



# Epidemiological Update:

## Human infection caused by avian influenza A(H7N9) in China

8 May 2013

The Pan American Health Organization / World Health Organization (PAHO/WHO) recommends that Member States continue efforts to prepare and maintain the capacity to detect any unusual health event, including those that might be associated with a new subtype of influenza virus. PAHO/WHO encourages Member States to consider developing diagnostic capabilities for detecting infection caused by avian influenza A(H7N9).

The Organization does not advise health screening at points of entry in relation to this event, nor that any travel or trade restrictions be applied.

As of May 8<sup>th</sup> of 2013, the WHO has been notified of 131 laboratory confirmed cases of human infection caused by avian influenza A(H7N9) virus, including 32 deaths (case fatality rate 24%). Cases have been reported from the provinces of Anhui (4), Fujian (5), Henan (4), Hunan (3), Jiangsu (26), Jiangxi (5), Shandong (2), Zhejiang (46), the municipalities of Beijing (1) and Shanghai (34) and one case was reported by the Taipei Centers for Disease Control. The onset of the cases' symptoms occurred from February 19<sup>th</sup> to May 7<sup>th</sup>, 2013.

Out of 127 of the cases which have available information, the age range is 2 to 91 years old (median = 61), with 68/127 (54%) of cases registered in persons of 60 years or older. The distribution pattern of cases in persons of 60 years or older is predominantly observed in the in Shanghai where 20 out of 30 cases (67%) reported have been within this range. Of the total cases with information available, 38 (30%) are among female and 88 (70%) are among males.

As a strategy to reduce potential transmission, the provinces of Guangdong, Jiangsu and Zhejiang have proceeded in eliminating poultry and closing live bird markets. There have been no new cases of human infection caused by avian influenza A (H7N9) in Anhui, Beijing and Shanghai, in the past 15, 17 and 19 days respectively. Since the April 25<sup>th</sup> epidemiological update, new cases have been reported from Fujian, Henan, Hunan, Jiangsu, Jiangxi, Shandong and Zhejiang.

Updated information on this event is published on the [WHO Disease Outbreak News](#) (DON) site.

The majority of cases have been severe, however it is possible that there could be more mild and asymptomatic infections as-yet-undetected, because surveillance systems have a preferential tendency to detect severe cases.

The virus has been found in poultry (ducks, chickens) and pigeons in live bird markets in Anhui, Guangdong, Henan, Jiangsu, Jiangxi, Shanghai and Zhejiang and in environmental

samples taken from live poultry market in Shandong.<sup>1</sup> Other potential reservoirs of the virus are still under investigation.

The investigations to identify the source of infection and the mode of transmission are ongoing. At this time there is no evidence of sustained ongoing human-to-human transmission.<sup>2</sup> Preliminary test results provided by the WHO Collaborating Centre in China suggest that the virus is susceptible to the neuraminidase inhibitors (e.g. oseltamivir and zanamivir).

## Recommendations

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The same recommendations as in the Epidemiological Update of April 25<sup>th</sup>, 2013 apply.

### Epidemiological surveillance

PAHO/WHO recommends Member States to be prepared and maintain the capacity to detect any unusual health event, including those that may be associated with a new subtype of influenza, such as the influenza A(H7N9) virus.

As per previous PAHO/WHO recommendations in these types of events, the initiation of an investigation is recommended in the following situations:

- a severe acute respiratory infection (SARI) case of unknown etiology is detected in a health facility,
- the detection of a SARI cluster with unexplained etiology,
- an unusual or unexpected SARI case of unknown etiology in the community or in a health care worker, or
- as with avian influenza A(H5N1)viruses, investigation should be undertaken and testing for influenza considered in persons with SARI, recent travel history and exposure to influenza-infected animals.<sup>3</sup>

In such situations, samples of clinical and epidemiological significance should be taken and analyzed within the capacity of the national laboratory system. **All specimens that cannot be subtyped for influenza A and those with inconclusive or unexpected subtyping results should be forwarded, immediately,** to the WHO Collaborating Center for influenza, at the United States Centers for Disease Control and Prevention (US CDC) for additional testing.<sup>4</sup>

The investigation should include complete epidemiological and clinical information, for example: clinical signs and symptoms, date of onset of symptoms, underlying clinical conditions, history of influenza vaccination, history of treatment with oseltamivir or zanamivir, contact with animals, and history of travel, among others.

