Influenza at the human-animal interface

Summary and assessment as of 14 December 2015

**Human infection with avian influenza A(H5) viruses**

Since the last WHO Influenza update on 13 November 2015, no new laboratory-confirmed human cases of avian influenza A(H5N1) virus infection have been reported to WHO.

From 2003 through 14 December 2015, 844 laboratory-confirmed human cases of avian influenza A(H5N1) virus infection have been officially reported to WHO from 16 countries. Of these cases, 449 have died.

Influenza A(H5) viruses of various subtypes, such as influenza A(H5N1), A(H5N2), A(H5N6), A(H5N8) and A(H5N9) have been detected in birds in Africa, Asia, and Europe according to reports received by OIE. Although influenza A(H5) viruses have the potential to cause disease in humans, so far no human cases of infection with these viruses have been reported, with exception of the human infections with influenza A(H5N1) viruses and the four human infections with influenza A(H5N6) virus detected in China since 2014.

In recent weeks, highly pathogenic avian influenza A(H5) viruses of several subtypes have been detected in domestic birds in France. Based on preliminary data, at least one of these viruses has different origins than the influenza A(H5) viruses that have infected the human cases reported in the past. WHO is in contact with the animal health authorities to better understand these viruses and to more accurately assess the public health risk.


**Human infection with other non-seasonal influenza viruses**

**Human infections with avian influenza A(H7N9) viruses in China**

Since the last WHO Influenza update on 13 November 2015, two new laboratory-confirmed human cases of avian influenza A(H7N9) virus infection were reported to WHO from China. Both of these cases reportedly had exposure to domestic poultry.
A total of 683 laboratory-confirmed cases of human infection with avian influenza A(H7N9) viruses, including at least 275 deaths\(^1\), have been reported to WHO.

During 2015, there have been continued avian influenza A(H7N9) virus detections in the animal population in multiple provinces in China, indicating that the virus persists in the poultry population. If the pattern of human cases follows the trends seen in previous years, the number of human cases may rise over the coming months. Further sporadic cases of human infection with avian influenza A(H7N9) virus are therefore expected in affected and possibly neighboring areas.

**Figure 1: Epidemiological curve of avian influenza A(H7N9) cases in humans by week of onset.**

![Epidemiological curve of avian influenza A(H7N9) cases in humans by week of onset.](image)

**Overall public health risk assessment for avian influenza A(H7N9) viruses:** Overall, the public health risk from avian influenza A(H7N9) viruses has not changed since the assessment of 23 February 2015. [http://www.who.int/influenza/human_animal_interface/influenza_h7n9/Risk_Assessment/en/](http://www.who.int/influenza/human_animal_interface/influenza_h7n9/Risk_Assessment/en/)


\(^1\) The total number of fatal cases is published on a monthly basis by China National Health and Family Planning Commission.
Human infections with avian influenza A(H9N2) viruses in China

Since the last WHO Influenza update on 13 November 2015, four laboratory-confirmed human cases of avian influenza A(H9N2) virus infection were reported to WHO from China. All of the cases were reported to have mild disease and none were hospitalized.

<table>
<thead>
<tr>
<th>Country</th>
<th>Province</th>
<th>Age</th>
<th>Sex</th>
<th>Date of onset</th>
<th>Exposure to</th>
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<tr>
<td>China</td>
<td>Anhui</td>
<td>4</td>
<td>F</td>
<td>14 April 2015</td>
<td>Live animal market</td>
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<tr>
<td>China</td>
<td>Hunan</td>
<td>2</td>
<td>M</td>
<td>1 Sept 2015</td>
<td>Unknown</td>
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<tr>
<td>China</td>
<td>Hunan</td>
<td>15</td>
<td>F</td>
<td>15 Sept 2015</td>
<td>No known exposure</td>
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<tr>
<td>China</td>
<td>Hunan</td>
<td>1</td>
<td>F</td>
<td>27 Oct 2015</td>
<td>Unknown</td>
</tr>
</tbody>
</table>

Overall public health risk assessment for avian influenza A(H9N2) viruses: Further human cases and small clusters could occur as this virus is circulating in poultry populations across Asia and the Middle East. Human cases have previously been reported from Bangladesh, China and Egypt. This virus does not seem to transmit easily between humans and tends to result in mild clinical disease, therefore the current likelihood of community-level spread and public health impact of this virus is considered low.

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. All human infections with non-seasonal influenza viruses are reportable to WHO under the IHR (2005). It is critical that influenza viruses from animals and people are fully characterized in appropriate animal or human health influenza reference laboratories and reported according to international standards.

Links:

WHO Human-Animal Interface web page

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

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