



Pan American  
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# Epidemiological Alert

## Outbreaks of avian influenza and public health implications in the Region of the Americas

19 November 2022

Given the increase in outbreaks of highly pathogenic avian influenza in poultry farms, backyards, and wild birds in countries of the Region of the Americas and other Regions, the Pan American Health Organization/World Health Organization (PAHO/WHO) recommends that the Member States strengthen coordination between sectors involved in alerting and responding to zoonotic events and implement the necessary measures to contain emerging pathogens that may put public health at risk. PAHO/WHO recommends monitoring the occurrence of influenza-like illness (ILI) or severe acute respiratory infection (SARI) in people exposed to birds (domestic, wild, or in captivity) infected with influenza viruses.

### Situation summary

According to the World Organisation for Animal Health (WOAH), the highly pathogenic avian influenza (HPAI) epidemic season continues with **outbreaks in poultry and reported outbreaks in birds other than poultry, mainly in the Regions of Europe and the Americas**. In the current epidemic period, **H5N1 is the predominant subtype, and unusual persistence of the virus in wild birds during the summer months has been reported for the first time** (1, 2).

**In accordance with the seasonal pattern of HPAI<sup>1</sup>, the number of outbreaks is expected to increase in the coming months** and WOAH recommends that countries maintain and strengthen their surveillance efforts, biosecurity measures on farms, and continue with the timely notification of avian influenza outbreaks in both birds and non-avian species. The quality of surveillance is key for **the early detection and timely response to potential threats to animal health with an impact on public health** (1,2).

#### Global context of avian influenza viruses:

Five subtypes of avian influenza A viruses capable of causing infection in humans are known (H5, H6, H7, H9, and H10 viruses). The most frequently identified subtypes causing human infections are the H5, H7, and H9 viruses. Specifically, the A(H5N1), A(H7N9), A(H5N6) (highly pathogenic avian influenza) and A(H9N2) (low pathogenic avian influenza) viruses (3). To date in the Region of the Americas, of these four, only one human case of influenza A(H5N1) virus infection has been reported. Additionally, in the Region of the Americas, cases of low pathogenicity avian influenza (LPAI) have been detected in humans (3, 4).

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<sup>1</sup> Avian influenza viruses are classified into low pathogenic avian influenza viruses (LPAI) and highly pathogenic avian influenza viruses (HPAI) according to their ability to cause disease in birds.

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## Global context of avian influenza A(H5N1):

Since the detection of the influenza A(H5N1) virus in 1996, outbreaks were limited to Southeast Asia until 2005. After 2005, the virus spread westwards, entering Europe and Africa (5). In the Region of the Americas, in 2014, authorities in Canada and the United States of America warned of outbreaks in poultry and wild birds of a new virus genetically different from the avian influenza A(H5N1) viruses circulating in Asia, belonging to the group called "Eurasian H5 clade 2.3.4.4", which was due to a genetic regrouping between the Eurasian A(H5N8) virus strains (introduced in 2014 in the USA), North American strains and strains resulting in turn from A(H5N2) virus regroupings detected in Canada (6) and the USA (7). In 2015, an H5N1 virus was detected in a wild bird in the United States that exhibited a new "rearrangement" with genes from highly pathogenic Asian H5 viruses and low pathogenic North American viruses (8).

Regarding infections in humans, since 2003, more than 880 confirmed cases of influenza A(H5N1) virus infection have been reported, mainly in Indonesia and Egypt until 2017, with case-fatality rates (CFR) of 46% and 25%, respectively. However, since 2018, 7 cases have been reported (1 in Nepal, 1 in Laos, 1 in India, 1 in the United Kingdom, 1 in the United States of America, and 2 in Spain) with 2 deaths (in Nepal and India) (9). The newly detected cases in the Regions of Europe and America are the first to be associated with H5N1 viruses circulating predominantly in birds and differing from previous H5N1 viruses (10).

## Epidemiological situation in the Region of the Americas

As of epidemiological week (EW) 45 of 2022, agriculture authorities in Canada, Colombia, Mexico, Peru, and the United States of America have detected outbreaks of HPAI H5 viruses in domestic birds, farm poultry, and wild birds (**Map 1**), which were notified to WOA.

The following is a summary of the situation in countries of the Region of the Americas that reported outbreaks of avian influenza in 2022.

