



MI Flu Focus

Influenza Surveillance Updates
Bureaus of Epidemiology and Laboratories

Michigan Department
of Community Health



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Updates of Interest:

- **National:** MMWR article summarizes U.S. influenza activity for the 2013-14 season
- **International:** WHO announces new human cases of MERS-CoV
- **International:** WHO announces new human cases of avian influenza H7N9

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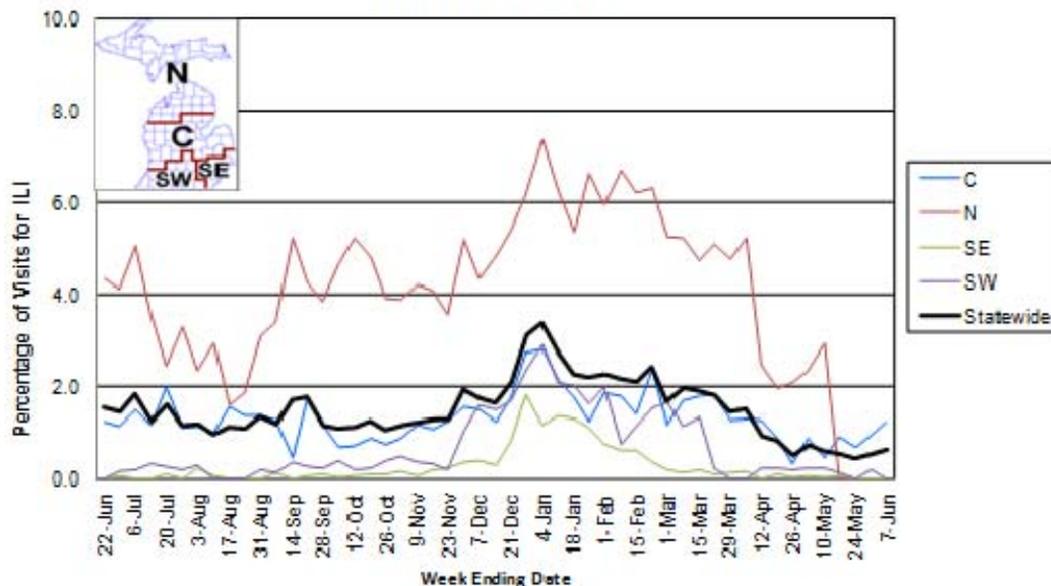
Influenza Surveillance Reports

Michigan Disease Surveillance System (as of June 12): MDSS influenza data for the week ending June 7, 2014 indicated that compared to levels from the previous week, individual reports remained steady and aggregate reports slightly decreased. Aggregate reports are slightly lower than levels seen during the same time period last year, while individual reports are similar.

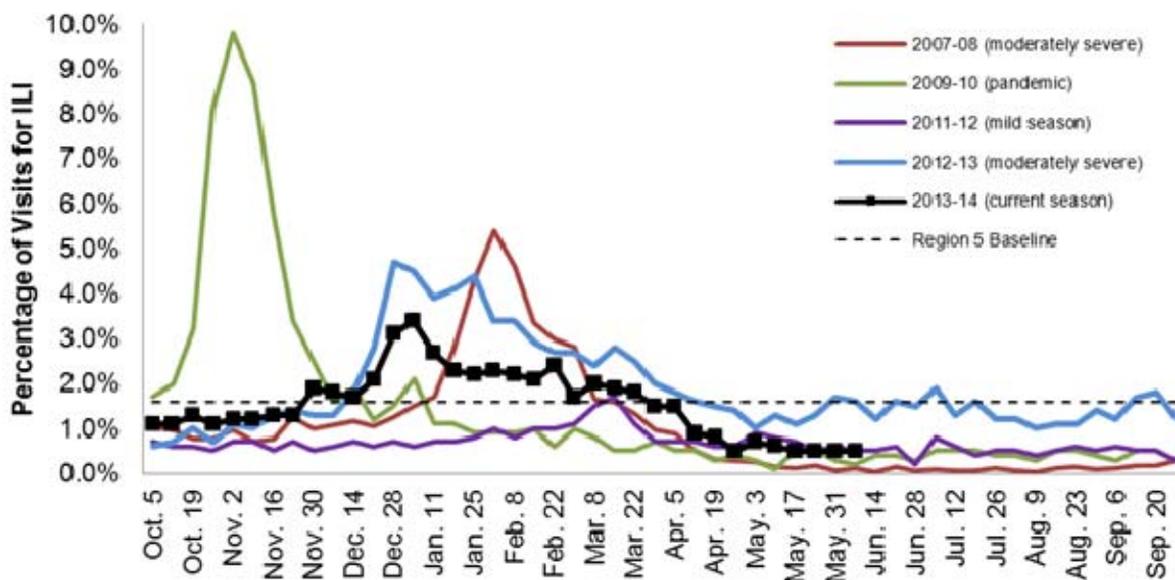
Emergency Department Surveillance (as of June 12): Emergency department visits due to constitutional complaints remained steady during the week ending June 7, 2014, while respiratory complaints decreased slightly. Emergency department visits from both constitutional and respiratory complaints are similar to levels during the same time period last year. In the past week, there were 6 constitutional alerts in the SW(1), C(4) and N(1) Influenza Surveillance Regions and 2 respiratory alerts in the C(1) and N(1) Regions.

