Influenza at the human-animal interface
Summary and risk assessment, from 6 to 26 January 2023[1]

- **New infections[2]:** From 6 to 26 January 2023, one human case of infection with an influenza A(H5) virus was reported officially.
- **Risk assessment:** The overall public health risk from currently known influenza viruses at the human-animal interface has not changed, and the likelihood of sustained human-to-human transmission of these viruses remains low. Human infections with viruses of animal origin are expected at the human-animal interface wherever these viruses circulate in animals.
- **IHR compliance:** All human infections caused by a new influenza subtype are required to be reported under the International Health Regulations (IHR, 2005).[3] This includes any influenza A virus that has demonstrated the capacity to infect a human and its haemagglutinin 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

Current situation:

Avian influenza A(H5) viruses

Since the last risk assessment on 5 January 2023, one human case of influenza A(H5) virus infection was reported from Ecuador.[4]

On 9 January 2023, the Ecuador informed PAHO/WHO of a human case of infection with an avian influenza A(H5) virus. The case was detected as part of severe acute respiratory infection (SARI) sentinel surveillance and was confirmed by the National Influenza Centre (NIC), the National Institute of Public Health Research (INSPI per its acronym in Spanish).

The case is a 9-year-old girl, with no known comorbidities, from Bolívar Province, Ecuador. She developed symptoms of conjunctival pruritus and coryza on 25 December 2022. On 27 December, she was brought to a local health centre for medical evaluation and treatment. On 30 December, due to the persistent symptoms including nausea, vomiting and constipation, she was admitted to a general hospital where empirical treatment for meningitis was started with antibiotics and antipyretics. On 3 January 2023, she was transferred to a paediatric hospital in critical condition

[1] This summary and assessment covers information confirmed during this period and may include information received outside of this period.
[2] 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.
[3] 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).
[4] World Health Organization. Human infection caused by avian influenza A(H5) – Ecuador. www.who.int/emergencies/disease-outbreak-news/item/2023-DON434.

where she was admitted to the intensive care unit (ICU) with septic shock and was treated with oseltamivir and mechanical ventilation due to pneumonia.

On 5 January, as part of SARI surveillance activities, a nasopharyngeal sample was collected from the patient. The sample was sent to Ecuador National Influenza Centre (NIC) and tested positive for influenza A(H5) by reverse transcription-polymerase chain reaction (RT-PCR) on 7 January. Specimens have been sent to a WHO Collaborating Centre for further characterization.

According to the epidemiological investigation in response to the outbreak, a week before the onset of her symptoms, the family acquired poultry which died without apparent cause on 19 December 2022. In addition, the epidemiological investigations revealed that several incidents of dead backyard poultry (chickens and ducks) have been reported from the same community where the family resided. Influenza A(H5N1) viruses have been detected in poultry in Ecuador since outbreaks in commercial poultry began in November 2022.

As of 26 January, the patient remained hospitalized, under observation and in stable condition. As part of the response, contact tracing was conducted, and it was reported that no further cases were detected among the contacts of this case.

According to reports received by the World Organisation for Animal Health (WOAH), various influenza A(H5) subtypes continue to be detected in wild and domestic birds in Africa, Asia, Europe and the Americas. Infections in mammals are also reported.

Risk Assessment:

1. What is the likelihood that additional human cases of infection with avian influenza A(H5) viruses will occur?

The overall risk assessment is unchanged. Most human cases were sporadic infections exposed to A(H5) viruses through contact with infected poultry or contaminated environments, including live poultry markets. Since the viruses continue to be detected in animals and related environments, further human cases can be expected. In some cases, the confirmation of infection with influenza A(H5) versus transient contamination of the nasopharynx/oropharynx after exposure to infected birds or contaminated environment remains inconclusive.

2. What is the likelihood of human-to-human transmission of avian influenza A(H5) viruses?

Even though small clusters of A(H5) virus infections have been reported previously including those involving health care workers, current epidemiological and virological evidence suggests that influenza A(H5) viruses have not acquired the ability of sustained transmission among humans, thus the likelihood is low.

3. What is the risk 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 evidence suggests these viruses have not acquired the ability to transmit easily among humans.

Overall Risk Management Recommendations:

- 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.

- Given the observed extent and frequency of avian influenza cases in wild birds, WHO advises the public to avoid contact with sick or dead birds, including wild birds, and to report dead wild birds or request their removal by contacting local wildlife or veterinary authorities.
- Swine influenza viruses circulate in swine populations in many regions of the world. Depending on geographic location, the genetic characteristics of these viruses differ. Most human cases are exposed to swine influenza viruses through contact with infected animals or contaminated environments. Human infection tends to result in mild clinical illness in most cases. Since these viruses continue to be detected in swine populations, further human cases can be expected.
- 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.
- Due to the constantly evolving nature of influenza viruses, WHO continues to stress the importance of global surveillance 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. Collaboration between the animal and human health sectors is essential. As the extent of influenza viruses 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 here: https://www.who.int/publications/i/item/WHO-WHE-IHM-GIP-2018.2.
- In the current COVID-19 pandemic, vigilance for the emergence of novel influenza viruses of pandemic potential should be maintained. WHO has developed practical guidance for integrated surveillance in the context of the cocirculation of SARS-CoV-2 and influenza viruses. The guidance is available here: https://www.who.int/publications/i/item/WHO-2019-nCoV-Integrated_sentinel_surveillance-2022.1
- All human infections caused by a new subtype of influenza virus are notifiable under the International Health Regulations (IHR, 2005).[5] State Parties to the IHR (2005) are required to immediately notify WHO of any laboratory-confirmed[6] case of a recent human infection caused by an influenza A virus with the potential to cause a pandemic[7]. Evidence of illness is not required for this report.
- It is critical that these influenza viruses from animals or from people 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 regular and **timely basis**[8] with the Global Influenza Surveillance and Response System (GISRS), a WHO-coordinated network of public health laboratories. The viruses are used by the public health laboratories to assess the risk of pandemic influenza and to develop candidate vaccine viruses.

Links:

WHO Human-Animal Interface web page

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[5] World Health Organization. Case definitions for the four diseases requiring notification in all circumstances under the International Health Regulations (2005).

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

[7] World Health Organization. Pandemic influenza preparedness framework for the sharing of influenza viruses and access to vaccines and other benefits. Available at: https://apps.who.int/iris/handle/10665/44796

[8] 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/10665/25940

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)
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
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 Influenza A(H7N9) Information
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 UN (FAO) webpage: Avian Influenza
https://www.fao.org/animal-health/avian-flu-qa/en/
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