In **Canada**, as of 3 November 2022, multiple HPAI A(H5N1) outbreaks in poultry and non-poultry birds (including wild birds) have been reported in the provinces of Alberta, British Columbia, Manitoba, Ontario, Quebec, and Saskatchewan<sup>2</sup>. To date, no confirmed cases of avian influenza A(H5N1) have been identified in humans in the identified outbreaks.

In **Colombia**, between 19 October and 11 November 2022, the Colombian Agricultural Institute (ICA per its acronym in Spanish) identified 9 HPAI A(H5N1) outbreaks. Of the total number of outbreaks, 7 were identified in rural and peri-urban areas of Acandí Municipality in Chocó Department, one was identified in a rural area of Cartagena District in Bolívar Department, and one was identified in a rural area of Los Palmitos Municipality, Sucre Department. The outbreaks have been identified in backyard birds that had contact with wild birds traveling along migratory routes to the south of the continent. To date, no confirmed cases of avian influenza A(H5N1) have been identified in humans in the identified outbreaks<sup>3,4</sup>.

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<sup>2</sup> Public Health Agency of Canada. Avian Influenza, available at: <https://bit.ly/3ICTii9>; Status of the ongoing response to avian influenza by province, available at: <https://bit.ly/3f12aYq>

<sup>3</sup> National Institute of Health. Weekly Epidemiological Bulletin No.44. Available at: <https://www.ins.gov.co/buscador-eventos/Paginas/Vista-Boletin-Epidemiologico.aspx>

<sup>4</sup> Colombian Agricultural Institute. Resolution 00022990 "By which the State of Sanitary Emergency is declared in the National Territory due to the presence of Highly Pathogenic Avian Influenza." Available at: <https://bit.ly/3gbPIU1>

In the **United States of America**, since late 2021 through 16 November 2022, outbreaks of HPAI A(H5) virus have been reported in wild waterfowl, commercial poultry, and backyard poultry. These are the first detections of avian influenza A(H5) viruses in the United States since 2016. Preliminary genetic sequencing and RT-PCR tests on some virus samples show that these viruses correspond to HPAI A(H5N1) virus of the 2.3.4.4 clade. During the same period, HPAI outbreaks have been reported in wild birds in 47 states and in poultry in 46 states<sup>5</sup>.

On 28 April 2022, a case of Influenza A(H5N1) was identified in the United States in a person who participated in the culling of birds at a commercial poultry facility in Colorado, where influenza A(H5N1) virus was detected in birds. This was the second human case associated with this specific group of H5 viruses that are currently predominant, and the first case in the United States. The patient was isolated and treated with antivirals, did not require hospitalization, and made a full recovery. In this event, no evidence of person-to-person transmission of influenza A(H5N1) virus was identified<sup>6</sup>.

In **Mexico**, between October and 11 November 2022, the National Agrifood Health, Safety, and Quality Service (SENASICA, per its acronym in Spanish) identified an outbreak of HPAI A(H5N1) in backyard birds, poultry farms, and wild birds. The outbreaks in wild birds were identified in wetlands in the states of Mexico and Jalisco, as well as in Texcoco (a protected natural reserve) and in parks in Baja California, Aguascalientes, and Puebla. The outbreaks in birds from poultry farms were identified in the states of Nuevo León, Sonora, Aguascalientes, and Jalisco, as well as backyard farms in the states of Chiapas, Chihuahua, and the state of Mexico. To date, no confirmed cases of avian influenza A(H5N1) associated with this outbreak have been identified in humans<sup>7</sup>.

In **Peru**, in 2022, as of 14 November, approximately 300 dead pelicans and 24 dead blue-footed booby were found on the island of Lobos de Tierra in Paita Province, Piura Department. Preliminary laboratory results from the National Agrarian Health Service of Peru (SENASA, per its acronym in Spanish) identified the HPAI A(H5) virus as the causative agent. Ongoing sequencing will determine the neuraminidase (N). To date, no confirmed cases of avian influenza A(H5N1) associated with this outbreak have been identified in humans<sup>8</sup>.

Of the total number of avian influenza outbreaks reported in the **Region of the Americas** in 2022, as of EW 45, only one case of highly pathogenic avian influenza has been identified corresponding to the detection of influenza A(H5N1) in a person who participated in the slaughter of birds in a commercial poultry facility in the United States<sup>6</sup>.

