



HUMAN EMERGING RESPIRATORY PATHOGENS BULLETIN

MONTHLY SITUATIONAL ANALYSIS OF EMERGING RESPIRATORY DISEASES AFFECTING HUMANS

Issue No 39 March 2020

IN THIS BULLETIN

1. COVID-2019 update
2. Novel influenza updates
3. MERS-CoV update

COVID-2019 UPDATE

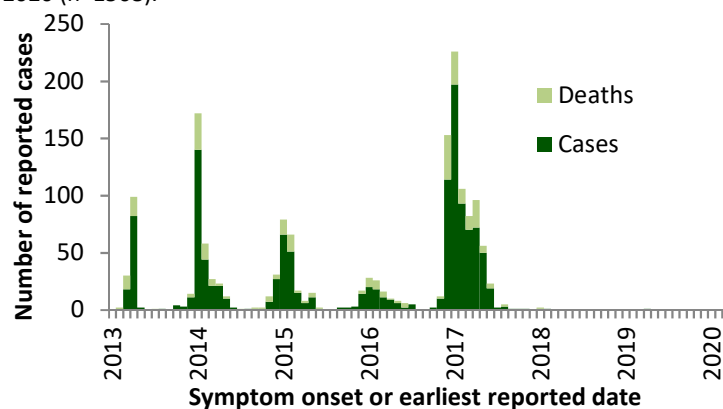
On December 31, 2019, cases of a pneumonia of unknown etiology were reported in Wuhan, China which have since been determined to be due to a novel coronavirus (COVID-2019). On January 30, 2020, the World Health Organization (WHO) declared the outbreak a Public Health Emergency of International Concern (PHEIC).

As of March 31, 2020, 7,708 cases of COVID-2019 have been reported in Canada. Globally, 790,163 cases of COVID-19 have been reported in 199 countries/jurisdictions. The highest number of cases were reported from the United States, followed by Italy, Spain, China, and Germany.

The Public Health Agency of Canada is monitoring the situation closely. For more information, please visit: <https://www.canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection.html>

AVIAN INFLUENZA UPDATES

Figure 1. Temporal distribution of human infection with avian influenza A(H7N9), globally, by month and year, January 1, 2013 to March 31, 2020 (n=1568).



Note: Graph 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 graph reflects data available through these risk assessments as of March 31, 2020.

UPDATE ON HUMAN EMERGING RESPIRATORY PATHOGEN PUBLIC HEALTH EVENTS (AS OF MARCH 31, 2020)

NOVEL INFLUENZA¹ [N CUMULATIVE CASES² (DEATHS), CFR%³]

| | |
|----------|-------------------|
| A(H7N9) | [1568 (615), 39%] |
| A(H5N1) | [879 (461), 52%] |
| A(H9N2) | [56 (1), 2%] |
| A(H5N6) | [24 (7), 29%] |
| A(H7N4) | [1 (0), 0%] |
| A(H1N2) | [2 (0), 0%] |
| A(H3N2)v | [435 (1), <1%] |
| A(H1N2)v | [26 (0), 0%] |
| A(H1N1)v | [23 (0), 0%] |

MERS-CoV¹

| | |
|-------------------|-------------------|
| Global case count | [2550 (871), 34%] |
| Saudi Arabia | [2154 (793), 37%] |

¹**Date 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(H7N4): February 2018. A(H3N2)v with M gene from pH1N1: 2011. A(H1N2)v: 2005. A(H1N1)v: 2005.

²**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).

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

AVIAN INFLUENZA A(H7N9)

No new H7N9 cases were reported to the WHO in March 2020. The last case was globally reported in April 2019. Two travel-related cases were reported in Canada in January 2015. A total of 1568 human cases of avian influenza A(H7N9), including at least 615 deaths, have been reported globally since 2013 (Figure 1).

AVIAN INFLUENZA A(H9N2)

The WHO has retrospectively reported Senegal's first human infection of H9N2. The case was a child who was detected through routine surveillance in February 2019. The most likely source of exposure was backyard poultry and has since recovered. The most recent case of H9N2 in Africa, was reported in 2016 and globally, 56 cases of H9N2, including this case, has been reported since 1998.

AVIAN INFLUENZA A(H5N1)

No new H5N1 cases were reported to WHO in March 2020. The most recent case was reported in March 25, 2019 in Nepal. A total of 879 cases including 461 deaths have been reported globally since 1997. One fatal travel-related case of H5N1 was reported in Canada in January 2014.

AVIAN INFLUENZA A(H5N6)

No new cases of H5N6 were reported to WHO in March 2020. The most recent case of H5N6 was reported in China in August 2019. There have been a total of 24 cases, including seven deaths, reported globally since 2014, all in China.

AVIAN INFLUENZA A(H7N4)

No new cases of H7N4 were reported to WHO in March 2020. On February 14, 2018, the WHO was notified of the first known human case of H7N4. The case was associated with poultry exposure. No cases have been reported since.

