



## Update: West Nile Activities

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Contact: CDC, Media Relations  
(404) 639-3286

From budget to statistics, CDC works daily to improve the fight against West Nile virus. It joins forces with state and local health departments, various federal agencies, and international experts. In 2000, West Nile virus has been identified in 188 WNV-infected birds from 34 counties in four northeastern states. These include 128 birds from New York, 54 from New Jersey, four from Massachusetts, and two from Connecticut. WNV positive pools of mosquitos have also been detected in New York state and Connecticut. This monitoring effort has provided public health officials an early warning and hint of the potential for transmission of WNV to humans in the surveillance area. This warning has allowed careful targeting of prevention and protection efforts to reduce the risk of human infection from West Nile virus.

CDC continues its efforts to reduce the risk of human WNV infection. CDC works with other federal agencies to support local and state health departments as they implement recommended outbreak prevention and guidance plans. CDC works with national and international experts from many disciplines to combat West Nile virus.

### **Summer 2000: Systematically fighting a new threat**

- To date, CDC has awarded 44 states, 4 cities, and the District of Columbia grants totaling nearly \$7 million. The grants support state and local health departments in their efforts to track West Nile virus and other mosquito borne viruses. Grants have been extended to states beyond the Eastern seaboard, into the Midwest, and across the West coast. The states include Alabama, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, Florida, Georgia, Idaho, Illinois, Iowa, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, Wisconsin, and Wyoming. The cities include Houston, Texas, Los Angeles, Co., California, New York City, New York, and Philadelphia, Pennsylvania.
- CDC worked with the New York City health department to identify the first human case of West Nile virus in 2000, a 78-year old man from Staten Island, New York.
- CDC continues to lead the West Nile virus coordination committee. This committee is comprised of representatives from the Department of Health and Human Services, including the CDC and the National Institutes of Health; the Department of Interior, including the U.S. Geological Survey and the National Park Service; the Department of Agriculture's Animal and Plant Health Inspection Service; and the Environmental Protection Agency.
- CDC provides ongoing leadership through weekly conference calls with state and local health departments, as well as other federal agencies to discuss monitoring efforts and

to share information on the control and prevention work being conducted against West Nile.

- CDC continues to supply technical support and control and guidance to the states. A multi-agency team headed by CDC continues to analyze information on possible ways West Nile entered the Western Hemisphere.
- CDC maintains a West Nile conference Web site for public health professionals involved in the West Nile prevention and control efforts that gives automatic access to updated findings across a series of scientific disciplines.

## **A HISTORICAL PUBLIC HEALTH PERSPECTIVE ON WEST NILE**

### **SPRING 2000: On the look-out**

- The purpose of early surveillance was to identify the reappearance of WNV in birds or mosquitoes and implement mosquito control through integrated pest management. CDC recommended continued intensified surveillance to detect mosquitoes, birds, other animals and humans that may be infected with the West Nile virus. CDC further recommended identification, mapping and control of *Culex* mosquito larval habitats to reduce the potential for West Nile virus transmission to recur.
- CDC recommended 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.
- Individuals are reminded that they can participate in the West Nile virus prevention effort by eliminating sources of stagnant water on their property. People can protect themselves from mosquitoes by applying insect repellent before going outside at dawn, dusk and during the evening.
- CDC 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 was used to support field studies of wild birds.
- CDC 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.

### **WINTER 1999: CDC mobilizes**

- 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, 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 made 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 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 could be used safely as sentinel birds in West Nile virus surveillance systems. Live chickens have been 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 provided technical guidance to help states develop prevention and control plans for their areas. As such, CDC staff participated in many state planning meetings.
- CDC's Division of Quarantine, National Center for Infectious Diseases, coordinated a taskforce to research modes of introduction of viruses into the United States. Taskforce members 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.