

SUMMARY: RELEVANT SIGNALS (includes all signals rated ≥3.0)

Highly Pathogenic Avian Influenza

- Over the last week, **Canada** has reported outbreaks of HPAI H5N1 in commercial poultry in: **Quebec (8)** and **Ontario (1)**; and in non-commercial poultry in: **Alberta (1)**
- A **Canadian** pre-print article has shown that multiple naturally circulating reassortant H5N1 viruses can replicate in primary human airway epithelial cells and cause lethal disease in multiple mammalian species; one isolate (A/Red Tailed Hawk/ON/FAV-0473-4/2022) efficiently transmitted by direct contact between ferrets, resulting in lethal outcomes
- More than 200 dead Canada geese have been collected around **Brampton, Ontario** in the past month due to HPAI H5N1
- In the **USA**, two domestic cats, that lived on a farm with a poultry flock in **Oregon**, died in December 2022 from HPAI; the birds in the flock had contracted HPAI and were euthanized about one week before the cats began showing neurologic symptoms
- Additional cases of HPAI H5N1 clade 2.3.4.4b have been reported in wild red foxes in: **Wisconsin, Colorado, and New York**; and in wild striped skunks in: **New Mexico**

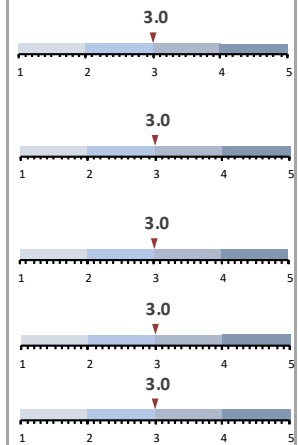
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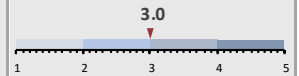
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Canine Influenza

- The **Philadelphia** region has been in the midst of an outbreak of canine influenza, which was noticed in early January

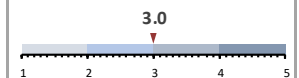
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Babesiosis

- A recent journal article has reported the first high-quality nuclear genome sequence and assembly of the pathogen *Babesia duncani*; identifying the molecular mechanism most likely leading to the parasite's pathogenicity and virulence, and proving leads for the development of more effective therapies

[Read More](#)



NEW EVENTS: (events rated > 2)

No new events to report this week

CONTINUED EVENTS: (events rated ≥ 2.4)

Canine Influenza in North America

No. of Signals: 01

No. of weeks in report: 03

Avg. Rating: 3.0

- The [Philadelphia](#) region has been in the midst of an outbreak of canine influenza, which was noticed in early January

Highly Pathogenic Avian Influenza in North America

No. of Signals: 14

No. of weeks in report: 66

Avg. Rating: 2.0 – 3.0

- [Canada](#) has reported outbreaks of HPAI H5N1 in commercial poultry in: Quebec (8) and Ontario (1); and in non-commercial poultry in: Alberta (1)
- More than 200 dead Canada geese have been collected around [Brampton](#), Ontario in the past month due to HPAI H5N1
- The [USDA](#) has reported outbreaks of HPAI H5N1 in commercial poultry in: North Dakota and South Dakota; in WOAHP poultry in: New York; in WOAHP non-poultry in: Colorado and Idaho; and in a live bird market in: New York
- Two domestic cats, that lived on a farm with a poultry flock in [Oregon](#), died in December 2022 from HPAI; the birds in the flock had contracted HPAI and were euthanized about one week before the cats began showing neurologic symptoms
- Additional cases of HPAI H5N1 clade 2.3.4.4b have been reported in mammals across [various states](#); in wild red foxes in: Wisconsin, Colorado, and New York; and in wild striped skunks in: New Mexico
- The [US](#) government is testing four potential avian influenza vaccines for poultry (one vaccine from Zoetis Inc., one from Merck Animal Health, and two developed by the department's Agricultural Research Service)

Highly Pathogenic Avian Influenza in South America

No. of Signals: 08

No. of weeks in report: 22

Avg. Rating: 2.0 – 2.3

- [Chile](#) has reported the death of two Chilean dolphins due to HPAI; so far this year, 4,347 animals have been stranded on the Chilean coast, of which 35 have been confirmed as positive for HPAI: 2 chungungos, 25 sea lions, 4 Humboldt penguins, 2 spiny porpoises and most recently 2 Chilean dolphins
- [Argentina](#), [Uruguay](#), and [Chile](#) have reported outbreaks of HPAI H5N1 in domestic poultry

