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OAHN Q2 Survey: Key results

Survey responses were received from 32 counties across the province with 54% of the respondents reporting greater than 50% of their patient base was equine.

Responses to the “Foals and Breeding stock” section revealed an increase in the number of foal pneumonias (not due to *Rhodococcus equi*), dystocias and foals with neonatal maladjustment syndrome reported this quarter compared to Q2 of 2017. Two of the foal pneumonias were reportedly due to *Streptococcus zooepidemicus* and there was a 1-day-old foal with aspiration pneumonia. Anthelmintic resistance continues to be reported in young stock with both roundworms and strongyles implicated.



Responses to the “Adult” section revealed an increase in the reporting of suspected Potomac Horse Fever (no diarrhea), anthelmintic resistance, equine protozoal myelitis (EPM), and “neurological disease suspicious for an infectious cause” compared to Q2 of 2017. Recurrent airway obstruction and inflammatory airway disease (equine asthma) were commonly reported. One respondent noted horses were clinically worse than other years, and another reported some were refractory to treatment and in severe distress. Four respondents noted an increase in pruritic skin disease this quarter, and one noted that large insects were causing huge, ulcerative welts. Full body hives were also diagnosed requiring large corticosteroid doses to be administered. Gastric impactions were also diagnosed, primarily in warmbloods.

Network member reports

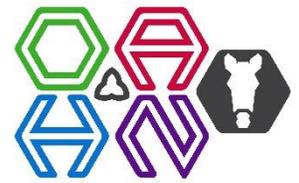
<p>Northern Region (Drew Hunnisett)</p>	<p>There was an increase in horses diagnosed with a variety of different causes of colic; impactions, spasmodic colic, colonic displacement. One horse had colitis which responded to oxytetracycline but was negative for PHF PCR on blood and manure. Recurrent airway obstruction was also commonly diagnosed, and along with the colics, seemed to be exacerbated by the heat and humidity.</p>
<p>Southwestern Region (Melissa McKee)</p>	<p>An increase in horses diagnosed with severe exertional rhabdomyolysis and very high muscle enzymes were noted this quarter. A number of horses diagnosed with lower airway inflammation were refractory to treatment. Some horses dealing with recurrent airway obstruction were in respiratory distress and were difficult to control. Gastric impactions continued to be diagnosed primarily in warmbloods. Some standardbred racehorses had a nasty skin rash that seemed to follow the outline of the number pad. There was also a mild increase in ultraviolet-sensitive skin cases and a few more laminitis cases than expected this spring possibly exacerbated by the heat and lush pasture.</p>

Look for the Q3 survey in October 2018!

Practitioner input is invaluable to help detect regional trends, alert veterinarians to disease clusters and guide further investigation. The more vets participate, the more useful you will find the results!



<p>Thoroughbred Industry (Jessica Peatling)</p>	<p>Consultation with multiple veterinarians in the Thoroughbred racing industry indicated that there was an increased number of horses with exertional rhabdomyolysis this quarter compared to previous years possibly brought on by the high heat and humidity. More soft tissue injuries have been noted, specifically proximal suspensory desmitis and superficial digital tendonitis. A decrease in bone related injuries specifically tibial stress fractures and pelvic fractures was noted. One horse was diagnosed with Potomac Horse Fever, although it had a history of travel to Florida. Overall the number of horses with infectious respiratory disease seems reduced this year which may in part be due to the new vaccination policy or the fact that the larger stables were vaccinated with the Rhinitis A vaccine in the US during the winter.</p>
<p>Ontario Veterinary College (Memo Arroyo)</p>	<p>A noticeable number of horses with colic were admitted this quarter. Small intestinal accidents, epiploic entrapments, strangulating lipomas, medical impactions and gas colics were diagnosed. Some of them went on to develop soft manure but testing was negative for etiologic agents including coronavirus. A few foals diagnosed with <i>Rhodococcus equi</i> pneumonia were also admitted with some in acute respiratory distress.</p>
<p>AHL Pathology (Murray Hazlett)</p>	<ul style="list-style-type: none"> • TB filly foal with colic was diagnosed with coronavirus, rotavirus, <i>Parascaris equorum</i> and small strongyle infection. Follow up testing on the farm revealed 5/15 coronavirus positive horses which were negative 10 days later. • A SB mare with a history of decreased appetite had a lump on her right dorsum diagnosed as myositis ossificans. • A TB broodmare with a history of a cecal impaction and partial tear post foaling was euthanized after developing diarrhea and cecal distension post-operatively. She was diagnosed at PM with a large cecal abscess and fibrinous peritonitis. • A 9 day old SB foal with periarticular abscesses/wounds was diagnosed with severe unilateral necrohemorrhagic pneumonia due to <i>Salmonella Infantis</i>. 9 foals died on this farm although it is uncertain if due to the same pathogen. • 2 year old TB with acute fever and nonresponsive to NSAIDS was found dead in the stall. It was diagnosed with septic phlebitis and septicemia secondary to <i>Actinobacillus equuli</i>. • A 7.5 year old QH who was clinically normal the day before, was “off” and depressed the morning of his death. Severe pericarditis and epicarditis were diagnosed on PM. No etiologic agent was identified.
<p>OMAFRA (Alison Moore)</p>	<p>So far in 2018 there have been 32 confirmed cases of raccoon-variant rabies (in raccoons and skunks), 5 cases of fox-variant rabies (in skunks and a bovine), and approximately 10 cases of bat-variant rabies (in bats). The Ministry of Natural Resources and Forestry (MNRF) has once again begun its annual rabies vaccine baiting campaign, which will continue into the fall. Go here to see the map of the control zone.</p>



