



The A.C.D. Quarterly

PHILADELPHIA DEPARTMENT OF PUBLIC HEALTH

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West Nile Virus and Lyme Disease Surveillance in Philadelphia

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Insect Vectors in Philadelphia



WNV: Northern House Mosquito (*Culex pipiens*)



Lyme Disease: Deer or Black-legged Tick (*Ixodes scapularis*)

Philadelphia's Mosquito Management Program

Between May and October, the PDPH Vector Control Program in collaboration with the PA Department of Environmental Protection regularly traps mosquitoes at over 250 sites across the city for WNV testing. Adult mosquito control activities (i.e. ground spraying) are applied to areas with WNV positive mosquito pools. Other mosquito control efforts include eliminating breeding sites and larviciding. For weekly updates on these activities, visit: <https://hip.phila.gov>.

Online Resources for Healthcare Providers

West Nile Virus: Information and Guidance for Clinicians: Epidemiology and Clinical Features of Lyme Disease (Free CME Opportunity!)

Available at:

<http://www.bt.cdc.gov/coca/calls/>

With high levels of West Nile Virus (WNV) activity in mosquitoes being detected, human WNV infections are anticipated to increase over the next few weeks as we move through the height of the 2012 season. In Philadelphia, the 2012 WNV mosquito positivity rate has approached the level documented in 2010 (21%), the highest on record and a peak season for human WNV cases. Although less than 1% of infected individuals will develop WNV neuroinvasive disease—aseptic meningitis, encephalitis, or flaccid paralysis, severe illness can result in residual neurological deficits or death. Of 54 neuroinvasive WNV infections among city residents from 2001 to 2011, all were aged 32 to 89 years and occurred during July through October (Figure 1). Notably, over one-half (52%) of the neuroinvasive cases occurred in September, when temperatures are still mild and infected mosquitoes are abundant. So far in 2012, the Philadelphia Department of Public Health (PDPH) has confirmed 1 neuroinvasive WNV case in a healthy 56 year-old female who reported several outdoor exposures.

It is also important to remember that Philadelphia is an endemic area for Lyme Disease, which is transmitted by deer ticks infected with the bacterium, *Borrelia burgdorferi*. Throughout the year, PDPH identifies about 300 new Lyme Disease cases among residents of all ages (Figure 1). If untreated, individuals with Lyme Disease may develop arthritis or neurologic symptoms (i.e., Bell's palsy, weakness, etc.).

Area healthcare providers play a central role in the surveillance and control of these vector-borne diseases in Philadelphia. PDPH encourages you to:

• Collect Specimens and Order Tests for Laboratory Confirmation:

A.) WNV: Between May and October, collect cerebrospinal fluid and serum for WNV IgM and IgG testing from patients who present with unexplained encephalitis or meningitis. Contact the Division of Disease Control at (215) 685-6742 to help facilitate specimen submission to the PA Department of Health laboratory for confirmatory testing.

B.) Lyme Disease: Collect serum for two-tiered *B. burgdorferi* IgM and IgG testing.

• **Submit Reports to PDPH:** Report WNV infections and encephalitis cases *immediately*. Submit Lyme Disease reports within 5 days of diagnosis.

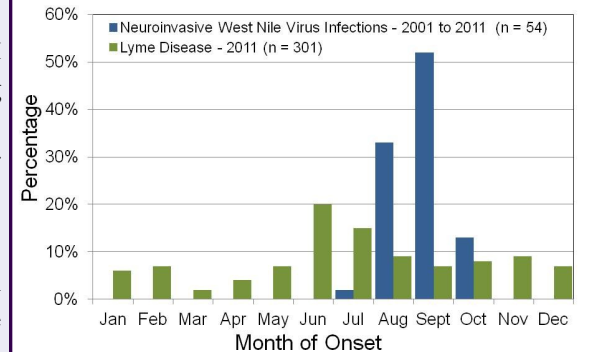
• Advise Your Patients to Take Preventive Measures for WNV and Lyme Disease:

A.) Avoid insect bites by using repellent and protective clothing (e.g. long sleeves and pants) when outdoors, staying indoors at dusk and dawn during mosquito season, and avoiding wooded and bushy areas, with high grass and leaf litter, since ticks may be present.

B.) Find and remove ticks along with showering or bathing after being outdoors.

C.) Remove standing water outside their home twice a week, keep well-fitted screens on windows and doors, and regularly mow grass and remove brush.

