



## Influenza at the human-animal interface

Summary and assessment as of 4 December 2014

### Human infection with avian influenza A(H5N1) viruses

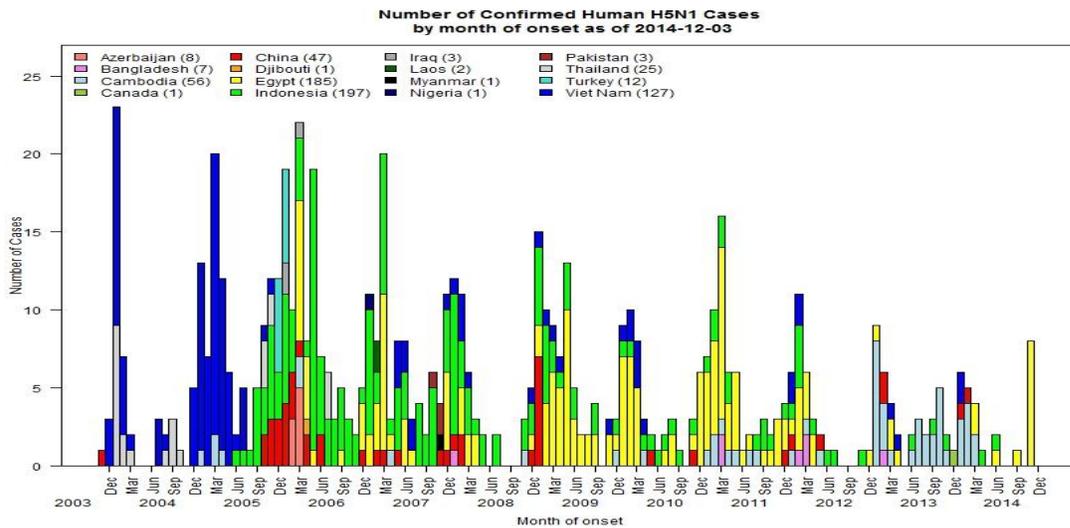
From 2003 through 4 December 2014, 676 laboratory-confirmed human cases of avian influenza A(H5N1) virus infection have been officially reported to WHO from 16 countries. Of these cases, 398 have died.

Since the last WHO Influenza update on 2 October 2014, eight new laboratory-confirmed human cases of avian influenza A(H5N1) virus infection including five fatal cases were reported to WHO from Egypt.

All cases had onset of disease in November 2014. Six cases were reported from Menia governorate, and one each from the neighbouring governorates of Beni Sueff and Assiut. The cases were reported in two children who survived, five adults who died and one woman still in critical condition (see table 1). The 2-year-old child was picked up through investigation of the 30-year-old woman, both had contact to the same sick backyard poultry. With the exception of one case, all other cases had exposure to sick and dead poultry in the days before onset of symptoms. Identification of such sporadic cases or small clusters are not unexpected as avian influenza A(H5N1) viruses are known to be circulating in poultry in the country. This is the highest number of laboratory-confirmed human cases of avian influenza A(H5N1) virus reported by Egypt in the month of November. Preliminary laboratory investigation did not detect changes in the viruses isolated from the patients compared to isolates from cases reported previously. 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 (2 October – 4 December 2014)**

Country	Province	Age	Sex	Date of onset	Date of Hospitalisation	Oseltamivir treatment Start date	Date of death	Exposure to
Egypt	Menia	3	M	11 Nov 2014	12 Nov 2014	12 Nov 2014	NA	Backyard poultry
	Assiut	19	F	7 Nov 2014	11 Nov 2014	11 Nov 2014	16 Nov 2014	Backyard poultry
	Menia	30	F	11 Nov 2014			18 Nov 2014	Backyard poultry
	Menia	2	F	12 Nov 2014		19 Nov 2014		Backyard poultry
	Menia	43	M	20 Nov 2014	23 Nov 2014	23 Nov 2014	26 Nov 2014	Ongoing investigation
	Menia	29	F	22 Nov 2014	23 Nov 2014	24 Nov 2014	26 Nov 2014	Backyard poultry
	Beni Suef	35	F	23 Nov 2014	25 Nov 2014	26 Nov 2014	27 Nov 2014	Contact with birds from street vendor
	Menia	24	F	24 Nov 2014	28 Nov 2014	28 Nov 2014	NA	Backyard poultry

NA: not applicable or not available

### Human infection with other non-seasonal influenza viruses

### Human infection with influenza A(H1N2) reassortant viruses

Since 2013, a reassortant influenza A(H1N2) virus has been identified on a swine farm in Sweden. In April 2014 this virus was detected in nasal swabs from two swine farmers in Sweden, during the course of a study of influenza viruses circulating in swine and people in contact with swine. The virus detections in the swine farmers occurred after the same virus had been detected in swine at the farm where the two

human cases worked. Both human cases were asymptomatic, and no further human infections have been detected among other farmers or family members. The genetic analysis of the viruses so far shows that 7 genes of the virus, including the haemagglutinin (HA) and all internal genes, are closely related to the A(H1N1)pdm09 virus. The neuraminidase (NA) is derived from a human influenza A(H3N2) virus. This gene has been circulating among pigs in Sweden since 2009. Virological characterization is ongoing.

**Overall public health risk assessment for influenza A(H1N2) reassortant viruses:** The two human cases appear to be a result of swine-to-human transmission with no further human-to-human transmission occurring. With the study ongoing, additional similar cases may be detected. Based on the current understanding of the virus and considering the existing immunity in the human population against the HA of the A(H1N1)pdm09 virus, the public health impact of this influenza A(H1N2) virus is expected to be low. Further monitoring and virological information will help better understand the public health risks associated with these viruses.

#### **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

[http://www.who.int/influenza/human\\_animal\\_interface/influenza\\_h7n9/Risk\\_Assessment/en/index.html](http://www.who.int/influenza/human_animal_interface/influenza_h7n9/Risk_Assessment/en/index.html)

<http://www.who.int/csr/don/29-october-2014-avian-influenza/en/>

#### **Human infection with influenza A(H3N2)v viruses**

One additional case of human infection with influenza A(H3N2)v viruses was detected in the United States of America (USA) since the last risk assessment, bringing the total number of human infections to three for 2014. Close contact with swine in the week prior to illness was reported for this, and previous, human cases.

**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. In past years, cases have been associated with agricultural fairs where people are in close contact with potentially infected swine populations. The current likelihood of community level spread and public health impact of this virus is considered low.

#### **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.

Owing in part to the emergence of avian influenza A(H7N9) virus, there is enhanced surveillance for non-seasonal influenza viruses in both humans and animals. It is expected that influenza A(H5N1) and A(H7N9) will continue to be detected in humans and animals over the coming months. In addition, various other subtypes, such as influenza A(H5N6), A(H5N8), A(H5N2), A(H5N3) have been detected in poultry recently, according to reports received by OIE.

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 (those that are not currently circulating widely in human populations) 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.

**Links:**

WHO human-animal interface web page

[http://www.who.int/influenza/human\\_animal\\_interface/en/](http://www.who.int/influenza/human_animal_interface/en/)

Avian influenza A(H7N9) information

[http://who.int/influenza/human\\_animal\\_interface/influenza\\_h7n9/en/index.html](http://who.int/influenza/human_animal_interface/influenza_h7n9/en/index.html)

World Organisation of Animal Health (OIE) web page: Web portal on Avian Influenza

<http://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>

OFFLU

<http://www.offlu.net/index.html>