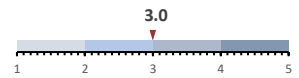


## SUMMARY: RELEVANT SIGNALS (includes all signals rated ≥ 3.0)

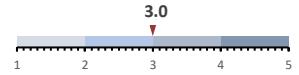
### Influenza A (H3N2v, H1N1v, H1N2v, H5N1)

- ◆ **Canada** has reported a single human case of swine-origin influenza A (H3N2) variant in a child (<18 years old) from **Saskatchewan** that developed symptoms on June 10, 2024, and has since recovered; the case lives on a farm with cattle and swine, but reported no direct contact with the livestock
- ◆ The **USA** has reported two human cases of variant influenza A, one infection with an H1N1 variant in **Ohio** and one infection with an H1N2 variant in **Pennsylvania**; both patients are >18 years-old, developed symptoms during the week ending August 10, 2024, reported exposure to swine, were briefly hospitalized, and have since recovered
- ◆ **Cambodia** has reported another human case of influenza A H5N1 (clade yet to be determined – likely 2.3.2.1c), the tenth case this year, in a 15-year-old girl from **Prey Veng** province, who had direct contact with dead poultry, and passed away on August 20, 2024
- ◆ Journal article: In the **USA**, in relation to the multistate outbreak of influenza A H5N1 in dairy cattle, the CDC has found the none of the Michigan farm workers tested had antibodies to the virus, suggesting that asymptomatic infections are not occurring among workers exposed to infected animals and that the current testing approach of collecting samples from symptomatic people may be sufficient

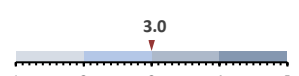
[Read More](#)



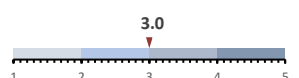
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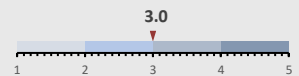
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### Highly Pathogenic Avian Influenza

- ◆ Pre-print: Recent Bovine HPAI H5N1 Isolate Is Highly Virulent For Mice, Rapidly Causing Acute Pulmonary And Neurologic Disease
  - Compared disease progression and pathology of three recent clade 2.3.4.4b isolates derived from a cow, mountain lion, and mink to a human HPAI A(H5N1) isolate from Vietnam in mice
  - Inoculation of C57BL/6J and BALB/c mice with all four HPAI A(H5N1) isolates resulted in comparable levels of virus replication in the lung inducing severe respiratory disease
  - C57BL/6J mice infected with the bovine isolate also developed high virus titers in the brain, resulting in a significant pro-inflammatory cytokine response and neurologic disease
- ◆ Pre-print: Outcome of H5N1 clade 2.3.4.4b virus infection in calves and lactating cows
  - Oronasal inoculation of the calves resulted in moderate nasal replication and shedding with no severe clinical signs or transmission to sentinel calves; in dairy cows, intramammary inoculation resulted in severe acute mammary gland infection with necrotizing mastitis; high fever was observed for both H5N1 genotypes/strains
  - Adaptive mutation PB2 E627K emerged after intramammary replication of H5N1 genotype eUDG
  - Data suggest that other HPAIV H5N1 strains have the potential to replicate in the udder of cows and that milk and milking procedures, rather than respiratory spread, are likely the primary routes of H5N1 transmission between cattle
- ◆ In **Antarctica**, 14 new positive cases of the HPAI H5N1 have been confirmed in penguins, seabirds, and sea lions, indicating that the spread of the virus in the southern region is greater than expected

[Read More](#)



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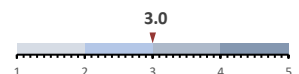
[Read More](#)



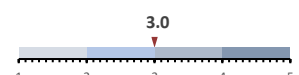
### Mpox (clade Ib)

- ◆ The WHO has released an updated Disease Outbreak News report on mpox in **Africa** as well as a new [mpox surveillance dashboard](#) of laboratory confirmed cases; the updated report indicates that clade Ib is spreading rapidly among adults through close physical contact, including sexual contact and networks of sex workers, and as the virus spreads further, the affected groups are changing, with the virus also taking hold within households and other settings
- ◆ **Thailand** has confirmed **Asia's** first case of mpox clade Ib in a 66-year-old European man who had travelled to **Africa**; 43 close contacts are currently being monitored

[Read More](#)



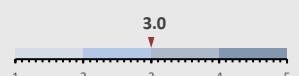
[Read More](#)



