

A Publication of the Genesee County Health Department

West Nile Virus Update

West Nile Virus (WNV) is an arbovirus commonly found in Africa, Asia, and the Middle East. It is a close relative of the St. Louis encephalitis virus and can infect humans, birds, mosquitoes, horses and some other mammals. The first domestically acquired cases of WNV encephalitis were documented in the U. S. in the summer of 1999. WNV spread throughout much of the U.S during 2000 and 2002. By the end of 2002, WNV activity had been reported from 44 states and the District of Columbia. In 2002, 4,156 human cases of WN disease (including 2,942 meningo-encephalitis cases and 284 deaths) were reported to the CDC. Michigan was one of the worst hit States in the U.S during the 2002 WNV season, reporting the second highest number of WNV cases and deaths in the country. West Nile season started relatively late in the summer last year in Michigan. By the end of the season, over 2900 specimens were submitted for WNV testing to the Michigan Department of Community Health (MDCH) laboratory. In 2002, there were a total of 644 laboratory positive cases in Michigan, with 51 deaths that are attributable to WNV infection.

WNV continues to be a public health threat for the third year in the U.S. As of October 7, 2003, a total of 6411 human cases of WNV infection and 134 deaths were reported from 43 states in the U.S. The majority of WNV cases in the U.S. have been reported from the State of Colorado, with 2090 (33% of all cases in the U.S) WNV cases and 38 deaths. So far this year in Michigan, only one case of WNV has been reported this year. This was in a 90 year old woman from Oakland County who succumbed to the disease. No

WNV cases have been reported from Genesee County. The majority of human WNV cases this year continue to arise from the Central U.S. Experts now believe that WNV will appear as a seasonal epidemic in the U.S during the summer months and continue into the fall.

WNV is primarily transmitted by the bite of an infected mosquito. In 2002, four new routes of transmission of WNV were documented, including, blood transfusion, organ transplantation, breast-feeding and trans-placental transfer. WNV is not transmitted through casual contact. The incubation period for WNV ranges from 3-14 days. Case-fatality rate in the U. S. has been 7% overall, and 10% among patients with more significant WNV disease. Eighty percent of people who are bitten by a WNV infected mosquito have a mild infection, showing no symptoms of the illness and they develop immunity to future WNV infection. Twenty percent of people will develop a mild form of the illness, called West Nile fever, with symptoms ranging from fever, headache, body and joint aches, fatigue, swollen lymph nodes, and rash. Less than 1% of those bitten by an infected mosquito will develop a more serious form of the disease, including those who develop meningitis or encephalitis. Arboviruses have complex life cycles that depend on both arthropods and birds or small mammals for their survival. Birds are usually the preferred hosts for arboviruses; humans are generally a dead-end for the virus life cycle.

The purpose of this quarterly newsletter is to inform the community and health care providers in Genesee County about disease trends in the county. We welcome any comments or questions. Contact:

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West Nile virus (WNV) infection should be suspected in a person based on clinical symptoms and patient history. Patients over 50 years of age with symptoms such as fever, muscle weakness and severe headaches and a travel history to areas (or residence) where West Nile virus activity has been identified have the highest risk of severe disease. These patients should be evaluated for WNV infection. IgM antibody testing of serum specimens and cerebrospinal fluid (preferred test) is the most efficient method of diagnosis. These tests can be arranged through the Genesee County Health Department (GCHD). IgM antibodies are produced very early in the infected person. Consequently, the blood test may not be positive when symptoms first occur; however, the test is positive in most infected people (90%) within 8 days of onset of symptoms. IgM antibody in cerebrospinal fluid strongly suggests central nervous system infection. Individuals who were recently vaccinated with yellow fever or Japanese encephalitis vaccines or persons recently infected with a related flavivirus may have positive results on IgM antibody tests for WNV. Additionally, the presence of IgM antibodies in a single serum sample is not indicative of a recent infection with WNV. If serum specimens are used to make the diagnosis, paired acute and convalescent phase serum samples should be collected. The acute-phase specimen should be collected at least 8 days post onset and the convalescent-phase specimen

should be drawn at least 22 days post onset. Treatment for WNV is supportive. Ribavirin in high doses and interferon- α 2b were shown to be effective against the West Nile virus in vitro; however, controlled clinical trials have not been completed for either agent.

The risk of getting WNV infection can be reduced by protecting oneself from mosquito bites. The use of insect repellents containing DEET is very effective in protecting against mosquito bites. The American Academy of Pediatrics and other experts suggest that it is acceptable to apply repellent with low concentrations of DEET to infants over 2 months old. Mosquito proofing homes by installing window and door screens and draining standing water around homes is another way of reducing the risk of WNV. Dead birds are usually a sign that WNV is circulating between birds and mosquitoes in an area. The Genesee County Health Department (GCHD) is not collecting any dead birds for WNV testing this year because WNV is endemic in our area. County residents are requested to submit dead bird reports to the MDCH-WNV website at:

www.michigan.gov/dnr/wildlife/pubs/disease_obsreport.asp. The timely identification of human cases of acute West Nile virus infections has important public health implications. Prompt reporting of all cases of WNV to the GCHD will enable a timely public health response to reduce the risk for additional human infections.

Selected Reportable Communicable Diseases in Genesee County

Disease	Week ending 7/26/03	Reported cases to date FY* 2002-03	Same week reported cases to date FY 2001-02	Total reported cases FY 2001-02
Chicken Pox	0	227	300	318
Pertussis	0	1	2	3
Flu-like illness	0	35,765	42,467	49,047
TB-New cases	0	11	15	15
Chlamydia	54	1,974	1,890	2,142
Gonorrhea	41	1,374	1,480	1,794
Hepatitis B (Acute)	0	7	11	11
Hepatitis C (Acute)	0	10	11	11
Campylobacter	0	15	23	29
Giardiasis	0	20	23	29
Hepatitis A	0	15	9	9
Salmonellosis	1	20	26	33
Shigellosis	0	4	3	4
Meningitis-Viral	0	40	88	106
Meningitis-Bacterial	0	4	10	10

*FY – Fiscal Year, October 1-September 30