Influenza at the human-animal interface
Summary and assessment, 11 May to 24 June 2019

- **New infections**: Since the previous update on 10 May 2019, one new human infection with an influenza A(H1N1) variant virus was 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 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 10 May 2019, 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. Overall, the risk assessment has not changed.

**Avian influenza A(H7N9) viruses**
Since the last update on 10 May 2019, no new laboratory-confirmed human cases of influenza A(H7N9) virus infections were reported to WHO. There have been no publicly available reports from animal health authorities in China of influenza A(H7N9) virus detections in animals in recent months. Overall, the risk assessment has not changed.

### Swine Influenza Viruses

**Current situation:**

**Influenza A(H1N1)v virus**
Since the last update on 10 May 2019, one new laboratory-confirmed human case of influenza A(H1N1)v virus infection was reported. On 31 May 2019, the IHR National Focal Point (NFP) of the United States of America (USA) reported the detection of an influenza A(H1N1)v in an adult over 65 years of age. The patient, with underlying medical conditions, sought medical care for an acute respiratory illness on 5 May 2019. After hospital admission, a sample was collected as part of routine 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/](http://www.who.int/wer/en/)

1 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)

surveillance activities and the virus was initially characterized as a seasonal A(H1N1)pdm09 virus. Upon genetic sequencing of the virus at the National Influenza Reference Center in Wisconsin state, per national surveillance specimen submission guidelines, and further testing at the WHO Collaborating Centre (US Centers for Disease Control and Prevention), the virus was confirmed to be an influenza A(H1N1) variant virus. Genetic analysis of the virus indicated that the haemagglutinin (HA) and neuraminidase (NA) genes were closely related to the current seasonal influenza A(H1N1)pdm09 viruses, while the internal genes were closely related to those in influenza viruses circulating and detected in swine populations in the USA in recent years. The case recovered, no further cases were detected and no other viruses with this combination of genes have been reported in humans. Investigation around this case has thus far not indicated the source of exposure to the virus.

Risk Assessment:
1. What is the likelihood that additional human cases of infection with swine influenza viruses will occur? 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 swine or contaminated environments. Human infection tends to result in mild clinical illness. Since these viruses continue to be detected in swine populations, further human cases can be expected.

2. What is the likelihood of human-to-human transmission of swine influenza viruses? Although limited human-to-human transmission may have taken place, current evidence suggests that these viruses have not acquired the ability of sustained transmission among humans, thus the likelihood is low. Since the virus from the case discussed above has HA and NA genes derived from contemporary seasonal viruses, it might be able to transmit more easily between people compared to other previously reported A(H1N1)v viruses with HA and NA genes from non-A(H1N1)pdm09 swine influenza viruses lineages. However, human population immunity is also high.

3. What is the likelihood of international spread of swine influenza viruses 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 these viruses have 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 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, epidemiological and virologic 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

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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). Available at: www.who.int/ihr/Case_Definitions.pdf
