



HUMAN EMERGING RESPIRATORY PATHOGENS BULLETIN

MONTHLY SITUATIONAL ANALYSIS OF EMERGING RESPIRATORY DISEASES AFFECTING HUMANS

Issue No 36 December 2019

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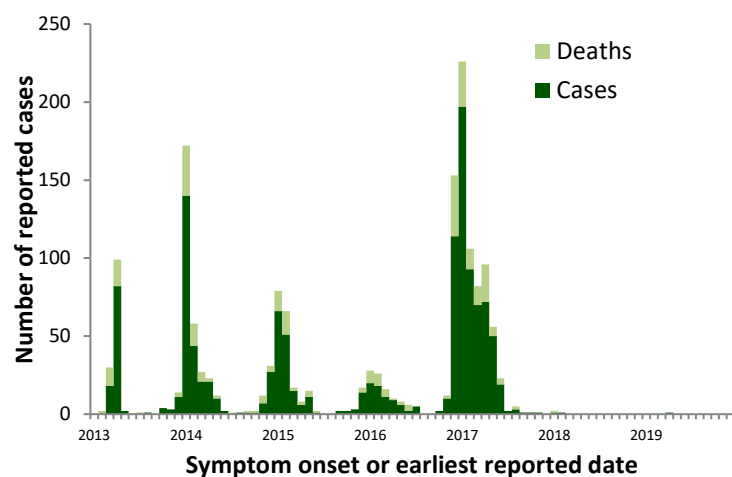
1. Novel Influenza Updates
2. MERS-CoV Updates

AVIAN INFLUENZA UPDATES

AVIAN INFLUENZA A(H7N9)

No new H7N9 cases were reported to the WHO in December 2019. The last case was reported in April 2019. A total of 1568 human cases of avian influenza A(H7N9), including at least 615 deaths, have been reported globally since 2013, with one case reported in wave 7 (November 1, 2018 to September 30, 2019) (Figure 1). Two travel-related cases were reported in Canada in January 2015.

Figure 1. Temporal distribution of human infection with avian influenza A(H7N9), globally, by month and year, January 1, 2013 to December 31, 2019 (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 December 31, 2019.

UPDATE ON HUMAN EMERGING RESPIRATORY PATHOGEN PUBLIC HEALTH EVENTS (AS OF DECEMBER 31, 2019)

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

A(H7N9)	[1568 (615), 39%]
A(H5N1)	[879 (461), 52%]
A(H9N2)	[54 (1), <1%]
A(H5N6)	[24 (7), 29%]
A(H7N4)	[1 (0), 0%]
A(H1N2) ⁴	[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	[2501 (858), 34%]
Saudi Arabia	[2105 (779), 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.

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

AVIAN INFLUENZA A(H5N1)

No new H5N1 cases were reported to the WHO in December 2019. The most recent case of H5N1 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 the WHO in December 2019. The most recent case of H5N6 was reported in China in August 2019. There have been a total of 24 cases, including 7 deaths, reported globally since 2014, all in China.



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AVIAN INFLUENZA A(H9N2)

No new cases of H9N2 were reported to the WHO in December 2019. The most recent case was reported in November 2019 in China. Globally, 54 cases, including 1 death, have been reported since 1998.

AVIAN INFLUENZA A(H7N4)

No new cases of H7N4 were reported to the WHO in December 2019. 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 1 death, have been reported globally since 2011. One locally-acquired case of H3N2v was reported in Canada in December 2016.

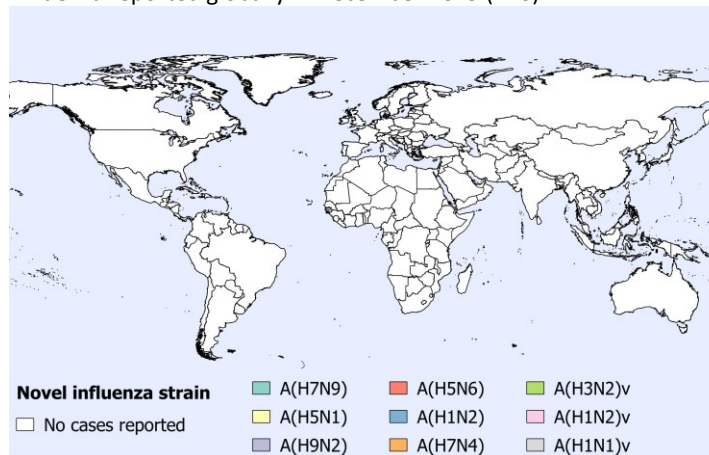
SWINE ORIGIN INFLUENZA A(H1N2)v

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. The case was over 65 years, had no history of swine exposure, and has fully recovered. 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 December 2019 (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 December 31, 2019.

MIDDLE EAST RESPIRATORY SYNDROME CORONAVIRUS (MERS-COV)

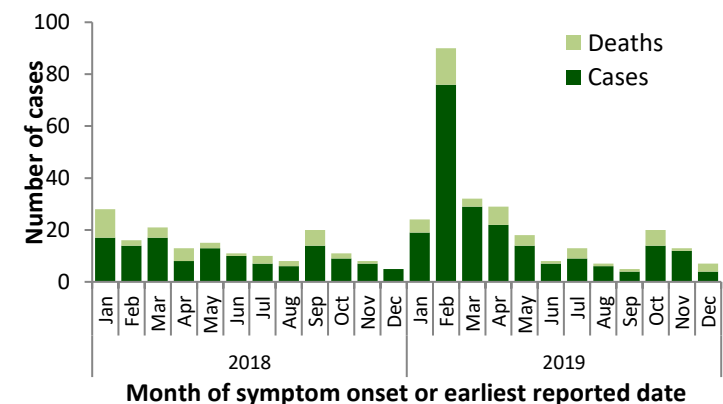
In December 2019, 4 cases of MERS-CoV, including two deaths were reported across three regions in Saudi Arabia (Figure 3, Figure 4). Most of the cases were male (n=3, 75%), and the median age was 68 years (range: 65 to 72 years). Two cases (50%) had known primary camel exposure and the other two cases (50%) had unknown exposure but were classified as primary, meaning it is unlikely that they acquired the infection from a human MERS case. On December 26, 2019, WHO was notified by Qatar's National IHR focal point of three lab confirmed cases identified in November 2019. All three cases are from Doha, Qatar and the source of infection for the first case is under investigation. Two of the cases were asymptomatic but linked to the first case. A total of 2501 laboratory-confirmed cases of MERS-CoV, including 858 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 December 2019 (n=4).



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 December 31, 2019.

Figure 4. Temporal distribution of human cases of MERS-CoV reported to the WHO, globally, by month and year, January 1, 2018 to December 31, 2019 (n=343).



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 December 31, 2019.