

PRAIRIE DIAGNOSTIC PERSPECTIVE



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PDS is Hiring

PDS is currently seeking a Client Services Veterinarian to join our team. If you or someone you know may be interested in this opportunity, please see the job advertisement attached to this newsletter for more information on the position and how to apply.

Suspect Anthrax Submissions

- Ensure that Suspect RG3 is checked on the submission form.
- Place a copy of the submission form in an envelope and attach the envelope to the outside of the package.
- Notify PDS that an Anthrax suspect submission is being shipped and expected day of arrival.
- For additional information, refer to Anthrax Sample Collection and Shipping Guidelines on the PDS website.

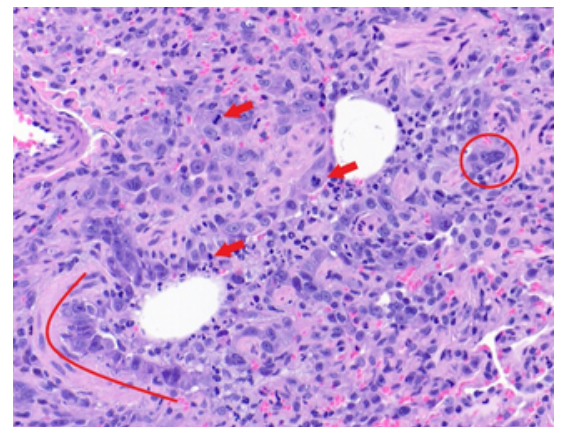
Histological Respiratory Lesions of Highly Pathogenic Avian Influenza (HPAI) in a Cat

Michael Zabrodski, (Anatomic Pathologist, PDS) BSc, DVM, MSc, DACVP

In late April 2026, PDS diagnosed a case of fatal HPAI infection in a domestic cat that had spent time outdoors and was reported to have had direct contact with a goose carcass. Histological examination of postmortem lung samples identified patchy lesions of bronchiolitis with interstitial pneumonia consistent with viral infection. PCR testing of fresh lung recovered influenza A virus, which was later confirmed to be the H5N1 strain associated with HPAI. Brain was separately tested by the CFIA to rule-out rabies.

HPAI is generally associated with infection in wild birds and domestic poultry; however, infections in mammals are occasionally reported. In cats, disease progression may be rapid and clinical signs may include a combination of neurological and respiratory symptoms. In the present case, both serous nasal discharge and stuporous mentation developed within a period of hours. For more information on HPAI infection in cats, please refer to the references below.

Photomicrograph of an affected airway, which exhibits bronchiolitis with marked regenerative epithelial hyperplasia. The curved red line runs along the smooth muscle of the bronchiolar wall and underlines a segment of attenuated and regenerative epithelium. Red arrows highlight mitotic figures (one of which is within adjacent collapsed alveolar spaces). The red circle highlights a suspected viral syncytial cell.



References:

Canadian Animal Health Surveillance System:

<https://cahss.ca/cahss-tools/document-library/highly-pathogenic-avian-influenza-A-H5N1-and-cats>

Government of Saskatchewan:

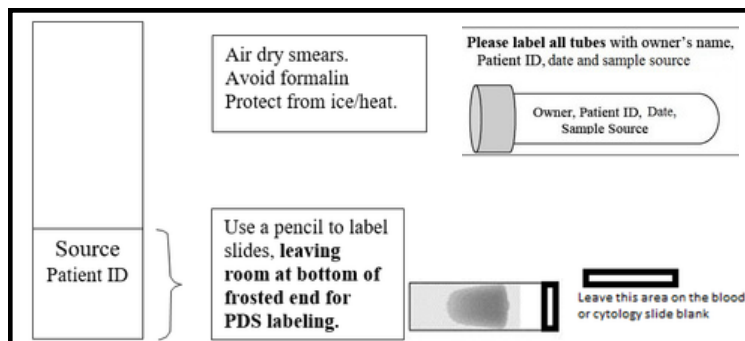
<https://www.saskatchewan.ca/government/news-and-media/2026/may/07/highly-pathogenic-avian-influenza-confirmed-in-cat-in-southeastern-saskatchewan>

