

Dear Colleagues,

We are happy to share the fourth edition of the Public Health Vet Update! With this issue, we have successfully completed the move to an online platform with individual subscriptions which provides better functionality, such as enhanced viewing on smart phones and other mobile devices. Because we are no longer able to blast fax communications, we are still looking to connect with veterinary staff and other interested people who have not signed up to receive the newsletter. Veterinary public health advisories/alerts will only be sent to subscribers of this new system. Help spread the word by sharing the following link to our brief subscription form with your colleagues to make sure they stay informed on local veterinary public health-related issues! www.kingcounty.gov/zoo. You can also subscribe to receive other communicable disease information from Public Health at: <http://www.kingcounty.gov/depts/health/communicable-diseases/newsletter/subscribe.aspx>.

Please send any feedback on this newsletter or questions regarding zoonotic disease to Beth Lipton at 206.263.8454 or beth.lipton@kingcounty.gov.

Sincerely,

Beth Lipton, DVM MPH | Public Health Veterinarian

ZOONOTIC INFLUENZA IN CATS

Avian Influenza A (H7N2) Virus Outbreak among Shelter Cats in New York City



In December 2016, an outbreak of avian influenza A H7N2 virus infection occurred among cats in animal shelters in New York City (NYC), with over 100 cats testing positive. Cats were quarantined off-site so shelters could continue to receive cats, and adoptions were suspended.

One human infection in a person at a shelter who had close, prolonged, unprotected exposure to the respiratory secretions of sick cats was also linked to this outbreak. The person had relatively mild illness and recovered. Avian influenza virus in an unexpected host (like a domestic cat) and any human infection with a non-human influenza virus must be carefully investigated and measures taken to ensure that the virus does not spread person-to-person. In the US, this was both the first reported outbreak of H7N2 in cats and the first reported case of human influenza resulting from exposure to an infected cat.

Symptoms of influenza in cats are generally mild and include: nasal or ocular discharge, sneezing, coughing, fever, inappetence, and lethargy. Transmission of the virus in cats is through direct contact, through droplets from coughing or sneezing, and via contaminated surfaces such as shared food or water bowls and cage surfaces. Although rare, humans can

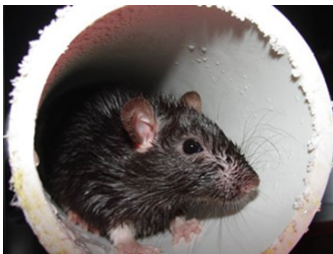
get infected with influenza viruses from sick, infected cats by touching virus-containing secretions from the cat and then touching their eyes, nose or mouth. When sick cats cough or sneeze, droplets with virus are expelled into the air, and persons in close contact with the infected animal can then breathe in the virus or have it enter their eyes, nose or mouth.

Veterinarians should educate pet owners and staff on basic zoonotic disease prevention measures which also apply to influenza. CDC has [guidance for cat owners](https://www.cdc.gov/flu/fluincats/h7n2-cat-questions-answers.htm), including that people wash their hands with soap and running water after contact with cats, cat saliva or stool, and after cleaning a litter box. These precautions are even more important for people who are at high risk of complications from influenza, including persons with cancer or other chronic health conditions such as diabetes; heart liver disease or kidney disease; and women who are pregnant. The NYC Health Department found through its investigation and human testing that the risk to humans with this strain of H7N2 is low.

For more information on H7N2 in cats, see: <https://www.cdc.gov/flu/fluincats/h7n2-cat-questions-answers.htm>.

OUTBREAK UPDATE: SEOUL VIRUS

The CDC is assisting state and local health officials in investigating an outbreak of Seoul virus, a type of hantavirus that can be transmitted from rats (the Norway rat and black rat) to people. As of April 1, 17 people in seven states have been infected. People who become infected with this virus often exhibit relatively mild or no symptoms, but some will develop hemorrhagic fever with renal syndrome (HFRS) with death occurring in approximately 1–2% of cases. Symptoms in humans typically begin within 1-2 weeks of exposure and may include fever, severe headache, back and abdominal pain, chills, blurred vision, conjunctivitis, or rash. Infected rats do not become sick and can shed virus for months in their urine, feces, and saliva. People can become infected with the virus after exposure to aerosolized urine, droppings, or saliva of infected rodents or after exposure to dust from their nests. Transmission can also occur from bites or when infected secretions from rats come into direct contact with broken skin or mucous membranes. Seoul virus is transmitted between rats through direct contact such as during mating or fighting, or through exposure to bedding and other contaminated environmental materials.