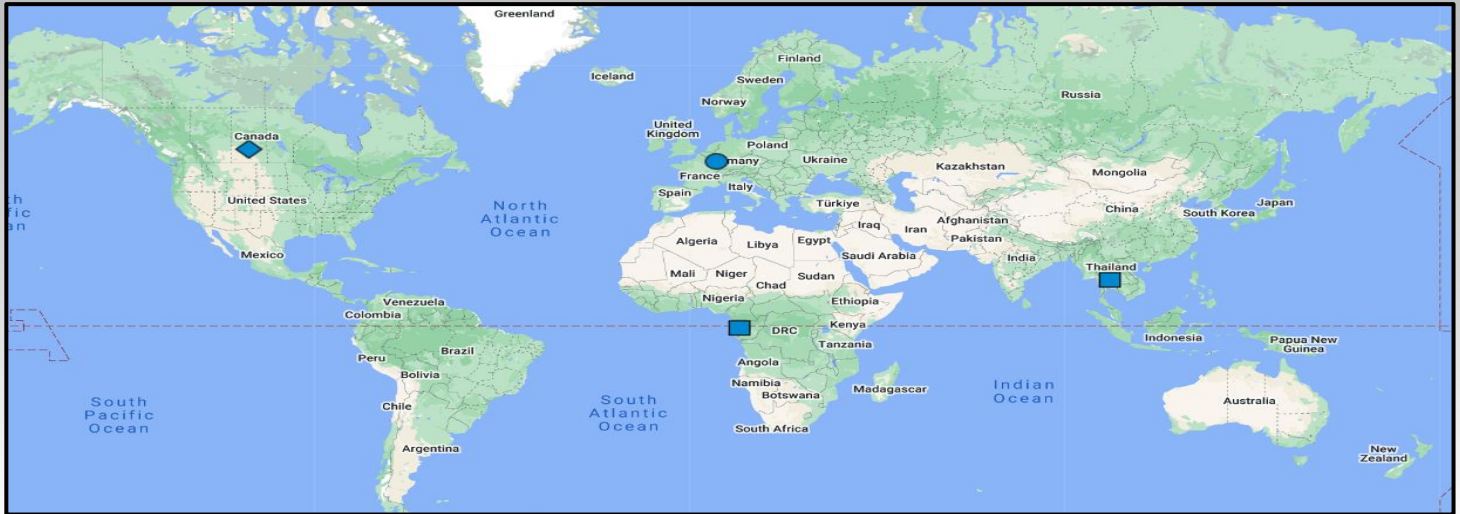
### Oropouche virus

- ◆ **Cuba** recently announced that >400 cases of Oropouche virus have been confirmed on the island, since the initial detection in May 2024; this figure contrasts with reports from social media and other health departments that signify a much larger outbreak, however this may be due to limited lab capacity and ability to confirm cases

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NEW EVENTS: (events rated > 2)



**Influenza A (H3N2) variant in Saskatchewan**

**Pathogen:** virus; **Transmission:** direct contact, fomite, aerosol; **Species affected in event:** human

① Canada has reported a single human case of swine-origin influenza A (H3N2) variant in a child (<18 years-old) from Saskatchewan. On June 10, 2024, the case developed several symptoms including decreased appetite, arthralgia, dizziness, fatigue, otitis, rhinorrhea, nasal congestion, sore throat, and sputum production. On June 16 they sought emergency medical care but were not hospitalized and have since then recovered. The case lives on a farm with cattle and swine, but reported no direct contact with the livestock. There was no known exposure to other symptomatic persons or animals prior to symptom onset. This is the fourth reported case in Canada since 2005 (2 in Ontario, in [2005](#) and [2016](#); 1 in Manitoba, in [2021](#)). [Read More](#)

Avg. Rating	3.0
No. of Signal	1
No. of Ratings	3

**Mpox in Thailand (clade Ib) and Gabon (clade unknown)**

**Pathogen:** virus; **Transmission:** direct contact, fomite; **Species affected in event:** human

① Thailand has confirmed Asia's first case of mpox clade Ib in a 66-year-old European man who had travelled to Africa. Monitoring of 43 close contacts has not identified any symptoms so far. [Read More](#)

Avg. Rating	2.3 - 3.0
No. of Signal	3
No. of Ratings	3

Gabon has confirmed its first case of mpox (clade has not been reported) in a 30-year-old man who had travelled and stayed in Uganda for two weeks. A few days after he arrived in Gabon, he presented with fever and fatigue, followed by a generalized skin rash. He was hospitalized and placed in isolation on August 21. Contact tracing is under way. [Read More](#)