SWINE INFLUENZA UPDATES

SWINE ORIGIN INFLUENZA A(H3N2)v

The most recent case of swine origin influenza H3N2v was reported in June 2018 in the United States. The case reported exposure to swine at an agricultural fair. A total of 435 cases, including one death, have been reported globally since 2011. One locally acquired case of H3N2v was reported in Canada in December 2016.

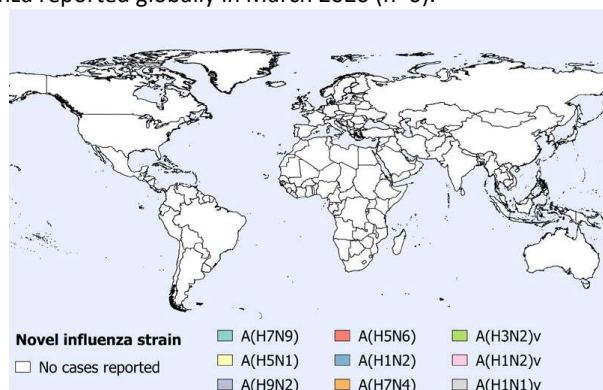
SWINE ORIGIN INFLUENZA A(H1N2)v

The most recent case of swine origin influenza H1N2v was reported in August 2018 in the United States. The case reported exposure to swine at an agricultural fair. A total of 26 confirmed cases of H1N2v have been reported in the United States since 2005. Most of the reported cases resulted in mild illness.

SWINE ORIGIN INFLUENZA A(H1N1)v

The most recent case of swine origin influenza H1N1v was reported in May 2019 in the United States. A total of 23 cases have been reported globally since 2005. To date, the reported H1N1v infections have been associated with mild illness.

Figure 2. Spatial distribution of human cases of avian and swine influenza reported globally in March 2020 (n=0).

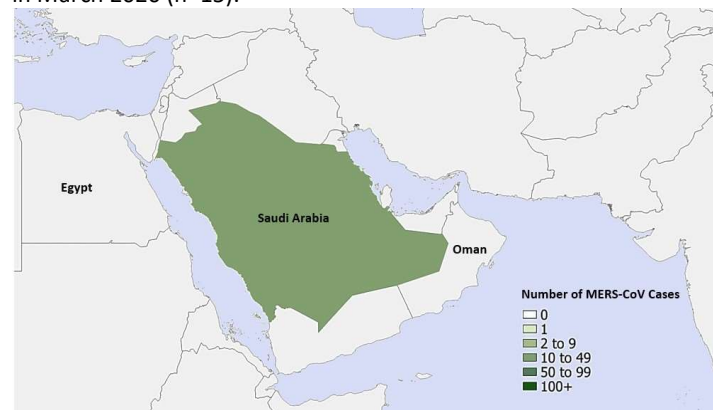


Note: Map was prepared by the Centre for Immunization and Respiratory Infectious Diseases (CIRID) using data from the latest WHO Monthly Influenza at the Human-Animal Interface Risk Assessment. This map reflects data available through these risk assessments as of March 31, 2020.

MIDDLE EAST RESPIRATORY SYNDROME CORONAVIRUS (MERS-COV) UPDATE

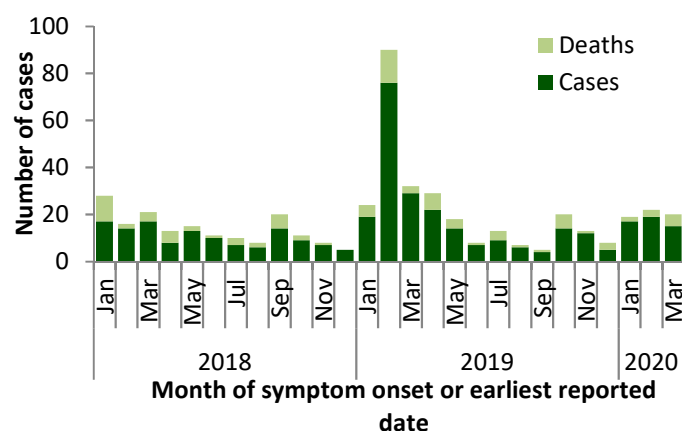
In March 2020, 15 cases of MERS-CoV were reported. Fifteen cases, including five deaths, were reported across four regions of Saudi Arabia (Figure 3, Figure 4). Most of the cases were male (n=13, 87%), and the median age was 55 years (range: 35 to 80 years). All cases (n=15, 100%) had primary exposure, meaning it is likely that they acquired the infection from a dromedary camel. No cases were healthcare workers. A total of 2550 laboratory-confirmed cases of MERS-CoV, including 871 deaths, have been reported globally since 2012 by the WHO. No cases have been reported in Canada.

Figure 3. Spatial distribution of human cases of MERS-CoV reported in March 2020 (n=15).



Note: Map was prepared by the Centre for Immunization and Respiratory Infectious Diseases (CIRID) using data from the latest WHO Disease Outbreak News and Saudi Arabia's Ministry of Health. This map reflects data available through these risk assessments as of March 31, 2020.

Figure 4. Temporal distribution of human cases of MERS-CoV reported to the WHO, globally, by month and year, January 1, 2018 to March 31, 2020 (n=395).



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, 2020.