



HUMAN EMERGING RESPIRATORY PATHOGENS BULLETIN

MONTHLY SITUATIONAL ANALYSIS OF EMERGING RESPIRATORY DISEASES AFFECTING HUMANS

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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 seven times throughout 2020 and 2021, continually assessing that COVID-19 constitutes a PHEIC.

As of April 30, 2021, 1,219,425 COVID-19 cases and 24,219 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(H9N2)

On April 11, 2021, the National Health Commission of the People's Republic of China notified the WHO of two confirmed human cases of avian influenza A(H9N2). The first case, a 10-year-old male from Fujian Province, had mild symptom onset on January 28, 2021^[1]. This case had no history of poultry exposure. The second case, a 2-year-old female from Hubei Province, had mild symptom onset on February 7, 2021. She reported exposure to backyard poultry. Both cases have since recovered and have had no further detections amongst family members. These two cases mark the 11th and 12th human detections of A(H9N2) in 2021, with the majority (11/12; 92%) of cases reported out of China. No cases have been reported in Canada since the emergence of this virus in the human population in 1998.

UPDATE ON HUMAN EMERGING RESPIRATORY PATHOGEN PUBLIC HEALTH EVENTS (AS OF APRIL 30, 2021)

NOVEL INFLUENZA ¹	[N CUMULATIVE CASES ² (DEATHS), CFR% ³]
A(H7N9)	[1,568 (615), 39%]
A(H5N1)	[880 (461), 52%]
A(H9N2)	[78 (1), 1%]
A(H5N6)	[31 (10), 32%]
A(H5N8)	[7 (0), 0%]
A(H7N4)	[1 (0), 0%]
A(H1N2)	[2 (0), 0%]
A(H3N2)v	[438 (1), <1%]
A(H1N2)v	[29 (0), 0%]
A(H1N1)v	[32 (0), 0%]
Eurasian avian-like A(H1N1)	[4 (0), 0%]
Reassortant novel influenza ⁴	[1 (0), 0%]

MERS-CoV¹

Global case count	[2,565 (876), 34%]
Saudi Arabia	[2,168 (798), 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(H3N2)v with M gene from pH1N1: 2011. A(H1N2)v: 2005. A(H1N1)v: 2005. 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.

⁴Reassortant novel influenza: refers to A/Denmark/1/2021 A(H1N1) of the pdm09 lineage.



Public Health
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Canada

SWINE INFLUENZA UPDATES

SWINE ORIGIN INFLUENZA A(H3N2)v

A sample from a laboratory confirmed influenza case was sent to the Victorian Infectious Disease Reference Laboratory for characterization in March 2021. Sequencing and phylogenetic analysis results revealed that the virus was an A(H3N2) variant virus [A(H3N2)v]. The case, a 10-year-old male from South Australia, had presented to a paediatric emergency department, but was not hospitalized and has since recovered. No exposures for the infection were identified. No additional influenza cases were reported in connection to this case. This case is the second human H3N2v case reported in 2021, with the first case reported out of the US in January 2021. One locally acquired H3N2v case was reported out of Ontario, Canada in December 2016. Globally, 438 H3N2v cases have been reported since 2005, with a <1% case fatality rate (CFR).

