related to surveillance of West Nile virus.
- CDC has provided technical guidance to help states develop prevention and control plans for their areas. As such, CDC staff have participated in many state planning meetings.
- CDC's Division of Quarantine, National Center for Infectious Diseases, has coordinated a taskforce to research modes of introduction of viruses into the United States. Taskforce members have collected data in an effort to better understand general patterns of human and animal movement and aid in formulating an hypothesis about the introduction of West Nile virus.

## **THIS SPRING**

The ecology of West Nile virus is very complex. The virus must be repeatedly transferred back and forth between infected mosquitoes and animal reservoirs (usually birds) before it poses a risk to humans. The purpose of active surveillance is to detect this viral activity in birds or

mosquitoes and implement mosquito control before human infection occurs. CDC recommends continued intensified surveillance to detect mosquitoes, birds, other animals and humans that may be infected with the West Nile virus. CDC further recommends identification, mapping and control of *Culex* mosquito larval habitats to reduce the potential for West Nile virus transmission to recur.

CDC recommends that the West Nile mosquito vectors should be attacked in their larval habitats before they emerge as adults. Many EPA-approved chemicals known as “larvicides” can be used to destroy immature mosquitoes. Application of EPA approved pesticides to destroy adult mosquitoes (i.e., malathion spraying) should only be used as a last resort and before human cases have occurred.

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### **COORDINATION/COLLABORATION**

- CDC is concentrating on supporting the following 19 state and local health departments: Massachusetts, Rhode Island, New York, New Jersey, Connecticut, Pennsylvania, Maryland, Virginia, Delaware, North Carolina, South Carolina, Georgia, Florida, Mississippi, Alabama, Louisiana, Texas, New York City, and the District of Columbia. CDC is hosting regular conference calls between participating federal agencies of the West Nile coordinating committee and the 19 cooperative agreement recipients. Also, CDC technical support, recommendations, and the control and prevention plan are available to all states.
- CDC has supplied reagents, protocols and funding to the National Wildlife Health Center, USGS, in Madison, WI, to improve its laboratory diagnostic support for surveillance. In addition, some of the funding will be used to support field studies on wild bird surveillance.
- CDC has included state public health veterinarians in all of its correspondence regarding West Nile virus surveillance, including receipt of the guidelines. CDC has worked with USDA to develop enhanced equine surveillance for West Nile virus.
- CDC created a West Nile conference website for health professionals involved in the West Nile prevention and control effort that provides automatic access to all new information in a series of scientific disciplines and updates from other federal agencies.