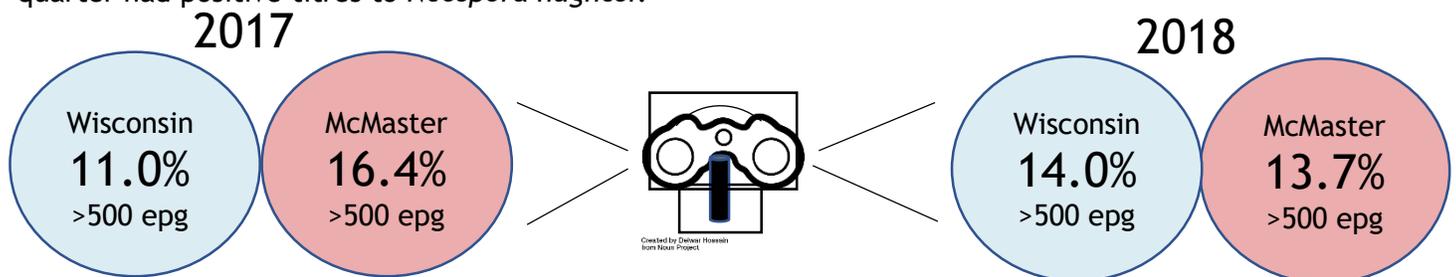
Alcohol and Gaming Commission Incidents

The AGCO will not be releasing incident data in the near future.

Laboratory data - Highlights for Q2

Parasitology

Fecal testing was slightly decreased in Q2 from Q2 of 2017 (755 tests vs 782) with a slight decrease in McMaster tests but increase in fecal floatations (124 in 2018 vs 99 in 2017). The percentage of egg counts greater than 500 epg was fairly similar for Q2 in both years. Testing for equine protozoal myelitis (EPM) was increased at 33 tests for Q2 2018 vs 10 for 2017. Eleven tests were positive in Q2 2018. Two tests this quarter had positive titres to *Neospora hughesi*.



Microbiology

The number of submissions for bacterial culture increased from 183 in Q1 to 308 in Q2 and the number of total cultures performed were almost double that from Q2 in 2017 (572 vs 238). There were notable increases in the percentage of *Streptococcus zooepidemicus*, *Staphylococcus (other than aureus)*, *Actinobacillus equuli* and *Klebsiella sp* cultured compared to Q2 2017.

Two aborted feti tested positive for **EHV-1** and one was the neurotropic strain.

There was a notable increase in the number of positive tests for **coronavirus** this quarter compared to Q2 of 2017 (14 of 61 tests versus no tests for Q2 2017). This due to follow up testing on a farm from which an infected horse was diagnosed.

