



## Influenza at the human-animal interface

Summary and risk assessment, from 30 September to 5 November 2025<sup>1</sup>

- **New human cases<sup>1,2</sup>:** From 30 September to 5 November 2025, based on reporting date, the detection of influenza A(H5N1) in one human, A(H5N2) in one human and A(H9N2) in two humans were reported officially.
- **Circulation of influenza viruses with zoonotic potential in animals:** High pathogenicity avian influenza (HPAI) events in poultry and non-poultry animal species continue to be reported to the World Organisation for Animal Health (WOAH).<sup>3</sup> The Food and Agriculture Organization of the United Nations (FAO) also provides a global update on avian influenza viruses with pandemic potential.<sup>4</sup>
- **Risk assessment<sup>5</sup>:** Sustained human to human transmission has not been reported in the above human infection events. Based on information available at the time of this risk assessment update, the overall public health risk from currently known influenza A viruses detected at the human-animal interface has not changed and remains low. The occurrence of sustained human-to-human transmission of these viruses is currently considered unlikely. Although human infections with viruses of animal origin are infrequent, they are not unexpected at the human-animal interface.
- **IHR compliance<sup>6</sup>:** This includes any influenza A virus that has demonstrated the capacity to infect a human and its haemagglutinin (HA) gene (or protein) is not a mutated form of those, i.e. A(H1) or A(H3), circulating widely in the human population. Information from these notifications is critical to inform risk assessments for influenza at the human-animal interface.

### Avian influenza viruses in humans

#### **Current situation:**

Since the last risk assessment of 29 September 2025, one laboratory-confirmed human case of A(H5N1) infection was detected in Cambodia, and one laboratory-confirmed human case of A(H5N2) virus infection was detected in Mexico.

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<sup>1</sup> This summary and assessment covers information confirmed during this period and may include information received outside of this period.

<sup>2</sup> For epidemiological and virological features of human infections with animal influenza viruses not reported in this assessment, see the reports on human cases of influenza at the human-animal interface published in the Weekly Epidemiological Record [here](#).

<sup>3</sup> World Organisation for Animal Health (WOAH). Avian influenza. Global situation. Available at: <https://www.woah.org/en/disease/avian-influenza/#ui-id-2>.

<sup>4</sup> Food and Agriculture Organization of the United Nations (FAO). Global Avian Influenza Viruses with Zoonotic Potential situation update. Available at: <https://www.fao.org/animal-health/situation-updates/global-aiv-with-zoonotic-potential>.

<sup>5</sup> World Health Organization (2012). Rapid risk assessment of acute public health events. World Health Organization. Available at: <https://iris.who.int/handle/10665/70810>.

<sup>6</sup> World Health Organization. Case definitions for the 4 diseases requiring notification to WHO in all circumstances under the International Health Regulations (2005). [Case definitions for the four diseases requiring notification in all circumstances under the International Health Regulations \(2005\)](#).



### **A(H5N1), Cambodia**

On 15 October 2025, Cambodia notified WHO of a laboratory-confirmed human infection with HPAI avian influenza A(H5N1) in a girl from Kampong Speu Province. The case, with no known underlying medical conditions, had an onset of fever on 4 October and was admitted to hospital on 12 October. Nasopharyngeal and oropharyngeal swabs collected on 13 October tested positive for avian influenza A(H5N1) at the Institut Pasteur du Cambodge (the National Influenza Centre (NIC) by reverse transcription-polymerase chain reaction (RT-PCR). Laboratory results were confirmed at the National Institute of Public Health. Treatment with oseltamivir was initiated on 14 October. The case fully recovered and was discharged on 23 October.

Respiratory samples collected from 11 close contacts and one symptomatic villager tested negative for influenza A(H5N1) virus. Field investigations revealed that backyard chickens had died in the weeks preceding the detection of the human case. Although no clear history of direct exposure to sick or dead chickens was identified, it was reported that the case frequently played around the house and in the nearby backyard where the chickens had died.

Seventeen human infections with A(H5N1) viruses have been confirmed in Cambodia in 2025 and eight of these have been fatal. All these cases in 2025 had exposure to domestic birds or their environments. In some cases, domestic birds were reported to be sick or dead. Where the information is available, the genetic sequence data from the viruses from the human cases closely matches that from recent local animal viruses and are identified as clade 2.3.2.1e viruses. From the information available thus far on these recent human cases, there is no indication of human-to-human transmission of the A(H5N1) viruses.

