



Influenza Surveillance Updates

Bureaus of Epidemiology and Laboratories

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Updates of Interest

- **International:** WHO is reporting 55 cases of MERS-CoV including 31 deaths.

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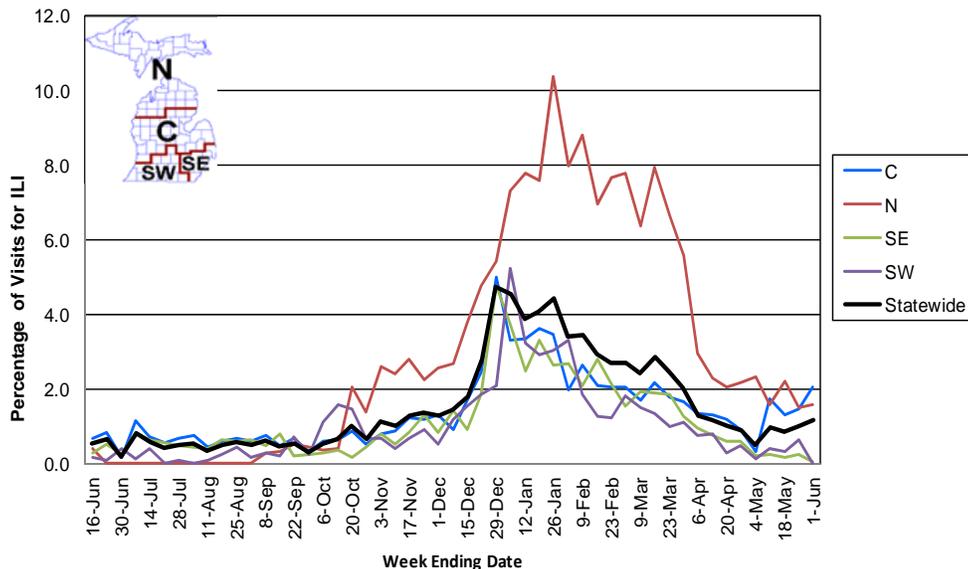
Influenza Surveillance Reports

Michigan Disease Surveillance System (as of June 13): MDSS influenza data for the week ending June 8, 2013 indicated that compared to levels from the previous week, individual reports remained the same, while aggregate reports decreased. Aggregate reports are lower than levels seen during the same time period last year, while individual reports are slightly lower.

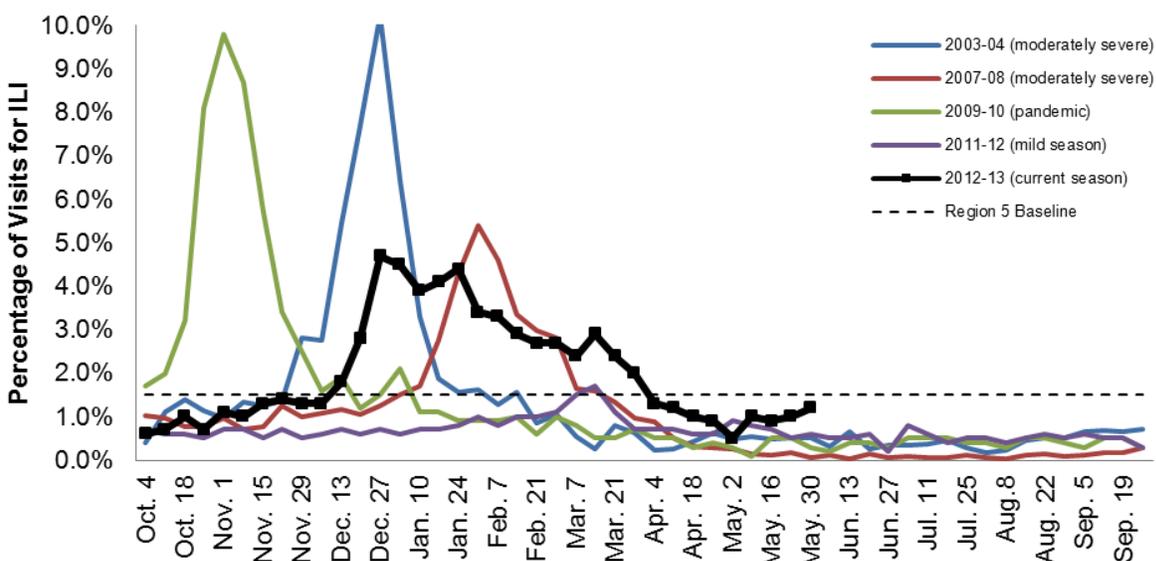
Emergency Department Surveillance (as of June 13): Emergency department visits due to constitutional complaints are slightly lower when compared to levels from the week prior and are lower when compared to levels reported during the same time period last year. Emergency department visits from respiratory complaints continue to remain steady compared to the previous week and are similar when compared to levels reported during the same time period last year. In the past week, there were 3 constitutional alerts in the SW(1) and C(2) Influenza Surveillance Regions and 3 respiratory alerts in the C(2) and SE (1) Regions.

