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West Nile Virus Surveillance, Connecticut, 2005

Since 1999, the Connecticut Department of Public Health (DPH) has conducted surveillance for cases of human West Nile virus (WNV). Since 2000, the DPH has coordinated statewide monitoring of WNV in wild birds. The DPH Laboratory offers free testing of serum and cerebrospinal fluid (CSF) specimens from persons hospitalized with neurologic syndromes consistent with WNV infection. During 2005, WNV activity in humans, birds, or mosquitoes was detected in 4 counties and encompassed 23 towns.

In 2005, 77 specimens from 54 persons with suspected WNV-related illness were tested. Of these, 10 persons (19%) had encephalitis or meningoencephalitis, and 19 (35%) had meningitis. At physicians' requests, 179 patients with other clinical syndromes were also tested. Of the 233 persons tested for WNV, 6 (3%) were confirmed, of whom 3 (50%) were hospitalized. Serum samples from 5 of the 6 infected patients initially tested positive at outside laboratories and were later confirmed by the DPH Laboratory; 3 had elevated IgM antibody levels specific to WNV in serum, 1 in CSF, and 2 in both CSF and serum.

Of the 6 cases, 5 were infected in Connecticut and resided in the counties of Fairfield (3), Hartford (1), and New Haven (1). Onset dates ranged from August 9 – September 23. The median age of hospitalized patients was 73 years (range 41-83 years). Symptoms most often reported included fever, headache, altered mental state, and lack of coordination. The duration of hospital stay ranged from 7-13 days (median 8 days), and onset of symptoms preceded hospitalization by 1-4 days (median of 2 days). The 3 WNV-infected outpatients had a median age of 54 (range 34-69), and most often reported fever, headache, rash, swollen lymph nodes, and muscle pain. One death was reported.

Of the 74 dead birds received, 22 (30%) tested positive for WNV. Of these, there were 18 (82%) crows, 3 (14%) blue jays, and 1 (5%) hawk found in 14 towns. The Connecticut Agricultural Experiment Station (CAES) conducted mosquito trapping in 73 (43%) of Connecticut's 169 towns. Positive WNV mosquitoes were identified in 34 pools located in 8 towns. Mosquitoes were collected from July 11 - October 5 (1). No WNV-infected horses were reported.

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Editorial Note:

During 2000-2005, 48 persons with WNV infection were identified in Connecticut; 44 resided in 27 towns in 6 of Connecticut's 8 counties. Onset of

Centers for Disease Control and Prevention (CDC) Clinician Registry for Terrorism and Emergency Response Updates and Training Opportunities.

To facilitate the rapid dissemination of information to clinicians, the CDC operates this registry of approximately 40,000 members. E-mail updates of recent changes to information on smallpox, SARS, influenza, terrorism and emergency response, and other related health issues are distributed on a weekly basis. The CDC also uses the registry to announce new training opportunities for clinicians related to terrorism and emergency response topics.

The CDC Clinician Registry is an efficient way to learn of national terrorism and emergency response updates and augments public health alerts from the Connecticut Department of Public Health.

Clinicians can subscribe to the CDC Clinician Registry at: http://www.bt.cdc.gov/clinregistry/

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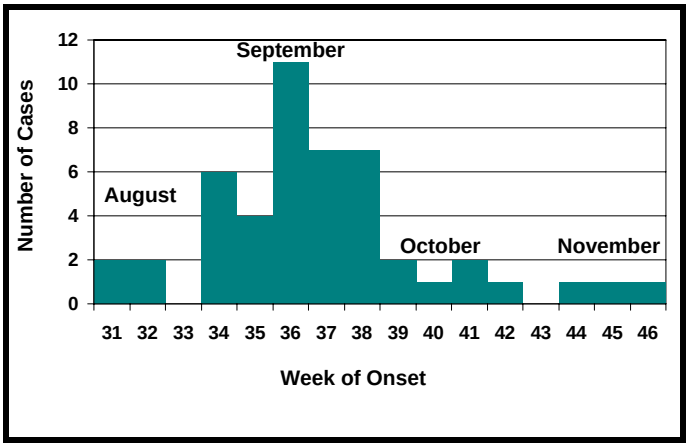
symptoms occurred during July 30-November 14 with the peak in early September (Figure 1). To identify areas with WNV activity before onset of human cases and determine the intensity of activity, sentinel surveillance systems for WNV in wild birds, primarily crows, and mosquitoes were used.

