



# 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 ten (10) times through 2020 to 2022, continually assessing that COVID-19 constitutes a PHEIC.

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)

Three (3) new cases of avian influenza A(H9N2) were reported in March 2022, two (2) from China and one (1) from Cambodia. The cases range in age from 1 year old to 5 years old. All (3/3; 100%) of the reported cases were female. The two (2) cases from China were reported in separate provinces: Shanxi and Anhui. One (1) case was hospitalized while the other two (2) cases developed mild illness. All cases had recovered at the time of last report. All (3/3; 100%) of the cases had a history of poultry exposure prior to illness onset. Including these three (3) cases, 13 human cases of avian influenza A(H9N2) were reported worldwide in 2022.

### UPDATE ON HUMAN EMERGING RESPIRATORY PATHOGEN PUBLIC HEALTH EVENTS (AS OF MARCH 31, 2022)<sup>1</sup>

#### NOVEL INFLUENZA<sup>1</sup> [N CUMULATIVE CASES<sup>2</sup> (DEATHS), CFR%<sup>3</sup>]

|                             |                    |
|-----------------------------|--------------------|
| A(H7N9)                     | [1,568 (615), 39%] |
| A(H5N1)                     | [882 (462), 52%]   |
| A(H9N2)                     | [99 (2), 2%]       |
| A(H5N6)                     | [75 (32), 43%]     |
| A(H5N8)                     | [7 (0), 0%]        |
| A(H7N4)                     | [1 (0), 0%]        |
| A(H1N2) <sup>4</sup>        | [2 (0), 0%]        |
| A(H3N2)v                    | [441 (1), <1%]     |
| A(H1N2)v                    | [40 (0), 0%]       |
| A(H1N1)v                    | [38 (0), 0%]       |
| A(H1N1)v <sup>5</sup>       | [1 (0), 0%]        |
| A(H10N3)                    | [1 (0), 0%]        |
| Eurasian avian-like A(H1N1) | [10 (0), 0%]       |

#### MERS-CoV<sup>1</sup>

|                   |                    |
|-------------------|--------------------|
| Global case count | [2,577 (880), 34%] |
| Saudi Arabia      | [2,178 (802), 37%] |

<sup>1</sup>Date of 1<sup>st</sup> 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(H9N2)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.

<sup>2</sup>Cumulative 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).

<sup>3</sup>Case Fatality Rate (CFR): the proportion of cases that resulted in death. For events with active cases, may be updated retrospectively as final disposition is known.

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

<sup>5</sup>A(H1N1)v: virus is a novel influenza A(H1N1) virus with pending neuraminidase results.

<sup>6</sup>Reassortant novel influenza: refers to A/Denmark/1/2021 A(H1N1) of the pdm09 lineage.

Since the emergence of this virus in the human population in 1998, 99 cases have been reported worldwide, with a case fatality rate (\*CFR) of 2%. No cases have been reported in Canada.

\*CFR: case fatality rate. Note that this rate is dependent on accurately reported deaths. For events with active cases, this value may be updated retrospectively as final disposition of the cases is known.



Public Health  
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Canada

## AVIAN INFLUENZA A(H5N6)

Three (3) human cases of avian influenza A(H5N6) were reported in March 2022, all from China. They all (3/3; 100%) reported contact with poultry prior to illness onset. The cases range in age from 12 years old to 79 years old and two (2/3; 67%) of the reported cases were female. Two (2) of the cases died as a result of their infection and one (1) case was in critical condition at the time of last report. These cases were detected in Jiangxi Province and Guangxi Zhuang Autonomous Region. None of the cases were known to be connected to each other or to previously reported cases.

A total of 75 laboratory-confirmed human cases of avian influenza A(H5N6), including at least 32 deaths (CFR: 43%) have been reported globally since 2014. Since January 2021, 49 cases of avian influenza A(H5N6) have been reported globally (Figure 2); 48 A(H5N6) cases were reported from China and one (1) case was reported from Lao PDR (Figure 3). So far, 17 A(H5N6) cases have been reported worldwide in 2022. No cases have been reported in Canadian residents.