Sample Submission Guidelines

Additional information can be found on the PDS website - [Submission Protocols – PDS Inc.](#)

Sample Labelling

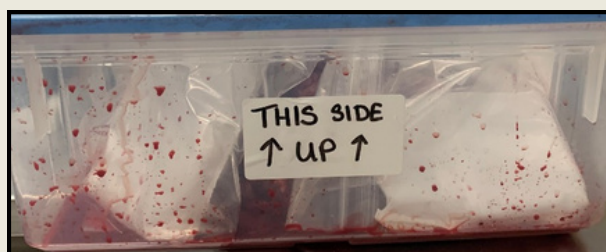
All samples must be properly labeled with the patient's identification, the owner's last name, and source (site). This includes cytology smears, tubes, feces, tissues and all other various samples sent for testing. For cytology smears taken from multiple sites, each slide must be labeled to indicate the corresponding site. Improperly labelled samples can delay testing.



Repackaging, Trimming, and Cleaning Tube/Sample Fees

Repackaging Fee:

samples submitted that are improperly packaged and have leaked in transit, where the receiving office cannot contain the sample, will be sent through the necropsy facility for repackaging before being sent to the appropriate lab for testing.



Repackaging fee will be charged.

Trimming Fee:

samples submitted that are larger than what the labs can accommodate (i.e. a whole limb, large liver or spleen, etc.) will be sent through the necropsy facility for the sample to be trimmed to an appropriate size.

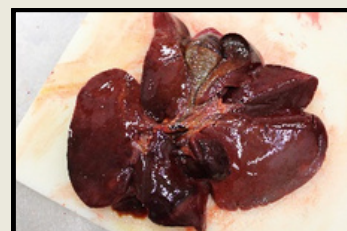


Cleaning Tube/Sample Fee:



Please ensure that the outside of all sample containers are clean and free of contamination before submission.

Samples received with dirty or contaminated tubes may require additional handling, which can delay testing and the reporting of results. If excessively dirty, cleaning will be required before testing can begin, additional processing charges may apply.



PDS will notify clients by email when one of these fees has been applied. If you require additional information on any of the additional fees, please email PDS receiving office – dso@usask.ca or phone 306-966-7316.

Unique Cytomorphology of Cestodiasis: A Case Report of Canine Alveolar Echinococcosis

Shanika Kurukulasuriya (Clinical Pathologist, PDS)

Maria Jarque (Parasitology Specialist, Jenkins lab)

A 9-year-old neutered male Havanese presented with abdominal enlargement. Fluid aspirated from a large, mineralized hepatic mass identified on CT was submitted for cytologic evaluation. Cytology revealed numerous large (100–750 µm), self-folded eosinophilic hyaline membrane-like structures (figure 1) containing multiple mineral-like particles measuring 2–10 µm (figure 2). These findings were interpreted as cestodiasis, with *Echinococcus* spp. considered the top differential diagnosis. Fluid sample was run for qPCR (adapted from Frey et al. 2019) using primer sequence for *Echinococcus multilocularis* (EM) targeting the NADH dehydrogenase subunit 1 (NAD1) mitochondrial gene 5'-3', *Echinococcus granulosus* (s.l.) and *Taenia* spp targeting the small subunit of ribosomal RNA (rrnS). The result was POSITIVE for EM.

EM is a tapeworm in the family *Taeniidae* that causes alveolar echinococcosis (AE), a severe and potentially life-threatening disease. Although dogs are usually considered as definitive hosts, they can develop alveolar echinococcosis when they function as aberrant intermediate hosts. In these hosts, EM develops into metacestodes (larval stages) within internal organs and body cavities, most commonly in the liver. These metacestodes form alveolar (multilocular hydatid) cysts lined by a parasitic germinal membrane, from which protoscolices develop. Progressive cyst growth and infiltrative expansion of the germinal membrane can result in severe organ damage and widespread dissemination of larval stages throughout the host.