Figure 1: Cumulative Human Cases of Connecticut-Acquired West Nile Virus Infection by Week of Onset, 2000-2005*



* No cases were reported in 2004.

From 2000-2005, significant decreases were found in: reports of dead crow sightings (95%); towns reporting dead crows (55%); birds testing positive for WNV (98%); and towns reporting positive birds (87%). The number of WNV-positive mosquito pools varied each year and generally correlated with numbers of human WNV cases. The number of WNV-positive mosquito pools peaked in 2002 and 2003. Reported human cases peaked during the same time period (Table 1).

Since 1999, WNV has become enzootic across the United States. In 2005, 2949 human cases were reported from 42 states (2). The risk of acquiring WNV infection varies by season and geographic region. In Connecticut, the risk is highest in August and September. Clinicians should consider the possibility of arboviral infection throughout the year in persons with neurologic illness and a history of travel.

References:

1. Connecticut Agricultural Experiment Station. Mosquito Trapping and Testing Cumulative Results. Available at http://www.caes.state.ct.us/MosquitoTesting/2005Testing/Mosquitocumulative2005.htm. Accessed February 2006.
2. CDC. 2005 West Nile Virus Activity in the United States. Available at http://www.cdc.gov/ncidod/dvbid/westnile/surv&controlCaseCount05_detailed.htm. Accessed February 2006.

Table 1: West Nile Virus Activity by Year, Connecticut, 2000-2005

	Year					
	2000	**2001**	**2002**	**2003**	**2004**	**2005**
Human Cases*	1	6	17	15	0	5
# towns	1	6	10	14	0	5
Dead Crows	4335	3189	3830	4009	480	202
# towns	137	124	119	136	86	61
Positive Birds	1095	445	528	524	27	22
# towns	94	59	93	131	18	12
Mosquito Pools	14	24	73	72	43	34
# towns	7	14	15	29	5	7

Laboratory Testing for West Nile Virus

Free arbovirus testing will be performed at the DPH Laboratory for specimens collected from hospitalized patients with neurologic illness. Specimens from outpatients with mild illness should be submitted to commercial or hospital laboratories. Acute CSF and serum samples should be collect within 14 days of symptom onset and convalescent specimens 2-3 weeks

Virology Form OL9B: Instructions for Arboviral Testing

For *free* testing, **Virology Form OL9B** *must* accompany specimens.

- For WNV testing ONLY, please write "WNV TESTING" on the bottom of the form in "Other tests not listed."
- Check the "ARBOVIRUS PANEL" box if testing for eastern equine encephalitis, western equine encephalitis, California encephalitis group, and St. Louis encephalitis.
- Check the "ENCEPHALITIS PANEL" box if testing for WNV, organisms in the ARBOVIRUS PANEL, Jamestown canyon virus, herpes, varicella, and cytomegalovirus.

To request forms call (860) 509-8501.

For questions concerning arbovirus testing or surveillance, please contact the Epidemiology Program at (860) 509-7994.

later. Please send ≥ 5.0 mL of serum and ≥ 1.0 mL of CSF. *Do not send whole blood.* Note that negative results may occur during the first week of illness in WNV infected patients.

Outbreak of Norovirus Gastroenteritis, Connecticut, 2005

In October 2005, the Connecticut Department of Public Health (DPH) was notified of guests from multiple states who were ill with gastrointestinal (GI) symptoms after attending a wedding in Connecticut 4 days earlier. The wedding was held in a private setting at 3:00 P.M., and a reception immediately followed. A single caterer provided food for the wedding reception. In addition, several guests brought food for consumption at wedding-related events over a 2-3 day period. Because of the possibility of a foodborne outbreak, staff from the DPH and the local health department (LHD) conducted an epidemiological and environmental investigation.

Contact information was available for 49 (34%) of the 145 attendees. Telephone interviews included questions about demographics, illness history, and food consumption. A case was defined as an individual who attended the wedding and subsequently developed illness characterized by vomiting and/or diarrhea (≥ 2 episodes in a 24 hour period) with onset between October 9 - October 11. Of the 49 interviewed guests, 25 (51%) met the case definition.