## AVIAN INFLUENZA A(H5N1)

The most recent case of avian influenza A(H5N1) was reported in January 2022 from the United Kingdom.

There have been 882 human cases of A(H5N1) reported globally since 1997, with a CFR of 52%. One (1) A(H5N1) case has been reported worldwide in 2022. In 2014, Canada (Alberta) reported one single fatal case of A(H5N1) in a resident returning from travel in China.

## SWINE INFLUENZA UPDATES

### SWINE ORIGIN INFLUENZA A(H1N2)v

The most recent case of swine origin influenza A(H1N2)v was reported in February 2022 from the US.

A total of 40 A(H1N2)v cases have been reported globally since 2005, with a 0% case fatality rate. One (1) A(H1N2)v case has been reported worldwide in 2022. Three (3) A(H1N2)v detections have been reported in Canadian residents since reporting began in 2005, and the latest case in Canada was reported in November 2021 from Manitoba.

## SWINE ORIGIN INFLUENZA A(H3N2)v

The most recent case of swine origin influenza A(H3N2)v was reported in October 2021 from the US.

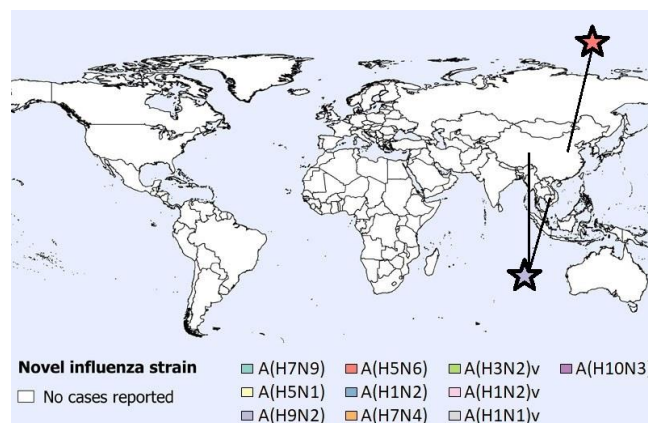
Globally, 441 A(H3N2)v cases have been reported since 2005, with <1% case fatality rate. No A(H3N2)v cases have been reported worldwide in 2022. Two (2) A(H3N2)v detections have been reported in Canadian residents since reporting began in 2005, with the latest case reported in June 2021.

## SWINE ORIGIN INFLUENZA A(H1N1)v

The most recent case of swine origin influenza A(H1N1)v was reported in January 2022 from Denmark.

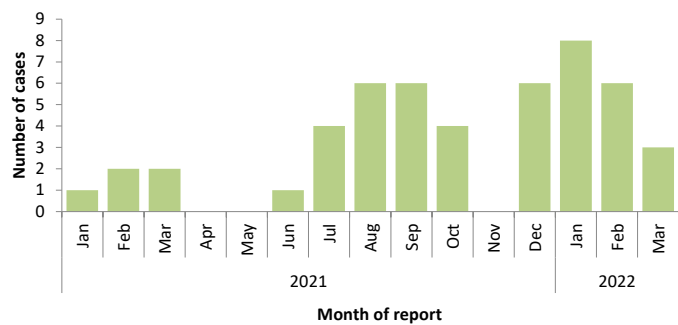
Globally, 38 human cases of A(H1N1)v have been reported since 2005, with no associated fatalities. One (1) A(H1N1)v case has been reported worldwide in 2022. Two (2) A(H1N1)v detections have been reported in Canadian residents since reporting began in 2005, with the latest case reported in April 2021.