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<sup>1</sup> Follow-up report No. 7 by the World Organization for Animal Health (OIE). Updated 5 May 2013 and available at:

[http://www.oie.int/wahis\\_2/public/wahid.php/Reviewreport/Review?page\\_refer=MapFullEventReport&reportid=13391](http://www.oie.int/wahis_2/public/wahid.php/Reviewreport/Review?page_refer=MapFullEventReport&reportid=13391)

<sup>2</sup> WHO Disease Outbreak News, *Human infection with influenza A(H7N9) in China—update*, 8 May 2013.

Available at: [http://www.who.int/csr/don/2013\\_05\\_08/en/index.html](http://www.who.int/csr/don/2013_05_08/en/index.html)

<sup>3</sup> Available at: [http://www.who.int/csr/resources/publications/influenza/WHO\\_CDS\\_EPR\\_GIP\\_2006\\_4r1.pdf](http://www.who.int/csr/resources/publications/influenza/WHO_CDS_EPR_GIP_2006_4r1.pdf)

<sup>4</sup> WHO Collaborating Centre for the Surveillance, Epidemiology and Control of Influenza Centers for Disease Control and Prevention National Center for Immunization and Other Respiratory Diseases Influenza Division, 1600 Clifton Road, A-20, Atlanta, Georgia 30333, United States of America, Fax: +1 404 639 2334, <http://www.cdc.gov/flu/>

## Laboratory diagnostics

PAHO/WHO encourages Member States to consider developing diagnostic capabilities for detecting infection by avian influenza A(H7N9). The following resources have been developed for this purpose:

- The Real-time RT-PCR Protocol for the Detection of A(H7N9) Influenza Virus, updated by WHO on April 15<sup>th</sup>, 2013 and available on the Global Influenza Programme website.<sup>5</sup>
- The Protocol published by the US CDC, which also uses the Real-time RT-PCR technique. The [diagnostic kits](#) prepared by the US CDC may be accessed through the Influenza Reagent Resource website.<sup>6</sup>

## Surveillance in animals

As animal surveillance for influenza viruses can provide an early warning system for identifying viruses with the potential for causing human disease, it is important to maintain close and systematic interactions between human health and animal health sectors, for timely exchange of information and to conduct joint risk assessments and prevent and control zoonotic diseases, as necessary.

Surveillance in animals should be intensified and take into consideration not only high pathogenic influenza viruses (HPIV) but also LPAI viruses as the risk to human health is independent of the level of pathogenicity in chickens. Also, influenza surveillance in avian species must include surveillance of wild and domestic animals.

## Clinical management and prevention of infections associated with health care

At present, PAHO/WHO considers the clinical management for persons with infections caused by avian influenza A(H7N9) should be as for persons with infections caused by avian influenza A(H5N1). The clinical management guide is available at: [http://www.who.int/influenza/resources/documents/clinical\\_management\\_h5n1\\_15\\_08\\_2007/en/index.html](http://www.who.int/influenza/resources/documents/clinical_management_h5n1_15_08_2007/en/index.html)

Given the current situation and available evidence, recommendations for prevention and control of infections caused by avian influenza A(H7N9) associated with health care are the same as those for the prevention and control of avian influenza A(H5N1). The guide for prevention and control is available at: [http://www.who.int/csr/resources/publications/swineflu/WHO\\_CDS\\_EPR\\_2007\\_6/en/index.html](http://www.who.int/csr/resources/publications/swineflu/WHO_CDS_EPR_2007_6/en/index.html).