### **A(H5N2), Mexico**

On 2 October 2025, Mexico notified PAHO/WHO a laboratory-confirmed case of avian influenza A(H5) virus infection detected in an adult, resident of Mexico City. The case had an onset of respiratory symptoms on 14 September and was hospitalized on 28 September. A bronchoalveolar lavage sample collected on 29 September tested positive for unsubtypeable influenza A. On 30 September, further testing by real-time RT-PCR confirmed the presence of influenza A(H5) virus. The sample was subsequently sent to the National Influenza Centre, the National Institute of Epidemiological Diagnosis and Reference (InDRE), which confirmed avian influenza A(H5) through molecular diagnostics. The neuraminidase was identified as N2. The sample was sent to a WHO Collaborating Centre for influenza for further characterization.

Respiratory samples collected from close contacts including hospital contacts, tested negative for influenza viruses. During the epidemiologic investigation, several animals (including birds) and bird droppings were found in the building where the case resides, in an area the case passes frequently. A dog was identified as a pet at the case's residence. Samples collected from the animals tested positive for influenza A(H5). Information on whether this virus was a high or low pathogenicity avian influenza virus (HPAI or LPAI) is pending further testing.

This is the third human case of avian influenza A(H5) in Mexico since 2024 and the first case in Mexico City. In 2024, a human case of infection with an influenza A(H5N2) virus was detected in a resident of the state of Mexico. In 2025, a human case of infection with an influenza A(H5N1) virus was detected in the state of Durango. Ongoing outbreaks of A(H5) viruses in birds have been detected in multiple states in Mexico since 2022.

According to reports received by WOA, various influenza A(H5) subtypes continue to be detected in wild and domestic birds in Africa, the Americas, Asia and Europe. Infections in non-human mammals



are also reported, including in marine and land mammals.<sup>7</sup> A list of bird and mammalian species affected by HPAI A(H5) viruses is maintained by FAO.<sup>8</sup>

#### **Risk Assessment for avian influenza A(H5) viruses:**

##### **1. What is the current global public health risk of additional human cases of infection with avian influenza A(H5) viruses?**

Most human infections so far have been reported in people exposed to A(H5) viruses, for example, through contact with infected poultry or contaminated environments, including live poultry markets, and occasionally infected mammals and contaminated environments. As long as the viruses continue to be detected in animals and related environments humans are exposed to, further human cases associated with such exposures are expected but remain unusual. The impact for public health if additional sporadic cases are detected is minimal. The current overall global public health risk of additional sporadic human cases is low.

##### **2. What is the likelihood of sustained human-to-human transmission of avian influenza A(H5) viruses related to the events above?**

No sustained human-to-human transmission has been identified associated with the recent reported human infections with avian influenza A(H5) viruses. There has been no reported human-to-human transmission of A(H5N1) viruses since 2007, although there may be gaps in investigations. In 2007 and the years prior, small clusters of A(H5) virus infections in humans were reported, including some involving health care workers, where limited human-to-human transmission could not be excluded; however, sustained human-to-human transmission was not reported.

Current evidence suggests that influenza A(H5) viruses related to these events did not acquire the ability to efficiently transmit between people, therefore sustained human-to-human transmission is thus currently considered unlikely.

##### **3. What is the likelihood of international spread of avian influenza A(H5) viruses by travellers?**

Should infected individuals from affected areas travel internationally, their infection may be detected in another country during travel or after arrival. If this were to occur, further community-level spread is considered unlikely as current evidence suggests these viruses have not acquired the ability to transmit easily among humans.

#### **A(H9N2), China**

Since the last risk assessment of 29 September 2025, two cases of infection with influenza A(H9N2) were notified to WHO from China on 13 October 2025 in a child in Hunan province and an adult in Jiangxi province. The cases had onsets of symptoms in September 2025. Both had known exposure to backyard poultry. Both cases were detected through the influenza-like illness (ILI) surveillance system and have recovered. The adult case had underlying conditions and was hospitalized. No further cases were detected among contacts of these cases. A(H9) viruses were detected in environmental samples collected during the investigations around each case.

#### **Risk Assessment for avian influenza A(H9N2):**

##### **1. What is the global public health risk of additional human cases of infection with avian influenza A(H9N2) viruses?**

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<sup>7</sup> World Organisation for Animal Health (WOAH). Avian influenza. Global situation. Available at: <https://www.woah.org/en/disease/avian-influenza/#ui-id-2>.

<sup>8</sup> Food and Agriculture Organization of the United Nations. Global Avian Influenza Viruses with Zoonotic Potential situation update. Available at: <https://www.fao.org/animal-health/situation-updates/global-aiv-with-zoonotic-potential/bird-species-affected-by-h5nx-hpai/en>.