Marburg Virus in Equatorial Guinea

No. of Signals: 04

No. of weeks in report: 05

Avg. Rating: 1.5 – 2.3

- As of April 23, 2023, a total of 17 laboratory-confirmed cases have been reported in [Equatorial Guinea](#), with 35 total deaths

Highly Pathogenic Avian Influenza in Europe

No. of Signals: 08

No. of weeks in report: 122

Avg. Rating: 2.0

- [Belgium](#) has reported additional cases of HPAI in wild red foxes
- [Hungary](#), [Russia](#), and [Norway](#) have reported HPAI H5N1 in domestic poultry
- [France](#), [England](#), [Spain](#), and [Italy](#) have reported HPAI H5N1 in wild birds
- A summary of the overall HPAI situation in Europe is available [here](#)

Highly Pathogenic Avian Influenza in Asia

No. of Signals: 03

No. of weeks in report: 99

Avg. Rating: 2.0

- [Japan](#) has reported HPAI H5N1 in a wild red fox in Hokkaido
- [Taiwan](#) has reported HPAI H5N1 in domestic poultry
- [Israel](#) has reported HPAI H5N1 in an Armenian gull found dead at the Habonim Beach Nature Reserve on April 9

SCIENTIFIC FINDINGS & REPORTS:

Coronavirus

- ◆ Cryptic SARS-CoV-2 lineage identified on two mink farms as a possible result of long-term undetected circulation in an unknown animal reservoir, Poland, November 2022 to January 2023 [Read More](#)
- ◆ SARS-CoV-2 Seroprevalence Studies in Pets, Spain [Read More](#)

Influenza

- ◆ Pre-print: Transmission of lethal H5N1 clade 2.3.4.4b avian influenza in ferrets [Read More](#)
- ◆ Pre-print: The Changing Dynamics of Highly Pathogenic Avian Influenza H5N1: Next Steps for Management & Science in North America [Read More](#)
- ◆ Pre-print: Targeted genomic sequencing of avian influenza viruses in wetlands sediment from wild bird habitats [Read More](#)
- ◆ H5N1 Avian Flu and Animal Shelters [Read More](#)
- ◆ Zoonotic Animal Influenza Virus and Potential Mixing Vessel Hosts [Read More](#)
- ◆ Evolution of Avian Influenza Virus (H3) with Spillover into Humans, China [Read More](#)
- ◆ A One Health approach to mitigate the impact of influenza A virus (IAV) reverse zoonosis is by vaccinating humans and susceptible farmed and pet animals [Read More](#)
- ◆ Bayesian phylodynamics reveals the transmission dynamics of avian influenza A(H7N9) virus at the human–live bird market interface in China [Read More](#)

Vector and Vector Borne Diseases

- ◆ Review of environmental management strategies to reduce tick populations [Read More](#)
- ◆ *Babesia duncani* multi-omics identifies virulence factors and drug targets [Read More](#)
- ◆ *Borrelia miyamotoi* Infection in Immunocompromised Man, California, USA, 2021 [Read More](#)
- ◆ Yezo Virus Infection in Tick-Bitten Patient and Ticks, Northeastern China [Read More](#)

Other

- ◆ 2023 US Annual Pet Parasite Forecasts (note Canadian results based on diagnostic tests without known travel history) [Read More](#)
 - ◆ For more Canadian context - Canadian Parasitology Expert Panel Guidelines (last updated 2017) [Read More](#)
- ◆ Feral swine as indirect indicators of environmental anthrax contamination and potential mechanical vectors of infectious spores [Read More](#)
- ◆ New Genotype of *Coxiella burnetii* Causing Epizootic Q Fever Outbreak in Rodents, Northern Senegal [Read More](#)
- ◆ Unknown Circovirus in Immunosuppressed Patient with Hepatitis, France, 2022 [Read More](#)
- ◆ Epizootic Hemorrhagic Disease Virus Serotype 8, Italy, 2022 [Read More](#)

Disclaimer

This intelligence report is intended to provide information to risk managers about emerging and zoonotic disease events that could pose a threat to Canada. It is based on information signals acquired and selected from twenty-one distinct disease surveillance sources via the Knowledge Integration using Web-based Intelligence (KIWI) tool hosted on the Canadian Network for Public Health Intelligence (CNPHI) informatics platform. The report is based on the activities of the CEZD Community of Practice and subject to change based on evolving user needs.