Overall testing for **Lyme disease (*Borrelia burgdorferi*)** was similar in Q2 for 2018 and 2017, although the distribution of testing was slightly different, with 63 multiplex tests and 15 ELISAs being ordered versus 41 and 38 respectively in 2017. There were 12 positive tests by multiplex and 15 by ELISA for 2018 vs 18 by multiplex and 13 by ELISA for 2017.

The number of submissions and number of test positives for **Strangles (*S. equi*)** was similar for Q2 in 2018 and 2017. For Q2 2018 there were 65 PCR tests performed with 9 positives and 1 culture positive; for Q2 2017 there were 78 PCR tests performed and 8 positives and 1 culture positive.



Post Mortem Examinations

The number of postmortem examinations was up slightly with 67 being performed compared to 51 in 2017. Overall there have been 111 exams to date versus 79 at this time in 2017. There were 16 submissions from AGCO. The number of gastrointestinal accidents were increased to 11 versus 2 in Q2 2017. An increase in the number of impactions, peritonitis and colitis diagnoses were noted.

Antimicrobial Use / Resistance responses from the Q2 survey

Prior to prescribing antibiotics, how often do you perform a culture first (if a sample is obtainable)?

Answer	%
<25% of the time	72.73%
50% of the time	18.18%
75% of the time	4.55%
100% of the time	0.00%
Never	4.55%
Total	

What is the main reason for not performing a culture?

Answer	%
Owner doesn't want to spend the money	13.64%
Culture costs too much	4.55%
I don't think it's going to change which antibiotic I am going to use	18.18%
I rarely have a site to sample	9.09%
I am going to treat with antibiotics anyway because that's what the owner wants	0.00%
I cannot wait for culture results before initiating treatment	45.45%
Other	9.09%
Total	

Principles of sample collection for diagnosis of bacterial infections

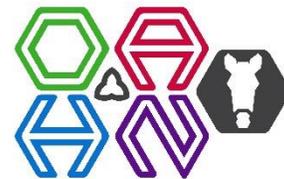
From Hodgson et al. *Diagnosis of bacterial infections. Part 1: Principles of sample collection and transportation*, Equine Vet Educ. (2008) 20 (11); 608-616.

Step 1. Determine if the patient has a treatable microbial infection.

- Is it an infectious etiology or is it inflammatory only and in need of corticosteroids (e.g. equine asthma / IAD)?
- Bacterial infections often cause; fever, pain, heat, swelling, discharge, increased WBC count with neutrophilia, possible left shift with toxic changes, increased fibrinogen and SAA.

Step 2. Determine if bacterial isolation and identification is required.

- Is a known organism, with a predictable susceptibility pattern likely to be causing the condition? If so, empirical therapy without need for bacterial isolation and identification may be appropriate.
- Sometimes bacterial isolation is not practical (e.g. *Neorickettsia risticii*) or the most informative test (e.g. toxin testing for *C. difficile*).



Step 3. Determine the optimal time for sampling.

- Collect samples early in the course of disease. Once necrosis develops some organisms might die or be overtaken by others.
- Obtain samples prior to antimicrobial administration. If this is not possible then collect the sample immediately before the next antibiotic dose or, in samples where antibiotics concentrate such as urine, wait 48 h after the last dose.

Step 4: Localise the site of infection.

- Sample the actual site of infection when possible and not the nearby site containing normal flora (e.g. culture tracheal mucus as opposed to nasal discharge).

Step 5: Determine if the site is normally considered sterile.

- Does the site being sampled normally have flora or does it have defenses to remove bacteria quickly. Example of sites where few bacteria should be found include the uterus, trachea and urinary bladder.

Step 6: Determine if anaerobes are likely to be involved.

- Features associated with an anaerobic infection include: gas and/or black discoloration and foul smell
- Because anaerobes survive in areas of low oxygen tension, they are more commonly isolated in severe, chronic infections such as dental and hoof abscesses as well as pleuropneumonia.

Step 7: Determine which samples are required.

- For example: endometritis - use a guarded uterine swab or small volume flush, draining tracts from wounds -aspiration of deep tissues is more likely to lead to appropriate bacterial identification than a swab of the surface drainage.