**Bluetongue virus serotype 3 in Luxembourg**

**Pathogen:** virus; **Transmission:** vector - culicoides; **Species affected in event:** sheep, cattle

① Luxembourg has reported its first outbreak of BTV-3. Since the initial detection on August 2, 2024, a total of 339 animals (236 cattle, 99 sheep, and 4 goats) have tested positive for BTV-3 across 180 farms. A vaccination campaign was initiated on August 9, 2024, with 50,000 doses distributed to veterinarians and another 190,000 additional doses ordered. [Read More](#)

Avg. Rating	2.5
No. of Signal	2
No. of Ratings	2

## CONTINUED EVENTS: (events rated $\geq 2.4$ )

### **Influenza A (H1N1v, H1N2v) in the USA**

**No. of Signals: 01**

**No. of weeks in report: 19**

**Avg. Rating: 3.0**

- The [USA](#) has reported two human cases of variant influenza A, one infection with an H1N1 variant in Ohio and one infection with an H1N2 variant in Pennsylvania; both patients are >18 years old, developed symptoms during the week ending August 10, 2024, reported exposure to swine, were briefly hospitalized, and have since recovered

### **Influenza A (H5N1) in Cambodia**

**No. of Signals: 01**

**No. of weeks in report: 13**

**Avg. Rating: 3.0**

- [Cambodia](#) has reported another human case of influenza A H5N1 (clade yet to be determined – likely 2.3.2.1c), the tenth case this year, in a 15-year-old girl from Prey Veng province, who had direct contact with dead poultry, and passed away on August 20, 2024

### **Highly Pathogenic Avian Influenza in Antarctica**

**No. of Signals: 01**

**No. of weeks in report: 11**

**Avg. Rating: 3.0**

- In [Antarctica](#), 14 new positive cases of the HPAI H5N1 have been confirmed in penguins, seabirds, and sea lions, indicating that the spread of the virus in the southern region is greater than expected

### **Mpox Worldwide (Africa)**

**No. of Signals: 09**

**No. of weeks in report: 28**

**Avg. Rating: 2.0 - 3.0**

- The WHO has released an [updated Disease Outbreak News report](#) on mpox in Africa as well as a new [mpox surveillance dashboard](#) of laboratory confirmed cases; the updated report indicates that clade 1b is spreading rapidly among adults through close physical contact, including sexual contact and networks of sex workers, and as the virus spreads further, the affected groups are changing, with the virus also taking hold within households and other settings
- [Burundi](#) is reporting elevated mpox (clade unspecified) activity, with a total of 605 cases (105 confirmed) since July 25, 2024
- [Kenya](#) has confirmed its second case of mpox (clade unspecified, likely 1b), in a Ugandan truck driver who was screened at the Malaba One Stop Border Post in Busia County
- [Nigeria](#) has reported a total of 39 confirmed cases of mpox (clade unspecified) and zero deaths across 33 states and the federal capital territory, from the beginning of 2024

### **Oropouche in South America & Cuba**

**No. of Signals: 03**

**No. of weeks in report: 05**

**Avg. Rating: 2.0 - 3.0**

- [Cuba](#) recently announced that >400 cases of Oropouche virus have been confirmed on the island, since the initial detection in May 2024; this figure contrasts with reports from social media and other health departments that signify a much larger outbreak, however this may be due to limited lab capacity and ability to confirm cases
- According to the latest public data reported by PAHO, since January, Brazil, Bolivia, Colombia, Peru and Cuba have confirmed 8,078 cases of Oropouche virus through the end of June; [Brazil](#) has reported one fetal death and one abortion in the state of Pernambuco and four cases of newborns with microcephaly in Acre and Pará, in addition to having three possible cases of fetal death due to vertical transmission of the virus in Pernambuco under study
- In the USA, [Florida](#) has reported a total of 20 travel-related (Cuba) Oropouche virus cases

### **New World Screwworm in Central America**

**No. of Signals: 01**

**No. of weeks in report: 12**

**Avg. Rating: 2.5**

- As of August 17, 2024, [Panama](#) has reported 14,749 cases of New World Screwworm, Costa Rica has reported 4,905 cases, and Nicaragua has reported 1,945 cases
- As of August 16, 2024, [Panama](#) has confirmed a total of seven human cases, with two suspected cases, of New World Screwworm

### **Bluetongue virus in Europe**

**No. of Signals: 03**

**No. of weeks in report: 10**

**Avg. Rating: 2.0 - 2.5**

- Since the initial reports of BTV-3 in [France](#) in late July 2023, the country has reported a total of 185 outbreaks of BTV-3 in both sheep and cattle, with 122 of the outbreaks occurring over the last week; the outbreaks are still localized to north eastern France, along France's borders with Belgium and Luxembourg
- [France](#) is distributing 6.4 million doses of BTV-3 vaccine to the most impacted regions