Sentinel Provider Surveillance (as of June 6): During the week ending June 1, 2013, the proportion of visits due to influenza-like illness (ILI) increased to 1.2% overall; this is below the regional baseline (1.5%). A total of 66 patient visits due to ILI were reported out of 5,658 office visits. Data were provided by 22 sentinel sites from the following regions: Central (7), North (3), Southeast (10) and Southwest (2). ILI activity increased in two regions: C (2.1%) and N (1.6%). ILI activity decreased in two regions: SE (0.1%) and SW (0.0%). Please Note: these rates may change as additional reports are received.

Percentage of Visits for Influenza-like Illness (ILI)
Reported by Sentinel Providers, Statewide and Regions
2011-2012 and 2012-13 Flu Seasons



Percentage of Visits for Influenza-like Illness (ILI) Reported by the US Outpatient Influenza-like Illness Surveillance Network (ILINet): Michigan, Select Seasons



As part of pandemic influenza surveillance, CDC and MDCH highly encourage year-round participation from all sentinel providers. New practices are encouraged to join the sentinel surveillance program today! Contact Stefanie DeVita at 517-335-3385 or DeVitaS1@michigan.gov for more information.

Hospital Surveillance (as of May 18): The CDC Influenza Hospitalization Surveillance Project provides population-based rates of severe influenza illness through active surveillance and chart review of lab-confirmed cases, starting on October 1, 2012, in the Clinton, Eaton, Genesee, and Ingham counties. Reporting for the season has concluded. There were 258 influenza hospitalizations (168 adult, 90 pediatric) within the catchment area. The incidence rate for adults was 24.7 hospitalizations per 100,000 population and for children was 43.0 hospitalizations per 100,000.

The MDCH Influenza Sentinel Hospital Network monitors influenza hospitalizations reported voluntarily by hospitals statewide. Reporting for the 2012-13 influenza season has concluded. 437 hospitalizations (278SE, 21SW, 64C, 74N) were reported by 12 hospitals during the 2012-13 season.

Laboratory Surveillance (as of June 8): During June 2-8, no positive influenza results were reported by MDCH. For the 2012-13 season (starting Sept. 30, 2012), MDCH has identified 681 influenza results:

- Influenza A(H3): 500 (124SE, 169SW, 169C, 38N)
- Influenza A(H1N1)pdm09: 36 (20SE, 4SW, 9C, 3N)
- Influenza B: 153 (30SE, 31SW, 74C, 18N)
- Parainfluenza: 8 (3SW, 1C, 4N)
- RSV: 1 (1N)
- hMPV: 2 (2SW)

8 sentinel labs reported (SE (2), SW(2), C(4), N (0)) for the week ending June 1, 2013. No labs reported influenza A activity or influenza B activity. One lab (C) reported sporadic Parainfluenza activity. Two labs (SE, C) reported sporadic RSV activity. No labs reported hMPV activity. All sites but one (SE) were at low or very low testing volumes.

