

Influenza at the human-animal interface

Summary and assessment as of 1 October 2012

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

From 2003 through 1 October 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, no new laboratory-confirmed human cases with influenza A(H5N1) virus infection were reported to WHO.

Public health risk assessment for avian influenza A(H5N1) viruses: The public health risk for the virus remains unchanged.

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

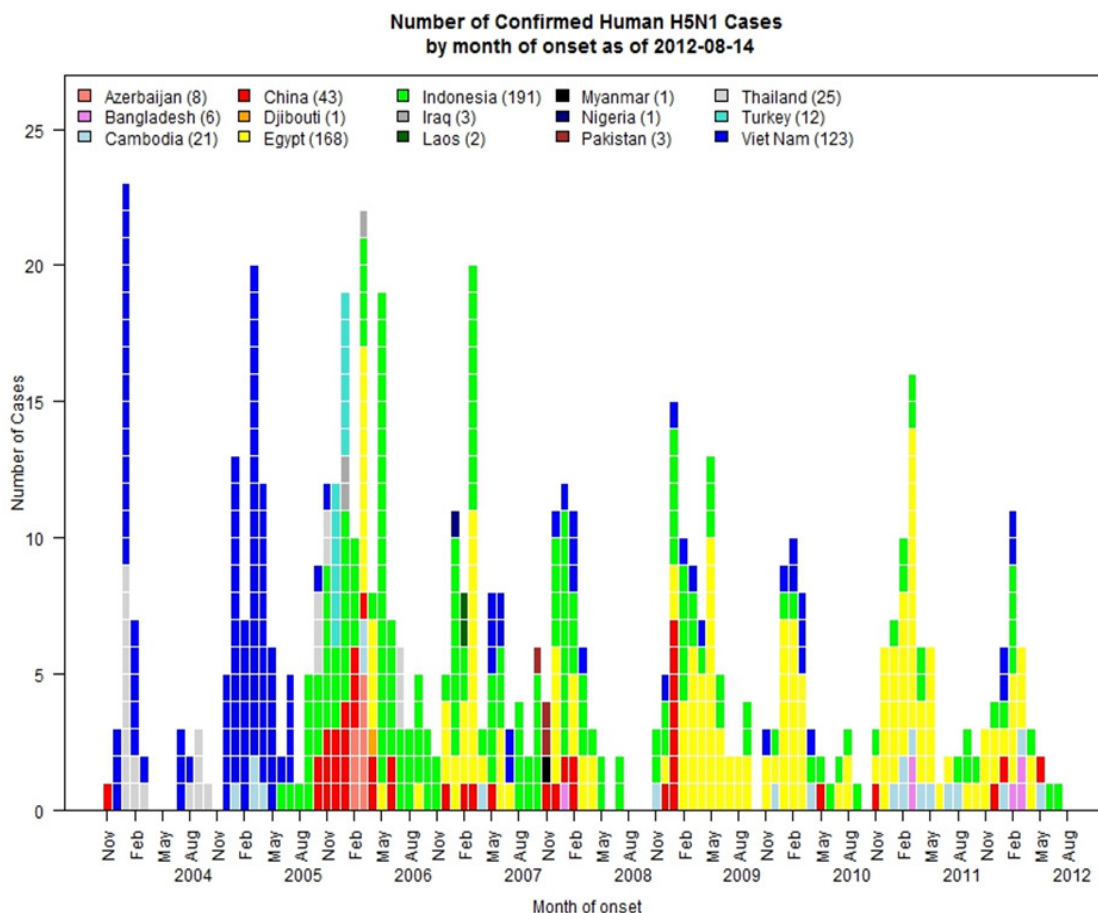
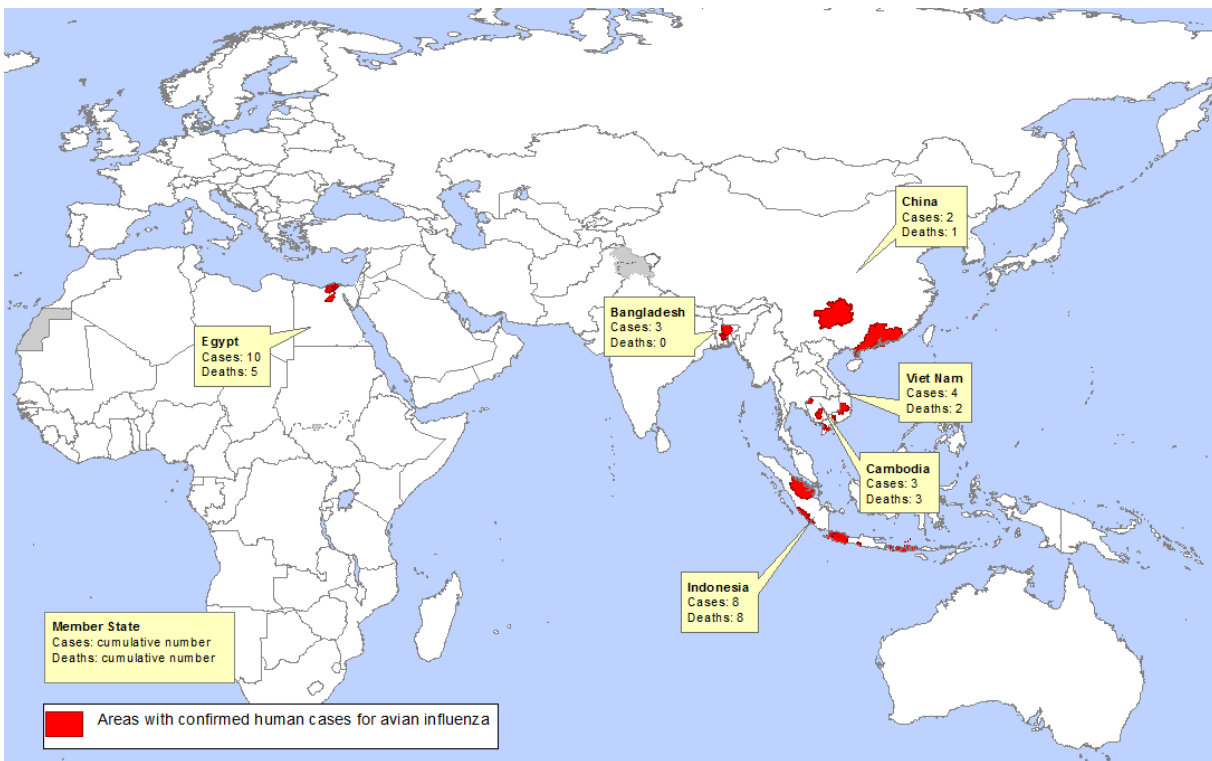


