



HUMAN EMERGING RESPIRATORY PATHOGENS BULLETIN

MONTHLY SITUATIONAL ANALYSIS OF EMERGING RESPIRATORY DISEASES AFFECTING HUMANS

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IN THIS BULLETIN

1. COVID-19 update
2. Novel influenza updates
3. MERS-CoV update

COVID-19 UPDATE

On December 31, 2019, cases of a pneumonia of unknown etiology were reported in Wuhan, China. These cases have since been determined to be due to a novel coronavirus called severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), which causes coronavirus disease 2019 (COVID-19). On January 30, 2020, the World Health Organization (WHO) first declared the outbreak a Public Health Emergency of International Concern (PHEIC). On March 11, 2020, the WHO characterized the outbreak as a global pandemic. The WHO Director-General convened the International Health Regulations (IHR) Emergency Committee (EC) on COVID-19 eight times throughout 2020 and 2021, continually assessing that COVID-19 constitutes a PHEIC.

As of August 31, 2021, 1,499,165 COVID-19 cases and 26,932 deaths have been reported in Canada. The Public Health Agency of Canada is monitoring the situation closely. For the most up-to-date information, please visit: <https://www.canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection.html>

AVIAN INFLUENZA UPDATES

AVIAN INFLUENZA A(H5N1)

On August 11, 2021, a WHO Event Information Site (EIS) posting confirmed that the previous A(H5Nx) human case in India, reported in the Issue No 55 July 2021 Human Emerging Respiratory Pathogens Bulletin, was an A(H5N1) case. The case, an 11-year-old male with underlying conditions, presented with acute respiratory illness in June 2021, was hospitalized on July 2, 2021, and died on July 12, 2021. This case marks the first human case of A(H5N1) reported from India. This is the first A(H5N1) case reported worldwide in 2021. Canada (Alberta) reported one single fatal case of A(H5N1) in 2014, in a resident returning from travel in China. Globally, 881 human cases of A(H5N1) have been reported with a case fatality rate of 52% since 1997.

UPDATE ON HUMAN EMERGING RESPIRATORY PATHOGEN PUBLIC HEALTH EVENTS (AS OF AUGUST 31, 2021)¹

NOVEL INFLUENZA ¹	[N CUMULATIVE CASES ² (DEATHS), CFR% ³]
A(H7N9)	[1,568 (615), 39%]
A(H5N1)	[881 (462), 52%]
A(H9N2)	[81 (1), 1%]
A(H5N6)	[42 (22), 52%]
A(H5N8)	[7 (0), 0%]
A(H7N4)	[1 (0), 0%]
A(H1N2) ⁴	[2 (0), 0%]
A(H3N2)v	[439 (1), <1%]
A(H1N2)v	[33 (0), 0%]
A(H1N1)v	[33 (0), 0%]
A(H10N3)	[1 (0), 0%]
Eurasian avian-like A(H1N1)	[5 (0), 0%]
Reassortant novel influenza ⁵	[1 (0), 0%]

MERS-CoV¹

Global case count	[2,570 (877), 34%]
Saudi Arabia	[2,173 (799), 37%]

¹Date of 1st Reported Case of Human Infection: MERS-CoV: February 2013 (retrospective case finding September 2012), A(H7N9): March 2013, A(H5N1): 1997, A(H9N2): 1998, A(H5N6): 2014, A(H5N8): December 2020, A(H7N4): February 2018, A(H1N2): March 2018, A(H3N2)v with M gene from pH1N1: 2011, A(H1N2)v: 2005, A(H1N1)v: 2005, EA A(H1N1): 1986, but the above table counts cases from January 2021. A/Denmark/1/2021: February 2021.

²Cumulative Case Counts: updated using data reported by the World Health Organization (avian and swine influenza, MERS CoV), and the United States Centers for Disease Control and Prevention (US CDC) (swine influenza).

³Case Fatality Rate: the proportion of cases that resulted in death.

⁴A(H1N2): virus is a seasonal reassortant of the A(H1N1)pdm09 and A(H3N2) seasonal strains.

⁵Reassortant novel influenza: refers to A/Denmark/1/2021 A(H1N1) of the pdm09 lineage.

AVIAN INFLUENZA A(H5N6)

Six human cases of avian influenza A(H5N6) were reported in August 2021, all from China.

The first case, a 61-year-old retired female, from Guilin, Guangxi province, reported illness onset on 6 July 2021, and was hospitalized on 9 July with mild symptoms. The second case was a 65-year-old female farmer from Yibin, Sichuan province, with onset of illness and hospitalized on 13 July 2021, and at the time



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of IHR notification was reported to be in critical condition. The third case, a 55-year-old female from Chenzhou, Hunan Province, reported illness onset on July 26th, and was hospitalized on July 30th due to severe pneumonia and remains under treatment. The fourth case is a 54-year-old male who is also the husband of the third case. He developed mild symptoms on August 2nd, 2021 and was hospitalized on the same day. The husband had jointly cooked the duck purchased from the market before his wife's onset of illness. The fifth case, a 52-year-old female from Huizhou, Guangdong Province, reported illness onset on July 31, 2021 after exposure to backyard poultry and was hospitalized the same day after experiencing dizziness, falling, and sustaining a head injury. The sixth case, a 55-year-old male farmer from Laibin, Guangxi Province, reported onset of illness on 12 August 2021, was hospitalized on 17 August, developed severe pneumonia and was in critical condition.

Except for the third and fourth cases reported as having a common exposure, none of the other cases were known to be connected. Globally, 42 human cases of A(H5N6) have been reported since 2014 (22 of them fatal), with 41 of these cases reported from China, and 15 of these cases reported in 2021 (Figure 2). No A(H5N6) detections have been reported in Canadian residents since reporting began in 2014.

