

**Update on H7N9 influenza in China  
April 11, 2013**

**\*\*This message sent to BC MHOs, PHNLs, ICPs, ERDOCs, IDSPEC, MEDMICRO, AMBULANCE, CDPACS Clinical, Immunization Team\*\***

**Please share with your workplace colleagues as appropriate.**

Dear Colleagues –

Brief update on evolving H7N9 events in China as of April 10, 2013. Note that useful web-links have been added to the end of this update.

**1. Epidemiologic Summary**

**Tally:** 33

**Fatalities:** 9

**Age span:** 4-87 years; all but one 20+ years of age

**Gender:** 22/33 cases and 7/9 deaths male

**Presentation:** Influenza-like illness (ILI) with fever and cough, progressing to pneumonia and severe acute respiratory distress. To date, 3/33 with mild illness, the rest severe – most requiring hospitalization.

**Illness onset span:** February 19 to April 4, 2013 (one onset date pending)

**Geographic distribution:** No cases detected outside of the previously emphasized eastern provinces of China, summarized by place of residence per below:

Municipality of Shanghai (pop~23M: 13 cases; 4 deaths); province of Jiangsu (pop~79M: 11 cases; 2 deaths); province of Zhejiang (pop~55M: 6 cases; 2 deaths) and province of Anhui (pop~60M: 3 cases; 1 death).

**Epidemiologic links:** None identified between cases

**Poultry exposure:** 11/33 with recognized poultry exposure

See attached slide set for further person, place, time details. In this version, an indication of the underlying population density has been added to the geographic case mapping.

**2. Virologic Summary**

Preliminary sequence analysis of isolates posted to GISAID suggest the H7N9 virus causing human infections in China is a reassortant virus with the haemagglutinin (H) surface protein most closely related to H7N3 virus from domestic ducks in China in 2011; the neuraminidase (N) surface protein is most closely related to H7N9 from a wild bird population in Korea in 2011 and the other six internal components of the virus are likely derived from chicken H9N2 viruses in China from the past 5 years.

The virus is a low pathogenic avian influenza (LPAI) virus in fowl meaning it causes minimal symptoms in affected birds notwithstanding potentially severe illness in humans. Based on genetic sequencing, the virus has a marker (but not all markers) associated with mammalian adaptation and one of the internal components (PB2) has a mutation associated with virulence. These properties have not yet been validated in the laboratory. The virus bears no swine-related signatures. Sequencing also indicates the virus is likely to be resistant to adamantanes but sensitive to neuraminidase inhibitors.

**3. Risk Assessment (unchanged)**

A novel H7N9 subtype of avian influenza has caused a small but not insignificant number of sporadic and unlinked cases of mostly (but not strictly) severe respiratory illness in several provinces of eastern China. At this time there is no evidence for ongoing human-to-human transmission and the risk of disease spread to British Columbia is considered low. However, individual cases coming from China cannot be ruled out and clinicians should be vigilant for that possibility.

#### **4. Actions and Advice (unchanged)**

Clinicians should be alert for patients presenting with severe acute respiratory illness (SARI) with links within 10 days of illness onset to affected areas of China in which case they should notify their local health authority/Medical Health Officer without delay. Given a spectrum of illness inclusive of less severe ILI presentations, clinicians should use their clinical judgement if persuaded of risk (i.e. in the case of clear epidemiologic links).

Cases should be managed in respiratory isolation with contact and droplet precautions. The particular ocular tropism of H7 viruses warrants added emphasis on eye protection. Aerosol generating procedures may facilitate spread warranting airborne precautions.

For diagnostic testing for suspected influenza A/H7N9 virus, please consult a virologist or microbiologist at the BC Public Health Microbiology and Reference Laboratory at the BC Centre for Disease Control to arrange advance notification. Specimens, including nasopharyngeal swab, sputum and, if indicated, tracheal aspirate and/or BAL, should be shipped directly.

#### **5. Useful web-links**

For additional useful information you may wish to consult the following links:

PHAC: Public Health Notice: H7N9 avian flu in China

<http://www.phac-aspc.gc.ca/phn-asp/2013/h7n9-0403-eng.php>

and

Travel.gc.ca: H7N9 Avian Influenza Human Cases in China

<http://travel.gc.ca/travelling/health-safety/travel-health-notice/h7n9-china>

WHO: Global Alert and Response (GAR) Disease outbreak news

<http://www.who.int/csr/don/en/index.html>

ECDC: Avian influenza in humans

[http://www.ecdc.europa.eu/en/healthtopics/avian\\_influenza/Pages/index.aspx](http://www.ecdc.europa.eu/en/healthtopics/avian_influenza/Pages/index.aspx)

US CDC: Avian Influenza A (H7N9) Virus

<http://www.cdc.gov/flu/avianflu/h7n9-virus.htm>

We will update you further as indicated.