Follow-up investigations by CDC and partnering state and local health departments indicate that potentially infected rodents may have been distributed or received in 15 states: Colorado, Delaware, Georgia, Illinois, Idaho, Iowa, Michigan, Minnesota, Missouri, New Jersey, Pennsylvania, South Carolina, Tennessee, Utah, and Wisconsin. To date, we have no indication that infected rodents were distributed to Washington State.

As there is presently no effective treatment for Seoul virus infection, preventing infections in people is important. As the virus spreads very easily among rats housed together in a facility, and because it can be shed from an infected rat for a long time, euthanizing rats housed together in a home/facility with confirmed cases is the optimal way to interrupt transmission and prevent spread of the virus to their owners and other people who handle them. Find more information at <http://www.kingcounty.gov/depts/health/communicable-diseases/zoonotic/facts-resources/diseases.aspx>.

Guidance for veterinarians:

- Ask about the origin of rats that present to your practice to identify if they might be part of this outbreak. Contact Public Health to discuss testing options for rats purchased after September 1, 2016 and originating from home-based ratteries, particularly in Wisconsin or Illinois. We currently do not recommend routine testing of pet rats unless they are associated with this outbreak.
- Use appropriate personal protective equipment, including protective outerwear, gloves, head and shoe covers and fit-tested N95 respirators when handling rats that may have Seoul virus.
- Advise individuals who are concerned about exposure to rats that may be associated with the outbreak to contact Public Health.
- Reinforce safe pet handling practices with all pet owners. For more information visit <https://www.cdc.gov/healthypets/>.

Continuing Education on Your Time <http://zoonoses.info>

Last issue we featured an online continuing education opportunity accessible for just a couple of months; but recently the Center for Food

Security and Public Health (CFSPH) at Iowa State University College of Veterinary Medicine announced that they are offering the online course, ***Zoonoses: Protecting People and Their Pets***, all the time! The course can be accessed at any time and completed at your own pace. It covers the importance of zoonotic diseases such as plague, tularemia, and rabies, and the role that veterinarians can play in their prevention.

The course is approved for 10 RACE hours of continuing education for veterinary professionals. Dr. Glenda Dvorak, DVM, MPH, DACVPM, Assistant Director, CFSPH, emphasizes that “Partnerships between medical, public health and veterinary professionals are needed to raise awareness, enhance detection, and promote prevention of zoonotic diseases to protect the health of people and pets.”

Cost to register is \$125, which includes the textbook (a \$70 value). To register, visit <http://zoonoses.info>.

THREE RECENT CASES OF HANTAVIRUS

Hantavirus can cause a rare but deadly disease called Hantavirus Pulmonary Syndrome (HPS). The Sin Nombre hantavirus was first recognized in the US in 1993, and it is one of several New World hantaviruses circulating in the US that can cause HPS. HPS has a mortality rate of 38%. Since 1993, 659 cases have been reported in the US, and 46 of those are believed to have been exposed in WA State (Eastern WA in most cases). In WA State, hantavirus is carried by deer mice. Seoul virus, a type of hantavirus causing a current outbreak in pet rats, does not cause HPS (see Outbreak Update: Seoul Virus on page 2 for more information).



Photo of a deer mouse (James Gathany, CDC image ID #8358)

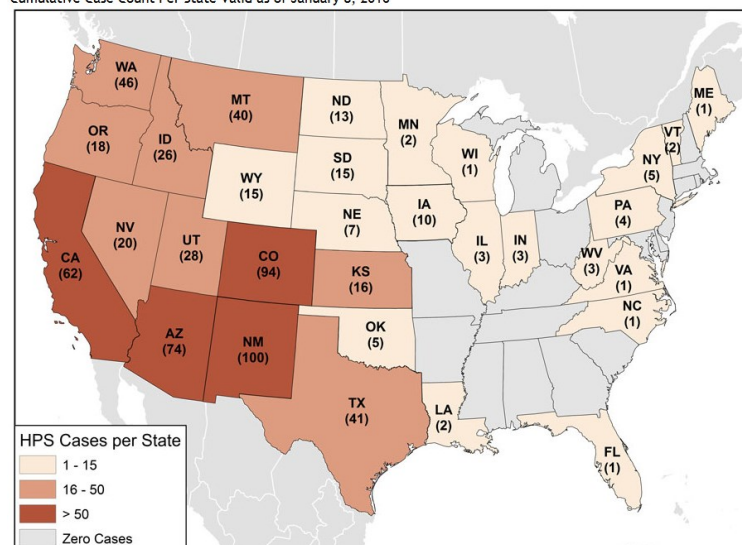
Over the past several months, three people in King County have become ill with HPS, and one person died. The cases are believed to have been exposed locally. A person gets HPS by breathing in hantavirus, usually when

dust from dried rodent urine, saliva, and droppings that contain hantavirus are stirred up in the air. People can also get infected by touching rodent urine, droppings, or nesting materials that contain virus, and then touching their eyes, nose, or mouth. It's also possible to get HPS from a rodent bite. The disease does not spread person-to-person.