**Figure 1.** Spatial distribution of human cases of avian and swine influenza reported globally in March 2022 (n=6).



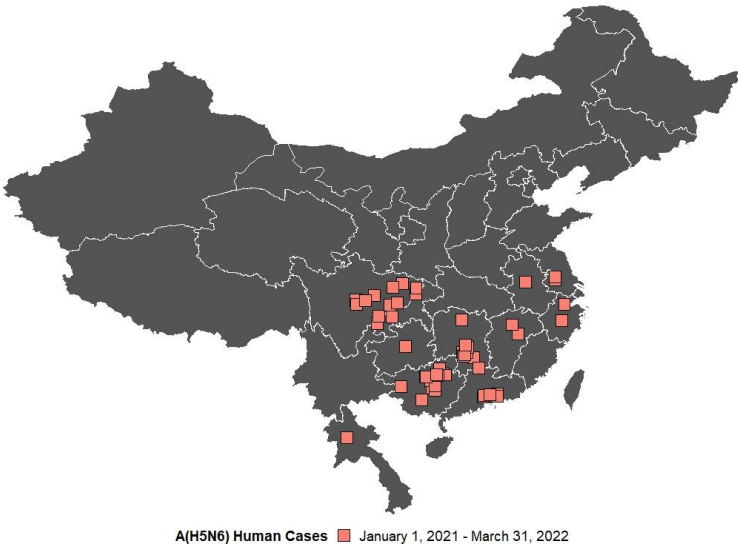
**Note:** Map was prepared by the Centre for Immunization and Respiratory Infectious Diseases (CIRID) using data from the latest WHO Event Information Site (EIS) postings and Weekly US Influenza Surveillance Reports (FluView). This map reflects data available through these publications as of March 31, 2022.

**Figure 2.** Temporal distribution of human cases of A(H5N6) influenza reported globally, by month, January 1, 2021 to March 31, 2022 (n=49).



**Note:** Graph was prepared by the Centre for Immunization and Respiratory Infectious Diseases (CIRID) using data from the WHO EIS postings and the Hong Kong Centre for Health Protection (CHP) press releases. This graph reflects data available as of March 31, 2022.

**Figure 3.** Spatial distribution of human cases of A(H5N6) influenza reported in China and Lao PDR from January 1, 2021, to March 31, 2022 (n=49).



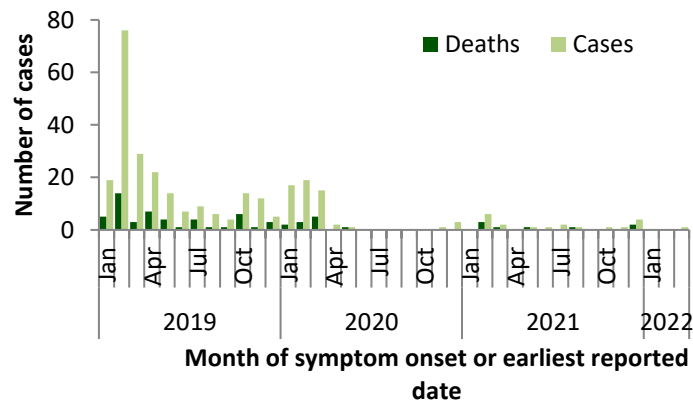
**Note:** Map was prepared by the Centre for Immunization and Respiratory Infectious Diseases (CIRID) using data from the WHO EIS postings and the Hong Kong Centre for Health Protection (CHP) press releases. This map reflects data available through these publications as of March 31, 2022.

## MIDDLE EAST RESPIRATORY SYNDROME CORONAVIRUS (MERS-COV) UPDATE

In March 2022, one (1) new MERS-CoV case was reported from Qatar. The case was a 50 year old male who was exposed to camels prior to illness onset. He was admitted to the hospital for treatment. No outcome information is available. None of the case’s contacts developed symptoms.

A total of 2,577 laboratory-confirmed cases of MERS-CoV, including 880 deaths, have been reported globally since 2012 by the WHO (CFR: 34%). One (1) MERS-CoV case has been reported worldwide in 2022. No cases have been reported in Canada.

**Figure 4.** Temporal distribution of human cases of MERS-CoV reported to the WHO, globally, by month and year, January 1, 2019 to March 31, 2022 (n=295).



**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 March 31, 2022.