



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

## Emerging Respiratory Virus Bulletin – June 15, 2017

### HIGHLIGHTS:

#### Avian Influenza A(H7N9), China

- Since the first emergence in February 2013 and as of May 26, 2017, a total of 1,512 lab-confirmed A(H7N9) human cases, including at least 573 deaths (case fatality= $\sim$ 40%), have been reported to the WHO.
- The fifth epidemic wave started earlier (ongoing since October 1, 2016) and has been associated with more cases and a greater geographic distribution than any previous wave, with almost double the number of reported cases (n=714 to date during the fifth epidemic) compared to all four previous epidemics combined. However, the number of new cases associated with the fifth epidemic wave has shown expected decline since the usual January/February peak in cases.
- As in prior epidemics, the majority of cases have been older adult males. 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.

#### Middle East Respiratory Syndrome Coronavirus (MERS-CoV), multiple countries

- Globally, since September 2012 and as of June 10, 2017, a total of 2,015 MERS-CoV cases, including at least 703 related deaths, have been reported to WHO.
- In recent months, human cases of MERS-CoV continue to be reported from affected regions in the Middle East, including Saudi Arabia, the United Arab Emirates (UAE) and Qatar.
- Six hospital-based clusters (two that are linked) have recently been reported from Saudi Arabia involving patients, healthcare workers and household contacts and including a large proportion of asymptomatic cases among contacts.



A research and teaching centre affiliated with UBC

## KEY ACTION AND ADVICE:

- For travellers to affected areas: Prior to travel abroad, consult [travel health notices](#) of the Public Health Agency of Canada. 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.

## A. EPIDEMIOLOGICAL UPDATES

### 1. Avian Influenza A(H7N9), China

As summarized in the latest [Risk Assessment Summaries](#) from the WHO, between February 14 and May 16, 2017, 263 new human cases of avian influenza A(H7N9) have been reported as part of a fifth epidemic wave in China, beginning October 1, 2016 (**Figure 1**). Since then, an additional 26 human A(H7N9) cases have been reported including the first two cases to be reported from Shanxi province.

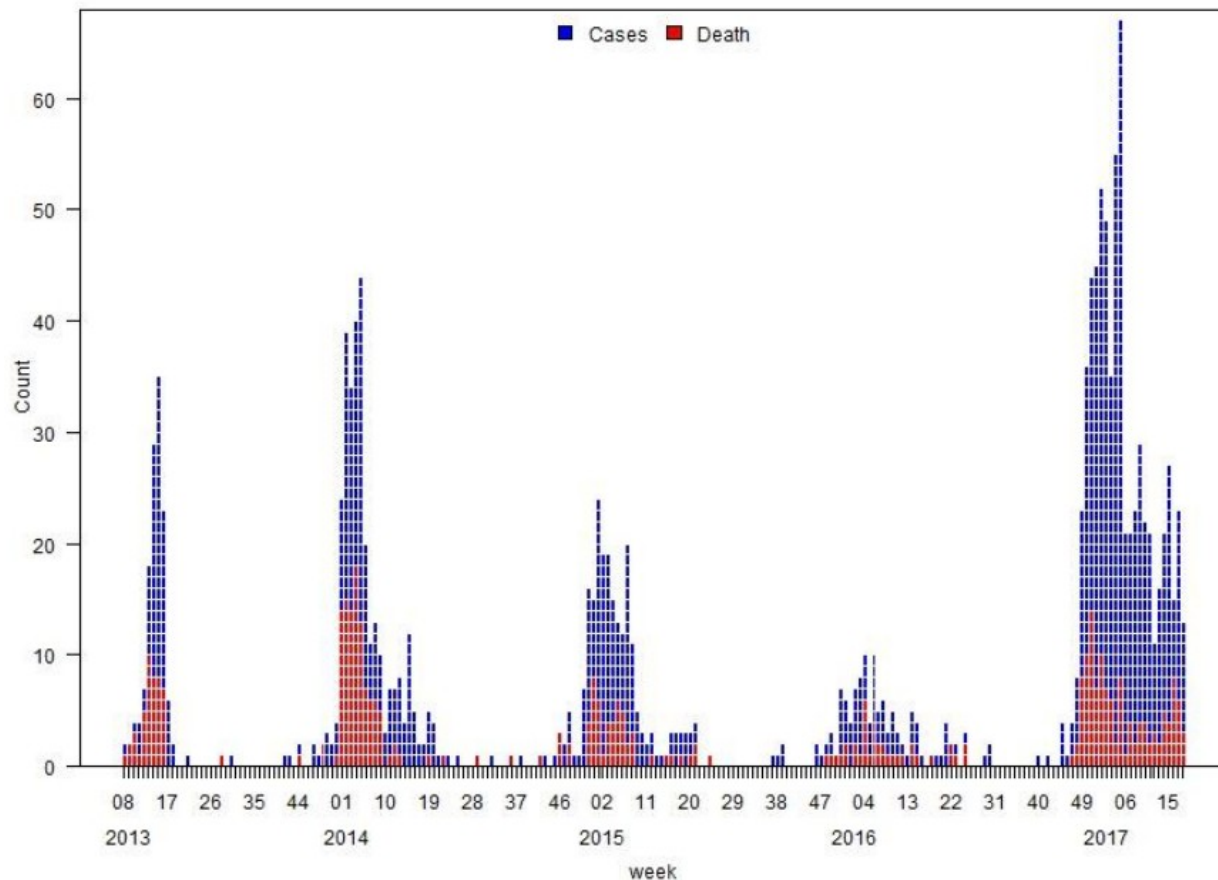
Among the 263 laboratory-confirmed cases newly reported between February 14 and May 16, 2017, the median age was 56 years (range: 4-86 years), 70% were male and, at the time of report, 50 had died and over half were considered in severe condition. Over three-quarters reported exposure to poultry or a live poultry market.