Michigan Influenza Antigenic Characterization (as of June 13): For the 2012-13 season, 113 Michigan influenza B specimens have been characterized at MDCH BOL. 94 specimens are B/Wisconsin/01/2010-like, matching the B component of the 2012-13 influenza vaccine. 19 influenza B specimens were characterized as B/Brisbane/60/2008-like, which is not included in the 2012-13 vaccine.

Michigan Influenza Antiviral Resistance Data (as of June 13): For the 2012-13 season, 32 influenza A/H3 specimens and 25 influenza A(H1N1)pdm09 specimens have been tested at the MDCH BOL for antiviral resistance. None of the influenza isolates tested have been resistant.

CDC has made recommendations regarding the use of antivirals for treatment and prophylaxis of influenza, which are available at <http://www.cdc.gov/flu/professionals/antivirals/index.htm>.

Influenza-associated Pediatric Mortality (as of June 13): 7 pediatric influenza-associated influenza mortalities (3 A/H3, 4B) have been reported for the 2012-13 season.

CDC requires reporting of flu-associated pediatric deaths (<18 yrs), including pediatric deaths due to an influenza-like illness with lab confirmation of influenza or any unexplained pediatric death with evidence of an infectious process. Contact MDCH immediately for proper specimen collection. The MDCH protocol is at www.michigan.gov/documents/mdch/ME_pediatric_influenza_guidance_v2_214270_7.pdf.

Influenza Congregate Settings Outbreaks (as of June 13): 112 respiratory outbreaks (22SE, 30SW, 41C, 19N) have been reported to MDCH during the 2012-13 season; testing results are listed below.

- Influenza A/H3: 16 (7SW, 9C)
- Influenza A: 55 (10SE, 13SW, 20C, 12N)
- Influenza B: 8 (1SE, 3SW, 2C, 2N)
- Influenza A and B: 2 (1SE, 1SW)
- Influenza A/H3 and B: 1 (1C)
- Influenza positive: 4 (1SE, 1SW, 2C)
- Influenza and RSV positive: 1 (1C)
- Influenza B and RSV positive: 1 (1SE)
- hMPV: 1 (1SW)
- Negative/no testing: 23 (8SE, 4SW, 6C, 5N)

National (CDC): Past weekly reports and updated data during the summer months are available online at: <http://www.cdc.gov/flu/weekly/fluactivitysurv.htm>.

International (WHO [edited], June 7): Influenza activity in the northern hemisphere temperate zones has decreased to low levels. The influenza activity in tropical areas have been varying- but relatively stable since the last update, Madagascar reported high influenza activity. Influenza activity in the southern hemisphere has started to increase in South America, and in South Africa but remained low in Oceania. For information on H7N9 in China please see link below. A summary review of the Northern Hemisphere was published in the World Epidemiological Report on 31 May 2013.

The entire WHO report is available online at www.who.int/influenza/surveillance_monitoring/updates/latest_update_GIP_surveillance/en/index.html

Weekly reporting to the CDC has ended for the 2012-2013 influenza season.

For additional flu vaccination and education information, the MDCH *FluBytes* newsletter is available at http://www.michigan.gov/mdch/0,1607,7-132-2940_2955_22779_40563-125027--,00.html.

Novel Influenza Activity and Other News

WHO Pandemic Phase: Post-pandemic – Influenza disease activity has returned to levels normally seen for seasonal influenza. It is expected that the pandemic virus will behave as a seasonal influenza A virus. It is important to maintain surveillance and update pandemic preparedness/response plans accordingly.

International, Human (WHO, June 7): The Ministry of Health in Saudi Arabia has notified WHO of an additional laboratory-confirmed case with Middle East respiratory syndrome coronavirus (MERS-CoV).

The patient is a 83-year-old man with underlying medical conditions, who became ill on 27 May 2013 and died on 31 May 2013. He is from Al-Ahsa, where an outbreak began in a health care facility since April 2013.

Globally, from September 2012 to date, WHO has been informed of a total of 55 laboratory-confirmed cases of infection with MERS-CoV, including 31 deaths.