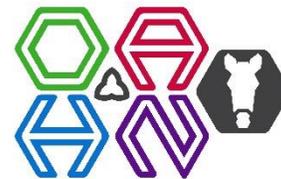
Step 8: Choose an appropriate method of sample collection and number of samples to collect

- Choose a method that will collect a sufficient volume of sample while avoiding contamination from nearby sites with normal flora.
- Multiple samples may be needed to isolate bacteria present in low numbers (e.g. in blood or manure)
- Appropriate collection devices and transport media are needed to ensure survival of bacteria and to prevent overgrowth. Call your laboratory to determine the appropriate collection and transport system if unsure.



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Reportable disease: Do you suspect rabies?

Rabies is a disease reportable to the Canadian Food Inspection Agency and immediately notifiable to OMAFRA. Rabies response and prevention in Ontario is a joint effort involving members of the public, Public Health, veterinarians, the Ministry of Health and Long-Term Care (MOHLTC), OMAFRA and the Ministry of Natural Resources and Forestry (MNR). Ontario has been dealing with an outbreak of raccoon rabies since 2015 (go [here](#) to see map). No horses have tested positive in Ontario since 2007.

Scenario

It's August and you are out to a farm to examine an acutely neurologic horse. Vaccinations for rabies have occurred sporadically (or not at all) and it is not vaccinated for EEEV or WNV. You euthanize the horse. You have rabies on your differential list.

What do you do next?

- Determine whether there has been any human contact with the horse's mouth by either the owner, the owner's family or you. There needs to be a category 2 or higher exposure to warrant a risk of exposure (see box).
- If you have determined that there is human exposure or you are not sure, contact the public health unit which correlates to the location of the horse and they will perform a risk assessment. Use this link to identify the appropriate health unit <http://www.lhins.on.ca/>
- If human exposure is ruled out, and there are no other exposed domestic animals on the property (e.g. solitary horse), then testing for rabies is not required.
- If there has been no human exposure but there are other exposed domestic animals on the farm, call OMAFRA's Agricultural Information Contact Centre at 1-877-424-1300 and a veterinarian will get back to you to perform a risk assessment.

WHO CATEGORIES

Category 1: Touched or licked on intact skin by offending animal.

Category 2: Nibbled, minor skin lesions in contact with saliva of offending animal.

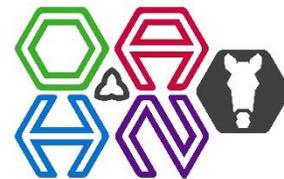
Category 3: Bitten, deep scratches, broken skin or mucus membranes in contact with saliva of offending animal.

What should you expect from your discussions with the health unit?

- A public health inspector from the health unit will perform a risk assessment to determine whether testing the brain for rabies is warranted based on human exposure.
- If they decide to go ahead with testing, they will send out a Registered Veterinary Technician (RVT) to remove the brain and send it to the CFIA lab in Ottawa. Sample collection usually occurs later that day or the following day depending on the RVT's schedule.
- The horse's body will have to be held in a secure place, out of the sun and away from scavengers until tested. THE BODY SHOULD NOT BE BURIED until after the brain has been removed. DEADSTOCK COMPANIES WILL NOT PICK UP THE BODY until the brain has tested negative. The brain is usually removed by sawing the head completely through the skull just behind the eyes. Many owners have difficulty with this and you may want to warn them not to be present.

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- Results will usually be back within two business days (one day for shipping and one day for testing, unless a weekend is involved).
- If the test is negative, there is no further action. If the test is positive (or unfit), the public health unit will commence issuing post-exposure prophylaxis to individuals considered exposed. If there are other domestic animals on the farm (horse or otherwise) OMAFRA will be contacted and further risk assessments conducted.

What should you expect from your discussions with OMAFRA?

