Influenza at the human-animal interface
Summary and assessment, 2 November to 13 December 2018

• **New infections**: Since the previous update, human infections with avian influenza A(H7N2) and 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). This includes any influenza A virus that has demonstrated the capacity to infect a human and its hemagglutinin 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 1 November 2018, no new laboratory-confirmed human cases of influenza A(H5) virus infections 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.

**Avian influenza A(H7N2) viruses**
Since the last update on 1 November 2018, an additional laboratory-confirmed human case of infection with an avian influenza A(H7N2) virus, associated with an outbreak in cats in December 2016 in the United States (USA), was detected. Novel serologic testing methods were employed in active case finding following the outbreak. Of over 100 individuals with exposure to infected cats, one person met the criteria for seropositivity to be considered a laboratory-confirmed case. The individual reported mild respiratory illness following close contact with infected cats during the outbreak. This is the second human case of infection with an influenza A(H7N2) virus transmitted from cats to humans.

---

1 For epidemiological and virological 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/](http://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](http://www.who.int/ihr/Case_Definitions.pdf)


Risk Assessment:

1. What is the likelihood that additional human cases of infection with avian influenza A(H7N2) viruses will occur? If the virus infects cats, or other animals, and humans are in close contact with infected animals, further human cases would be expected but it would be unusual.

2. What is the likelihood of human-to-human transmission of avian influenza A(H7N2) viruses? Current evidence suggests that the likelihood is low. Thus far, there has been no evidence of sustained human-to-human transmission of influenza A(H7N2) viruses.

3. What is the risk of international spread of avian influenza A(H7N2) 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 this virus has not acquired the ability to transmit easily among humans.

Avian influenza A(H7N9) viruses

According to reports from mainland and the Hong Kong Special Administrative Region China and those received by the World Organisation for Animal Health (OIE), A(H7N9) avian influenza viruses continue to be detected in China but at lower levels compared to previous years. A nationwide domestic poultry vaccination campaign began in 2017. Overall, the risk assessment has not changed.

Avian influenza A(H9N2) viruses

Since the last update on 1 November 2018, two new laboratory-confirmed human cases of influenza A(H9N2) virus infections were reported to WHO. On 11 December 2018, China reported the detection of avian influenza A(H9N2) viruses in two children aged <5 years, one from Guangdong (with illness onset on 16 October 2018) province and one from Guangxi province (with illness onset on 10 October 2018). The case from Guangdong province reportedly had exposure to backyard poultry while the case from Guangxi did not have known contact with live poultry. During epidemiological investigations, no further cases among family members were reported. Avian influenza A(H9N2) viruses are enzootic in poultry in China.

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 virological 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 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 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 regard 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 virological, 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, epidemiological and virological surveillance and the follow-up of suspected human cases should remain high. New guidance on investigation of non-seasonal influenza and other emerging acute respiratory diseases has been published on the WHO website here http://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). 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 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 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.

Links:
WHO Human-Animal Interface web page
WHO Protocol to investigate non-seasonal influenza and other emerging acute respiratory diseases
Cumulative Number of Confirmed Human Cases of Avian Influenza A(H5N1) Reported to WHO
Avian Influenza A(H7N9) Information
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
Food and Agriculture Organization of the UN (FAO) webpage: Avian Influenza
OFFLU
http://www.offlu.net/index.html

---

5 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