This case highlights the distinctive cytologic features of EM metacestodes, which may serve as a strong first-line diagnostic indicator of AE and facilitate early recognition of this uncommon but clinically significant disease.

References:

Oscos-Snowball, Astrid, et al. "What is your diagnosis? Fluid aspirated from an abdominal mass in a dog." *Vet Clin Pathol* 44.1 (2015): 167–8.

Zajac, Anne, et al. "Alveolar echinococcosis in a dog in the eastern United States." *Journal of Veterinary Diagnostic Investigation* 32.5 (2020): 742–746.

Frey, Caroline F., et al. "A novel protocol to isolate, detect and differentiate taeniid eggs in leafy greens and berries using real-time PCR with melting curve analysis." *Parasites & Vectors* 12.1 (2019): 590.

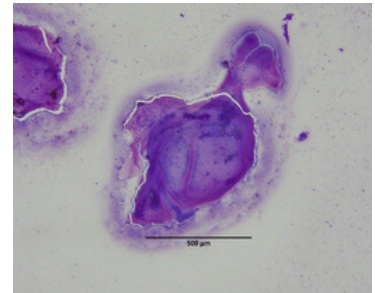


Figure 1: Self-folded eosinophilic hyaline membrane-like structures representing Metacestode (larval) structures of *Echinococcus multilocularis*

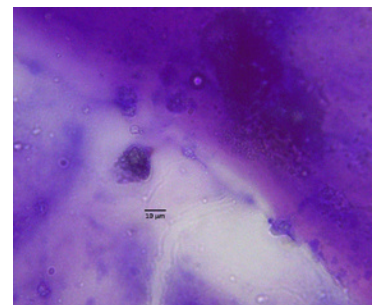


Figure 2: Calcareous corpuscles: Mineral like particle associated with metacestode of *Echinococcus multilocularis*

A Hidden Import: Spirocerca lupi Diagnosed on Pleural Fluid Cytology

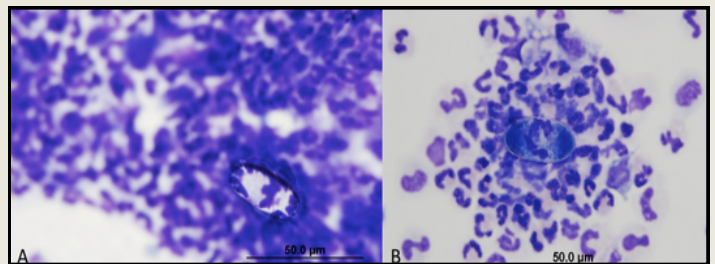
By Dr. Lilani Munasinghe (Clinical Pathologist, PDS)

A 2-year-old spayed female terrier mix, rescued from Peru and imported into Canada, was presented for lethargy, shaking, fever, and rapid shallow breathing. Thoracic imaging revealed mild to moderate pleural effusion, mediastinal lymphadenopathy, and contrast-enhancing caudal esophageal mass.

Ultrasound-guided thoracocentesis was performed, and pleural fluid submitted to our clinical pathology lab revealed a marked neutrophilic exudate. Cytology identified rare oval, thick-walled structures morphologically consistent with *Spirocerca lupi* eggs. Bacterial culture was negative.

Subsequent centrifugal fecal flotation performed on three samples confirmed *Spirocerca lupi* infection, with eggs detected on the third sample. The dog was treated with milbemycin and recovered well, with complete resolution of respiratory signs reported at 3-month follow-up.

Spirocerca lupi is a nematode endemic to tropical and subtropical regions and should be considered in imported dogs presenting with pyothorax, pleural effusion, or esophageal masses. This case highlights the value of careful cytologic examination of pleural fluid in achieving a minimally invasive antemortem diagnosis.



