

Avian Influenza (HVAI) Vaccine Initiative

To: Chair and Members of the Board of Health

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Recommendations

It is recommended that the Board of Health receive this report for information.

Key Points

- There is a global outbreak of highly pathogenic avian influenza (H5N1), affecting birds and mammals, with detections in Ontario's poultry and wild birds.
- The Public Health Agency of Canada (PHAC), the Canadian Food and Inspection Agency (CFIA), and Health Canada and others are collaborating to manage occupational exposure risks via surveillance, biosecurity, and rapid outbreak response.
- Ontario's Human Vaccines Against Avian Influenza (HVAI) program offers the Arepanrix™ H5N1 vaccine to select individuals at higher occupational risk.
- Wellington Dufferin Guelph Public Health (WDGPH) led Ontario in offering the H5N1 vaccine.
- Human-to-human transmission of H5N1 has not been sustained, so targeted vaccination and ongoing surveillance are recommended for those at occupational risk.

Background

Avian influenza A(H5N1) is a type of influenza that typically occurs in wild birds but can also infect poultry, mammals, and rarely humans.¹ Avian influenza A(H5N1) can be classified as either low pathogenic or highly pathogenic depending on level of illness in birds.¹ Currently, there is a global outbreak of highly pathogenic avian influenza (HPA1)A(H5N1) that includes infections in wild birds, poultry, and other mammals across Canada, the United States (US) and many other countries. In the US, transmission among dairy cattle has been reported since March 2024.² In 2024, 61 human cases were confirmed in the United States, primarily among dairy and poultry workers, with only one severe case reported. Canada has reported a single case in 2024, where the source of exposure remains unknown, but the virus subtype was the same as strains found in wild birds.²

In Ontario, no human cases have been reported. However, avian influenza A(H5N1) has been detected in domestic poultry and wild bird populations across the province, highlighting the potential for occupational exposure.

The risk of potential animal-to-human and human-to-human A(H5N1) transmission has prompted many Canadian organizations such as Health Canada, the Public Health Agency of Canada (PHAC), and the Canadian Food Inspection Agency (CFIA) to approach this work together.² This collaboration includes surveillance of avian influenza A(H5N1) in wild birds, poultry and many other mammals, biosecurity on farms, regulatory requirements for importation of animals, and rapid response when outbreaks occur in poultry operations.² Many countries secured limited amounts of human vaccines for avian influenza A(H5N1), Arepanrix™, including Canada. This vaccine is used for individuals who are at increased risk of occupational exposure.

Since its re-emergence in 2003, avian influenza A(H5N1) has expanded across Asia, Africa, Europe, and the Americas. Between 2003 and late 2024, nearly 940 human cases and 464 deaths were reported globally, though this likely underrepresents mild or asymptomatic infections.²

In North America, the virus was first identified in Newfoundland in 2021 and has since spread widely. In the United States, over 130 million poultry and 10,000 wild birds have been affected since 2022.² A novel genotype, B3.13, has caused extensive outbreaks in dairy cattle, with over 860 herds affected across 16 states by late 2024.² This represents a rare instance of mammal-to-mammal transmission, likely transmitted via milk and milking equipment.²

Human infections remain rare and generally mild, with most cases involving conjunctivitis or upper respiratory symptoms. However, the potential for asymptomatic infection and under-reporting remains a concern.

Human infection typically occurs through direct contact with infected animals or contaminated environments. Farm workers, veterinarians, and individuals involved in culling operations are at elevated risk. In the U.S., 61 human cases were reported by December 2024, with most linked to exposure to infected cattle or poultry.²

Ontario's Human Vaccines Against Avian Influenza (HVAI) Program

Ontario's HVAI initiative is designed to focus on a select group of individuals who face a higher likelihood of occupational exposure to avian influenza in the current non-pandemic setting. To identify this population more accurately and support targeted vaccine outreach, the Ministry of Health is collaborating with key partners, including the Ontario Ministry of Agriculture, Food and Agribusiness (OMAFRA), the Ministry of Natural Resources (MNR), and the Canadian Food Inspection Agency (CFIA). Through this work, WDGPB received a list of 54 organizations that have staff who may be eligible to receive the Arepanrix™ H5N1 vaccine.

WDGPB contacted all organizations and provided information on eligibility, registration and access to the Arepanrix™ H5N1 vaccine at WDGPB. Arepanrix™ H5N1 is a Health Canada-approved vaccine for preventing avian influenza A(H5N1) in adults and children aged 6 months and older. The vaccine was not offered outside of WDGPB led clinics.¹

Given that there are currently no ongoing human-to-human transmission and Ontario is not in a pandemic state, the risk of exposure to avian influenza A(H5N1) is low. However, certain individuals who are at increased risk of exposure due to their work are recommended to receive this two-dose vaccine series. These individuals include:

People with ongoing contact with known infected birds or other infected animals

- Wildlife officers, researchers, and rehabilitators (such as bird banders) who handle sick or dead birds or mammals.
- Veterinarians or veterinary technicians exposed to sick or dead birds or mammals carrying avian influenza A(H5N1), for example during necropsies.

