2017 Veterinary Advisory #6: West Nile Virus Advisory

- West Nile virus (WNV) has been detected in record numbers of mosquito pools
  - 450 pools collected from all five boroughs have tested positive, to date
  - Two human cases have been reported in New York City (NYC) in 2017
- While WNV has been rarely reported in companion animals in NYC, the Department of Health and Mental Hygiene (DOHMH) reminds all veterinarians that West Nile virus (WNV) circulates in NYC during mosquito season (July 1 – October 31).
- For updated surveillance data and more information on WNV, visit our website at www.nyc.gov/health/wnv.

August 16, 2017

Dear Veterinary and Animal Health Colleagues:

The Department of Health and Mental Hygiene (DOHMH) reminds veterinarians to be aware of West Nile virus (WNV) in companion animals during peak mosquito season, which usually lasts from July 1st to October 31st. This alert provides updated information about WNV surveillance findings for 2016 and 2017, to date, as well as information about WNV in pets.

Surveillance Findings: There has been a record number of mosquito pools testing positive for WNV this year, with more being reported at this point in the season compared to all previous years. To date, 450 mosquito pools have tested positive for WNV in New York City (NYC). Staten Island has had the largest number of positive pools (155) followed by Queens (103), Brooklyn (150), Manhattan (20), and the Bronx (22). There have been 2 human WNV cases reported in NYC, from Manhattan and Brooklyn. The patient from Brooklyn was likely exposed to WNV in New Jersey.

In comparison, in 2016, there was a total of 282 WNV positive mosquito pools and 6 human cases, while in 2015 there were 827 WNV positive mosquito pools and 38 human cases from all five boroughs.

The DOHMH conducts surveillance for WNV during peak adult mosquito season. Laboratory testing of mosquitoes collected from traps set throughout NYC began in the spring. For the most recent surveillance data, visit our website at www.nyc.gov/health/wnv.

Clinical Illness in Animals: WNV has rarely been reported among companion animals in NYC. However, there are several reports in the literature which show they are at risk for infection. WNV antibodies have been identified in domesticated animals across the globe, including NYC, the Gulf Coast region of the United States, Canada, China, and several countries in Eastern Europe and in Africa.\textsuperscript{1,7} A sero-survey conducted in New York City in 1999 found horses and dogs with WNV antibodies, and following Hurricane Katrina, rescued cats and dogs from the Gulf Coast region were found to have WNV antibodies.\textsuperscript{6} Most dogs and cats that are infected remain asymptomatic; however mild illness has been reported in cats when experimentally inoculated.\textsuperscript{6,8-10} In one study, cats infected with WNV showed mild, non-specific symptoms such as slight fever and mild lethargy during the first week after infection. In the same study, cats developed WNV antibodies after
consuming WNV infected mice; however none became clinically ill. There is no specific treatment for WNV infection in dogs or cats; treatment is supportive. While dogs, cats and horses can become infected and develop viremia, they are not thought to play a role in amplification or spread of the virus, as the concentration of virus is not considered sufficiently high for transmission to a mosquito. Symptoms of WNV infection in horses include ataxia, knuckling, head tilt, muscle tremors, and recumbency with inability to rise. A WNV vaccine is available for horses.

**Epidemiology of WNV in Animals:** In NYC, the following animals have tested positive for WNV since 1999: a harbor seal, equids, squirrels, bats and a chipmunk. In 1999, one stray kitten (in New Jersey) was found with clinical neurologic disease attributed to WNV infection. Since clinical disease due to WNV in mammals (with the exception of horses) appears to be very rare, it is important to consider more common causes of neurologic disease, especially rabies virus, which is enzootic in NYC.

**Human Disease:** Most infections are asymptomatic. Approximately 20% of infected persons will develop West Nile fever; symptoms may include fever, headache, myalgia, fatigue, muscle weakness, and/or arthralgia. Less than 1% of infected persons may develop neuroinvasive disease, with more severe neurologic symptoms such as confusion, lethargy, muscle weakness, ocular disturbances, movement disorders, severe headache, stiff neck or photophobia.

**Mosquito Control Activities:** DOHMH will continue to work to reduce the number of potential mosquito-breeding sites and control mosquito larvae in NYC. Adulticiding activities are scheduled as needed in areas where surveillance indicates that the risk of transmission to humans is high. The pesticide used in spraying is Anvil 10+10 ULV, a pyrethroid product designed to kill adult mosquitoes. This product is used at a very low dosage rate, 0.0036 lbs/acre, and poses little risk to humans and pets. We do recommend, however, that people and pets remain indoors during the applications. Information on upcoming spray events can be found by calling 311 or by visiting the DOHMH website at [www.nyc.gov/health/wnv](http://www.nyc.gov/health/wnv).

**Infection Control Measures to Prevent Transmission from Infected Animals or Birds:** There is no indication that a person can get WNV from simply handling live or dead infected birds or other animals, although evidence suggests that persons with occupational exposure to birds have occasionally become infected with WNV. In 2002, two laboratory workers were infected with WNV via percutaneous inoculation. That same year, turkey farm workers in Wisconsin were thought to have acquired WNV infections via percutaneous inoculation, or fecal-oral or respiratory routes; an investigation on the farm detected WNV in the feces of infected turkeys. Additionally, a veterinary student became infected while performing an autopsy on an infected pony. The student handled the brain using latex gloves, although no protective inhalation or eye gear was used. The most likely route of transmission was thought to be mucous membrane exposure to droplets. Persons should avoid barehanded contact when handling dead animals and use gloves or double plastic bags for proper disposal. If performing an autopsy, gloves, masks and eye gear are indicated. Veterinarians and their staff should use infection control precautions when caring for an animal suspected to have WNV or any viral infection.

**Prevention measures for pets:** It is not advised to use insect repellents approved for human use, such as DEET, for pets as these products are not approved for veterinary use because animals tend to ingest them by licking. While small mammal pets do not appear to be at risk for clinical illness due to WNV, pet birds (especially psittacines) and horses should be considered at equal risk as humans. We urge you to recommend precautionary measures to your clients including:

- Vaccinate horses against WNV.
- Keep birds indoors, particularly at dawn and dusk, during the mosquito season.
If pet birds are brought outdoors, provide a mosquito-proof enclosure using screens or mosquito netting.

Check all windows for intact screens.

Reduce possible mosquito-breeding habitats (standing water) on the property, or report standing water by calling 311 or report online: nyc.gov, search “standing water”.

Animal Disease Reporting: Arboviral encephalitis is one of 16 animal diseases reportable in NYC. Please report any laboratory-diagnosed cases of arboviral infection in your patients to the NYC DOHMH by calling 347-396-2600 or complete and fax an Animal Disease Case report to 347-396-2753. Our report form is available online at https://www1.nyc.gov/assets/doh/downloads/pdf/zoo/zoo-disease-report-form.pdf (nyc.gov, search “animal disease”). In 2008, the reporting and testing of individual birds was discontinued as it was determined that these efforts were of limited value in the early detection of WNV. However, the DOHMH receives reports of clusters of 10 or more dead birds of any species or 3 or more water birds to help detect diseases that may be of public health concern. West Nile Virus in humans and animals is reportable throughout the year.

The Department of Health and Mental Hygiene is available for consultation regarding possible WNV in your patients. If you have any questions regarding animal disease surveillance, please call Sally Slavinski at 347-396-2672.

As always, we appreciate your continued collaboration with our efforts to monitor public health issues in New York City.

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