If your clients have questions regarding hantavirus or rodent control, you can refer them to the following Public Health web page for more information: <http://www.kingcounty.gov/depts/health/communicable-diseases/disease-control/hantavirus.aspx>, or instruct them to call Public Health at 206.263.9566.

Hantavirus Pulmonary Syndrome (HPS) Cases, by State of Exposure

Cumulative Case Count Per State Valid as of January 8, 2016



Total Cases: N=659 in 31 States

Not displayed: 31 cases with unknown exposure; 2 cases with presumed exposure outside the USA

Source: <https://www.cdc.gov/hantavirus/surveillance/state-of-exposure.html>

Selected Notifiable Conditions (# of cases reported)				
	King County		WA State	
	Yearly average, 2013-15	2016	Yearly average, 2013-15	2016
Human Cases:				
Brucellosis	1	0	3	1*
Coccidiomycosis (Valley Fever)**	4	8	19	38
Cryptococcus gattii	1	0	6	4
Hantavirus pulmonary syndrome	0	1	0.7	1
Leptospirosis	0	0	0.7	2
Lyme disease	7	8	19	31
Plague	0	0	0	0
Psittacosis	0	0	0.3	0
Q Fever	0	0	2	9
Rabies suspected exposures	101	123	258	330
Tularemia	0.7	0	4	1
West Nile virus	0.3	0	12	9
Animal Surveillance:				
Positive rabies in bats tested	3	3	12	20
Positive rabies in other mammals^	0	0	0.3	0
Cryptococcus gattii	2	0	5	0
West Nile virus: mammals	0	0	14	27
West Nile virus: birds	0	0	2	2
West Nile virus: mosquitoes	0	0	85	95

Note: 2016 counts are preliminary & may change as case info. is reviewed and/or more cases are reported; *Diagnosed in traveler to WA, not a WA resident; ** 3 cases in 2014 and 2 cases in 2016 exposed in-state; ^a Jefferson County cat tested positive in 2015

Visit our Updated Website!

The Zoonotic Disease program web pages have had a makeover, along with Public Health's entire website! We hope that you will find the website much more user friendly and organized.

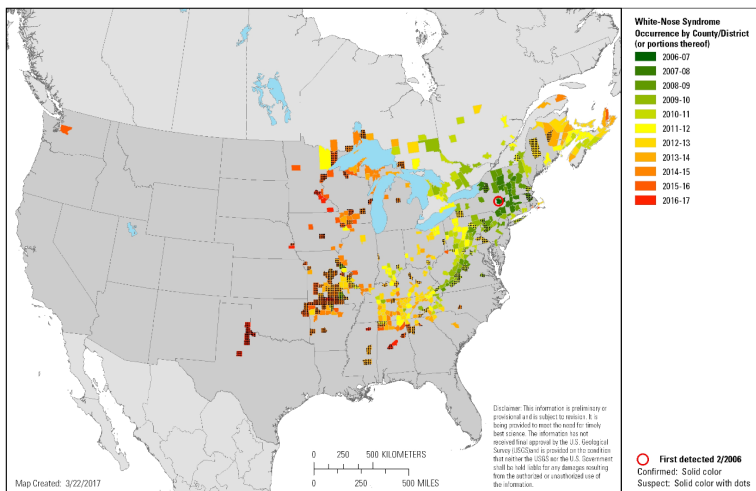
Please take a few minutes to visit the Zoonotic Disease program page and bookmark it as a 'favorite':

<http://www.kingcounty.gov/depts/health/communicable-diseases/zoonotic.aspx>

On this site you will find: previous issues of the Vet Update newsletter and the subscription form, rabies information and resources, a comprehensive zoonotic disease reference manual for veterinary practitioners, canine influenza virus and leptospirosis case report forms, and many other resources!