Most human cases follow exposure to the A(H9N2) virus through contact with infected poultry or contaminated environments. Most human infections of A(H9N2) to date have resulted in mild clinical illness. Since the virus is endemic in poultry in multiple countries in Africa and Asia, further human cases associated with exposure to infected poultry are expected but remain unusual. The impact to public health if additional sporadic cases are detected is minimal. The overall global public health risk of additional sporadic human cases is low.

## **2. What is the likelihood of sustained human-to-human transmission of avian influenza A(H9N2) viruses related to this event?**

At the present time, no sustained human-to-human transmission has been identified associated with the recently reported human infections with A(H9N2) viruses. Current evidence suggests that A(H9N2) viruses from these cases did not acquire the ability of sustained transmission among humans, therefore sustained human-to-human transmission is thus currently considered unlikely.

## **3. What is the likelihood of international spread of avian influenza A(H9N2) virus by travellers?**

Should infected individuals from affected areas travel internationally, their infection may be detected in another country during travel or after arrival. If this were to occur, further community level spread is considered unlikely as current evidence suggests the A(H9N2) virus subtype has not acquired the ability to transmit easily among humans.

### **Overall risk management recommendations:**

#### *Surveillance and investigations*

- Due to the constantly evolving nature of influenza viruses, WHO continues to stress the importance of global strategic surveillance in animals and humans to detect virologic, epidemiologic and clinical changes associated with circulating influenza viruses that may affect human (or animal) health. Continued vigilance is needed within affected and neighbouring areas to detect infections in animals and humans. Close collaboration with the animal health and environment sectors is essential to understand the extent of the risk of human exposure and to prevent and control the spread of animal influenza. WHO has published guidance on [surveillance for human infections with avian influenza A\(H5\) viruses](#).
- As the extent of influenza virus circulation in animals is not clear, epidemiologic and virologic surveillance and the follow-up of suspected human cases should continue systematically. [Guidance on investigation of non-seasonal influenza and other emerging acute respiratory diseases](#) has been published on the WHO website.
- Countries should increase avian influenza surveillance in domestic and wild birds, enhance surveillance for early detection in cattle populations in countries where HPAI is known to be circulating, include HPAI as a differential diagnosis in non-avian species, including cattle and other livestock populations, with high risk of exposure to HPAI viruses; monitor and investigate cases in non-avian species, including livestock, report cases of HPAI in all animal species, including unusual hosts, to WOAH and other international organizations, share genetic sequences of avian influenza viruses in publicly available databases, implement preventive and early response measures to break the HPAI transmission cycle among animals through movement restrictions of infected livestock holdings and strict biosecurity measures in all holdings, employ good production and hygiene practices when handling animal products, and protect persons in contact with suspected/infected animals.<sup>9</sup> More guidance can be found from [WOAH](#) and [FAO](#).

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<sup>9</sup> World Organisation for Animal Health. Statement on High Pathogenicity Avian Influenza in Cattle, 6 December 2024. Available at: <https://www.woah.org/en/high-pathogenicity-avian-influenza-hpai-in-cattle/>.



- When there has been human exposure to a known outbreak of an influenza A virus in domestic poultry, wild birds or other animals – or when there has been an identified human case of infection with such a virus – enhanced surveillance in potentially exposed human populations becomes necessary. Enhanced surveillance should consider the health care seeking behaviour of the population, and could include a range of active and passive health care and/or community-based approaches, including: enhanced surveillance in local influenza-like illness (ILI)/SARI systems, active screening in hospitals and of groups that may be at higher occupational risk of exposure, and inclusion of other sources such as traditional healers, private practitioners and private diagnostic laboratories.
- Vigilance for the emergence of novel influenza viruses with pandemic potential should be maintained at all times including during a non-influenza emergency. In the context of the co-circulation of SARS-CoV-2 and influenza viruses, WHO has updated and published [practical guidance for integrated surveillance](#).

#### *Notifying WHO*

- All human infections caused by a new subtype of influenza virus are notifiable under the International Health Regulations (IHR, 2005).<sup>10</sup> State Parties to the IHR (2005) are required to immediately notify WHO of any laboratory-confirmed<sup>11</sup> case of a recent human infection caused by an influenza A virus with the potential to cause a pandemic<sup>12</sup>. Evidence of illness is not required for this report. Evidence of illness is not required for this report.
- WHO published the case definition for human infections with avian influenza A(H5) virus requiring notification under IHR (2005): <https://www.who.int/teams/global-influenza-programme/avian-influenza/case-definitions>.