Photomicrographs of thoracic fluid cytology, direct smear (A) and cytopspin preparation (B). Modified Wright-Giemsa, ×100 objective.

It is not *S. suis* anymore?

Dr. Ruwani Karunaratna (Diagnostic Microbiologist, PDS)

Dhinesh Periyasamy (Molecular Biologist, PDS)

Streptococcus suis (*S. suis*) is a significant swine pathogen that causes septicemia, sudden death, meningitis, arthritis, and endocarditis, primarily in post-weaned piglets. Accurate identification of *S. suis* from affected animals is essential for disease diagnosis, surveillance, and the potential development of autogenous vaccines.

Recent genomic studies have shown that *S. suis* represents part of a broader *S. suis* complex comprising several closely related species. Because members of this complex share a high degree of genomic similarity, traditional identification methods, including matrix-assisted laser desorption/ionization time-of-flight mass spectrometry (MALDI-TOF MS) and *recN* gene-based PCR, have limited discriminatory power and may misidentify closely related species as *S. suis* (Li et al. 2025).

Recently at PDS, an isolate was initially identified as *S. suis* by MALDI-TOF MS. We performed whole-genome sequencing for serotyping and multilocus sequence typing (MLST), but the isolate was untypeable by both methods. Further genomic analysis confirmed that the isolate was closely related to *Streptococcus iners*, demonstrating that current methods can misidentify species closely related *S. suis*.

To improve diagnostic accuracy, our laboratory has adopted more stringent MALDI-TOF MS identification criteria for *S. suis*. When MALDI-TOF MS results are ambiguous or inconsistent, we consult with the submitting swine veterinarian and recommend whole-genome sequencing to confirm the species identity.

Reference

Li, Kevin, Sonia Lacouture, Lucy A. Weinert, et al. 2025. "Genomic Re-Evaluation of Clinical Isolates Reveals a Structured *Streptococcus Suis* Complex." *Journal of Clinical Microbiology* 63 (12): e01030–25. <https://doi.org/10.1128/jcm.01030-25>.

Blue Green Algae

Vanessa Cowan DVM PhD DABVT

Summertime is the highest risk period for cyanobacteria (blue green algae) problems in livestock, pets, and wildlife. The warm temperatures create an ideal environment for these algae to thrive, but other factors are required for toxic bloom formation. The most at risk water sources are those that:

1. are stagnant/have low flow
2. have high nutrient input (run-off, animal excrement) and
3. have limited-to-no dilution.

This can include dug-outs, ponds, and low flow areas of lakes and rivers. Toxic algal blooms can have various appearances but have been described as looking like paint ribbons or pea soup. As the name suggests, the colour of blooms is often a vivid blue green colour (see picture), but colour can be variable. In addition, the individual algal cells will be imperceptible, which differentiates these blooms from true algae like duckweed or from pollen. Depending on the water body, you may also observe dead fish, which is suggestive of a low oxygen environment in the water caused by a bloom.



Picture credit: Dr. Stephen Hopper, Animal Disease Diagnostic Laboratory, Indiana USA

The most common forms of poisoning caused by blue green algae in Saskatchewan are **neurotoxic** (affects the nervous system) and **hepatotoxic** (causes severe, often fatal liver damage). These toxins are **very fast acting** and can result in symptoms and death within as little as an hour. There are limited feasible options for treatment of poisoned animals aside from supportive measures. As such, **prevention of exposure** is of paramount importance.

Unfortunately, the appearance of toxic blue green algae blooms and toxin production can be unpredictable. The only way to ensure the safety of a water source is **testing** for cyanobacterial toxins. Identification of species of blue green algae is helpful but does not indicate whether toxins are present. Prairie Diagnostic Services offers water testing services through the toxicology laboratory.

