



HUMAN EMERGING RESPIRATORY PATHOGENS BULLETIN

MONTHLY SITUATIONAL ANALYSIS OF EMERGING RESPIRATORY DISEASES AFFECTING HUMANS

Issue No 28 April 2019

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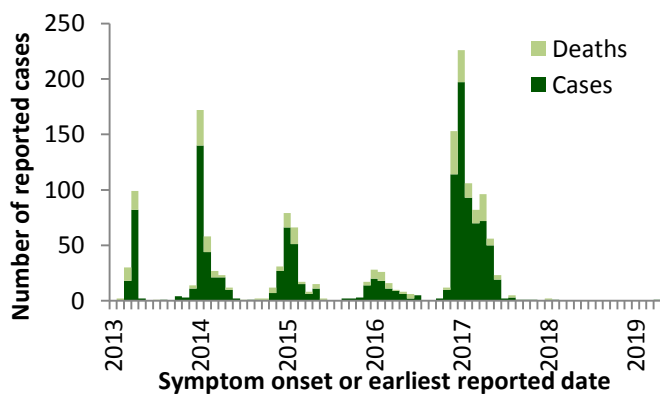
1. Novel Influenza Updates
2. MERS-CoV Updates

AVIAN INFLUENZA UPDATES

AVIAN INFLUENZA A(H7N9)

In April 2019, a new human infection with H7N9 was reported from China. The case is an 82 year old male from Gansu province, but with suspected exposure in Inner Mongolia, China. The case was hospitalized with severe pneumonia. Further information on the source of exposure and the case outcome is expected. This is the first case reported since February 2018. A total of 1568 human cases of avian influenza A(H7N9), including at least 615 deaths, have been reported globally since 2013, with 1564 cases reported in wave 5, three cases reported in wave 6 and one case reported in the current wave 7 (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 – April 30, 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 April 30, 2019.

UPDATE ON HUMAN EMERGING RESPIRATORY PATHOGEN PUBLIC HEALTH EVENTS (AS OF APRIL 30, 2019)

| NOVEL INFLUENZA ¹ | [N CUMULATIVE CASES ² (DEATHS), CFR% ³] |
|------------------------------|--|
| A(H7N9) | [1568 (615), 39%] |
| A(H5N1) | [878 (460), 52%] |
| A(H9N2) | [51 (1), 2%] |
| A(H5N6) | [23 (15), 65%] |
| A(H7N4) | [1 (0), 0%] |
| A(H1N2) ⁴ | [2 (0), 0%] |
| H3N2v | [435 (1), <1%] |
| H1N2v | [26 (0), 0%] |
| H1N1v | [22 (0), 0%] |
| MERS-CoV ¹ | |
| Global case count | [2428 (835), 34%] |
| Saudi Arabia | [2037 (758), 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 (retrospective case finding December 2017). H3N2v with M gene from pH1N1: 2011. H1N2v: 2005. H1N1v: 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(H9N2)

No new cases of H9N2 were reported to the WHO in April 2019. The most recent case was reported in March 2019 in China. Globally, 51 cases, including 1 death, have been reported since 1998.

AVIAN INFLUENZA A(H5N6)

The most recent case of H5N6 was reported in November 2018 in China. The source of exposure was unknown. There have been a total of 23 cases, including 15 deaths, reported globally since 2014, all in China.



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AVIAN INFLUENZA A(H7N4)

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.

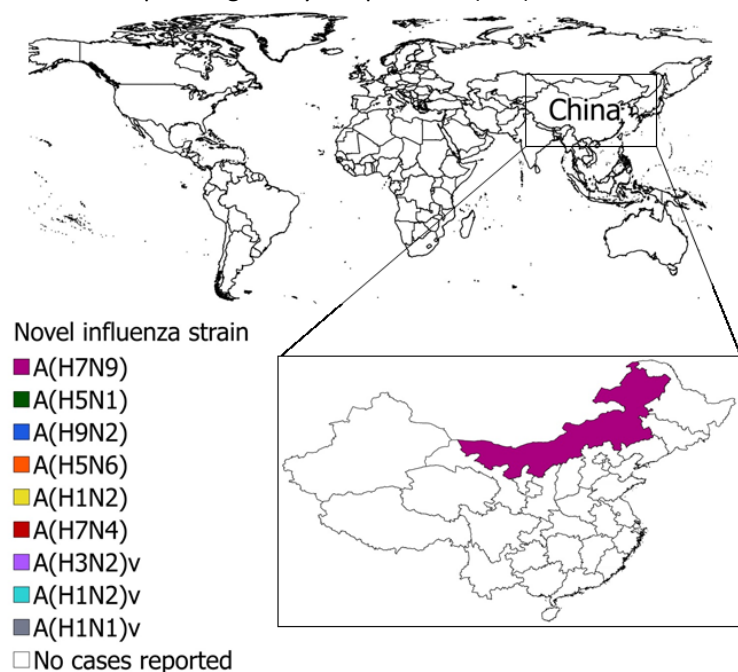
SWINE ORIGIN INFLUENZA A(H1N2)v

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 January 2018 in Switzerland. The case was associated with swine exposure. A total of 22 cases have been reported globally since 2005. H1N1v infection is associated with mild illness.

Figure 2. Spatial distribution of human cases of avian and swine influenza reported globally in April 2019 (n=1).



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, 2019.

MIDDLE EAST RESPIRATORY SYNDROME CORONAVIRUS (MERS-COV)

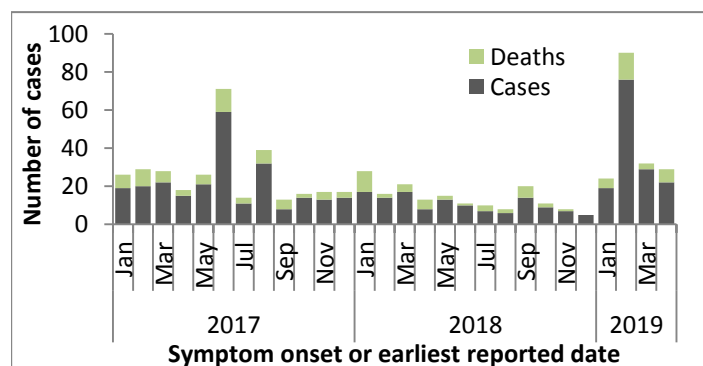
In April 2019, 22 new cases of MERS-CoV, including 7 deaths, were reported in Saudi Arabia (Figure 3): a decrease from the number of cases reported in earlier months this year. Approximately 91% (20/22) of these cases were male, the median age was 56 years (range: 28-83 years). Two cases had reported camel exposure, eight were classified as primary cases with unknown camel exposure and 12 were classified as secondary cases. A total of 2428 laboratory-confirmed cases of MERS-CoV, including 835 deaths, have been reported globally since 2012 by the WHO and the Kingdom of Saudi Arabia (Figure 4). No cases have been reported in Canada.

Figure 3. Spatial distribution of human cases of MERS-CoV reported in March 2019 (n=22).



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 April 30, 2019.

Figure 4. Temporal distribution of human cases of MERS-CoV reported to the WHO, globally, by month and year, January 1, 2017 – April 30, 2019 (n=521).



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, 2019.