#### *Virus sharing and risk assessment*

- It is critical that these influenza viruses from animals or from humans are fully characterized in appropriate animal or human health influenza reference laboratories. Under WHO's Pandemic Influenza Preparedness (PIP) Framework, Member States are expected to share influenza viruses with pandemic potential on a **timely basis**<sup>13</sup> with a WHO Collaborating Centre for influenza of GISRS. The viruses are used by the public health laboratories to assess the risk of pandemic influenza and to develop candidate vaccine viruses.
- The Tool for Influenza Pandemic Risk Assessment (TIPRA) provides an in-depth assessment of risk associated with some zoonotic influenza viruses – notably the likelihood of the virus gaining human-to-human transmissibility, and the impact should the virus gain such transmissibility. TIPRA maps relative risk amongst viruses assessed using multiple elements. The results of TIPRA complement those of the risk assessment provided here, and those of prior TIPRA analyses will be published at [http://www.who.int/teams/global-influenza-programme/avian-influenza/tool-for-influenza-pandemic-risk-assessment-\(tipra\)](http://www.who.int/teams/global-influenza-programme/avian-influenza/tool-for-influenza-pandemic-risk-assessment-(tipra)).

<sup>10</sup> World Health Organization. [Case definitions for the four diseases requiring notification in all circumstances under the International Health Regulations \(2005\)](#).

<sup>11</sup> World Health Organization. Manual for the laboratory diagnosis and virological surveillance of influenza (2011). Available at: <https://apps.who.int/iris/handle/10665/44518>.

<sup>12</sup> World Health Organization. Pandemic influenza preparedness framework for the sharing of influenza viruses and access to vaccines and other benefits, 2nd edition. Available at: <https://iris.who.int/handle/10665/341850>.

<sup>13</sup> World Health Organization. Operational guidance on sharing influenza viruses with human pandemic potential (IVPP) under the Pandemic Influenza Preparedness (PIP) Framework (2017). Available at: <https://apps.who.int/iris/handle/10665/259402>.



### *Risk reduction*

- Given the observed extent and frequency of avian influenza in poultry, wild birds and some wild and domestic mammals, the public should avoid contact with animals that are sick or dead from unknown causes, including wild animals, and should report dead birds and mammals or request their removal by contacting local wildlife or veterinary authorities.
- Eggs, poultry meat and other poultry food products should be properly cooked and properly handled during food preparation. Due to the potential health risks to consumers, raw milk should be avoided. WHO advises consuming pasteurized milk. If pasteurized milk isn't available, heating raw milk until it boils makes it safer for consumption.
- WHO has published [practical interim guidance to reduce the risk of infection in people exposed to avian influenza viruses](#).

### *Trade and travellers*

- WHO advises that travellers to countries with known outbreaks of animal influenza should avoid farms, contact with animals in live animal markets, entering areas where animals may be slaughtered, or contact with any surfaces that appear to be contaminated with animal excreta. Travelers should also wash their hands often with soap and water. All individuals should follow good food safety and hygiene practices.
- WHO does not advise special traveller screening at points of entry or restrictions with regards to the current situation of influenza viruses at the human-animal interface. For recommendations on safe trade in animals and related products from countries affected by these influenza viruses, refer to [WOAH](#) guidance.

### **Links:**

WHO Human-Animal Interface web page

<https://www.who.int/teams/global-influenza-programme/avian-influenza>

WHO Influenza (Avian and other zoonotic) fact sheet

[https://www.who.int/news-room/fact-sheets/detail/influenza-\(avian-and-other-zoonotic\)](https://www.who.int/news-room/fact-sheets/detail/influenza-(avian-and-other-zoonotic))

WHO Protocol to investigate non-seasonal influenza and other emerging acute respiratory diseases

<https://www.who.int/publications/i/item/WHO-WHE-IHM-GIP-2018.2>

WHO Public health resource pack for countries experiencing outbreaks of influenza in animals:

<https://www.who.int/publications/i/item/9789240076884>

Cumulative Number of Confirmed Human Cases of Avian Influenza A(H5N1) Reported to WHO

<https://www.who.int/teams/global-influenza-programme/avian-influenza/avian-a-h5n1-virus>

Avian Influenza A(H7N9) Information

[https://www.who.int/teams/global-influenza-programme/avian-influenza/avian-influenza-a-\(h7n9\)-virus](https://www.who.int/teams/global-influenza-programme/avian-influenza/avian-influenza-a-(h7n9)-virus)

World Organisation of Animal Health (WOAH) web page: Avian Influenza

<https://www.woah.org/en/home/>

Food and Agriculture Organization of the United Nations (FAO) webpage: Avian Influenza

<https://www.fao.org/animal-health/avian-flu-qa/en/>

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