For more information on blue green algae in Saskatchewan, please see the following guide from the Saskatchewan Ministry of Agriculture: <https://pubsaskdev.blob.core.windows.net/pubsask-prod/153446/Blue-Green-Algae-Livestock-Watering-Sources-Factsheet-2026.pdf>

Exciting News for Our Swine Clients: *Brachyspira* Testing Now Available at Prairie Diagnostic Services

Dr. Ruwani Karunaratna (Diagnostic Microbiologist, PDS)

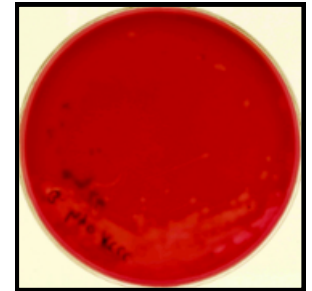
After several months of planning and hard work, Prairie Diagnostic Services is pleased to announce that we have successfully transitioned the *Brachyspira* testing program from Dr. Janet Hill's laboratory at WCVN to our veterinary diagnostic laboratory. Effective July 13, 2026, all samples for *Brachyspira* testing and reporting will be completed by PDS. We thank the Hill laboratory for providing this service since 2009. We are also grateful to Dr. John Harding for his guidance throughout the transition period.

There is no change in the submission process; samples for *Brachyspira* testing should be submitted directly to PDS as has been done in the past.

Swine dysentery is an economically significant disease of growing pigs, characterized by mucohemorrhagic colitis caused by strongly hemolytic *Brachyspira* species, including *Brachyspira hyodysenteriae* and *Brachyspira hamptonii*. Intestinal spirochetosis, which typically presents as mucoid diarrhea, is caused by *Brachyspira pilosicoli*. Accurate identification of causative agents is essential for effective disease prevention, treatment, and epidemiological investigations. *Brachyspira* spp can be associated with clinical infections other than swine, including poultry and exotic animals. Therefore, clients submitting samples from non-swine species may also request *Brachyspira* testing, as appropriate. We are pleased to offer the following diagnostic assays:



- **Real-Time PCRs** for *Brachyspira hyodysenteriae*, *Brachyspira pilosicoli*, and *Brachyspira hamptonii*.
- **Real-Time PCR for *Brachyspira hamptonii* Clade I/II Typing**: performed directly on clinical samples that have tested positive for *Brachyspira hamptonii*.
- ***Brachyspira* species *nox* Gene PCR with Sequencing Identification**: performed directly from clinical samples or from positive cultures.
- ***Brachyspira* Culture**
- ***Brachyspira* Antimicrobial Resistance Gene (ARG) PCR**, performed on positive *Brachyspira* broth cultures. In addition to the test cost, *Brachyspira* Broth Culture Set Up Charge will apply to each test.
 - Targets the *tvaB* and *lnu(C)* genes associated with resistance to tiamulin and lincomycin, respectively.



Hemolytic zones associated with the growth of *Brachyspira hyodysenteriae*.

Sample Submission

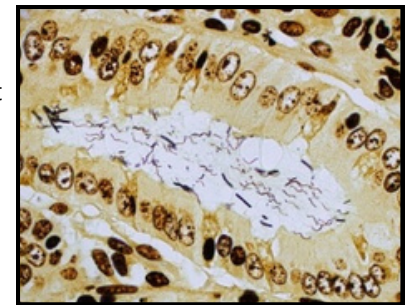
Fresh fecal, large intestinal and effluent (manure pit) samples are acceptable for testing. Samples should be received by the laboratory within 48 hours of collection and kept refrigerated during transport to preserve sample quality for bacterial isolation. Samples can be frozen for PCR testing, if needed. DO NOT FREEZE samples for culture. Additional test information can be found on the client portal fee guide.

These new testing services are now available to order on the PDS client portal and on the Porcine submission form available on our website.

We look forward to supporting your diagnostic needs with this expanded offering.