WHO has received reports of laboratory-confirmed cases originating in the following countries in the Middle East to date: Jordan, Qatar, Saudi Arabia, and the United Arab Emirates (UAE). France, Germany, Italy, Tunisia and the United Kingdom also reported laboratory-confirmed cases; they were either transferred there for care of the disease or returned from the Middle East and subsequently became ill. In France, Italy, Tunisia and the United Kingdom, there has been limited local transmission among patients who had not been to the Middle East but had been in close contact with the laboratory-confirmed or probable cases.

Based on the current situation and available information, WHO encourages all Member States to continue their surveillance for severe acute respiratory infections (SARI) and to carefully review any unusual patterns.

Health care providers are advised to maintain vigilance. Recent travellers returning from the Middle East who develop SARI should be tested for MERS-CoV as advised in the current surveillance recommendations. Specimens from patients' lower respiratory tracts should be obtained for diagnosis where possible. Clinicians are reminded that MERS-CoV infection should be considered even with atypical signs and symptoms, such as diarrhoea, in patients who are immunocompromised.

Health care facilities are reminded of the importance of systematic implementation of infection prevention and control (IPC). Health care facilities that provide care for patients suspected or confirmed with MERS-CoV infection should take appropriate measures to decrease the risk of transmission of the virus to other patients, health care workers and visitors.

All Member States are reminded to promptly assess and notify WHO of any new case of infection with MERS-CoV, along with information about potential exposures that may have resulted in infection and a description of the clinical course. Investigation into the source of exposure should promptly be initiated to identify the mode of exposure, so that further transmission of the virus can be prevented.

WHO does not advise special screening at points of entry with regard to this event nor does it currently recommend the application of any travel or trade restrictions.

WHO continues to closely monitor the situation.

The update is available online at http://www.who.int/csr/don/2013_06_07/en/

June 5 WHO update: http://www.who.int/csr/don/2013_06_05/en/index.html

June 2 WHO update: http://www.who.int/csr/don/2013_06_02_ncov/en/index.html

June 1 WHO update: http://www.who.int/csr/don/2013_06_01_ncov/en/index.html

May 31 WHO update: http://www.who.int/csr/don/2013_05_31_ncov/en/index.html

International (WHO EMRO, June 10): Middle East respiratory syndrome coronavirus: Joint Kingdom of Saudi Arabia/WHO mission

Between 4 and 9 June 2013, a joint mission of the Kingdom of Saudi Arabia (KSA) and the World Health Organization (WHO) met in Riyadh to assess the situation due to a new coronavirus in the Kingdom. This virus has recently been named the Middle East respiratory syndrome coronavirus (MERS-CoV). It is a new, emerging virus that is distantly related to the virus that caused SARS.

The first documented cases of MERS occurred in Jordan in early 2012. Globally, to date there has been a total of 55 cases confirmed by laboratory testing. Of these, 40 have occurred in KSA, and the rest have been reported from other countries in the Middle East (Qatar and the United Arab Emirates), from Tunisia in North Africa, and from France, Germany, Italy and the United Kingdom of Great Britain and Northern Ireland in Europe.

The overall number of cases is limited, but the virus causes death in about 60% of patients. So far, about 75% of the cases in KSA have been in men and most have occurred in people with one or more major chronic conditions.

There appears to be three main epidemiological patterns.

- In the first pattern, sporadic cases occur in communities. At present, we do not know the source or how these people became infected.
- In the second pattern, clusters of infections occur in families. In most of these clusters, there appears to be person-to-person transmission, but it seems that this transmission is limited to people who are in close contact with a sick family member.
- The third pattern comprises clusters of infections in health care facilities. Such events have been reported in France, Jordan and KSA. In these clusters, the sequence seems to be that an

infected person is admitted to hospital where that person then transmits the virus to other people in the health care facility.

Two important points need to be stressed.