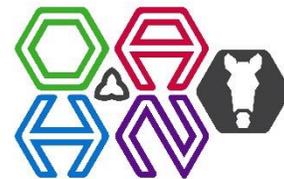
- A rabies response (RR) veterinarian will contact you to perform a risk assessment.
- If the RR veterinarian determines that the brain should be tested for rabies, one of the following needs to occur:
 - The brain is removed by you (the local veterinarian) at the farm. The RR veterinarian emails you links to information on how to perform a brain removal, how to package it and send it to the CFIA lab for testing. Your practice will be reimbursed \$160 by OMAFRA. (invoice template will be provided). Any additional charges (e.g. farm call, euthanasia) are a matter between you and the client.
 - If you are unable to do the brain removal yourself, there may be another veterinarian or RVT in the area who is willing and able to do so. Consider making arrangements with such a person in advance to simplify logistics. The remuneration paid by OMAFRA will still go to your practice, but can then be used to pay the individual who does the sample collection if needed.
 - The owner has the body shipped to the Animal Health Laboratory in Guelph or Kemptville to have the brain removed and sent for testing. Deadstock will not transport the body if they are told it is a rabies suspect. The owner will not be charged for brain removal or rabies testing, however he/she WILL be charged for disposal of the body and any other testing that is requested.
- If the rabies test comes back negative, there will be no further action. If it is positive (or unfit), the other livestock on the property that were considered exposed will be under a precautionary confinement period for 40 days. It is recommended that all exposed animals be (re)vaccinated for rabies as soon as possible, even if the vaccinations are current.

What if you want to test for other encephalitides ?

- If the public health unit is in charge of brain removal because of human exposure, the brain will ONLY be submitted for rabies testing. You CANNOT request a sample be submitted for WNV/EEE PCR.
- However, if you remove the brain, or make arrangements for , another veterinarian or RVT to do so, , or you pay an RVT to remove the brain, you can remove a cross section of the pons/medulla and send that to send to AHL for WNV/EEE PCR testing , while the rest of the brain is sent to the CFIA lab. Alternatively, you can send the entire brain to AHL and they will send the appropriate sections to the CFIA lab while they commence histology. All other testing is held until the rabies result is known.
- Alternatively, prior to euthanizing the horse, take a few red top tubes of blood for serum testing for EEE or WNV IgM and a nasal swab/EDTA (purple top) for EHV-1 PCR testing. This is always a good idea since the owner may be so distraught that they aren't in a frame of mind to consider further testing beyond rabies.
- Another sample that can be taken is CSF for PCR and IgM testing for EEE.

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Comments on rabies vaccination

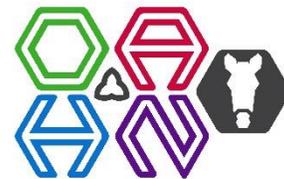
- The Regulations under the Health Promotion and Protection Act, administered by the Ministry of Health and Long Term Care, require that horses be immunized against rabies using only a vaccine licensed for use in Canada, according to the manufacturer’s instructions and only by a veterinarian registered under the Veterinarians Act.
- Only horses in settings where the general public is encouraged and/or expected to have direct contact with them are legally required to be vaccinated against rabies. Examples of settings that fit into this category include petting zoos; corporate birthday parties, and other “animal experience” events; and interactive animal exhibits where members of the public are intended to handle or pet the animals. Therapy animals, service animals and riding school horses would also fall under the scope of the immunization requirements. *(However, it is obviously best practice to vaccinate all horses, particularly in areas where there is a risk of contact with rabid wildlife).*
- If the horse has a medical condition that prevents vaccination or re-vaccination, the owner is exempt from the regulatory requirement IF:
 - ✓ A veterinarian writes a statement of exemption AND
 - ✓ The horse is controlled in a manner to prevent exposure to rabies
- **The results of a rabies titre test will not provide an exemption to this regulation.**
- For further information on the Act and Regulations go [here](#):
- For further information on Ontario’s rabies immunization requirements for animals go [here](#)
- For further information on the veterinarian’s requirements for the control of rabies and vaccination of animals , go [here](#)



<https://thehorse.com/120024>

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Equine research from Ontario and around the world

[Identification of genetic variation in equine collagenous lectins using targeted resequencing.](#)

Fraser RS, Arroyo LG, Meyer A, Lillie BN.

Vet Immunol Immunopathol. 2018 Aug;202:153-163. doi: 10.1016/j.vetimm.2018.07.001. Epub 2018 Jul 7.

[An exploration of industry expert perception of Canadian equine welfare using a modified Delphi technique.](#)

DuBois C, Hambly Odame H, Haley DB, Merkies K.

PLoS One. 2018 Jul 30;13(7):e0201363. doi: 10.1371/journal.pone.0201363. eCollection 2018.

