



## Ontario Animal Health Network (OAHN) Equine Expert Network Quarterly Owner Report – April to June 2016

Apr-June 2016

Report #5

### Highlights

#### Key Points

#### Equine Rhinitis A Virus

#### Looking Ahead – Potomac Horse Fever



### Your OAHN Equine Network Team:

#### Practitioners

Dr. Drew Hunnisett  
(Network Co-Lead)

Dr. Chris Grossenbacher

Dr. Melissa McKee

Dr. Jessica Peatling

#### Animal Health Lab

Dr. Murray Hazlett

#### Ontario Vet College

Dr. L. Memo Arroyo

#### OMAFRA

Dr. Alison Moore  
(Network Co-Lead)

Dr. Cathy Furness

Tim Pasma

#### Network Coordinator

Dr. Melanie Barham

## Ontario Equine Disease Surveillance (April to June 2016) - Key Points

- Potomac Horse Fever was diagnosed in the Simcoe County area.
- A moderate increase was observed in upper respiratory tract viral infections in the Standardbred industry likely due to equine rhinitis A virus.
- Rabies control efforts continue for the raccoon strain of rabies in the Hamilton and surrounding area. For more information visit OMAFRA's [rabies web pages](#).

## Equine Rhinitis A Virus - One Reason Why “Vaccinated Horses Are Getting Sick”

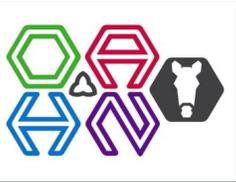
It is not unusual for young competition horses to become sick with nasal discharge and a cough during the course of a year. Owners become frustrated because those horses have often been regularly vaccinated against respiratory infections. Since respiratory infections look the same and can only be differentiated by laboratory testing, the assumption is the vaccine “failed”. However, there is not a vaccine available to protect against all viruses. Such is the case in Canada for equine rhinitis A virus (ERAV).

The vaccines given to horses in Canada to protect against respiratory viruses target equine influenza virus and equine herpesvirus 1 and 4, commonly called “flu” and “rhino” respectively. Both are very important disease-causing viruses not only due to their effect on the horse’s respiratory health but also due to the economic impact they cause from lost competition days and medication use. In some cases, infection with these viruses can lead to serious conditions such as pleuropneumonia which may be fatal.

ERAV is an equally important, and common virus, affecting Ontario’s horses. In the same family as the human common cold, this virus can cause signs in horses ranging from fever and nasal discharge to a mild dry cough and, sometimes, swelling of the limbs. In Ontario outbreaks, infection with ERAV has occurred concurrently with equine influenza virus which can lead to pneumonia and other serious health issues.

ERAV is transmitted between horses through nose to nose contact with an infected animal, through aerosolized droplets from a dry cough or through contact with contaminated objects such as clothing or tack. Diagnosis is by testing for antibody changes from blood drawn two weeks apart. Rest is key for the treatment of ERAV infection as it may take up to 21 days for the lining of the airway to repair. Infection by ERAV and other respiratory viruses causes inflammation of the airway which can lead to equine asthma syndrome (formerly called inflammatory airway disease) much like the common cold in people can contribute to the development and perpetuation of asthma in people. Treatment at this point is aimed at decreasing inflammation in the airways.

Presently there is no vaccine for ERAV available in Canada, although there is one in the United States (ERAV vaccine, Boehringer Ingelheim). Owners and trainers can minimize the effect of this virus through applying appropriate biosecurity procedures in their stable. Consult your veterinarian or see the sidebar on the next page for more information on biosecurity.



The National Farm and Facility Level Biosecurity Standard for the Equine Sector is available [here](#).



Mayfly



Caddisfly



Dragonfly



Damselfly

\*[Molecular Analysis of \*Neorickettsia risticii\*, the Trematode-borne Agent of Potomac Horse Fever, Culture Isolated from a Canadian Horse.](#) Xiong Q, Bekebrede H, Sharma P, Arroyo LG, Baird JD, Rikihisa Y. *Appl Environ Microbiol.* 2016 Jul 29.

