BC Centre for Disease Control
An agency of the Provincial Health Services Authority

655 West 12th Avenue
Vancouver, BC V5Z 4R4

Tel 604.707.2400
Fax 604.707.2441

www.bcbcdc.ca

Emerging Respiratory Virus (ERV) Bulletin

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Dear Colleagues –

Please note that the substantial increase in human cases of avian influenza A(H7N9) in China to which we alerted you earlier this year, continues.

HIGHLIGHTS:

- During this fifth wave beginning in October 2016, the number of human A(H7N9) cases reported in China has surpassed the number of cases reported in any of the four prior waves since the virus was first identified in February 2013 (see **Figure** below).

- As of March 1, 2017, a cumulative total of 1,258 confirmed human A(H7N9) infections and at least 328 deaths have been reported to the World Health Organization (WHO). More than one-third of these cases (n=460) were reported since October 2016.

- As in prior waves, the majority of reported cases are older adult males, with at least one-third fatal. Most cases have reported recent exposure to infected poultry or contaminated environments, including live poultry markets. A few clusters have occurred for which limited human-to-human transmission cannot be ruled out.

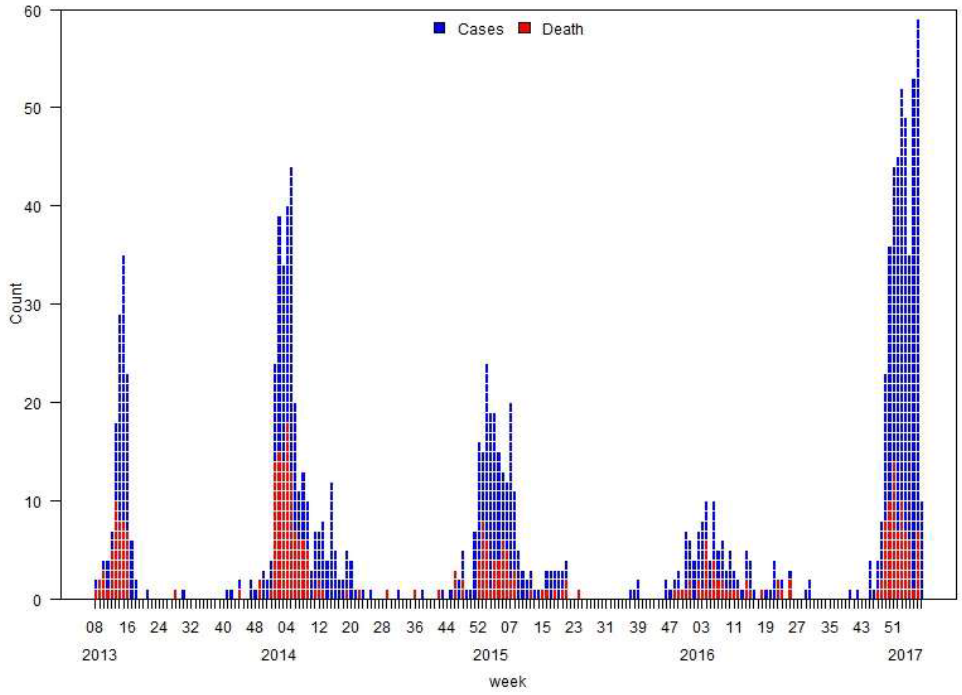
- Avian influenza A(H7N9) has previously been considered a low-pathogenic avian influenza (LPAI) virus, meaning that it causes little or no disease in poultry. However, on February 18, 2017 the WHO was notified of two previously reported human A(H7N9) cases that had been infected with a highly pathogenic avian influenza (HPAI) virus. HPAI A(H7N9) viruses were also detected at live poultry markets in China from birds sampled in January 2017. Of note, LPAI and HPAI designations refer to severity in poultry but are not predictive of severity in humans.

- Genetic sequencing also revealed that these viruses had acquired mutations conferring resistance to neuraminidase inhibitors (NIs), although both patients had received oseltamivir treatment before specimens were collected. Sporadic detection of A(H7N9) viruses with mutations conferring reduced sensitivity to NIs has been reported previously but these have not become established/ongoing causes of human illness. To date, there has been no evidence of increased pathogenicity in humans or transmission between humans associated with these genetic changes, although continued monitoring is warranted.

KEY ACTION AND ADVICE:

- For travellers to affected areas: Maintain strict personal, hand, food and environmental hygiene and avoid touching birds, poultry or their droppings or visiting markets, farms or other areas potentially contaminated by poultry droppings. All poultry and poultry products that are consumed, including eggs, should be thoroughly cooked. In the event of illness within 2 weeks of return to Canada that requires medical care, actively inform clinicians of travel abroad so they can manage and investigate appropriately.
- For attending clinicians: Maintain vigilance and actively elicit relevant travel and exposure history from patients presenting with acute illness that could be due to infectious disease, notably severe acute respiratory illness (SARI). If there are links to affected areas in the two weeks prior to symptom onset, notify the local Medical Health Officer and consult a microbiologist at the BCCDC Public Health Laboratory for testing advice, clearly indicating any relevant travel/exposure history with specimen submission. Follow strict infection prevention and control guidelines when collecting respiratory specimens.

Number of confirmed human A(H7N9) cases and deaths reported to the WHO by week of onset, China, February 2013 to February 2017



Data are current to February 14, 2017. *Source:* World Health Organization. Influenza at the human-animal interface. Summary and risk assessment, 17 January to 14 February 2017. Geneva: WHO; 2017. Available from: www.who.int/influenza/human_animal_interface/HAI_Risk_Assessment/en/.

FOR MORE INFORMATION:

1) WHO Influenza at the Human-Animal Interface Monthly Risk Assessments
2) WHO Disease Outbreak News (DONs)
3) ECDC Communicable Disease Threats Reports (CDTRs)
4) ECDC Avian influenza A(H7N9) highly pathogenic for poultry (24 February 2017)
5) Previous BCCDC ERV Bulletins