DEADLY FUNGUS THREATENING BATS FOUND IN WASHINGTON

White Nose Syndrome (WNS) is a disease known to cause significant mortality in a wide array of bat species in North America. The disease is caused by the fungus, *Pseudogymnoascus destructans* (*Pd*). *Pd* invades the epidermis of bats, sometimes causing a characteristic white appearance to the nose of affected hosts, while other times causing damage to the wing or ear tissues. The fungus disrupts normal hibernation by causing hosts to awaken repeatedly. The energy lost from disturbed hibernation is lethal to the bats which only store enough energy in fat reserves to make it through the winter. Transmission is among bats primarily thought to occur by direct contact, but introduction of spores on human clothing may play a role in the spread of the fungus. *Pd* appears to thrive in cool, moist climates, with bat caves being an ideal location. WNS is not known to affect humans, domesticated animals, or other wildlife.



Source: <https://www.whitenosesyndrome.org/>

WNS first emerged in the eastern US in 2006, and has led to the death of millions of different bat species. It has been particularly destructive in the east due to the tendency for bats to congregate in large hibernacula (colonies). The ecological impact of significant bat deaths has not yet been fully realized; the agriculture industry alone relies heavily on bats for not only insect predation but also for pollination.

Since its emergence, WNS has been traveling west, and in Spring 2016, the first case of WNS was diagnosed in WA State. An irregular appearing Little Brown Bat was found in North Bend and brought to PAWS Wildlife Center, where it subsequently died and was submitted for testing. A positive *Pd* sample was also obtained from an asymptomatic Silver-haired

Bat along with a positive guano sample obtained from under I-90 near Seattle.

Bat species in WA State tend not to congregate in large groups, so it is unclear whether the disease would spread here as it did on the east coast; also, local bat biologists haven't been able to track where bats go during hibernation which makes sampling difficult. Currently, the WA Dept. of Fish and Wildlife (WDFW) is performing WNS surveillance and also working in conjunction with Public Health to obtain samples for diagnostic testing. Bats sent in to the WA Dept. Of Health for rabies testing also have samples saved and banked for *Pd* identification.

You can help with the surveillance of WNS when providing assistance to your clients regarding bat exposures. The WDFW website has information about WNS and an online reporting system for reporting sick or dead bats and also living colonies: <http://wdfw.wa.gov/conservation/health/wns/>.

If a bat has come into contact with a person or pet, please follow these [instructions](#). Human exposures should be reported immediately to Public Health at 206.296.4774. For a cat or dog exposure, please call the Public Health Veterinarian at 206.263.8454. Approximately 5-8% of bats tested each year are positive for rabies, although <1% of bats in nature are infected with rabies, as healthy, non-rabid bats are less likely to be found on the ground or otherwise captured and tested. Bats infected with *Pd* may appear sick and could appear to be rabid because of an inability to fly or sick appearance.



Little brown bat found in western Washington, March 2016. The fungus damaged the bat's wings making it unable to fly. Photo credit: Progressive Animal Welfare Society (PAWS)

WHICH PATHOGENS IN WASHINGTON TICKS?

The WA Dept. of Health began a tick surveillance project in Fall 2010, and since that time has received over 10,700 ticks and tested over 2,500 for five specific pathogens, with additional testing for other pathogens provided on some ticks by the University of Massachusetts and the CDC. Testing of some live ticks at the British Columbia Centre for Disease Control also started last year.

During the June 2015—July 2016, 88 partners and 156 members of the general public collected ticks, in addition to ticks that the WA Dept. of Health staff collects through tick drags in various areas. WA Dept. of Health had funding to test 500 ticks during this study period. Results included two *Ixodes spinipalpis* ticks testing positive for *Anaplasma phagocytophilum* (Kitsap County), two *Ixodes pacificus* positive for *Borrelia burgdorferi* (Clallam County), and one *Dermacenter variabilis* positive for *Francisella tularensis* (Spokane County)— the first detection!

The collaboration with the Centre for Disease Control in British Columbia will help improve knowledge of *B. burgdorferi* dynamics in the Pacific Northwest as they are actively studying *B. burgdorferi* in British Columbia tick populations. During the recent study period, 100 live, unfed *Ixodes* ticks were sent to be tested for *Borrelia burgdorferi*.

WA Dept. of Health will be picking up collected ticks from partners during May 8-12 this spring. If you would like to help collect ticks, or if you already collect ticks and need additional supplies, email Lyndsey Smith, Tick Surveillance Technician, at lyndsey.smith@doh.wa.gov by April 30.



Photo of *Ixodes Pacificus* nymph, adult male, adult female (CA Dept of Health)

Map of Washington counties where positive ticks have been collected and distribution of tick genera by county (2010-16)