## Information for the Public

Although there is no evidence about sustained ongoing human-to-human transmission<sup>2</sup> of this virus, always it is pertinent to observe transmission prevention measures for respiratory viruses, in particular the following:

- Washing hands is the most effective way of reducing transmission.
- Dissemination of "respiratory etiquette" knowledge to help prevent transmission of the virus.

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<sup>5</sup> Available at: [http://www.who.int/influenza/gisrs\\_laboratory/cnic\\_realttime\\_rt\\_pcr\\_protocol\\_a\\_h7n9.pdf](http://www.who.int/influenza/gisrs_laboratory/cnic_realttime_rt_pcr_protocol_a_h7n9.pdf)

<sup>6</sup> Available at: <https://www.influenzareagentresource.org/>

- Individuals with fever should avoid leaving their homes to go to work or to other public places.

**The transmission prevention measures should be disseminated in multiple languages to reach all population groups.**

## Response

PAHO/WHO encourages Member States to update and implement the relevant components of their multi-hazard plans for preparedness and response to public health events.

## International travel and trade

PAHO/WHO does not advise the implementation of health screening at points of entry in relation to this event, nor that any travel or trade restrictions be applied.

PAHO/WHO takes this opportunity to remind Member States that the determination of health measures that can be adopted in response to specific public health risks pursuant paragraph 1 of Article 43 of the International Health Regulations (IHR),<sup>7</sup> should be based on scientific principles, available scientific evidence, and available guidance and advice by WHO. According to paragraph 3 of Article 43, any measure adopted pursuant paragraph 1 and significantly interfering with international traffic should be notified to PAHO/WHO.

In compliance with Recommendation 3 by the IHR Review Committee,<sup>8</sup> endorsed by Member States through Resolution WHA64.1,<sup>9</sup> PAHO/WHO is actively monitoring health measures adopted by States Parties and, when justified by the assessment of the public-health rationale of such measures, the Organization will be sharing relevant information with other States Parties.

For more information, consult the following links:

- [Frequently asked questions on human infection with influenza A\(H7N9\) in China](#)
- [Influenza](#)
- [Influenza at the Human-Animal interface \(HAI\)](#)
- [Avian influenza fact sheet](#)
- [Weekly Epidemiological Record \(WER\) 29 March 2013](#)

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<sup>7</sup> Available at: [http://whqlibdoc.who.int/publications/2008/9789241580410\\_eng.pdf](http://whqlibdoc.who.int/publications/2008/9789241580410_eng.pdf)

<sup>8</sup> Available at: [http://apps.who.int/gb/ebwha/pdf\\_files/WHA64/A64\\_10-en.pdf](http://apps.who.int/gb/ebwha/pdf_files/WHA64/A64_10-en.pdf)

<sup>9</sup> Available at: [http://apps.who.int/gb/ebwha/pdf\\_files/WHA64-REC1/A64\\_REC1-en.pdf#page=21](http://apps.who.int/gb/ebwha/pdf_files/WHA64-REC1/A64_REC1-en.pdf#page=21)

## References

- WHO Risk assessment – Human infections with influenza A(H7N9) virus. 13 April 2013. Available at: [http://www.who.int/influenza/human\\_animal\\_interface/influenza\\_h7n9/en/index.html](http://www.who.int/influenza/human_animal_interface/influenza_h7n9/en/index.html)
- Disease Outbreak News. Available at: <http://www.who.int/csr/don/en/index.html>
- World Organization for Animal Health (OIE). Terrestrial Animal Health Code. Ed. 2012. Available at :[http://www.oie.int/index.php?id=169&L=0&htmfile=chapitre\\_1.10.4.htm](http://www.oie.int/index.php?id=169&L=0&htmfile=chapitre_1.10.4.htm)