Influenza at the human-animal interface

Summary and assessment as of 20 January 2016

Human infection with avian influenza A(H5) viruses

Since the last WHO Influenza update on 14 December 2015, two new laboratory-confirmed human cases of avian influenza A(H5N1) virus infection were reported to WHO.

A 60-year-old male from Mymensing District in Bangladesh was hospitalized on 12 October 2015 with severe acute respiratory infection (SARI). Nasopharyngeal and throat swabs were collected upon hospital admission as part of SARI surveillance, and tested positive for A(H5N1) virus. The patient fully recovered. Prior to illness onset, the patient was exposed to live backyard poultry. The second case was in a 42-year-old male from Sichuan Province in China who had an onset of illness on 27 December 2015. He was hospitalized on 31 December 2015 and remains in a critical condition. This case had history of exposure to poultry.

From 2003 through 20 January 2016, 846 laboratory-confirmed human cases of avian influenza A(H5N1) virus infection have been officially reported to WHO from 16 countries (Figure 1). Of these cases, 449 have died.

Figure 1: Epidemiological curve of avian influenza A(H5N1) cases in humans by week of onset, 2004-2016
In this reporting period, five laboratory-confirmed human cases of avian influenza A(H5N6) virus infection were reported to WHO from China (Table 1). All were sporadic cases and with no further transmission among contacts.

Table 1: Cases of avian influenza A(H5N6) reported in 14 December 2015 till 20 January 2016

<table>
<thead>
<tr>
<th>Country</th>
<th>Province</th>
<th>Age</th>
<th>Sex</th>
<th>Date of Onset</th>
<th>Clinical outcome or current status</th>
<th>Exposure to</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>Guangdong</td>
<td>26</td>
<td>F</td>
<td>24 Dec 2015</td>
<td>Died</td>
<td>Handled duck meat</td>
</tr>
<tr>
<td>China</td>
<td>Guangdong</td>
<td>40</td>
<td>F</td>
<td>22 Dec 2015</td>
<td>Hospitalized</td>
<td>Live poultry</td>
</tr>
<tr>
<td>China</td>
<td>Guangdong</td>
<td>42</td>
<td>M</td>
<td>12 Dec 2015</td>
<td>Died</td>
<td>Live poultry market</td>
</tr>
<tr>
<td>China</td>
<td>Guangdong</td>
<td>25</td>
<td>M</td>
<td>1 Jan 2016</td>
<td>Died</td>
<td>Live poultry market</td>
</tr>
<tr>
<td>China</td>
<td>Guangdong</td>
<td>31</td>
<td>F</td>
<td>8 Jan 2016</td>
<td>Hospitalized</td>
<td>Unknown</td>
</tr>
</tbody>
</table>

Since 2013 through to 20 January 2016, ten cases of avian influenza A(H5N6) have been detected of which nine were notified to WHO and one was reported in the scientific literature. All nine cases notified to WHO had clinically severe disease. The case reported in the literature, a five-year-old female, was a mild case detected through routine surveillance activities.

Various influenza A(H5) subtypes, such as influenza A(H5N1), A(H5N2), A(H5N3), A(H5N6), A(H5N8) and A(H5N9), continue to be detected in birds in West Africa, Europe and Asia, according to recent reports received by OIE. Since last month’s report on detections of avian influenza A(H5) viruses in birds in France, no human infections have been identified. Although the influenza A(H5) viruses might have the potential to cause disease in humans, so far no human cases of infection have been reported, with exception of the human infections with influenza A(H5N1) and A(H5N6) viruses in China.


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1 Chen T, Zhang R. Symptoms seem to be mild in children infected with avian influenza A (H5N6) and other subtypes. J Infect. 2015;71(6).
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 18 December 2015, ten new laboratory-confirmed human cases of avian influenza A(H7N9) virus infection were reported to WHO (Table 2). Cases were reported from Guangdong, Jiangsu, Jiangxi and Zhejiang provinces of China with onsets between 24 November 2015 and 24 December 2015. All cases were exposed to live or slaughtered poultry.

