Human infection with avian influenza A(H5) viruses

Human infection with avian influenza A(H5N1) virus
Between 10 June 2022 and 16 June 2022, no new case of human infection with avian influenza A(H5N1) virus was reported to WHO in the Western Pacific Region.

As of 16 June 2022, a total of 239 cases of human infection with avian influenza A(H5N1) virus have been reported from four countries within the Western Pacific Region since January 2003 (Table 1). Of these cases, 134 were fatal, resulting in a case fatality rate (CFR) of 56%. The last case was reported from Lao PDR, with an onset date of 13 October 2020 (one case, no death).

Table 1: Cumulative number of laboratory-confirmed human cases (C) and deaths (D) of influenza A(H5N1) virus infection reported to WHO, by date of onset (January 2003 to 21 April 2022), Western Pacific Region

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>C</td>
<td>D</td>
<td>C</td>
<td>D</td>
<td>C</td>
<td>D</td>
<td>C</td>
<td>D</td>
<td>C</td>
<td>D</td>
<td>C</td>
</tr>
<tr>
<td>Cambodia</td>
<td>9</td>
<td>7</td>
<td>47</td>
<td>30</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>China</td>
<td>38</td>
<td>25</td>
<td>9</td>
<td>5</td>
<td>6</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Lao PDR</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Viet Nam</td>
<td>112</td>
<td>57</td>
<td>15</td>
<td>7</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>161</td>
<td>91</td>
<td>71</td>
<td>42</td>
<td>6</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>C</td>
<td>D</td>
<td>C</td>
<td>D</td>
<td>C</td>
<td>D</td>
<td>C</td>
<td>D</td>
<td>C</td>
<td>D</td>
<td>C</td>
</tr>
</tbody>
</table>

Globally, from January 2003 to 2 June 2022, there have been 864 cases of human infection with avian influenza A(H5N1) virus reported from 18 countries. Of these 864 cases, 456 were fatal (CFR of 53%). The latest case was reported from United States of America in April 2022.

Human infection with avian influenza A(H5N6) virus
Between 10 June 2022 and 16 June 2022, no new case of human infection with avian influenza A(H5N6) virus was notified to WHO in the Western Pacific Region. To date, a total of 79 laboratory-confirmed cases of human infection with influenza A(H5N6) virus including 33 deaths have been reported to WHO in the Western Pacific Region since 2014.

Public health risk assessment for human infection with avian influenza A(H5) viruses
Whenever avian influenza viruses are circulating in poultry, there is a risk for sporadic infection and small clusters of human cases due to exposure to infected poultry or contaminated environments. Therefore, sporadic human cases are not unexpected.

The rise in numbers of reported human cases of A(H5N6) infection may reflect the continued circulation of the virus in birds, and enhanced surveillance system and diagnostic capacity as a direct outcome from the response to the COVID-19 pandemic. The zoonotic threat remains elevated due to the spread of the viruses among birds. However, the overall pandemic risk associated with A(H5) is considered not significantly changed in comparison to previous years. WHO recommends Member States to remain vigilant and consider mitigation steps to reduce human exposure to potentially infected birds to reduce risk of additional zoonotic infection.

For information on risk assessments on Avian Influenza, visit:

Assessment of risk associated with highly pathogenic avian influenza A(H5N6) virus
Human infection with avian influenza A(H3N8) virus
Between 10 June 2022 and 16 June 2022, no new case of human infection with avian influenza A(H3N8) virus was reported to WHO in the Western Pacific Region. To date, a total of 2 laboratory-confirmed cases of human infection with influenza A(H3N8) virus with no death has been reported to WHO in the Western Pacific Region.

Human infection with avian influenza A(H7N4) virus in China
Between 10 June 2022 and 16 June 2022, no new case of human infection with avian influenza A(H7N4) virus was reported to WHO in the Western Pacific Region. To date, only one laboratory-confirmed case of human infection with influenza A(H7N4) virus has been reported to WHO. This case was reported from China on 14 February 2018.

Human infection with avian influenza A(H7N9) virus in China
Between 10 June 2022 and 16 June 2022, no new case of human infection with avian influenza A(H7N9) virus was reported to WHO in the Western Pacific Region. To date, a total of 1,568 laboratory-confirmed human infections with avian influenza A(H7N9) virus including 616 fatal cases (CFR: 39%) have been reported to WHO since early 2013. The last case of human infection with avian influenza A(H7N9) reported to WHO in the Western Pacific Region was in 2019.

Of the 1,568 human infections with avian influenza A(H7N9), 33 have reported mutations in the hemagglutinin gene indicating a change to high pathogenicity in poultry. These 33 cases were from Taiwan, China (one case had travel history to Guangdong), Guangxi, Guangdong, Hunan, Shaanxi, Hebei, Henan, Fujian, Yunnan, and Inner Mongolia. No increased transmissibility or virulence of the virus within human cases has been detected related to the HPAI A(H7N9) virus.