Figure 1. Percentage of Neuroinvasive West Nile Virus and Lyme Disease Cases by Month of Onset, Philadelphia, PA*

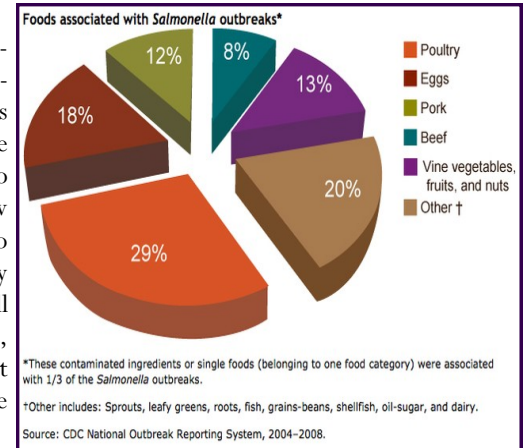


*If onset of illness unavailable, diagnosis or report date used.

Seasonal Spotlight: Salmonella

Every summer, along with the heat in Philadelphia, comes the increased risk of foodborne/waterborne diseases, one of the most common being salmonellosis. The warmer temperatures make it the perfect time of year for bacteria like *Salmonella* to grow, thrive and spread. Summer activities like cookouts, swimming in public pools, and visiting fairs and petting zoos can contribute to the spread of the illness during summer. Over 1 million people in the US become infected with *Salmonella* each year and unlike other foodborne illnesses which have declined in recent years, the number of *Salmonella* infections has remained relatively steady.

Why is *Salmonella* infection not decreasing along with other foodborne illnesses? A significant reason is that *Salmonella* can be found in a large variety of foods (see chart), and these foods may be widely distributed in a matter of days throughout the United States. This makes it very difficult to contain the spread of the disease and to locate a common source of the infection. Contamination can also occur anywhere from farm to the kitchen so even if one particular food is identified as spreading the infection it is difficult to know the point at which contamination occurred. Reporting practices also make it difficult to determine the source of infection or to identify farms, markets, or distributors that may have unsafe food practices. A case of *Salmonella* infection may go unconfirmed because ill patients may not seek medical attention, providers may not order confirmatory cultures, or the infection is not reported to public health authorities in a timely manner making it likely that patients forget the circumstances of their illness and therefore difficult for the investigator to get a clear picture of what may have been the source of the infection.



As health care providers you can help us combat foodborne illness in several ways. One of the most important, is by ensuring that stool cultures are ordered when appropriate and that you or your laboratory report positive *Salmonella* cultures to the Health Department promptly. The sooner we receive the cases the sooner we can investigate, determine the source and implement measures to prevent the spread of infection. Be aware that your patient's illness may be part of a larger outbreak and report to us if your patient mentions their illness in the context of an event or group. If you do suspect a foodborne illness, it is wise to advise your patient to remain home from school, daycare or work while they are symptomatic. As a provider you can also help the public by educating your patients about food safety. The CDC has posted guidelines for food safety which will be invaluable for keeping your patients healthy and foodborne illness free throughout the year.

- Clean.** Wash hands, cutting boards, utensils, countertops and produce thoroughly.
- Separate.** Keep raw meat, poultry, and seafood separate from ready-to-eat foods.
- Cook.** Use a food thermometer to ensure that foods are cooked to a safe internal temperature: 145°F for whole meats (allowing the meat to rest for 3 minutes before carving or consuming), 160°F for ground meats, and 165°F for all poultry.
- Chill.** Keep your refrigerator below 40°F and refrigerate food that will spoil.
- Don't prepare food for others** if you have diarrhea or vomiting.
- Be especially careful** preparing food for children, pregnant woman, those in poor health, and older adults.

For more information visit: <http://www.cdc.gov/vitalsigns/FoodSafety/index.html>

ACD Highlights: Pertussis on the Rise in 2012

Pertussis disease incidence has reached the highest rate recorded in the last five years in Philadelphia, following a nationwide trend.

- To date (08/31/2012), there have been 104 confirmed or probable cases in 2012, with an additional 89 cases under investigation. During this time period in 2011, there were only 35 confirmed and probable cases.
- Illness should be confirmed by PCR and/or culture in individuals with prolonged cough, whoop, post-tussive vomiting, paroxysms of cough, or in symptomatic persons with pertussis exposure.
- Appropriate antibiotics should be prescribed for treatment of the case patient and prophylaxis of close contacts.

Report all pertussis cases to the PDPH at (215) 685-6742. Please refer to <https://hip.phila.gov> and www.CDC.gov/pertussis for more information on diagnosis and prevention of pertussis, and be on the look-out for the next newsletter, in which pertussis statistics and prevention will be highlighted.

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REPORT OUTBREAKS AND REPORTABLE DISEASES AND CONDITIONS TO PDPH AT:

PHONE: 215-685-6742

FAX: 215-238-6947

REPORTING REQUIREMENTS AND FORMS ARE POSTED ONLINE AT hip.phila.gov.