People who handle live avian influenza A(H5N1) virus in laboratory settings

- Individuals working in labs who directly handle live avian influenza A(H5N1) virus, including laboratory workers in research, industry, or clinical reference settings.

Eligibility for vaccination could change if the situation and risk in Ontario evolve over time.

Getting vaccinated is voluntary and is offered to those who meet eligibility criteria.

Discussion

There is currently no evidence of sustained human-to-human transmission. However, the virus's ability to infect mammals and its presence in dairy cattle raise concerns about future adaptation. The general population risk remains low, but individuals with occupational exposure face higher risks. Seasonal influenza vaccination is also recommended for these groups to reduce the risk of co-infection and genetic re-assortment mixing in a host, although it does not protect against A(H5N1) directly.³

In June 2025, WDGPB was the first Ontario health unit to offer the H5N1 vaccine to eligible groups, including people outside the WDG area where it was not yet available. To facilitate this, WDG created an online registration process where individuals provided their eligibility criteria, based on this assessment, appointments were provided.

Currently, 29 people have received the Arepanrix™ H5N1 vaccine at WDGPB, 24 of which were non-WDG residents. Provincially, 2,600 doses have been distributed, but data on usage and wastage is unavailable. The Arepanrix™ H5N1 vaccine comes only in 10-dose vials, leading to wastage when not all doses are used at once; for example, at WDG, 43 doses were given and 114 doses discarded. This wastage occurred to facilitate prompt and accessible immunization for those seeking the vaccine.

Collaboration with Canadian National Vaccine Safety Network (CANVAS)

CANVAS is a national platform for tracking vaccine safety after approval of new vaccines. When WDG first offered the Arepanrix™ H5N1 vaccine, WDGPB worked with CANVAS to obtain client consent to share emails for follow-up. After receiving consent, CANVAS contacted recipients within a week of their first or second dose to monitor side effects and adverse events.

Health Equity Implications

The target population for the Arepanrix™ H5N1 vaccine was quite narrow and WDGPB was the first health unit to offer this to eligible individuals. WDGPB opened up registration to all people living in Ontario, increasing access for people where the vaccine was not yet available. Of the 29 individuals that were immunized, 24 were from regions outside of WDG as far away as Niagara Region, Toronto and Renfrew County. Clients were able to register for their appointments online or by telephone.

Conclusion

WDGPH led the way in Ontario by providing the Arepanrix™ H5N1 vaccine, successfully vaccinating 29 eligible people—24 of whom were from outside the WDG region. Ontario's HVAI program currently focuses on a targeted group of individuals who are at greater occupational risk. There is currently no evidence of ongoing human-to-human transmission, but some isolated human cases of avian influenza A(H5N1) have occurred. The virus mainly affects wild birds and poultry; however, instances in mammals and dairy cattle have raised concerns about possible adaptation. While risk to the public is low, those with job-related exposure face higher risk of infection. WDGPH will continue to collaborate with the Ministry of Health to make this vaccine accessible to all eligible individuals WDG and across the province.

Ontario Public Health Standards

Foundational Standards

- ☐ Population Health Assessment
- ☒ Health Equity
- ☒ Effective Public Health Practice
- ☒ Emergency Management

Program Standards

- ☐ Chronic Disease Prevention and Well-Being
- ☐ Food Safety
- ☐ Healthy Environments
- ☐ Healthy Growth and Development
- ☒ Immunization
- ☒ Infectious and Communicable Diseases Prevention and Control
- ☐ Safe Water
- ☐ School Health
- ☐ Substance Use and Injury Prevention

2024-2028 WDGPH Strategic Goals

More details about these strategic goals can be found in [WDGPH's 2024-2028 Strategic Plan](#).

- ☒ Improve health outcomes
- ☐ Focus on children's health
- ☒ Build strong partnerships
- ☒ Innovate our programs and services
- ☒ Lead the way toward a sustainable Public Health system

References

1. Government of Ontario. Vaccine Fact Sheet: Highly Pathogenic Avian Influenza. June 2025
2. Government of Canada. Rapid Response: Preliminary guidance on human vaccination against avian influenza in a non-pandemic context as of December 2024. [Rapid response: Preliminary guidance on human vaccination against avian influenza in a non-pandemic context as of December 2024 - Canada.ca](#)
3. Government of Ontario, Ministry of Health, [Management of Avian Novel Influenza Guideline 2025](#)