WHO is continuing to assess the epidemiological situation and will conduct further risk assessments as new information becomes available. The number and geographical distribution of human infections with avian influenza A(H7N9) viruses in the fifth epidemic wave (1 October 2016 to 30 September 2017) were greater than previous waves and the subsequent waves.

Further sporadic human cases of avian influenza A(H7N9) virus infection are expected in affected and possibly neighboring areas. Should human cases from affected areas travel internationally, their infection may be detected in another country during or after arrival. However, if this were to occur, community level spread is considered unlikely as the virus does not have the ability to transmit easily among humans.

To date, there is no evidence of sustained human-to-human transmission of avian influenza A(H7N9) virus. Human infections with the A(H7N9) virus are unusual and need to be monitored closely in order to identify changes in the virus and transmission behavior to humans as this may have serious public health impacts.

Human infection with avian influenza A(H9N2) virus
On 2 June 2022, one new case of human infection with avian influenza A(H9N2) was reported to WHO in the Western Pacific Region.

The case is a 5-year-old male from Yueyang city, Hunan Province with an onset of illness on 26 April 2022. The patient had mild disease with fever and cough. A wet market with live poultry stalls is located 500 m from the patients residence, however, the case has not visited it before the illness onset; a field investigation is ongoing to identify the source of infection. No family members have developed symptoms at the time of reporting on 2 June 2022. The environmental samples were collected from the patients...
residence and a nearby wet market (with live poultry stalls). The testing results showed only samples from the wet market were positive for influenza A, including H5 and H9. The local CDC has conducted strengthened surveillance, including close contact with the residences environment and nearby wet market. No other unusual results have been found.

To date, a total of 73 cases of human infection with avian influenza A(H9N2) have been officially reported from China to WHO since December 2015. The breakdown of cases reported from China per year (according to date of onset of illness) includes 2015 (4 cases), 2016 (6 cases), 2017 (6 cases), 2018 (7 cases), 2019 (5 cases), 2020 (16 cases), 2021 (24 cases), 2022 (6 cases).

**Human infection with avian influenza A(H10N3) virus**

Between 10 June 2022 and 16 June 2022, no new case of human infection with avian influenza A(H10N3) virus was reported to WHO in the Western Pacific Region. To date, one case of avian influenza A(H10N3) virus has been reported globally.

Most previously reported human infections with avian influenza viruses were due to exposure to infected poultry or contaminated environments. Since avian influenza viruses, including avian influenza A(H10N3) viruses, continue to be detected in poultry populations, further sporadic human cases could be detected in the future. Currently available epidemiologic information suggests that the avian influenza A(H10N3) virus has not acquired the ability for sustained human-to-human transmission, thus the likelihood of spread among human is low.

**Animal infection with avian influenza virus**

Between 10 June 2022 and 16 June 2022, no report of outbreak of avian influenza among birds were reported to OIE from the Western Pacific Region.

**For more information on animal infection with avian influenza viruses with potential public health impact, visit:**

- World Organization for Animal Health (OIE) web page: [Weekly disease information and Latest report on Avian Influenza](https://www.oie.int/en/)
- Food and Agriculture Organization of the UN (FAO) webpage: [Avian Influenza](https://www.fao.org/avian-influenza)
- [Emergency Prevention System for Transboundary Animal and Plant Pests and Diseases (EMPRES)](https://www.EMPRES-i.org)
- [FAO Global Animal Disease Information System (EMPRES-i)](https://www.EMPRES-i.org)

**Other updates**

- [Influenza at the human-animal interface summary and assessment](https://www.who.int/), 13 May 2022
- [Recommended composition of influenza virus vaccines for use in the 2022 southern hemisphere influenza season](https://www.who.int/), 24 September 2021
- [WHO SAGE Seasonal Influenza Vaccination Recommendations during the COVID-19 Pandemic Interim guidance](https://www.who.int/), 20 September 2020
- [Recommended composition of influenza virus vaccines for use in the 2022-2023 northern hemisphere influenza season](https://www.who.int/), 25 February 2022
- [WHO Consultation on the Composition of Influenza Virus Vaccines for Use in the 2022 Southern Hemisphere Influenza Season](https://www.who.int/), 13 – 30 September 2021
- [WHO Information Meeting on the Composition of Influenza Virus Vaccines for Use in the 2022-23 Northern Hemisphere Influenza Season](https://www.who.int/), 25 February 2022
• **Zoonotic influenza: candidate vaccine viruses and potency testing reagents.**