### **Highly Pathogenic Avian Influenza in Europe**

**No. of Signals: 06**

**No. of weeks in report: 187**

**Avg. Rating: 2.0 - 2.3**

- [France](#) will launch a second vaccination campaign against HPAI among farm ducks in October, after a successful inaugural programme last year
- [Denmark](#) and [France](#) have reported HPAI H5N1 in wild birds
- [Scotland](#) has reported HPAI H5N5 in wild birds
- A summary of the overall HPAI situation in Europe is available [here](#)

### **Highly Pathogenic Avian Influenza in North America**

**No. of Signals: 06**

**No. of weeks in report: 130**

**Avg. Rating: 2.0 - 2.3**

- [Canada](#) has not reported any outbreaks of HPAI in domestic poultry over the last week
- Over the last week, the [USDA](#) reported one outbreak of HPAI in a live bird market in Florida
- The [USDA](#) has not reported any additional outbreaks of influenza A H5N1 in dairy cattle over the last week; the total stands at 192 dairy herds across 13 states: Wyoming(1), North Carolina(1), Ohio(1), Oklahoma(2), Kansas(4), South Dakota(7), [Minnesota](#)(9), New Mexico(8), Iowa(13), Texas(24), [Michigan](#)(27), Idaho(31), and [Colorado](#)(64)
- [Mexico](#) has reported an outbreak of HPAI H5N1 in backyard poultry in Temascalcingo, with no link to commercial poultry farms
- Wastewater surveillance dashboards for influenza can be found at the [CDC](#) and Stanford University's [WastewaterSCAN](#)

## SCIENTIFIC FINDINGS, REPORTS, AND GUIDANCE:

### African Swine Fever

- ◆ Pre-print: Modeling the transmission dynamics of African swine fever virus within commercial swine barns: Quantifying the contribution of multiple transmission pathways [Read More](#)

### Influenza

- ◆ Pre-print: Recent Bovine HPAI H5N1 Isolate Is Highly Virulent For Mice, Rapidly Causing Acute Pulmonary And Neurologic Disease [Read More](#)
- ◆ Pre-print: Outcome of H5N1 clade 2.3.4.4b virus infection in calves and lactating cows [Read More](#)
- ◆ No Asymptomatic Bird Flu in 35 Exposed Dairy Farmworkers [Read More](#)
- ◆ Pre-print: Pre-existing H1N1 immunity reduces severe disease with cattle H5N1 influenza virus [Read More](#)
- ◆ Pre-print: Enhanced replication of contemporary human highly pathogenic avian influenza H5N1 virus isolate in human lung organoids compared to bovine isolate [Read More](#)
- ◆ Pre-print: Large-Scale Computational Modeling of H5 Influenza Variants Against HA1-Neutralizing Antibodies [Read More](#)
- ◆ Pre-print: First laboratory-confirmed human case of infection with influenza A(H5N2) virus reported in Mexico [Read More](#)
- ◆ Surveillance of avian influenza viruses in Hebei Province of China from 2021 to 2023: identification of a novel reassortant H3N3 [Read More](#)
- ◆ High pathogenicity avian influenza in Australia and beyond: could avian influenza cause the next human pandemic? [Read More](#)
- ◆ Unprecedented H5N1 outbreak: a rare cross-species influenza threat [Read More](#)

### Mpox

- ◆ National Institute of Health Study: Antiviral tecovirimat is safe but did not improve clade I mpox resolution in Democratic Republic of the Congo [Read More](#)
- ◆ Joint ECDC-WHO Regional Office for Europe – Mpox Surveillance Bulletin [Read More](#)

### Vectors and Vector borne Diseases

- ◆ Feline leishmaniosis in the Mediterranean Basin: a multicenter study [Read More](#)
- ◆ Detection of Usutu virus in a house martin bug *Oeciacus hirundinis* (Hemiptera: Cimicidae): implications for virus overwintering in a temperate zone [Read More](#)

### Other

- ◆ *Echinococcus ortleppi* infection in humans: An emerging zoonosis in Asia [Read More](#)
- ◆ Pre-print: First Report of Nipah virus shed in urine by fruit bats (*Pteropus medius*), Sri Lanka [Read More](#)
- ◆ France - Weekly Bulletin for International Animal Health Surveillance 27/08/2024 [Read More](#)
- ◆ ECDC - Communicable disease threats report, 17 - 23 August 2024, week 34 [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.