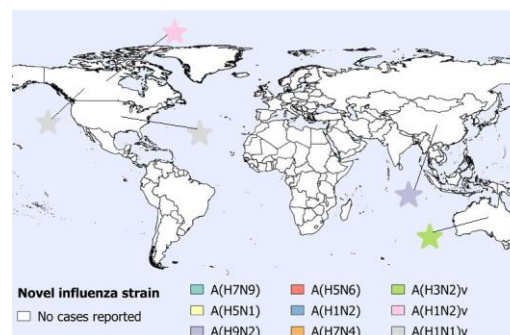
SWINE ORIGIN INFLUENZA A(H1N2)v

On April 28, 2021, Canada notified the WHO of a human infection with influenza A(H1N2) variant virus [A(H1N2)v]. The case was a child from Manitoba. The case was detected during a COVID-19 household investigation in March and April of 2021. The case developed influenza-like illness (ILI) in early April with a specimen collection soon after. Whole genome sequencing conducted by the NML confirmed a A(H1N2)v infection. The case tested negative for COVID-19. Although the case reported no known animal exposure prior to illness onset, public health investigations revealed one family member worked in pig barns prior to illness onset. The case has since recovered. This case was not epidemiologically linked to the case with [A(H1N1)v] from Manitoba mentioned below. This case marks the second A(H1N2)v detection in a Canadian resident since reporting began in 2005. A total of 29 cases has been reported globally since 2005.

SWINE ORIGIN INFLUENZA A(H1N1)v

On April 29, 2021, Canada notified the WHO of a human infection with influenza A(H1N1) variant virus [A(H1N1)v]. The case was a child from Manitoba. The case developed symptoms on April 8, 2021 and a specimen was collected for testing on April 9, 2021. Whole genome sequencing conducted by the NML confirmed a A(H1N1)v infection. Public health investigations revealed the case and the case's family members had direct contact with swine and no other influenza-like-illness (ILI) cases were reported from the community. The case has since recovered. This case marks the second A(H1N1)v detection in a Canadian resident since reporting began in 2005. In addition, on April 16, 2021, the United States informed the WHO of a human infection with A(H1N1)v. The case was an adult from Wisconsin. The case developed ILI symptoms and sought medical care on April 1, 2021, at which point a specimen was collected for influenza testing. Genome sequence analyses confirmed an A(H1N1)v infection on April 15, 2021. Public health investigations revealed the case had close contact with swine and no close contacts reported illness. The case was not hospitalized and has since recovered. Globally, 32 human cases of H1N1v have been reported since 2005, with no associated fatalities. These cases are separate from infections of the A(H1N1)pdm09 virus, which caused the 2009 pandemic.

Figure 1. Spatial distribution of human cases of avian and swine influenza reported globally in April 2021 (n=6).

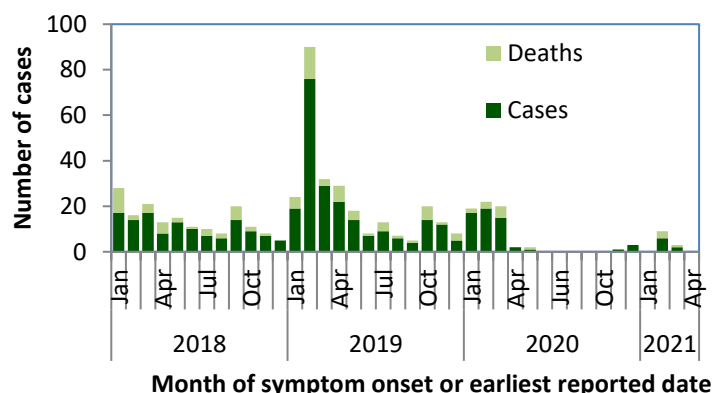


Note: Map was prepared by the Centre for Immunization and Respiratory Infectious Diseases (CIRID) using data from the latest WHO Monthly Influenza at the Human-Animal Interface Risk Assessment. This map reflects data available through these risk assessments as of April 30, 2021.

MIDDLE EAST RESPIRATORY SYNDROME CORONAVIRUS (MERS-COV) UPDATE

No new MERS-CoV cases were reported in April 2021. Eight cases of MERS-CoV have been reported around the world in 2021, with 7/8 (87.5%) cases reported from Saudi Arabia. A total of 2,565 laboratory-confirmed cases of MERS-CoV, including 876 deaths, have been reported globally since 2012 by the WHO. No cases have been reported in Canada.

Figure 2. Temporal distribution of human cases of MERS-CoV reported to the WHO, globally, by month and year, January 1, 2018 to April 30, 2021 (n=410).



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 April 30, 2021.