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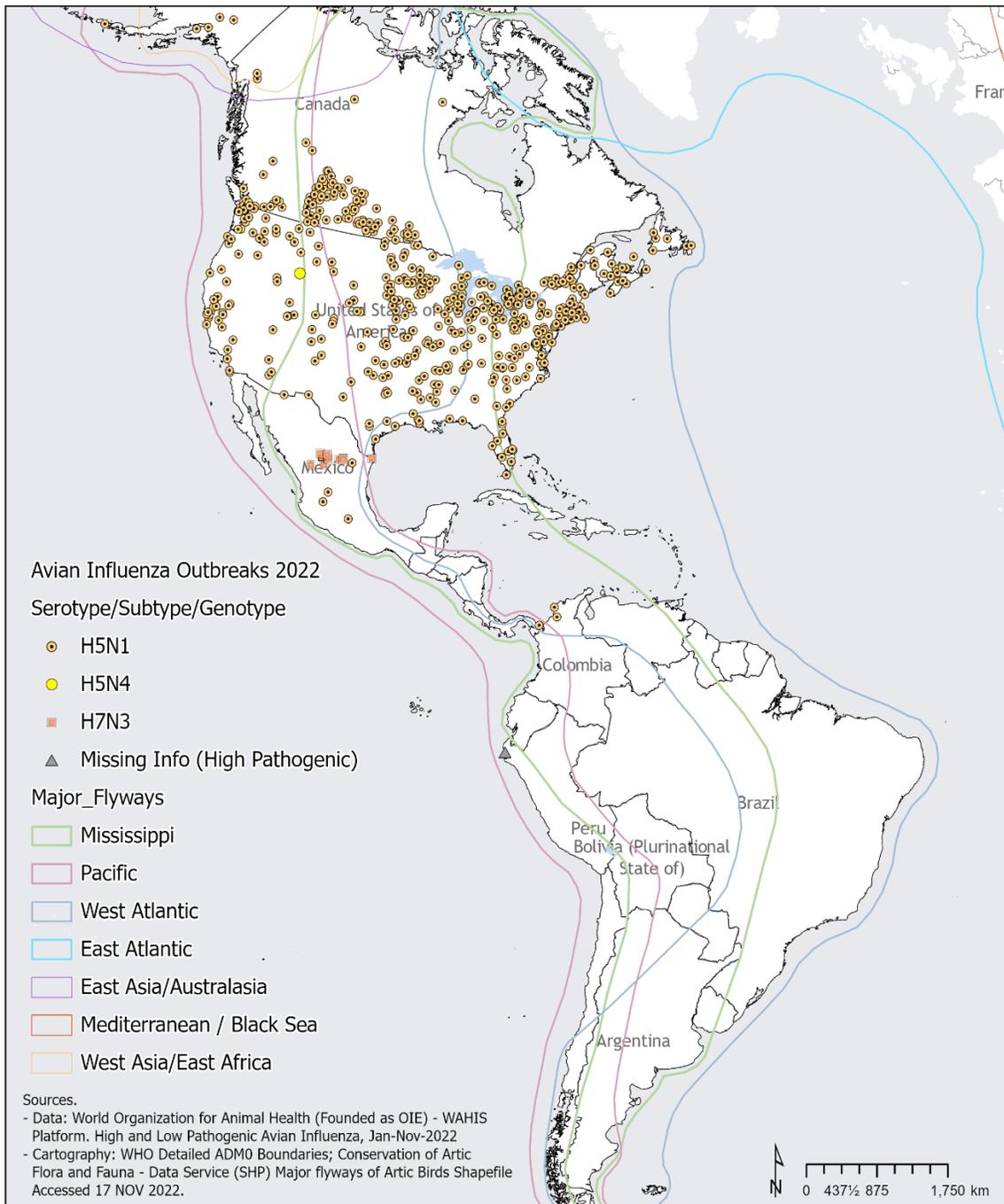
<sup>5</sup> United States Centers for Disease Control (US CDC). Information on bird flu. Available at: <https://bit.ly/3tyk6pp>

<sup>6</sup> WHO. Avian Influenza A(H5N1) - United States of America. Available at: <https://bit.ly/3Og62Kz>

<sup>7</sup> Government of Mexico. Strategic vaccination to protect national poultry production. Available at: <https://bit.ly/3hLKrO0>

<sup>8</sup> National Agrarian Health Service of Peru. Press release. Available at: <https://bit.ly/3An8CsD>

**Map 1.** Avian influenza outbreaks and main migratory routes of wild birds. Region of the Americas, as of EW 45 of 2022.