SWINE INFLUENZA UPDATES

SWINE ORIGIN INFLUENZA A(H1N2)v

On August 20, 2021, the US CDC reported two cases of A(H1N2)v in Wisconsin. Both patients were ≥18 years of age. One patient was hospitalized, and both have completely recovered from their illness. Investigation into the source of the infections revealed that prior to illness onset both patients attended the same county fair where swine were being exhibited. No human-to-human transmission of the A(H1N2)v virus has been associated with either patient. Two A(H1N2)v detections have been reported in Canadian residents since reporting began in 2005, with the latest case reported in April 2021. A total of 33 cases have been reported globally since 2005. There have been 5 A(H1N2)v cases reported worldwide in 2021.

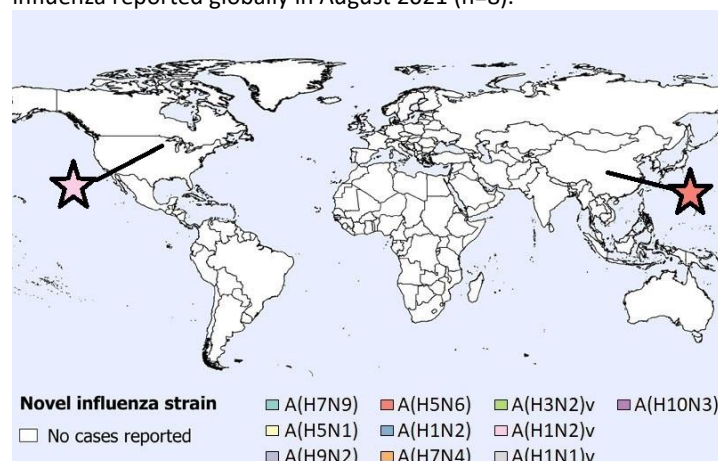
SWINE ORIGIN INFLUENZA A(H3N2)v

The most recent case of swine origin influenza A(H3N2)v was reported in June 2021 in Manitoba, Canada. This was the second case of A(H3N2)v detected out of Canada. The first case was notified in December 2016 in a child residing in Ontario who had contact with symptomatic infected swine. Globally, 439 A(H3N2)v cases have been reported since 2005, with <1% case fatality rate. There have been 3 A(H3N2)v cases reported worldwide in 2021.

SWINE ORIGIN INFLUENZA A(H1N1)v

The most recent case of swine origin influenza A(H1N1)v was reported in June 2021 from the United States. Two A(H1N1)v detections have been reported in Canadian residents since reporting began in 2005, with the latest case reported in April 2021. Globally, 33 human cases of A(H1N1)v have been reported since 2005, with no associated fatalities. There have been 2 A(H1N1)v cases reported worldwide in 2021.

Figure 1. Spatial distribution of human cases of avian and swine influenza reported globally in August 2021 (n=8).



Note: Map was prepared by the Centre for Immunization and Respiratory Infectious Diseases (CIRID) using data from the latest WHO Monthly Influenza at the Human-Animal Interface Risk Assessment. This map reflects data available through these risk assessments as of August 31, 2021.

Figure 2. Spatial distribution of human cases of A(H5N6) influenza reported in China in 2021 (n=15).



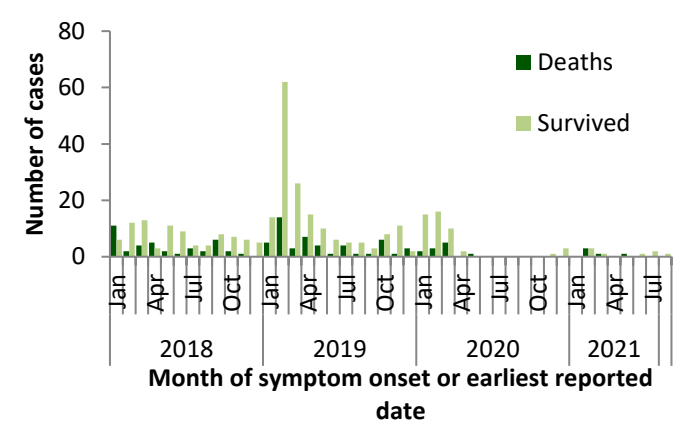
Note: Map was prepared by the Centre for Immunization and Respiratory Infectious Diseases (CIRID) using data from the latest WHO Monthly Influenza at the Human-Animal Interface Risk Assessment. This map reflects data available through these risk assessments as of August 31, 2021.

MIDDLE EAST RESPIRATORY SYNDROME CORONAVIRUS (MERS-COV) UPDATE

One new MERS-CoV case was reported from Saudi Arabia in August 2021. The case, a 69-year-old male from Riyadh, reported exposure to camels prior to illness onset and was classified as a primary case (the case likely did not contract the virus from another human).

Including this case, 13 cases of MERS-CoV have been reported globally in 2021 (5 of them fatal), with 12 of these cases reported from Saudi Arabia. A total of 2,570 laboratory-confirmed cases of MERS-CoV, including 877 deaths, have been reported globally since 2012 by the WHO. No cases have been reported in Canada.

Figure 3. Temporal distribution of human cases of MERS-CoV reported to the WHO, globally, by month and year, January 1, 2018 to August 31, 2021 (n=415).



Note: Graph was prepared by the Centre for Immunization and Respiratory Infectious Diseases (CIRID) using data from the WHO Disease Outbreak News and Saudi Arabia's Ministry of Health. This graph reflects data available as of August 31, 2021.