[A longitudinal study describing horse demographics and movements during a competition season in Ontario, Canada.](#)

Spence KL, O'Sullivan TL, Poljak Z, Greer AL.. Can Vet J. 2018 Jul;59(7):783-790

[Optimization of Antimicrobial Treatment to Minimize Resistance Selection.](#)

Guardabassi L, Apley M, Olsen JE, Toutain PL, Weese S. .Microbiol Spectr. 2018 May;6(3). doi:

10.1128/microbiolspec.ARBA-0018-2017.

[Equine duodenitis-proximal jejunitis: A review.](#)

Arroyo LG, Gomez DE, Martins C. Can Vet J. 2018

May;59(5):510-517. Review.

[Post-exercise cardiac troponin I release and clearance in normal Standardbred racehorses.](#)

Rossi TM, Kavsak PA, Maxie MG, Pearl DL, Pyle WG, Physick-Sheard PW.

Equine Vet J. 2018 May 28. doi: 10.1111/evj.12967. [Epub ahead of print]

[Marginal ancestral contributions to atrial fibrillation in the Standardbred racehorse: Comparison of cases and controls.](#)

Kraus M, Physick-Sheard P, Brito LF, Sargolzaei M, Schenkel FS.

PLoS One. 2018 May 15;13(5):e0197137. doi: 10.1371/journal.pone.0197137. eCollection 2018.

[Using a computer simulation model to examine the impact of biosecurity measures during a facility-level outbreak of equine influenza.](#)

Spence KL, O'Sullivan TL, Poljak Z, Greer AL. Can J Vet Res. 2018

Apr;82(2):89-96

[Exploring relationships between body condition score, body fat, activity level and inflammatory biomarkers.](#)

Pearson W, Wood K, Stanley S, MacNicol J.

J Anim Physiol Anim Nutr (Berl). 2018 Aug;102(4):1062-1068. doi: 10.1111/jpn.12893. Epub 2018 Apr 29.

[Ontario Racehorse Death Registry, 2003-2015: Descriptive analysis and rates of mortality.](#)

Physick-Sheard PW, Avison A, Chappell E, MacIver M. **Equine** Vet J. 2018 Apr 19. doi: 10.1111/evj.12955.

[Ultrasound tissue characterisation of the superficial digital flexor tendons in juvenile Thoroughbred racehorses during early race training.](#)

Plevin S, McLellan J, van Schie H, Parkin T. **Equine** Vet J. 2018 Aug 20. doi:

10.1111/evj.13006. [Epub ahead of print]

[Current Status of Canine Umbilical Cord Blood-Derived Mesenchymal Stem Cells in Veterinary Medicine.](#)

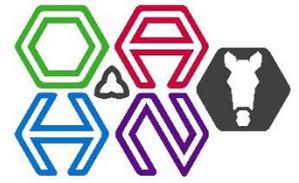
Sultana T, Lee S, Yoon HY, Lee JI.

Stem Cells Int. 2018 Jul 15;2018:8329174. doi: 10.1155/2018/8329174. eCollection 2018. Review.

[Synostosis of the first and second ribs in six horses.](#)

Rovel T, Coudry V, Denoix JM, Audigie F.

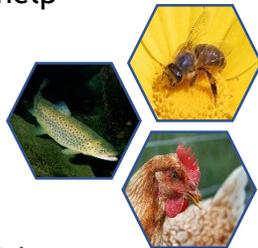
J Am Vet Med Assoc. 2018 Sep 1;253(5):611-616. doi: 10.2460/javma.253.5.611.



Small flock vet and Bee vet listservs

On December 1st, 2018, medically important antimicrobials for animals will only be available with a veterinary prescription. This will increase demand for veterinary services in some sectors where veterinary involvement has been limited in the past, such as apiculture (beekeeping), small / backyard poultry flocks, and aquaculture.

To help veterinarians get more involved with some of these less traditional clients, OAHN has set up two email listservs that include experts in these fields and other interested veterinarians, to help members find answers to their questions and other useful information. To sign up, simply email oahn@uoguelph.ca.



For those interested in pet fish and/or aquaculture medicine, the OVMA is coordinating some training sessions in the fall of 2018, to be provided by Dr. Veronique LePage. Watch the OVMA website and Newshound (and oahn.ca) for updates!

Your OAHN Equine Network Team

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Thoroughbred Industry
Dr. Jessica Peatling

Animal Health Lab
Dr. Murray Hazlett
Ontario Vet College
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