



RAPID RISK ASSESSMENT

Potential resurgence of highly pathogenic H5N1 avian influenza

September 2011

Conclusions and recommendations:

The increased reports of A(H5N1) outbreaks in poultry and wild bird populations, and the emergence of a further evolved lineage of the virus in poultry in some countries, do not change the current assessment of the risk to human health. This is still considered to be very low in EU/EEA countries. However, vigilance for avian influenza in domestic poultry and wild birds in Europe remains important.

In the countries where A(H5N1) is entrenched in wild bird populations and is occasionally transmitted to domestic poultry, rare and sporadic human infections in individuals who have contact with this poultry (or wild birds) are to be expected and should be considered as background cases. Constant vigilance should be maintained for any enlargement in A(H5N1) cluster size or for individual human cases outside of the countries where the virus is entrenched in poultry.

Source and date of request

Internal ECDC decision, 30 August 2011.

Public health issue

Report to the media from the Food and Agriculture Organization of the United Nations (FAO) on 29 August 2011, warning of a possible resurgence of highly pathogenic avian influenza A(H5N1) and the emergence of a new variant of the virus (H5N1 2.3.2.1) in China and Viet Nam, not necessarily covered by the existing vaccines for poultry.

Consulted experts

Elizabeth Mumford – World Health Organization

Timm Harder, David Swayne, Ian Brown – OFFLU OIE/FAO Network of expertise on animal influenza

Juan Lubroth – FAO

Marion Koopmans – RIVM (National Institute for Public Health and the Environment), the Netherlands.

Disease background information

Influenza virus type A(H5N1) is a group of avian viruses that are highly pathogenic and very infectious for a number of bird species, including most domestic poultry species kept by humans. Since 1997, the highly pathogenic avian influenza (HPAI) virus A(H5N1) has affected poultry, initially in the Far East and later in parts of Europe, the Middle East and Africa. The infection is considered entrenched at least in parts of Bangladesh, China, Cambodia, Egypt, India, Indonesia and Viet Nam and has been reported intermittently in other countries. In Europe, the latest recorded events date from 2010, when a large number of wild birds were found dead in the Tyva Republic of the Russian Federation, two backyard poultry outbreaks occurred in Romania and a common buzzard tested positive for the virus in Bulgaria. No events have been reported in 2011 so far.

To date, the virus is poorly adapted to the human species so that it only rarely causes illness in those exposed to it. For the few people that do become infected, the A(H5N1) virus can be highly virulent and the mortality rate has been significant (over 50%). Although human-to-human transmission has occurred, it is as yet inefficient (the R0 is well under one) which also reflects the poor adaptation of the virus to humans.

Since 2003, and as of 19 August 2011, 565 human cases with 331 deaths (fatality rate 58.6%) have been reported to the World Health Organization (WHO). These confirmed human cases of avian influenza A(H5N1) have been reported in 15 countries. The majority of cases occurred in the major risk group of people who have contact with domestic poultry, especially in households or contaminated environments. So far during 2011 (as at 19 August) WHO has reported 49 cases and 25 deaths from four different countries: Bangladesh (two cases – no deaths), Cambodia (eight cases – eight deaths), Egypt (32 cases – 12 deaths) and Indonesia (seven cases – five deaths). No clusters have been reported in 2011, apart from two mother and child pairs, one in Indonesia and one in Cambodia, probably due to dual environmental exposure.

Event background information

On 29 August, the Food and Agriculture Organization of the United Nations (FAO) published a press release warning of 'a possible major resurgence of the H5N1 Highly Pathogenic Avian Influenza amid signs that a mutant strain of the deadly Bird Flu virus is spreading in Asia and beyond, with unpredictable risks to human health'. The article refers to an increase in the number of outbreaks in domestic poultry and wild bird populations since July 2008, mainly in Asian countries, after a steady decrease had been noted in the previous period.