Fig 2 Map of avian influenza H5N1 cases in humans for 2012



Human infection with other non-human influenza viruses

A(H3N2) variant virus infection

The United States of America (USA) reported few additional human cases of influenza A(H3N2)v, and no additional deaths. The large majority of cases have been associated with swine exposure, though instances of likely human-to-human transmission have been identified. No sustained human-to-human transmission has been reported.

Limited serological studies^{1,2,3,4} indicate that adults may have some pre-existing immunity to this virus but children do not. Seasonal vaccines do not provide cross protection against A (H3N2)v infection. WHO has identified several candidate vaccine viruses specific for A(H3N2)v that could be used to produce an (H3N2)v vaccine if needed⁵.

¹ 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

² 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>

³ 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>;

⁴ 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>

⁵ http://www.who.int/influenza/vaccines/virus/candidates_reagents/variant_a_h3n2/en/index.html

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 and people may continue to be exposed, especially through the autumn. Close monitoring of the situation is warranted as schools have started again and changing weather conditions may favor influenza transmission.

A(H1N1) variant virus infections

As a result of enhanced surveillance around the agricultural fairs, a case of human infection with H1N1 variant influenza virus was detected and reported from the USA⁶. The case occurred in August 2012 in a previously healthy woman. She was not hospitalized and recovered from her illness. The person had direct contact with swine at a State Fair. No further cases were identified. This is the second case of infection with this H1N1v virus in the USA; the previous case occurred in 2011.

Canada also reported a case of human infection with influenza A(H1N1)v in an adult male with underlying risk factors . He developed symptoms at the end of August and was hospitalized with pneumonia in September. He had occupational exposure to swine. No additional cases have been reported.

The influenza A(H1N1)v viruses isolated from patients in the USA and Canada have an haemagglutinin similar to human seasonal influenza viruses circulating very recently in people, which might suggest some existing population immunity except in young children. Current seasonal vaccines would provide cross protection against these viruses. Available data indicates that the virus would be susceptible to antivirals (neuraminidase inhibitors; oseltamivir and zanamivir).

Overall public health risk assessment for influenza A(H1N1)v viruses : Further human cases and small clusters of human infection with these viruses may be expected as they are circulating in swine populations. No human-to-human transmission with this virus has been reported. It is expected that the human populations are largely protected by existing immunity except for young children and by the seasonal influenza vaccine.

Because influenza viruses evolve constantly and change characteristics and behavior unpredictably, WHO continues to stress the importance of global monitoring of variant influenza viruses and recommends to all Member States to strengthen routine surveillance activities.

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 (www.oie.int/animal-health-in-the-world/web-portal-on-avian-influenza/) and FAO (www.fao.org/avianflu/en/index.html), and OFFLU (<http://www.offlu.net/index.html>).

Relevant Links:

WHO Table: Cumulative Number of Confirmed Human Cases of Avian Influenza A/(H5N1) Reported to WHO:

⁶ <http://www.cdc.gov/flu/spotlights/h1n2v-cases-mn.htm>

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:

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