



HUMAN EMERGING RESPIRATORY PATHOGENS BULLETIN

MONTHLY SITUATIONAL ANALYSIS OF EMERGING RESPIRATORY DISEASES AFFECTING HUMANS

Issue No 50 February 2021

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UPDATE ON HUMAN EMERGING RESPIRATORY PATHOGEN PUBLIC HEALTH EVENTS (AS OF FEBRUARY 28, 2021)

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 five times throughout 2020, and a sixth time on [January 14, 2021](https://www.who.int/news/item/14-01-2021-who-director-general-adopts-strategy-for-coronavirus-disease-2019-covid-19), continually assessing that COVID-19 constitutes a PHEIC.

As of February 26, 2021, 861,472 COVID-19 cases and 21,915 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(H5N8)

On February 18, 2021, Russia notified the WHO of a cluster of seven cases of avian influenza A(H5N8) detected in Astrakhan, southern Russia. These cases worked as a part of outbreak response and disinfection operations on a poultry farm, after a H5N8 poultry outbreak reported in December 2020. Prior to this report, there were zero human cases reported worldwide, marking these cases as the first human cases of H5N8 ever. The cases were asymptomatic, all are recovered, and it was reported that there was no evidence of human-to-human transmission. A full viral sequence isolated from a throat swab taken from one of the cases was deposited to the Global Initiative for Sharing Avian Influenza Data (GISAID). Current nomenclature designates this isolate A/Astrakhan/3212/2020 (H5N8).

NOVEL INFLUENZA ¹	[N CUMULATIVE CASES ² (DEATHS), CFR% ³]
A(H7N9)	[1,568 (615), 39%]
A(H5N1)	[880 (461), 52%]
A(H9N2)	[71 (1), 1%]
A(H5N6)	[29 (9), 31%]
A(H5N8)	[7 (0), 0%]
A(H7N4)	[1 (0), 0%]
A(H1N2)	[2 (0), 0%]
A(H3N2)v	[437 (1), <1%]
A(H1N2)v	[28 (0), 0%]
A(H1N1)v	[29 (0), 0%]
Reassortant novel influenza ⁴	[1 (0), 0%]

MERS-CoV¹

Global case count	[2,563 (875), 34%]
Saudi Arabia	[2,166 (797), 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(H5N1): 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.

AVIAN INFLUENZA A(H5N6)

China notified the WHO of two separate human cases of avian influenza A(H5N6) on January 24, 2021. The first case was a three-year-old female from Guizhou Province who had exposure to poultry prior to illness onset on November 21, 2020. She was hospitalized with severe illness on November 28, 2020 and died on December 22, 2020. The second case is a one-year-old female from Anhui Province. She also reported exposure to poultry before illness onset on December 22, 2020. However, the second case presented with mild illness. These two cases mark the second and third human infections with avian influenza A(H5N6) reported to the WHO in 2021. Globally, 29 cases of H5N6 have been reported since 2014.



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AVIAN INFLUENZA A(H9N2)

China reported three separate H9N2 cases to the WHO in February 2021. The first case, a five-year-old female from Anhui Province, had a reported onset date of January 17, 2021 for her mild symptoms. The second case, a one-year-old female from Sichuan Province, had reported exposure to backyard poultry before developing symptoms on November 30, 2020. The third case, a two-year-old female from Jiangxi Province, also reported mild illness with an onset date of January 18, 2021. All three cases have since recovered. Globally, 71 human cases of H9N2 have been reported to the WHO since 1998, with five cases reported in the first two months of 2021.

SWINE INFLUENZA UPDATES

SWINE ORIGIN INFLUENZA A(H3N2)v

The most recent case of swine origin influenza A(H3N2)v was reported in January 2021 in the United States. A total of 437 cases, including one death, has been reported globally since 2011. One locally acquired case of H3N2v was reported in Ontario, Canada in December 2016.

SWINE ORIGIN INFLUENZA A(H1N2)v

The most recent case of swine origin influenza A(H1N2)v was reported in December 2020 in Brazil. A total of 28 cases, including one domestic case from Alberta, Canada in October 2020, has been reported globally since 2005.