Of the 25 cases, 21 (84%) reported diarrhea, 20 (80%) nausea, 17 (68%) vomiting, 17 (68%) cramps, and 15 (60%) reported subjective fever. The median age was 34 years (range 23-76 years); 16 (64%) cases were male. The median incubation period from the start of the catered event to illness onset was 29 hours (range 13 - 65 hours); the median duration of illness was 3 days (range 1-7 days). Of those ill, 2 sought medical care for their illness; 1 was hospitalized. Ill persons lived in the following states: Michigan (8), California (5), Connecticut (4), Illinois (4), New York (2), Florida (1), and New Jersey (1).

Ill persons were more likely than non-ill persons to have consumed items from a cold cut platter (Odds ratio [OR]=12.75, 95% confidence interval [CI] 2.41-77.27, p-value [p]= 0.0003) and ice (OR=5.60, 95%CI 1.00-35.12, p=0.0329). After stratification, consumption of foods from the cold cut platter remained a significant risk factor for illness independent of ice consumption.

A private individual prepared the cold cut platter at home the evening before the wedding and stored it in the home refrigerator. The next morning, the platter was transported by car and placed in the refrigerator where guests and wedding party members had access to the platter before and after the wedding.

Stool specimens were collected from the preparer of the platter and two other persons who lived in the same household. All 3 stool specimens tested positive for norovirus (NoV). The preparer of the cold cut platter reported no GI symptoms. However, other persons in the household reported having GI symptoms the week prior to the wedding. Although food handling was not directly observed during preparation of the platter, significant bare hand contact with the items served on the platter was reported. Items on the cold cut platter included prepackaged deli meats and cheeses, tomatoes, and a spinach garnish. The meats and cheeses were all hand rolled at home before being placed on the platter, and gloves were not worn.

Interviews with dietary staff from the catering company found no ill food workers; stool specimens collected from all 8 food preparation workers were negative for *Campylobacter*, *Escherichia coli* O157, *Salmonella*, and *Shigella* and NoV.

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Editorial Note:

Noroviruses are members of the family *Calicivirdiae* and are well-recognized etiologic agents of nonbacterial acute gastroenteritis (1). In the United States, noroviruses cause approximately 23 million cases of acute gastroenteritis each year and are the leading cause of outbreaks of gastroenteritis (2). Food contamination by infectious food handlers is a cause of foodborne outbreaks; cold foods, including sandwiches, are often implicated in such outbreaks (3).

Illness caused by norovirus infection lasts 12-60 hours and is characterized by sudden onset of nausea, vomiting, and watery diarrhea (4). The

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incubation period is 12-48 hours. Secondary transmission to family members is common (5).

It is likely that the cold cut platter was contaminated during preparation. NoV was identified from the stool of the preparer of the platter and 2 household members. Although the person reported not being ill when preparing the platter, asymptomatic infections may play a role in transmission (6). Opportunities for other family members to contaminate platter ingredients could not be ruled out. It is also possible that another wedding guest(s) could have contaminated the platter while it was stored in the refrigerator.

This outbreak validates the importance of utilizing commercial, regulated, and inspected food establishments when catering food for large groups in private settings. Failure to do so may increase the risk of food contamination due to improper handling, cooking, or holding temperatures.

References

1. Fankhauser RL, Monroe SS, Noel JS, et al. Epidemiologic and molecular trends of "Norwalk-like viruses" associated with outbreaks of gastroenteritis in the United States. J Infect Dis 2002;186:1-7.
2. Mead PS, Slutsker L. Dietz V, et al. Food-related illness and death in the United States. Emerg Infect Dis 1999;5:607-25.
3. Bresee JS, Widdowson MA, Monroe SS, and RI Glass. Foodborne Viral Gastroenteritis: Challenges and Opportunities. CID. 2002;35:748-53.
4. Kaplan JE, Gary GW, Baron RC, et al. Epidemiology of Noralk gastroenteritis and the role of Norwalk virus in outbreaks of acute, non bacterial gastroenteritis. Ann Int Med 1982;96:756-61.
5. D. Heyman, ed. Control of Communicable Disease Manual. 18th ed. Washington DC: American Public Health Association; 2004:227.
6. Parashar UD, Dow L, Fankhauser RL, Humphrey CD, Miller J, Ando T, et al. An outbreak of viral gastroenteritis associated with consumption of sandwiches: implications for the control of transmission by food handlers. Epidemiol Infect. 1998;121:615-21.

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