Influenza at the human-animal interface
Summary and risk assessment, from 4 October to 1 November 2023

- **New infections**: From 4 October to 1 November 2023, two human cases of infection with avian influenza A(H5N1) viruses were reported officially.

- **Risk assessment**: The overall public health risk from currently known influenza viruses at the human-animal interface has not changed, and sustained human-to-human transmission of the viruses from these cases is currently considered unlikely. Although human infections with viruses of animal origin are unusual, they are not unexpected 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). 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 risk assessment of 3 October 2023, two human cases of infection with avian influenza A(H5N1) viruses were reported from Cambodia on 8 and 9 October 2023. A 50-year-old male in Svay Rieng province had an onset of illness on 3 October 2023 and passed away on 7 October. Detection of influenza A(H5N1) in samples collected from the case was confirmed on 7 October. He had exposure to sick and dead chickens before his illness onset.

A 2-year-old girl in Prey Veng province developed illness on 3 October 2023, was admitted to hospital on 5 October and passed away on 6 October. Detection of A(H5N1) virus in samples collected as part of severe acute respiratory infection (SARI) surveillance on 6 October was confirmed on 9 October. There were reports of sick and dead poultry in the village where the patient lived, and her family handled and cooked sick and dead poultry in the weeks prior to her illness onset.

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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).
The A(H5N1) viruses from the cases belong to the H5 haemagglutinin (HA) clade 2.3.2.1c. Viruses belonging to this clade have been detected in poultry since 2014 in Cambodia in longitudinal surveillance done in the animal health sector.

Information received thus far suggests separate spillover events from infected poultry to the two human cases. No further cases were detected among the contacts of these two cases.

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 non-human mammals are also reported.

Risk Assessment:

1. What is the risk of additional sporadic human cases of infection with avian influenza A(H5) viruses?
Most human cases so far were sporadic infections exposed to A(H5) viruses through contact with infected poultry or contaminated environments, including live poultry markets. While the viruses continue to be detected in animals and related environments, further human cases among exposed individuals are expected but unusual. The impact for public health if additional sporadic cases are detected is minimal. The overall risk is low.

2. What is the likelihood of human-to-human transmission of avian influenza A(H5) viruses?
No human-to-human transmission was identified associated with the event described above. In the past, small clusters of A(H5) virus infections were reported, including those involving health care workers, but without evidence of sustained human-to-human transmission. Current epidemiological and virological evidence suggests that contemporary influenza A(H5) viruses have not acquired the ability of sustained transmission among humans. 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.

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 and some wild mammals, the public should avoid contact with animals that are sick or dead from unknown causes, including wild animals, and should report dead wild 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.
- 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:

- Vigilance for the emergence of novel influenza viruses of 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 developed practical guidance for integrated surveillance. The guidance is available here:

- All human infections caused by a new subtype of influenza virus are notifiable under the International Health Regulations (IHR, 2005). State Parties to the IHR (2005) are required to immediately notify WHO of any laboratory-confirmed case of a recent human infection caused by an influenza A virus with the potential to cause a pandemic. 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 timely basis 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.

- 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).

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)

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4 World Health Organization. Case definitions for the four diseases requiring notification in all circumstances under the International Health Regulations (2005).
6 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
7 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
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 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 United Nations (FAO) webpage: Avian Influenza
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http://www.offlu.org/