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The designations employed and the presentation of the material in these maps do not imply the expression of any opinion whatsoever on the part of the Secretariat of the Pan American Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

Map production: PAHO Health Emergencies Department/ Health Emergency Information and Risk Assessment Unit/ GIS Team

## Recommendations for health authorities in Member States

Both HPAI and LPAI viruses can be rapidly spread among poultry through direct contact with infected waterfowl or other poultry, or through direct contact with fomites or surfaces, or water contaminated with the viruses. Infection of poultry with HPAI viruses can cause severe disease with high mortality. LPAI viruses are more associated with subclinical infection. The terms HPAI and LPAI apply only to the symptoms in birds (chickens in particular), and both types of viruses have the potential to cause infections in humans.

While the potential exists for these viruses to cause human infections, infections with avian influenza viruses are generally rare and when they have occurred, these viruses have not spread easily from person-to-person. To date, no person-to-person human transmission caused by avian influenza A(H5N8), A(H5N2), or A(H5N1) viruses has been reported either in the Americas or globally.

### Intersectoral coordination

Control of the disease in animals is the first measure to reduce the risk to humans. For this reason, it is important that prevention and control actions, both in the animal and human health sectors, are carried out in a coordinated and concerted manner. Agile information exchange mechanisms will have to be established and/or strengthened to facilitate coordinated decision-making.

Implementation of a comprehensive surveillance program, including wild birds and both backyard and commercial poultry, is essential. Targeted risk-based surveillance strategies should be combined with a strengthening of general surveillance. In this regard, sensor awareness tasks are key, particularly in the backyard, to encourage the detection and notification of suspicious events. These programs also provide information that enables spread modeling and more accurate risk analysis.

Full recommendations for strengthening intersectoral work on surveillance, early detection, and investigation of influenza events at the human-animal interface are available at: <https://bit.ly/3glEUNN>

### Surveillance in humans

People at risk of contracting infections are those directly or indirectly exposed to infected birds, for example, poultry keepers who maintain close and regular contact with infected birds or during slaughter or cleaning and disinfection of affected farms. For this reason, the use of adequate personal protective equipment and other protection measures is recommended to avoid zoonotic transmission in these operators.

In order to identify early transmission events at the human-animal interface, surveillance of exposed persons is recommended. In this sense, it is recommended to monitor the appearance of influenza-like illness (ILI) or severe acute respiratory infection (SARI) in people exposed to birds (domestic, wild, or in captivity) infected with influenza viruses during zoonotic events. Given the detection of an infection in humans, early notification is essential for an investigation and implementation of adequate measures that include the early isolation and treatment of the case, the active search for other cases associated with the outbreak, as well as the identification of close contacts for management and follow-up (11).

Health personnel in areas where transmission of avian influenza (HPAI or LPAI) in birds is taking place should be alerted about the possibility of infection in people exposed to these viruses. PAHO/WHO reiterates that all human infections caused by a new influenza virus subtype are mandatory and immediate notification under the International Health Regulations (IHR 2005).

## Laboratory diagnosis in humans

The specific diagnosis of human infection by avian influenza is based on the detection of the viral genome by molecular methods (polymerase chain reaction, PCR) extracted from clinical swab samples (oropharyngeal or nasopharyngeal), nasopharyngeal aspirate or bronchoalveolar lavage (only in hospitalized patients), collected within the first 7 days from the onset of symptoms.

The diagnostic algorithm<sup>9</sup> involves an initial screening that makes it possible to define the type of virus (influenza A or B typing). If it is positive for Influenza A, it is followed by subtyping to detect the viral subtype by identifying the hemagglutinin protein gene (H1pdm and H3). If subtyping for seasonal influenza is not possible, they are tested for non-seasonal influenza, H5, H7, and H9.

All influenza A viruses that cannot be subtyped or that are defined as an avian subtype (H5, H7 or H9), must be sent immediately within 24 hours, under the appropriate conditions for the category according to International Air Transport Association (IATA) regulations, to a WHO Collaborating Center (WHO CC) which, for the Region of the Americas, is the United States Centers for Disease Control and Prevention (US CDC) for subtype identification and molecular and antigenic characterization.