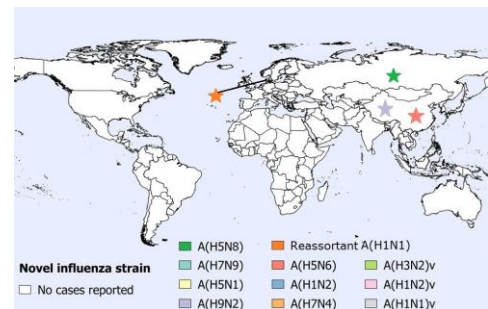
SWINE ORIGIN INFLUENZA A(H1N1)v

The most recent cases of swine origin influenza A(H1N1)v were reported in December 2020, two from the Netherlands and one from China. Twenty-nine cases of influenza A(H1N1)v have been reported worldwide, with no deaths reported to date.

As well, on February 4, 2021, the WHO was informed of a reassortant swine origin A(H1N1) influenza virus (A/Denmark/1/2021) detected in a citizen of Denmark through routine surveillance. The Statens Serum Institut (SSI) indicated that this case was isolated and there have been no signs of further spread. The case, a 73-year-old female, presented to the hospital with respiratory symptoms that began on January 19, 2021. She was admitted to the hospital from January 20-26, 2021, and discharged to go home afterwards. Although the case lives in the countryside within 400 meters from a pig farm, the case reported no contact with swine prior to illness onset and a source of infection is yet to be identified. The case has underlying conditions. Virus sequencing results indicate that all genes (except for NS) were derived from the influenza A virus subtype H1N1pdm09 virus, with the NS gene most closely resembling the avian-like influenza A(H1N1) and A(H1N2) swine viruses (H1 clade 1C.2). The viral sequence has been uploaded into GISAID and other analyses are reportedly underway. Including this new reassortant case, thirty cases of influenza A(H1N1)v have been reported worldwide, with no deaths reported to date.

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 February 2021 (n=13).

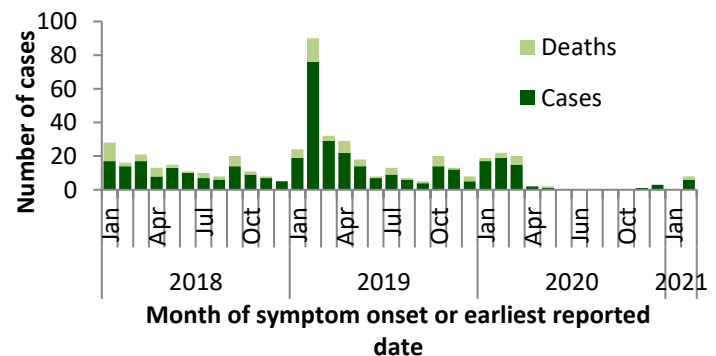


Note: Map was prepared by the Centre for Immunization and Respiratory Infectious Diseases (CIRID) using data from the latest WHO Monthly Influenza at the Human-Animal Interface Risk Assessment. This map reflects data available through these risk assessments as of February 28, 2021.

MIDDLE EAST RESPIRATORY SYNDROME CORONAVIRUS (MERS-COV) UPDATE

Six new MERS-CoV cases, including three deaths, were reported in 2021, five from Saudi Arabia and one from the United Arab Emirates (UAE) (Figure 2). All of the cases were male. Out of the Saudi Arabian cases, 3/5 (60%) reported camel contact prior to illness onset and the median age was 63 (range: 46 – 84 years). Three of these cases (60%) were fatalities. Cases were reported from the Makkah, Jeddah, Riyadh, and Alahsa regions. The UAE reported one case on February 2, 2021. The case is a 39-year-old male camel farm owner who developed symptoms on January 18, 2021. After multiple visits to a private hospital and a decline in his condition, he was admitted to a private hospital on January 26, 2021 and transferred to a government hospital on January 28, 2021, after which he tested positive for MERS-CoV. At the time of report, he was in stable condition. A total of 2,563 laboratory-confirmed cases of MERS-CoV, including 875 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 February 28, 2021 (n=408).



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 February 28, 2021.