# Looking Ahead - Bats, Birds, Insects and Snails- A Recipe for Potomac Horse Fever (PHF) (Equine Neorickettsiosis)

Potomac Horse Fever (PHF) is a serious disease of horses caused by the bacterium *Neorickettsia risticii* (*N. risticii*). Infected horses often develop a fever which may be missed, poor appetite diarrhea, and sometimes laminitis. Mares may abort between 5 and 7 months of pregnancy. Horses may die from bacterial toxins released in their blood stream due to damage to their intestinal tract, or are euthanized due to acute laminitis.

The way a horse becomes infected with the bacterium can be complex and is not completely understood. It is thought that horses are naturally infected when they ingest aquatic insects such as mayflies, caddisflies, dragonflies and/or damselflies that are infected with a parasite called a fluke which, in turn, is infected with the bacterium *N. risticii*. Horses ingest the insects through grazing, eating hay contaminated with these insects or drinking the insects in water buckets or troughs. After ingestion of the insect, *N. risticii* is released from the immature fluke and replicates in the cells lining the horse's colon, in white cells within the tissue and in blood cells called monocytes. The infection within the intestinal cells usually leads to diarrhea and the release of bacterial endotoxins initiates a sequence of events progressing to laminitis.

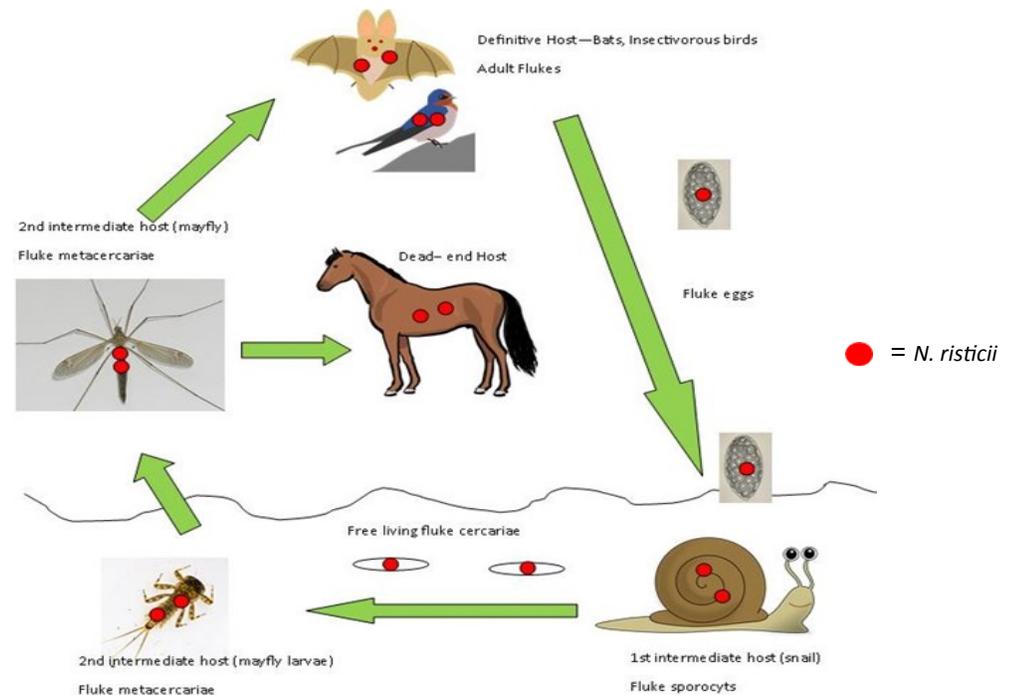


Diagram adapted from Vaughan et al. *Advances in Parasitology* 2012; 79, 253-91

Veterinarians typically diagnose PHF by sending in blood and/or manure samples to the laboratory for DNA testing.

Treatment for the disease should be initiated as soon as it is suspected. An antibiotic called oxytetracycline is the treatment of choice but should only be administered as directed by a veterinarian. Other supportive treatments such as intravenous fluid therapy and anti-inflammatories may also be required.

A vaccine targeting *N. risticii* is available in Ontario for the prevention of PHF. Vaccination may reduce the severity of clinical signs in some areas, however, vaccine failure has also been reported and may be due, in part, to the presence of different strains of *N. risticii*. A novel strain of *N. risticii* has recently been identified from an infected Ontario horse. It is distinct from, but closely related to, American Midwest strains.\*