In the Region of the Americas, as part of the Global Influenza Surveillance and Response System (GISRS), all National Influenza Centers (NICs) have the capacity for molecular detection of H5 and H7 influenza (some additionally for H9). Likewise, there are established mechanisms for quality control and shipment of samples for complete characterization to the US CDC, the WHO CC for the Region.

PAHO should be contacted at [flu@paho.org](mailto:flu@paho.org) before sending non-subtyped or avian influenza samples to the WHO CC.

PAHO/WHO guidelines on surveillance, clinical management, vaccination, and risk communication are available in the Epidemiological Update on Influenza and other respiratory viruses, published on 13 November 2022, available at: <https://bit.ly/3tLhAMB>.

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<sup>9</sup> PAHO/WHO. Integrated influenza surveillance and SARS-CoV-2 laboratory testing algorithm. 14 October 2022. Available at: <https://bit.ly/3Vbmlp2>

## Sources of information

1. World Organisation for Animal Health. Avian Influenza. Available at: <https://bit.ly/3AreAc0> and <https://bit.ly/3TP12Ob>
2. World Organisation for Animal Health. Highly Pathogenic Avian Influenza (HPAI) - Status Report 34. Available at: <https://bit.ly/3ArAKe0>
3. US CDC. Type A influenza viruses. Available at: <https://bit.ly/3XgUsCW>
4. US CDC. EID. Avian influenza A(H7N2) virus in humans exposed to sick cats, New York, USA, 2016. Available at: <https://bit.ly/3gcuujD>
5. Williams RAJ, Peterson AT. Ecology and geography of avian influenza (HPAI H5N1) transmission in the Middle East and northeastern Africa. Int J Health Geogr. 2009;8:47. Available at: <https://bit.ly/3UPW313>
6. Government of Canada. British Columbia Avian Influenza Outbreak Investigation Report, 2014. Available at: <https://bit.ly/3XfeNbN>
7. US CDC. EID. Novel Eurasian highly pathogenic H5 avian influenza A viruses in wild birds, Washington, USA, 2014. Available at: <https://bit.ly/3Apw2NO>
8. US NIH. Torchetti MK, Killian ML, Dusek RJ, Pedersen JC, Hines N, Bodenstein B, White CL, Ip HS. Novel H5 Clade 2.3.4.4 Reassortant (H5N1) Virus from a Green-Winged Teal in Washington, USA. Genome Announce. 2015 Apr 2;3(2):e00195-15. doi: 10.1128/genomeA.00195-15. PMID: 25838478; PMCID: PMC4384482. Available at: <https://bit.ly/3gkGrDR>
9. WHO. Cumulative number of confirmed human cases of avian influenza A(H5N1) reported to WHO, 2003-2022, 5 October 2022. Available at: <https://bit.ly/3TMCFRs>
10. US CDC. Report of a human avian influenza A(H5) virus case in the United States. Available at: <https://bit.ly/3gkHI3d>
11. WHO. Protocol to Investigate Non-Seasonal Influenza and Other Emerging Acute Respiratory Diseases. 2 October 2018. Available at: <https://bit.ly/3AtreHg>
12. WHO. Avian Influenza Surveillance, available at: <https://bit.ly/3Aq0IOY>
13. WHO. News on disease outbreaks, available at: <https://bit.ly/3EKP57O>
14. PAHO/WHO. Influenza Situation Report, available at: <https://bit.ly/3hJUNOk>
15. PAHO/WHO. Influenza at the human-animal interface. PAHO recommendations for strengthen intersectoral work on surveillance, early detection and research, 9 July 2020. Available at: <https://bit.ly/3UQrg4d>
16. WHO. Summary and Assessment of Influenza at the Human-Animal Interface, 5 October 2022. Available at: <https://bit.ly/3EJy9Pf>

## Useful links

- WHO. Avian influenza: <https://bit.ly/3XiJ1ej>
- WHO. Strengthening global health security at the human-animal interface: <https://bit.ly/3tGgDFp>
- Food and Agriculture Organization of the United Nations (FAO). Avian Influenza. <https://bit.ly/3tJQGEU>