These new cases have been reported from provinces throughout China, some of which had reported cases during prior waves, including Hunan (30), Sichuan (25), Guangxi (25), Henan (18), Jiangsu (18), Beijing (17), Guangdong (16), Hebei (16), Zhejiang (13), Anhui (13), Guizhou (11), Jiangxi (11), Fujian (10), Shandong (9), Hubei (7), Chongqing (6), Gansu (5), Shaanxi (4), Tibet (3), Tianjin (2), Jilin (1), Liaoning (1), and Shanghai (1). One case has also been reported from Hong Kong Special Administrative Region.

The epidemiological profile of reported cases is similar to previous waves, predominantly involving older adult males. Avian influenza A(H7N9) is enzootic in poultry in China and exposure to infected poultry remains the major risk factor for infection with only limited instances of human-to-human transmission.

To date (as of May 26, 2017), a total of 1,512 laboratory-confirmed human infections with avian influenza A(H7N9) , including at least 573 deaths (case fatality= $\sim$ 40%), have been reported to the WHO.

**Figure 1: Number of confirmed human A(H7N9) cases and deaths reported to the WHO by week of onset, China, February 2013 to May 2017**



Data are current to May 16, 2017. *Source:* World Health Organization. Influenza at the human-animal interface. Summary and risk assessment, 21 April to 16 May 2017. Geneva: WHO; 2017. Available from: [www.who.int/influenza/human\\_animal\\_interface/HAI\\_Risk\\_Assessment/en/](http://www.who.int/influenza/human_animal_interface/HAI_Risk_Assessment/en/).

Earlier this month, Wang et al. published a comparison of the five avian influenza A(H7N9) epidemics in [Lancet Infectious Diseases](http://www.thelancet.com/journal/20170505) emphasizing typical peaks in January/February. However, the geographic spread and overall number of human cases during the fifth epidemic (n=447 to February 23, 2017) is greater than earlier epidemics, ranging from 114 (fourth wave in 2015-16) to 306 (second wave in 2013-14). The median age of fifth epidemic cases (58 years; range=4-93 years) was similar to previous epidemics (56-61 years; range=1-92 years), although the proportion of middle-aged adults 16-59 years increased slightly (57% vs. 41-54%) most notably in comparison to the 2013 epidemic. Most cases have been men (70% overall) with minimal change over time. The clinical severity of hospitalized patients in the fifth epidemic was similar to previous waves. A greater proportion of fifth epidemic cases were seen in semi-urban and rural areas. The reasons for the dramatic increase in cases during the fifth epidemic remain unknown but could be related to increased prevalence and geographic spread of A(H7N9) infection in poultry. The 2016-17 epidemic also began earlier than past epidemics and this may have contributed to a greater accrual of cases. Although a few human-to-human clusters have been identified, the predominant mode of transmission remains poultry-to-human.

## **2. Middle East Respiratory Syndrome Coronavirus (MERS-CoV), multiple countries**

Between April 21 and June 10, 2017, 63 cases of MERS-CoV have been reported across Saudi Arabia (n=60), the United Arab Emirates (UAE) (n=2), and Qatar (n=1). Six hospital-based clusters (two of which are linked) are responsible for 44 of the aforementioned cases in Saudi Arabia (3 cases in cluster #1, 5 in cluster #2, 4 in cluster #3, 23 in cluster #4, 5 in cluster #5, and 4 in cluster #6) and involve secondary cases in patients (n=12), healthcare workers (n=22) and household contacts (n=6), including a large proportion (~60%) of asymptomatic cases among contacts. These clusters occurred at four healthcare facilities in Riyadh city, and one healthcare facility in each of Bisha city and Wadi Aldwaser city. The three cases in UAE and Qatar had frequent exposure to dromedary camels.

Globally, since September 2012 (as of June 10, 2017), 2,015 MERS-CoV cases, including at least 703 related deaths, have been reported to WHO.

### **B. ACTION AND ADVICE**

Prior to going abroad, travelers to affected areas should consult [travel health notices](#) of the Public Health Agency of Canada for advice. In the event of illness within 2 weeks of return to Canada that requires medical care, patients should actively inform clinicians of travel abroad so they can manage and investigate appropriately.

Clinicians should 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). In the event of links to affected areas in the 2 weeks prior to symptom onset (i.e. residence, travel history or contact with someone with such history), clinicians should notify their local health authority/Medical Health Officer and consult a virologist or microbiologist at the BCCDC Public Health Laboratory for advice related to diagnostic testing, clearly indicating the relevant travel or other exposure history with any submitted specimen.

For diagnostic testing for suspected avian influenza or MERS-CoV, lower respiratory specimens (e.g. sputum, endotracheal aspirate, or bronchoalveolar lavage) are recommended where possible and clinically indicated. Follow strict infection prevention and control guidelines when collecting respiratory specimens.

Health care workers should implement respiratory precautions immediately, and cases should be managed in respiratory isolation with contact and droplet precautions, inclusive of eye protection. Airborne precautions are warranted in the event of aerosol-generating procedures or conditions. Facilities should be mindful of the protection of other patients and visitors, in addition to healthcare workers, to minimize nosocomial transmission and risk.

**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) [Previous BCCDC ERV Bulletins](#)