Influenza at the human-animal interface

Summary and assessment as of 1 May 2015

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

From 2003 through 1 May 2015, 840 laboratory-confirmed human cases of avian influenza A(H5N1) virus infection have been officially reported to WHO from 16 countries. Of these cases, 447 have died.¹

Since the last WHO Influenza update on 31 March 2015, 14 new laboratory-confirmed human cases of avian influenza A(H5N1) virus infection, including one fatal case, were reported to WHO from Egypt (13) and China (one).

Of the 13 human cases of influenza A(H5N1) virus infection reported from Egypt, nine had onset of disease in March and the rest had onset of disease in April. The cases were reported from eight different governorates of Egypt (see table 1 in the annex). The age range of the 13 cases is from three to 58 years, with a median of 31 years and 23% of the cases are under 10 years of age. Slightly more females than males were affected. Only one fatal case was reported and the rest have recovered and been discharged from hospital. All cases had exposure to poultry or poultry, all cases were hospitalized and all reportedly received treatment with antiviral medication.

Although all influenza viruses evolve over time, preliminary laboratory investigation has not detected major genetic changes in the limited number of viruses isolated from the patients and animals in Egypt compared to previously circulating isolates thus far, but further in depth analysis is ongoing.

Compared to the previous five months, there has been a decrease in the number of laboratory-confirmed human cases of avian influenza A(H5N1) virus infection reported by Egypt since the last risk assessment. The decrease in the number of human cases over the past month is presently unclear. It is likely attributed to a mixture of factors, including fewer outbreaks in poultry, heightened public health awareness of risks and seasonal factors. The proportion of fatal cases has been consistently lower in Egypt than in other countries, especially in children.

China reported one human case of infection with an avian influenza A(H5N1) virus from Yunnan province, where two cases were detected last month. The case has recovered from his illness and was not reported to have had known exposure to poultry before illness.

Various influenza A(H5) subtypes, such as influenza A(H5N1), A(H5N2), A(H5N3), A(H5N6) and A(H5N8), have recently been detected in birds in west Africa, Asia, Europe, and North America, according to

¹ The outcomes of previously reported cases have recently been updated by the reporting countries, accounting for the increase in reported fatalities.
reports received by OIE. Although these influenza A(H5) viruses might have the potential to cause
disease in humans, so far with the exception of human infections with influenza A(H5N1) and A(H5N6)
viruses, no other subtypes of A(H5) virus infection in humans has been reported.

**Overall public health risk assessment for avian influenza A(H5) viruses:** The human cases reported
appear to be sporadic and the virus is known to be endemic in poultry in these countries. Whenever
avian influenza viruses are circulating in poultry, sporadic infections and small clusters of human cases
are possible in people exposed to infected poultry or contaminated environments. Therefore additional
human cases would not be unexpected.

Although an increased number of animal-to-human infections have been reported by Egypt over the past
few months, these influenza A(H5) viruses do not currently appear to transmit easily among people. As
such, the risk of community-level spread of these viruses remains to be low and the risk assessment
remains unchanged.

Further studies are needed to understand the risk factors for human infections and the potential role of
mild cases if they are occurring. More analyses on the viruses from both animals and humans need to be
undertaken to better understand if any subtle changes in the transmissibility of the virus from animals to
humans may be playing a role in the current situation.

A statement on the joint high-level mission to Egypt in March 2015, as well as the executive summary of
the mission report, can be found at this link:

With the rapid spread and magnitude of avian influenza A(H5) outbreaks, notably in areas that had not
experienced this disease in animals until recently, there is an increasing need for vigilance in the public
health sector. Surveillance should be enhanced to detect, at the earliest stage, human infections if they
occur and changes in viruses of transmissibility and pathogenicity that could have significant public
health implications.
Human infection with other non-seasonal influenza viruses

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

A total of 657 laboratory-confirmed cases of human infection with avian influenza A(H7N9) viruses, including at least 261 deaths, have been reported to WHO. The majority of recently reported human cases are associated with exposure to infected live poultry or contaminated environments, including markets where live poultry are sold. Influenza A(H7N9) viruses continue to be detected in poultry and their environments in the areas where human cases are occurring. There have been no major genetic changes in the viruses isolated from recent patients compared to previously-isolated viruses from humans. Information to date suggests that these viruses do not transmit easily from human to human.

2 The total number of fatal cases is published on a regular basis by the China National Influenza Centre.

3 A report of one laboratory-confirmed human case of infection with avian influenza A(H7N9) virus was published by the health authorities of Hubei province (a newly-affected province) but this case has not yet been reported to WHO and is not included in the total number of cases.
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/)


Figure 2: 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)
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

OFFLU
http://www.offlu.net/index.html
Annex:
Table 1: Laboratory-confirmed human cases of avian influenza A(H5N1) virus infection (1 April – 1 May 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</th>
<th>Oseltamivir treatment Start date</th>
<th>Outcome and date</th>
<th>Exposure to</th>
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<tr>
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<td>Sharkia</td>
<td>22</td>
<td>F</td>
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<td>27 March 2015</td>
<td>27 March 2015</td>
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<td>Poultry</td>
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<td>2 April 2015</td>
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<tr>
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<td>30 March 2015</td>
<td>5 April 2015</td>
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NA: not applicable or not available