Human infection with avian influenza A(H5) viruses

Human infection with avian influenza A(H5N1) virus

Between 7 and 13 January 2022, no new cases of human infection with avian influenza A(H5N1) virus were reported to WHO in the Western Pacific Region.

As of 13 January 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 13 January 2022), Western Pacific Region

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<tr>
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<td>25</td>
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<tr>
<td>Total</td>
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<td>6</td>
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Globally, from January 2003 to 13 January 2022, there have been 863 cases of human infection with avian influenza A(H5N1) virus reported from 18 countries. Of these 863 cases, 456 were fatal (CFR of 53%). The last case was reported from India in July 2021 (source).

Human infection with avian influenza A(H5N6) virus

Between 7 and 13 January 2022, five new cases of human infection with avian influenza A(H5N6) virus were notified to WHO in the Western Pacific Region.

The first case was a 75-year-old male farmer from Sichuan Province with the onset of illness on 1 December 2021. The case was hospitalized on 4 December 2021 and died on 12 December 2021 due to multiple organ failure.

The second case is a 54-year-old male farmer from Sichuan Province with the onset of illness on 8 December 2021. The case was hospitalized on 16 December 2021 and died on 24 December 2021 due to multiple organ failure.

The third case is a 51-year-old female from Zhejiang Province with the onset of illness on 15 December 2021. The case was hospitalized on 18 December 2021 with severe pneumonia and remains in critical condition at the time of reporting to WHO.

The fourth case is a 53-year-old male farmer from Liuzhou City, Guangxi Province with the onset of illness on 19 December 2021. The case was hospitalized on 23 December 2021 with severe pneumonia and is in a severe condition at the time of reporting to WHO.

The fifth case is a 28-year-old male from Liuzhou, Guangxi Province with the onset of illness on 23 December 2021. The case was hospitalized on 23 December 2021 with severe pneumonia and remains in critical condition at the time of reporting.
All the cases had history of exposure to poultry prior to onset of illness and no additional individuals among their respective family members have developed symptoms at the time of reporting. Following investigations, no epidemiological links have been determined among the five cases.

To date, a total of 63 laboratory-confirmed cases of human infection with influenza A(H5N6) virus including 29 deaths have been reported to WHO in the Western Pacific Region since 2014. The last case was reported from China with onset date of 23 December 2021.

**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(H7N4) virus in China**

Between 7 and 13 January 2022, no new cases of human infection with avian influenza A(H7N4) virus were 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 7 and 13 January 2022, no new cases of human infection with avian influenza A(H7N9) virus were 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 on 14 February 2017.

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 (source).

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 neighbouring 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 behaviour to humans as this may have serious public health impacts.

**Human infection with avian influenza A(H9N2) virus**

Between 7 and 13 January 2022, four new cases of human infection with avian influenza A(H9N2) were reported from China to WHO in the Western Pacific Region.

The first case is a 7-year-old female student from Zhenjiang City, Jiangsu Province with the onset of illness on 27 November 2021. The second case is a 3-year-old female from Huanggang City, Hubei Province with the onset of illness on 7 December 2021. The third case is a 14-year-old female student from Nanning City, Guangxi Province with the onset of illness on 9 December 2021. The case was hospitalized with a mild condition on 9 December 2021. The fourth case is a 3-year-old male from Huanggang City, Hubei Province with the onset of illness on 13 December 2021.

All of the four cases are in mild condition and had already recovered from the disease at the time of reporting to WHO. Before illness onset, the case had a history of poultry exposure. No family members have developed symptoms at the time of reporting. Following investigations, no epidemiological links have been determined among the four cases.

To date, 24 cases of avian influenza A(H9N2) have been reported to WHO from China in 2021, and a total of 65 cases of human infection with avian influenza A(H9N2) including two deaths (both with underlying conditions) have been reported to WHO in the Western Pacific Region since December 2015. The last case was reported from China with onset date of 13 December 2021.

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

Between 7 and 13 January 2021, no new cases of human infection with avian influenza A(H10N3) virus were 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 (source 1, 2).

**Animal infection with avian influenza virus**

Between 7 and 13 January 2022, 12 new outbreaks of avian influenza were reported to OIE from the Western Pacific Region. (source)

On 7 January 2022, Viet Nam reported to OIE five outbreaks of highly pathogenic avian influenza A(H5N1) among poultry. Outbreaks occurred in five locations: Bình Phước province, Tây Ninh province, Quảng...
Trị province, Ninh Binh province and Nghệ An province. In total there were 10,835 cases leading to 6,810 deaths among 18,144 susceptible birds, the remaining 11,334 were culled. (source)

On 10 January 2022, the Republic of Korea has reported to OIE two outbreaks of highly pathogenic avian influenza A(H5N1) among poultry in Jeongeup, Jeollabuk-do province and Muan, Jeollanam-do province. In total, there were 300 cases identified among 30,455 susceptible poultry birds. All of the 30,455 birds were culled and disposed. (source)

On 13 January 2022, Taiwan, China reported to OIE four outbreaks of avian influenza A(H5N2) among poultry. Outbreaks occurred in four locations; Bade District, Dacheng Township, Douliu City, and Fangyuan Township. In total, there were 7,870 cases leading to 7,870 deaths among 114,592 susceptible birds, the remaining 106,422 birds were culled. (source)

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
- Food and Agriculture Organization of the UN (FAO) webpage: Avian Influenza
- Emergency Prevention System for Transboundary Animal and Plant Pests and Diseases (EMPRES)
- FAO Global Animal Disease Information System (EMPRES-i)

Other updates

- Influenza at the human-animal interface summary and assessment, 1 October 2021
  - Risk assessment summary: 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. Human infections with viruses of animal origin are expected at the human-animal interface wherever these viruses circulate in animals.
- Recommended composition of influenza virus vaccines for use in the 2021 southern hemisphere influenza season (who.int) 24 September 2021
- WHO SAGE Seasonal Influenza Vaccination Recommendations during the COVID-19 Pandemic Interim guidance, 20 September 2020
- Recommended composition of influenza virus vaccines for use in the 2021-2022 northern hemisphere influenza season (who.int) 26 February 2021
- WHO Consultation on the Composition of Influenza Virus Vaccines for Use in the 2022 Southern Hemisphere Influenza Season 13 – 30 September 2021
- WHO Information Meeting on the Composition of Influenza Virus Vaccines for Use in the 2021-22 Northern Hemisphere Influenza Season, 26 February 2021
- Zoonotic influenza: candidate vaccine viruses and potency testing reagents.