ECDC Rapid Risk Assessment for the European Union

The true level of infection and distribution of A(H5N1) among poultry and wild birds is difficult to determine because of inherent weaknesses in surveillance and laboratory capacity in many countries, especially those with limited resources. The same applies to human cases.

It is recognised that any apparent increase in the number of outbreaks in domestic poultry and wild bird populations or changes in the distribution of the outbreaks is important and needs to be monitored. However, from a human health perspective, there are currently no indications of any significant change in the human epidemiology associated with any clade or strain of A(H5N1). This is based on the absence of human-to-human transmission, and on the observation that there is no apparent change in the size of clusters or reports of chains of infection. For this reason, the conclusions from the risk assessment published by ECDC in 2006 remain valid. The main points are:

- Transmissibility of A(H5N1) viruses to humans is still considered very low, requiring high infectious doses or some other, as yet unknown, variable;
- There is no evidence of the virus having become more adapted to humans;
- The direct risk to the health of the European population from A(H5N1) is very low and is mainly concentrated in persons with domestic or pet poultry.

The reported emergence of a new lineage of A(H5N1) follows the pattern observed since the first detection of these particular viruses in 1995. Since then, A(H5N1) viruses have evolved into different lineages, reflecting the widespread occurrence of infections in animals. This stresses the importance of adequate surveillance, regardless of the vaccination status of animals.

In EU Member States surveillance for highly pathogenic avian influenza in poultry is strong and is carried out on a continuous basis. ECDC is closely monitoring the situation, both in the EU and worldwide, and will regularly reassess the potential for a change in the A/H5N1 risk to humans.

Conclusions

Any recently observed increase in the number of outbreaks in poultry and wild bird populations and the emergence of different lineages of the virus does not change the current EU risk assessment in relation to highly pathogenic avian influenza A(H5N1) in humans and this risk is still considered to be very low.

Contact

support@ecdc.europa.eu

References

European Centre for Disease Prevention and Control (ECDC). The public health risk from highly pathogenic avian influenza viruses emerging in Europe with specific reference to type A/H5N1. Version: 1 June 2006. Available from: http://ecdc.europa.eu/en/publications/Publications/0606_TER_The_Public_Health_Risk_from_Highly_Pathogenic_Avian_Influenza_Viruses_Emerging_in_Europe.pdf

ECDC factsheet for professionals for avian influenza. Available from: http://ecdc.europa.eu/en/healthtopics/avian_influenza/basic_facts/Pages/factsheetf_professionals.aspx

Fiebig L, Soyka J, Buda S, Buchholz U, Dehnert M, Haas W. Avian influenza A(H5N1) in humans: new insights from a line list of World Health Organization confirmed cases, September 2006 to August 2010. *Euro Surveill.* 2011;16(32):pii=19941. Available online: <http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=19941>

Food and Agriculture Organisation (FAO), Media Centre. Bird flu rears its head again. 29 August 2011. Available from: <http://www.fao.org/news/story/en/item/87196/icode/>

Food and Agriculture Organisation (FAO). H5N1 HPAI Global overview: April–June 2011. Available from: <http://www.fao.org/docrep/014/am722e/am722e00.pdf>

Nicoll A. (Yet) another human A/H5N1 influenza case and cluster – when should Europe be concerned? *Eurosurveillance* 2008; Volume 13, Issue 15, 10 April 2008. Available online: <http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=18833>

Tarantola A, Barboza P, Gauthier V, Ioos S, El Omeiri N, Gastellu-Etchegorry M, for the Epidemic Intelligence team at InVS. The influenza A(H5N1) epidemic at six and a half years: 500 notified human cases and more to come. *Euro Surveill.* 2010;15(29):pii=19619. Available online: <http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=19619>

World Health Organization (WHO). Confirmed Human Cases of Avian Influenza A(H5N1). Available from: http://www.who.int/csr/disease/avian_influenza/country/en/index.html