

## WHO RISK ASSESSMENT

### Human infections with avian influenza A(H7N9) virus

2 October 2014

## Summary of surveillance and investigation findings

### *Human cases of avian influenza A(H7N9) virus infection to date*

A total of 453 laboratory-confirmed cases of human infection with avian influenza A(H7N9) virus, including 175 deaths, have been reported to WHO: 438 cases by China National Health and Family Planning Commission, four cases by the Taipei Centers for Disease Control (Taipei CDC), 10 cases by the Centre for Health Protection, China, Hong Kong SAR, and one case in a Chinese traveller, reported from Malaysia. Since the last update on 27 June 2014, three additional cases have been reported to WHO. One case was reported from Hunan Province and the other two recent cases were reported from Xinjiang Uyghur Autonomous Region, a newly affected region in China bordering several other countries.

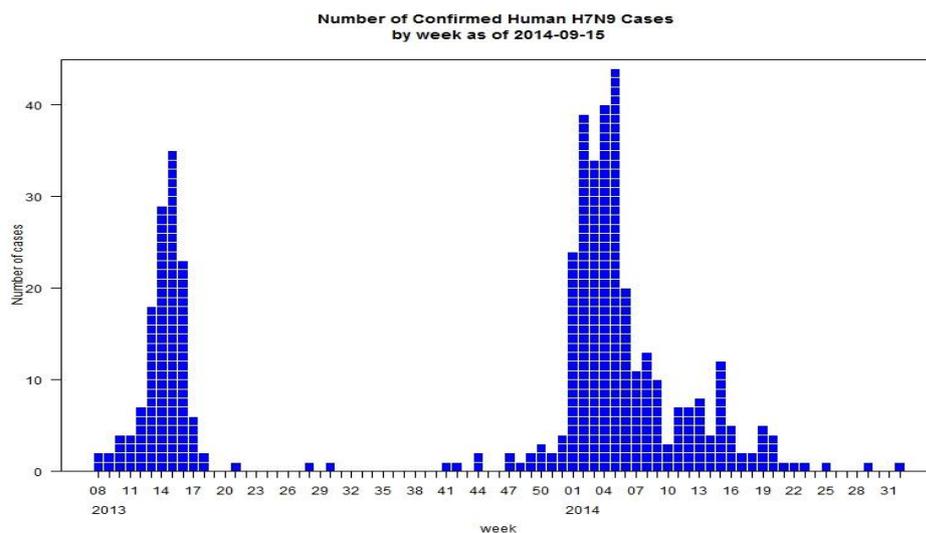


Fig 1: Laboratory-confirmed cases of human infection with avian influenza A(H7N9) virus by week of onset

### *Virus characteristics*

The majority of the influenza A(H7N9) viruses characterized so far remain antigenically similar to the candidate vaccine virus derived from A/Anhui/1/2013-like viruses. See also

[http://www.who.int/influenza/vaccines/virus/201409\\_zoonotic\\_vaccinevirusupdate.pdf?ua=1](http://www.who.int/influenza/vaccines/virus/201409_zoonotic_vaccinevirusupdate.pdf?ua=1)

### *Source of human infection*

Although much remains unknown about this virus, such as (1) the animal reservoir(s) in which it is circulating, (2) the main exposures and routes of transmission to humans, and (3) the distribution and prevalence of this virus among people and animals (including the distribution in wild birds),

human infection appears to be associated with exposure to infected live poultry or contaminated environments, including markets where live poultry are sold.

Current evidence suggests that these avian influenza A(H7N9) viruses do not transmit easily from poultry or environments to humans, although their transmissibility may be greater compared with avian influenza A(H5N1) viruses.

### ***Evidence regarding human-to-human transmission***

Information to date suggests that these viruses does not transmit easily from human to human, and does not support sustained human-to-human transmission.

A total of 14 family clusters<sup>1</sup> have been reported, with no new clusters since the last update. All clusters except for one cluster (3 family members) involved two family members.

## **Risk assessment**

This 2 October 2014 risk assessment was conducted in accordance with WHO's published<sup>2</sup> recommendations for rapid risk assessment of acute public health events and will be updated as more information becomes available.

Overall, the public health risk from avian influenza A(H7N9) viruses has not changed since the assessment published on 27 June 2014<sup>3</sup>.

### **What is the likelihood that additional human cases of infection with avian influenza A(H7N9) viruses will occur?**

The understanding of the epidemiology associated with these viruses, including the main reservoirs of the virus and the extent of its geographic spread among animals, remains limited. However, it is likely that most human cases were exposed to the H7N9 virus through contact with infected poultry or contaminated environments, including markets (official or illegal) that sell live poultry. Changes to hygiene practices in live poultry markets have been variably implemented in some provinces and municipalities. Since the virus source has not been identified nor controlled, and the virus continues to be detected in animals and environments in China, further human cases are expected in affected and possibly neighbouring areas.

Although few human cases were reported over the summer months, the most recent cases were reported from a new province that had not previously reported cases, and not adjacent to previously affected areas, indicating that the virus continues to circulate and is potentially widespread. It is

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<sup>1</sup> A "cluster" is defined as two or more persons with onset of symptoms within the same 14-day period and who are associated with a specific setting, such as a classroom, workplace, household, extended family, hospital, other residential institution, military barracks or recreational camp.

<sup>2</sup> [http://www.who.int/csr/resources/publications/HSE\\_GAR\\_ARO\\_2012\\_1/en/](http://www.who.int/csr/resources/publications/HSE_GAR_ARO_2012_1/en/)

<sup>3</sup> [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/)

likely that with the coming winter more human cases will be seen in China and cover a wider geographical area.

**What is the likelihood of human-to-human transmission of avian influenza A(H7N9) viruses?**

Current evidence suggests that these viruses does not transmit easily among humans.

It is possible that limited human-to-human transmission may have occurred where there was unprotected close contact with symptomatic human cases. No new clusters occurred over the summer. All previously reported clusters involved two people (except for one cluster of three people) with potential common exposure to poultry or contaminated environments, and no further human-to-human transmission was reported. No clusters reported have involved health-care workers. This evidence suggests that the transmissibility of the virus among humans remains low.

**What is the risk of international spread of avian influenza A(H7N9) viruses by travellers?**

Malaysia reported one human case with avian influenza A(H7N9) virus infection in February 2014. The patient was a Chinese resident who travelled to Malaysia while sick, and was most likely exposed in China. No further human cases were reported in Malaysia linked to this case.

It is possible that further similar cases will be detected in other countries among travellers from affected areas. Community-level spread in these other countries is unlikely as the virus does not transmit easily among people.

**Does WHO recommend any travel and trade precautions related to the H7N9 outbreak?**

WHO does not advise special screening at points of entry with regard to this event, nor does it currently recommend any travel or trade restrictions.

**What should countries do?**

As the extent of virus circulation in animals is not clear, epidemiological and virologic surveillance and follow up of suspect human cases should remain high. WHO advises countries to continue strengthening influenza surveillance, reporting all human infections with avian influenza H7N9 viruses and other influenza viruses not currently circulating widely in humans as required under the IHR (2005), and taking steps to improve national health preparedness. Current technical information as well as guidance related to avian influenza A(H7N9) can be found on the WHO website.<sup>4</sup>

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<sup>4</sup> [http://www.who.int/influenza/human\\_animal\\_interface/influenza\\_h7n9/en/](http://www.who.int/influenza/human_animal_interface/influenza_h7n9/en/)