

Influenza at the human-animal interface

Summary and assessment, from 28 September 2019 to 25 November 2019

- **New infections¹:** Since the previous update on 27 September 2019, three new human infections with influenza A(H9N2) viruses were reported.
- **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. Further human infections with viruses of animal origin are expected.
- **IHR compliance:** All human infections caused by a new influenza subtype are required to be reported under the International Health Regulations (IHR, 2005).² 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 update on 27 September 2019, no new laboratory-confirmed human cases of influenza A(H5) virus infection were reported to WHO. According to reports received by the World Organisation for Animal Health (OIE), various influenza A(H5) subtypes continue to be detected in birds in Africa, Europe and Asia. Overall, the risk assessment has not changed.

Avian influenza A(H7N9) viruses

Since the last update on 27 September 2019, no new laboratory-confirmed human cases of influenza A(H7N9) virus infections were reported to WHO. Publicly available reports from animal health authorities in China indicate no influenza A(H7N9) virus detections in animals among samples collected in July and August of this year.³ Overall, the risk assessment has not changed.

Avian influenza A(H9N2) viruses

Since the last update on 27 September 2019, three new laboratory-confirmed human cases of influenza A(H9N2) virus infection were reported.

On 11 November 2019, the detection of avian influenza A(H9N2) virus infection in a 4-year-old girl from Fujian province, with an onset of illness on 26 October 2019, was reported to WHO from China. The patient had mild illness but was hospitalized on 5 November 2019. Exposure to backyard poultry was reported. A second case was reported to WHO from China on 23 November, in a 5-year old girl

¹ For epidemiological and virologic features of human infections with animal influenza viruses not reported in this assessment, see the yearly report on human cases of influenza at the human-animal interface published in the Weekly Epidemiological Record. Available at: www.who.int/wer/en/

² World Health Organization. Case definitions for the four diseases requiring notification in all circumstances under the International Health Regulations (2005). Available at: www.who.int/ihr/Case_Definitions.pdf

³ Food and Agriculture Organization of the United Nations. H7N9 Situation Update. www.fao.org/ag/againfo/programmes/en/empres/H7N9/situation_update.html

from Anhui province, with an onset of illness on 12 November 2019. The patient had mild illness and recovered. Exposure to a poultry slaughterhouse was reported. No further cases among contacts of the two cases were detected.

A report of avian influenza A(H9N2) virus infection in a 17-month-old boy from Maharashtra State, India, with an onset of illness on 31 January 2019, was recently published.⁴ The case was detected through community-based surveillance and has recovered. No history of direct poultry exposure was reported. No further cases among contacts were reported.

Avian influenza A(H9N2) viruses are enzootic in poultry in Asia. This is the first documented human case of infection with an avian influenza virus reported from India. Published studies in human subjects indicate that seropositivity against A(H9N2) viruses is common especially among poultry workers in countries where the virus is considered endemic.⁵

Risk Assessment:

1. What is the likelihood that additional human cases of infection with avian influenza A(H9N2) viruses will occur?

Most human cases are exposed to the A(H9N2) virus through contact with infected poultry or contaminated environments. Human infection tends to result in mild clinical illness. Since the virus continues to be detected in poultry populations, further human cases can be expected.

2. What is the likelihood of human-to-human transmission of avian influenza A(H9N2) viruses?

No case clusters have been reported. Current epidemiological and virologic evidence suggests that this virus has not acquired the ability of sustained transmission among humans, thus the likelihood is low.

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

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 this virus has not acquired the ability to transmit easily among humans.

Overall Risk Management Recommendations:

- WHO does not advise special traveler 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 from countries affected by these influenza viruses, refer to OIE guidance.
- WHO advises that travelers 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 faeces. Travelers should also wash their hands often with soap and water. Travelers should follow good food safety and good food hygiene practices.
- Due to the constantly evolving nature of influenza viruses, WHO continues to stress the importance of global surveillance to detect virologic, epidemiological and clinical changes associated with circulating influenza viruses that may affect human (or animal) health, especially over the coming winter months. 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 virus circulation in animals is not clear,

⁴ Potdar V, Hinge D, Satav A, Simões EF, Yadav PD, Chadha MS. Laboratory-Confirmed Avian Influenza A(H9N2) Virus Infection, India, 2019. *Emerg Infect Dis.* 2019;25(12):2328-2330. (<https://dx.doi.org/10.3201/eid2512.190636>, accessed 21 November 2019).

⁵ Peacock TP, James J, Sealy JE, Iqbal M. A Global Perspective on H9N2 Avian Influenza Virus. *Viruses.* 2019;11(7),620. (<https://doi.org/10.3390/v11070620>, accessed 21 November 2019).

epidemiological and virologic surveillance and the follow-up of suspected human cases should remain high. Guidance on investigation of non-seasonal influenza and other emerging acute respiratory diseases has been published on the WHO website here

www.who.int/influenza/resources/publications/outbreak_investigation_protocol/en/.

- All human infections caused by a new subtype of influenza virus are notifiable under the International Health Regulations (IHR, 2005).⁶ State Parties to the IHR (2005) are required to immediately notify WHO of any laboratory-confirmed⁷ 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 influenza viruses from animals and 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 their influenza viruses with pandemic potential on a regular and timely basis⁸ 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

http://www.who.int/influenza/human_animal_interface/en/

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

http://www.who.int/influenza/resources/publications/outbreak_investigation_protocol/en/

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

http://www.who.int/influenza/human_animal_interface/H5N1_cumulative_table_archives/en/

Avian Influenza A(H7N9) Information

http://www.who.int/influenza/human_animal_interface/influenza_h7n9/en/

WHO Avian Influenza Food Safety Issues

http://www.who.int/foodsafety/areas_work/zoonose/avian/en/

World Organisation of Animal Health (OIE) web page: Web portal on Avian Influenza

<http://www.oie.int/animal-health-in-the-world/web-portal-on-avian-influenza/>

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

<http://www.fao.org/avianflu/en/index.html>

OFFLU

<http://www.offlu.net/index.html>

⁶ World Health Organization. Case definitions for the four diseases requiring notification in all circumstances under the International Health Regulations (2005). Available at: www.who.int/ihr/Case_Definitions.pdf

⁷ World Health Organization. Manual for the laboratory diagnosis and virologic surveillance of influenza (2011). Available at: www.who.int/influenza/gisrs_laboratory/manual_diagnosis_surveillance_influenza/en/

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: www.who.int/influenza/gisrs_laboratory/ivpp_sharing_guidance/en/