- First, there is no evidence of widespread person-to-person transmission of MERS-CoV. Where it has been suspected that the virus has been transmitted from person to person, it appears that there had been close contact between somebody who was sick and another person: a family member, a fellow patient or a health care worker.
- Secondly, many fewer infections with MERS-CoV have been reported in health care workers in KSA than might have been expected on the basis of the previous experience of SARS. During the SARS epidemic, health care workers were at high risk of infection. The MERS-CoV is different from the SARS virus. Although the reason why fewer health care workers have been infected with MERS-CoV is not clear, it could be that improvements in infection control that were made after the outbreak of SARS have made a significant difference. In this context, infection control measures in KSA appear to be effective.

Currently, the diagnosis of MERS CoV relies heavily on clinical awareness combined with confirmatory testing for the presence of MERS-CoV by the polymerase chain reaction. No bedside test exists. Treatment is primarily supportive and there are no convincing data that the use of potent antiviral agents, such as ribavirin and interferon, brings any benefit. The use of steroids in high doses should be avoided.

The joint mission reviewed the response in KSA, and concluded that the country has done an excellent job in investigating and controlling the outbreaks. Once the first cases were identified in 2012, several steps were taken, including the following:

- Measures, including infection control measures, were introduced to stop hospital outbreaks
- surveillance for MERS CoV cases was significantly increased
- awareness campaigns to alert and educate the public were started
- cases of MERS CoV were reported to WHO
- epidemiological investigations were initiated to identify the sources of infection, risk factors and routes of transmission
- international experts were invited to help.

At this point, the right prevention and control measures have been applied, and the KSA Government is to be congratulated for urgently taking crucial actions.

Some final points must be stressed.

- First, large gaps in our knowledge about this virus remain. Although extensive work has been done and is ongoing, it should be remembered that it often takes time for scientific investigations to produce results.
- Secondly, international concern about these infections is high, because it is possible for this virus to move around the world. There have been now several examples where the virus has moved from one country to another through travellers.
- Consequently, all countries in the world need to ensure that their health care workers are aware of the virus and the disease it can cause and that when unexplained cases of pneumonia are identified, MERS CoV should be considered. If cases of MERS CoV are found, they should be reported to WHO under the terms of the International Health Regulations (2005).
- So far, all cases of community acquired MERS CoV infection have been seen in the countries of the Middle East. All countries in this region should urgently intensify their surveillance efforts for infection by MERS-CoV.

The press release is available online at <http://www.emro.who.int/press-releases/2013/corona-virus-who-saudi-arabia-mission.html>

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Table. H5N1 Influenza in Humans – As of June 4, 2013. http://www.who.int/influenza/human_animal_interface/EN_GIP_20130604CumulativeNumberH5N1cases.pdf. Downloaded 06/07/2013. Cumulative lab-confirmed cases reported to WHO. Total cases include deaths.

| Country | 2003-2009 | | 2010 | | 2011 | | 2012 | | 2013 | | Total | |
|------------|-----------|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|
| | Cases | Deaths | Cases | Deaths | Cases | Deaths | Cases | Deaths | Cases | Deaths | Cases | Deaths |
| Azerbaijan | 8 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 5 |
| Bangladesh | 1 | 0 | 0 | 0 | 2 | 0 | 3 | 0 | 1 | 1 | 7 | 1 |
| Cambodia | 9 | 7 | 1 | 1 | 8 | 8 | 3 | 3 | 11 | 8 | 32 | 27 |
| China | 38 | 25 | 2 | 1 | 1 | 1 | 2 | 1 | 2 | 2 | 45 | 30 |
| Djibouti | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Egypt | 90 | 27 | 29 | 13 | 39 | 15 | 11 | 5 | 4 | 3 | 173 | 63 |
| Indonesia | 162 | 134 | 9 | 7 | 12 | 10 | 9 | 9 | 0 | 0 | 192 | 160 |
| Iraq | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 2 |
| Lao PDR | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 |
| Myanmar | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Nigeria | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| Pakistan | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 |
| Thailand | 25 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 17 |
| Turkey | 12 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 4 |
| Vietnam | 112 | 57 | 7 | 2 | 0 | 0 | 4 | 2 | 2 | 1 | 125 | 62 |
| Total | 468 | 282 | 48 | 24 | 62 | 34 | 32 | 20 | 20 | 15 | 630 | 375 |