Influenza at the human-animal interface

Summary and assessment as of 6 January 2015

Human infection with avian influenza A(H5N1) viruses

From 2003 through 6 January 2015, 694 laboratory-confirmed human cases of avian influenza A(H5N1) virus infection have been officially reported to WHO from 16 countries. Of these cases, 402 have died.

Since the last WHO Influenza update on 4 December 2014, 18 new laboratory-confirmed human cases of avian influenza A(H5N1) virus infection, including four fatal cases, were reported to WHO from Egypt.

Two cases had onset of disease in November 2014, the others had onset of disease in December 2014. The cases were reported from eight different governorates of Egypt (see table 1). There was one cluster reported which included two confirmed cases in siblings from Giza governorate and one probable case in the siblings' mother who died from acute respiratory syndrome but was not tested for the avian influenza A(H5N1) virus. The investigation of this cluster is ongoing. All cases had exposure to sick or dead poultry. Identification of such sporadic human cases or small clusters are not unexpected as avian influenza A(H5N1) viruses are known to be circulating in poultry in the country.

Currently, there are reports of an increased number of outbreaks and detections of influenza A(H5N1) viruses in poultry in Egypt compared to previous months and compared to this month in previous years.

This is the highest number of laboratory-confirmed human cases of avian influenza A(H5N1) virus infection reported by Egypt in a single month. Although all influenza viruses evolve over time, preliminary laboratory investigation has not detected major genetic changes in the viruses isolated from the patients or animals compared to previously circulating isolates. The increase in reported human cases is likely a consequence of several factors. These includes increased circulation of influenza A(H5N1) viruses in poultry, lower public health awareness of risks in middle and upper Egypt and seasonal factors such as closer proximity to poultry and longer survival of the viruses in the environment because of cold. Epidemiological and virological investigation in humans and animals is ongoing.

Overall public health risk assessment for avian influenza A(H5N1) viruses: Whenever avian influenza viruses are circulating in poultry, sporadic infections or small clusters of human cases are possible in people exposed to infected poultry or contaminated environments, especially in households. Human infections remain rare and these influenza A(H5N1) viruses do not currently appear to transmit easily among people. As such, the risk of community-level spread of these viruses remains low.
Figure 1: Epidemiological curve of avian influenza A(H5N1) cases in humans by reporting country and month of onset.

Table 1: Laboratory-confirmed human cases of avian influenza A(H5N1) virus infection (4 December 2014 – 6 January 2015)

<table>
<thead>
<tr>
<th>Country</th>
<th>Province</th>
<th>Age</th>
<th>Sex</th>
<th>Date of onset</th>
<th>Date of Hospitalisation Start date</th>
<th>Oselatamivir treatment Start date</th>
<th>Date of death</th>
<th>Exposure to</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sohag</td>
<td>2</td>
<td>F</td>
<td>2 Dec 2014</td>
<td>4 Dec 2014</td>
<td>4 Dec 2014</td>
<td>NA</td>
<td>Sick and dead backyard poultry</td>
<td></td>
</tr>
<tr>
<td>Sohag</td>
<td>1</td>
<td>F</td>
<td>7 Dec 2014</td>
<td>7 Dec 2014</td>
<td>8 Dec 2014</td>
<td>NA</td>
<td>Backyard poultry</td>
<td></td>
</tr>
<tr>
<td>Sohag</td>
<td>3</td>
<td>M</td>
<td>8 Dec 2014</td>
<td>9 Dec 2014</td>
<td>9 Dec 2014</td>
<td>NA</td>
<td>Sick and dead backyard poultry</td>
<td></td>
</tr>
<tr>
<td>Assiut</td>
<td>20</td>
<td>F</td>
<td>10 Dec 2014</td>
<td>15 Dec 2014</td>
<td>15 Dec 2014</td>
<td>17 Dec 2014</td>
<td>Sick and dead backyard poultry</td>
<td></td>
</tr>
<tr>
<td>Menia</td>
<td>3</td>
<td>F</td>
<td>13 Dec 2014</td>
<td>14 Dec 2014</td>
<td>14 Dec 2014</td>
<td>NA</td>
<td>Sick and dead backyard poultry</td>
<td></td>
</tr>
</tbody>
</table>
### Human infection with other non-seasonal influenza viruses

#### Human infection with avian influenza A(H5N6) viruses

China reported a human infection with an influenza A(H5N6) virus in a 58-year-old man from Guangdong province. He developed symptoms on 4 December 2014 and was admitted to hospital on 9 December and is now in critical condition. The patient had a history of exposure to live poultry. No further cases among contacts were reported.

This is the second time a human infection with influenza A(H5N6) has been detected. The first case was detected in April 2014 in a patient in Sichuan province, China. The first case also likely acquired the infection from exposure to infected poultry. Outbreaks of illness and deaths in poultry due to highly pathogenic A(H5N6) avian influenza viruses have been reported to OIE from China, Lao People’s Democratic Republic and Viet Nam in the last year.

**Overall public health risk assessment for avian influenza A(H5N6) viruses:** This human case appears also to be an isolated case, but given that the virus seems to be circulating widely in poultry, further sporadic human cases or small clusters of infection would not be unexpected. More information is sought and close monitoring of the situation in humans and animals over the coming months is needed to better understand the risks H5N6 viruses pose to public health.

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

WHO is closely monitoring this event and separate risk assessments have been posted. Please find the most updated information at
Outbreaks in animals with avian influenza viruses with potential public health impact

The number of reported outbreaks of avian influenza in birds globally is currently at the level expected during this period of the year, although novel strains of various subtypes have been detected for the first time in birds in new geographic regions.

Owing in part to the emergence of avian influenza A(H7N9) virus, there is enhanced surveillance for non-seasonal influenza viruses (those that are not currently circulating widely in human populations) in both humans and animals. It is expected that influenza A(H5N1) and A(H7N9) virus infections in humans and animals will continue to be reported over the coming months. In addition, various other subtypes, such as influenza A(H5N8), A(H5N2), and A(H5N3) have recently been detected in poultry in Europe, North America, and Asia, according to reports received by OIE. Although influenza A(H5N8) might have the potential to cause disease in humans, so far no human cases of infection have been reported.

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
http://www.who.int/influenza/human_animal_interface/EN_GIP_LatestCumulativeNumberH5N1cases.pdf

Avian influenza A(H7N9) information

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