

Influenza at the human-animal interface

Summary and assessment as of 10 August 2012

Human infection with avian influenza A(H5N1) virus and associated animal health events

From 2003 through 10 August 2012, 608 laboratory-confirmed human cases with avian influenza A(H5N1) virus infection have been officially reported to WHO from 15 countries, of which 359 died. Since January 2012, 30 human cases of influenza A(H5N1) virus infection have been reported to WHO.

Since the last update 2 laboratory-confirmed human cases with influenza A(H5N1) virus infection were reported from Indonesia. No further cases linked to the confirmed cases were reported.

Table 1: laboratory-confirmed human cases with avian influenza A(H5N1) virus infection reported between 25 June and 6 August

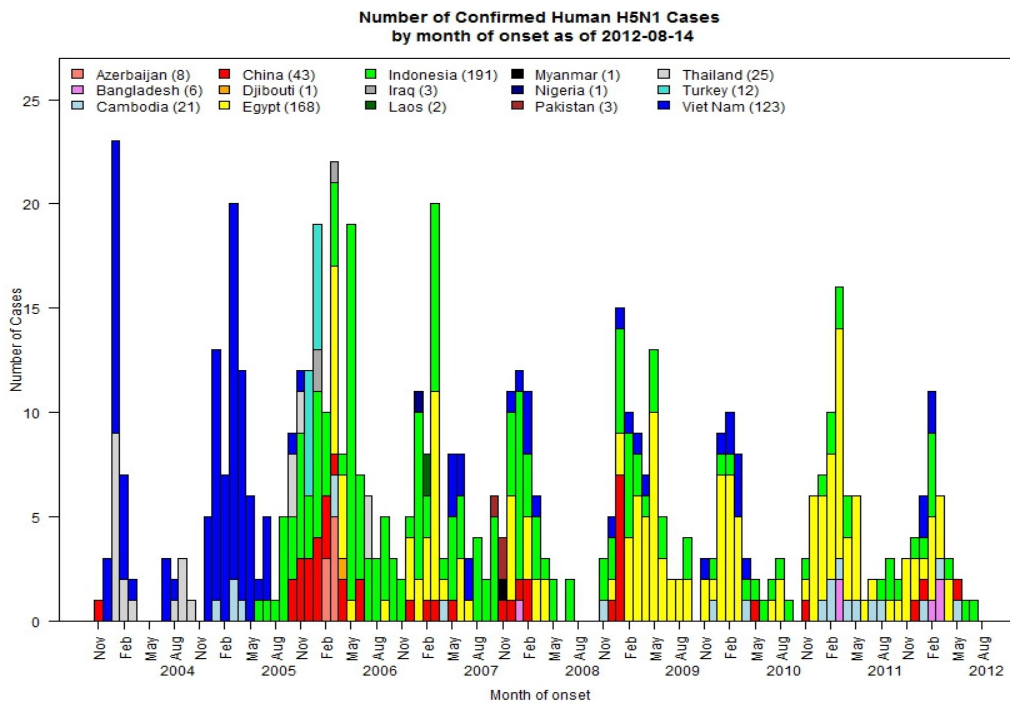
| Country | Province | Age (y) | Sex | Date of onset | Date of Hospitalisation | Date of death | Exposure to |
|-----------|------------|---------|-----|---------------|-------------------------|---------------|---------------------|
| Indonesia | West Java | 8 | F | 18/06/2012 | 25/06/2012 | 3/07/2012 | Live animal market |
| Indonesia | Yogyakarta | 37 | M | 24/07/2012 | 27/07/2012 | 30/07/2012 | Under investigation |

According to FAO, H5N1 viruses are thought to be circulating endemically in poultry in China, Egypt, Indonesia, Viet Nam, Bangladesh and India. In Cambodia, sporadic reintroduction into poultry populations is thought to occur¹. The epidemiologic curve of recent human cases (Figure 1) follows the same pattern seen in previous years, with larger numbers of cases in the winter months, decreasing towards summer in the northern hemisphere. This curve follows the seasonal curve of outbreaks in birds.

Overall public health risk assessment for avian influenza A(H5N1) viruses: Two sporadic human cases reported this month in a country with known endemic influenza A(H5N1) virus circulation in poultry is within the expected range. From the data available, there is no evidence of onward sustained human to human transmission at this time hence the public health risk for the virus remains unchanged.