Table 2: Cases of avian influenza A(H7N9) reported in 14 December 2015 till 20 January 2016

<table>
<thead>
<tr>
<th>Country</th>
<th>Province</th>
<th>Age</th>
<th>Sex</th>
<th>Date of onset</th>
<th>Clinical outcome or current status</th>
<th>Exposure to</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>Zhejiang</td>
<td>65</td>
<td>M</td>
<td>24 Nov 2015</td>
<td>Critical</td>
<td>Live poultry</td>
</tr>
<tr>
<td>China</td>
<td>Zhejiang</td>
<td>51</td>
<td>F</td>
<td>1 Dec 2015</td>
<td>Died</td>
<td>Live poultry market</td>
</tr>
<tr>
<td>China</td>
<td>Jiangsu</td>
<td>41</td>
<td>F</td>
<td>1 Dec 2015</td>
<td>Severe</td>
<td>Live poultry</td>
</tr>
<tr>
<td>China</td>
<td>Zhejiang</td>
<td>77</td>
<td>M</td>
<td>7 Dec 2015</td>
<td>Died</td>
<td>Live poultry</td>
</tr>
<tr>
<td>China</td>
<td>Jiangsu</td>
<td>52</td>
<td>F</td>
<td>11 Dec 2015</td>
<td>Critical</td>
<td>Live poultry</td>
</tr>
<tr>
<td>China</td>
<td>Zhejiang</td>
<td>53</td>
<td>M</td>
<td>12 Dec 2015</td>
<td>Critical</td>
<td>Live poultry</td>
</tr>
<tr>
<td>China</td>
<td>Guangdong</td>
<td>60</td>
<td>M</td>
<td>19 Dec 2015</td>
<td>Died</td>
<td>Live poultry</td>
</tr>
<tr>
<td>China</td>
<td>Jiangxi</td>
<td>46</td>
<td>M</td>
<td>21 Dec 2015</td>
<td>Severe</td>
<td>Live poultry</td>
</tr>
<tr>
<td>China</td>
<td>Zhejiang</td>
<td>58</td>
<td>F</td>
<td>22 Dec 2015</td>
<td>Critical</td>
<td>Poultry</td>
</tr>
<tr>
<td>China</td>
<td>Zhejiang</td>
<td>29</td>
<td>F</td>
<td>24 Dec 2015</td>
<td>Critical</td>
<td>Live poultry</td>
</tr>
</tbody>
</table>

A total of 693 laboratory-confirmed cases of human infection with avian influenza A(H7N9) viruses, including at least 277 deaths\(^2\), have been reported to WHO (Figure 2). Surveillance for avian influenza A(H7N9) viruses in poultry and live bird markets continued in China, where both seropositive and virus-positive samples continue to be detected.\(^3\)

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\(^2\) The total number of fatal cases is published on a monthly basis by China National Health and Family Planning Commission.

\(^3\) Further information on avian influenza A(H7N9) virus surveillance in poultry and live bird markets: [www.syj.moa.gov.cn/dwyqdt/jczt/201512/t20151203_4923435.htm](http://www.syj.moa.gov.cn/dwyqdt/jczt/201512/t20151203_4923435.htm)
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/

Please find the most updated information at  

Human infections with influenza A(H3N2v) virus in the United States of America

Since the last WHO Influenza update on 18 December 2015, one human infection with a novel influenza A virus was reported from New Jersey in the United States of America (USA). The patient was infected with an influenza A(H3N2v) virus. While no direct contact with swine was reported, the patient visited an area where swine were present prior to illness onset. The patient fully recovered and no ongoing human-to-human transmission has been identified.

Overall public health risk assessment for influenza A(H3N2v) viruses: This A(H3N2v) 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. Sporadic human infections with swine influenza viruses such as A(H1N1v), A(H1N2v) or A(H3N2v) are
periodically reported in the USA. Further human cases could occur since swine influenza viruses can circulate among swine throughout the year, but most outbreaks occur during the late fall and winter months similar to outbreaks of seasonal influenza in humans.4

**Human infections with avian influenza A(H9N2) virus in Bangladesh**

One human infection with avian influenza A(H9N2) virus was reported from Bangladesh. The case was a 46-year-old male poultry worker in a market in Dhaka City. He had onset of illness on 27 October 2015 presenting with fever, runny nose, headache and myalgia. Throat and nasal swabs were collected as part of the market avian influenza surveillance system and tested positive for A(H9N2) virus. The patient recovered. One day prior to illness onset, the case reported handling sick poultry.

**Overall public health risk assessment for avian influenza A(H9N2) viruses:** This is the third human infection of avian influenza A(H9N2) virus reported from Bangladesh. 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 also previously been reported from 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. All human infections with non-seasonal influenza viruses are reportable to WHO under the International Health Regulations (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

- 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