For additional information, please contact us at dso@usask.ca or call 306-966-7316.

Kulathunga, Dharmasiri GRS, and Joseph E. Rubin. "A review of the current state of antimicrobial susceptibility test methods for *Brachyspira*." *Canadian Journal of Microbiology* 63.6 (2017): 465-474.



Brachyspira hamptonii in a colonic crypt. Silver stain

We welcome your feedback on the information shared in this newsletter. If you have any questions, comments, or suggestions, please don't hesitate to reach out to our team. Please mail pdsclientservices@usask.ca, and your comments will be forwarded appropriately

BOVINE ABORTION DIAGNOSTICS: Better Answers for Producers

Funded by the Government of Saskatchewan
and the Beef Cattle Research Council.



1 INNOVATION



PDS developed **BovReproSeq**, a genomics-based diagnostic tool that can simultaneously detect **17+** pathogens associated with bovine abortion.



2 DIAGNOSTIC SUCCESS

>75%

diagnostic success when
a comprehensive package is used



Necropsy



Histopathology



Bacterial
culture



BovReproSeq



Mineral
testing



Vitamin
testing



3 PLACENTA MATTERS

~90%

diagnostic success when
placenta is submitted and
the full diagnostic package
is used



4 WHY IT MATTERS



Accurate diagnoses
help guide treatment,
management decisions,
and prevention—
supporting Saskatchewan
and Western Canadian
cow-calf producers.



*Client-centred innovation delivering
practical value to the cattle industry.*



Veterinarians: Have questions?
Contact PDS for assistance with testing,
sample submission, or diagnostic questions.

Phone: 306-966-7316
Email: pds.info@usask.ca
Website: pdsinc.ca



Client Service Veterinarian

Prairie Diagnostic Services Inc. (PDS) is a full-service, not-for-profit veterinary diagnostic laboratory serving veterinarians, livestock producers, industry partners, researchers, government agencies, and animal owners.

We are seeking a client-focused veterinarian to strengthen relationships, promote services, improve client experience, and contribute to sustainable business growth.

Expected Outcomes

The successful candidate will:

- Strengthen relationships with veterinary clinics, producer groups, researchers, and industry partners.
- Improve clients' access to PDS diagnostic expertise and services.
- Increase client retention and the appropriate use of PDS testing services.
- Identify new clients, service opportunities, and areas for business growth.
- Ensure that client feedback leads to meaningful improvements in PDS services and communication.
- Increase awareness of PDS's expertise, services, and role in animal health.

Main Duties

- Develop and maintain relationships with existing and prospective clients, including veterinary clinics, producer groups, researchers, and industry partners throughout Saskatchewan and Western Canada.
- Promote new, existing, and underutilized PDS services.
- Identify and pursue business development opportunities using a consultative approach.
- Gather, document, and follow up on client feedback, concerns, and service needs.
- Work with PDS teams to resolve client issues and improve processes, reporting, turnaround times, and service delivery.
- Represent PDS at conferences, producer meetings, educational events, and industry functions.



Qualifications and Skills

Required

- Doctor of Veterinary Medicine degree.
- Eligibility for veterinary licensure in Saskatchewan.
- Clinical veterinary experience.
- Strong communication, presentation, relationship-building, and problem-solving skills.
- A demonstrated client-centred approach and sound business judgment.
- Ability to work independently and collaborate effectively with professional and operational teams.
- Preferred
- Experience in a mixed animal practice setting.
- Experience in sales, account management, business development, or industry engagement.

Position Requirements

This position is based in Saskatoon and requires regular travel. Occasional overnight, evening, or weekend travel may be required.

PDS offers competitive compensation, comprehensive benefits, professional development support, and the opportunity to make a meaningful contribution to veterinary diagnostics and animal health.

Application deadline: September 15, 2026, or until the position is filled.

Please submit a cover letter and curriculum vitae to kelsey.rokosh@pds.usask.ca.