¹ Approaches to Controlling, Preventing and Eliminating H5N1 Highly Pathogenic Avian Influenza in Endemic Countries. Rome, United Nations Food and Agriculture Organization, 2011

Figure 1: Epidemiological curve of avian influenza H5N1 cases in humans by country and month of onset



Human infection with other non-human influenza viruses

The United States of America (USA) has recently reported an increase in the number of human cases of A(H3N2)v² infection³. As of August 10, 2012, the total number of confirmed human cases of influenza A(H3N2)v for 2012 increased to 154, mainly as a result of follow up investigations of the initial cases in Ohio and Indiana. One case was also reported from Hawaii and one in Illinois⁴

Most cases were children who had direct or indirect exposure to pigs in agricultural fairs, no further human to human transmission has been documented for the 2012 cases. Clinically, these cases are similar to seasonal influenza cases, and all patients have recovered from their illness. Investigations around cases and contacts is ongoing.

Limited serological studies^{5,6,7,8} indicate that adults may have some pre-existing immunity to this virus but children do not. Seasonal vaccines do not provide cross-protection to influenza A(H3N2)v in adults or children. Three candidate vaccine viruses specific for A(H3N2)v⁹ have been developed in the USA and could be used to produce an (H3N2)v vaccine if needed.

Overall public health risk assessment for influenza A(H3N2)v viruses : Further human cases and small clusters may be expected as this virus is circulating in the swine population in the USA. Sporadic human cases and small clusters of human infection with the virus are expected and do not change WHO's current assessment of pandemic risk at this point.

However, because influenza viruses evolve constantly and change characteristics and behavior unpredictably, WHO continues to stress the importance of global monitoring of variant influenza viruses¹⁰ and recommends to all Member States to strengthen routine surveillance activities. Countries experiencing outbreaks of influenza virus infection in animals should implement appropriate biosafety measures to protect people working with or living nearby infected and potentially infected animals. Collaboration with animal health partners is necessary to optimally control this disease and decrease risks to public health.

² http://www.who.int/influenza/gisrs_laboratory/terminology_ah3n2v/en/index.html

³ MMWR August 10, 2012 Evaluation of rapid influenza diagnostic tests for influenza A(H3N2)v virus and updated cases count-United States, 2012

http://www.cdc.gov/mmwr/preview/mmwrhtml/mm61e0810a1.htm?s_cid=mm61e0810a1_w

⁴ Information on Influenza A(H3N2)v variant viruses

<http://www.cdc.gov/flu/swineflu/influenza-variant-viruses-h3n2v.htm#table>

⁵ Antibodies Cross-Reactive to Influenza A(H3N2) Variant Virus and Impact of 2010-11 Seasonal Influenza Vaccine on Cross-Reactive Antibodies-United States, MMWR Vol 61/No 14 April 13, 2012

⁶ Skowronski et al, Cross-reactive antibody to swine influenza A(H3N2) subtype virus in children and adults before and after immunisation with 2010/11 trivalent inactivated influenza vaccine in Canada, Aug to Nov 2010. Euro Surveillance 2012; 17(4), web link: <http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=20066>

⁷ Waalen et al, Age-dependent prevalence of antibodies cross-reactive to the influenza A(H3N2) variant virus in sera collected in Norway in 2011; Euro Surveillance 2012; 17(19) web link:

<http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=20170>

⁸ Danuta Skowronski et al, Cross-reactive and vaccine-induced antibody to emerging swine influenza A(H3N2)v, JID 2012, <http://jid.oxfordjournals.org/content/early/2012/08/07/infdis.jis500.full.pdf+html>

⁹ Candidate vaccine viruses for variant influenza A(H3N2)

http://www.who.int/influenza/vaccines/virus/candidates_reagents/variant_a_h3n2/en/index.html

¹⁰ http://www.who.int/influenza/human_animal_interface/avian_influenza/h5n1-2011_12_19/en/index.html

All human infections with non-human influenza viruses as such are reportable to WHO under IHR (2005). More information on influenza at the human-animal interface is available from WHO (http://www.who.int/influenza/human_animal_interface/en/); additional information on influenza in animals is available from OIE (<http://www.oie.int/en/animal-health-in-the-world/web-portal-on-avian-influenza/>), FAO (<http://www.fao.org/avianflu/en/index.html>), and OFFLU (<http://www.offlu.net/>).

Relevant Links:

WHO Table: 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

WHO Table: H5N1 avian influenza: timeline of major events
http://www.who.int/influenza/human_animal_interface/avian_influenza/H5N1_avian_influenza_update.pdf

WHO Archive: Avian Influenza situation updates:
http://www.who.int/influenza/human_animal_interface/avian_influenza/archive/en/index.html

World Organisation of Animal Health (OIE) webpage: Web portal on Avian Influenza:
www.oie.int/animal-health-in-the-world/web-portal-on-avian-influenza/

Food and Agriculture Organization of the UN (FAO) webpage: Avian Influenza:
<http://www.fao.org/avianflu/en/index.html>

Updated unified nomenclature system for the highly pathogenic H5N1 avian influenza viruses
http://www.who.int/influenza/gisrs_laboratory/h5n1_nomenclature/en/index.html