Sentinel Provider Surveillance (as of June 12): During the week ending June 7, 2014, the proportion of visits due to influenza-like illness (ILI) increased to 0.6% overall; this is below the regional baseline (1.6%). A total of 39 patient visits due to ILI were reported out of 6,199 office visits. Data were provided by 19 sentinel sites from the following regions: Central (7), Southeast (10), and Southwest (2). There were no reports from the North region. ILI increased in one region: C (1.3%), remained the same in one region: SE (0.0%) and decreased in one region: 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
2013-14 Flu Season



**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 June 12): 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, 2013 and ending April 30, 2014, for Clinton, Eaton, Genesee, and Ingham counties. As of June 12th, there have been 232 influenza hospitalizations (69 pediatric, 163 adult) within the catchment area. Based on these counts, within the catchment area there are 33.0 pediatric influenza hospitalizations/100,000 population and 23.9 adult influenza hospitalizations/100,000.

The MDCH Influenza Sentinel Hospital Network monitors influenza hospitalizations reported voluntarily by hospitals statewide. Reporting for the 2013-14 season has concluded. 458 hospitalizations were reported during September 29, 2013-April 26, 2014.

Laboratory Surveillance (as of June 7): During May 25-June 7, 1 A/H3 (1C) and 4 influenza B (4C) results were reported by MDCH Bureau of Laboratories. For the 2013-14 season (starting Sept. 29, 2013), MDCH has identified 408 positive influenza results:

- Influenza 2009 A/H1N1pdm: 340 (77SE,132SW,94C,38N)
- Influenza A/H3: 30 (13SE,11SW,6C)
- Influenza A unsubtypeable: 1 (1SE)
- Influenza A and B (LAIV recovery): 1 (1SE)
- Influenza B: 41 (11SE,15SW,9C,6N)
- RSV: 2 (2SW)
- Adenovirus: 2 (1SE,1SW)
- Parainfluenza: 3 (1SE,2SW)
- Human metapneumovirus: 4 (4SW)

8 sentinel labs (SE,SW,C) reported for the week ending June 7, 2014. 2 labs (C) reported sporadic influenza A activity. 2 labs (C) reported sporadic RSV activity. 3 labs (SW,C) had sporadic parainfluenza activity. No labs reported influenza B, adenovirus or hMPV activity. Testing volumes are at low levels.

Michigan Influenza Antigenic Characterization (as of June 12): For the 2013-14 season, 3 Michigan influenza specimens (1SE,2C) have been characterized at CDC as A/California/07/2009-like/H1N1/pdm09, matching the influenza A/H1N1pdm09 strain in the 2013-14 Northern Hemisphere vaccine. 2 specimens (2C) have been characterized at CDC and MDCH as B/Brisbane/60/2008-like, which is a B/Victoria lineage virus; it is not in the 2013-14 Northern Hemisphere trivalent vaccine but is in the quadrivalent vaccine. 13 specimens (8SE,4SW,1C) have been characterized at CDC and MDCH as B/Massachusetts/02/2012-like, which is a B/Yamagata lineage virus that is included in the 2013-14 trivalent and quadrivalent vaccines.

Michigan Influenza Antiviral Resistance Data (as of June 12): For the 2013-14 season, 123 2009 A/H1N1pdm (33SE,37SW,41C,12N) and 15 A/H3 (6SE,7SW,2C) influenza specimens have been tested at the MDCH BOL for antiviral resistance. None of the influenza specimens 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 12): 3 pediatric influenza-associated influenza mortalities (1SE,2C) have been reported to MDCH for the 2013-14 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_pediatic_influenza_guidance_v2_214270_7.pdf.

Influenza Congregate Settings Outbreaks (as of June 12): One new respiratory outbreak at a long-term care facility in the SW Region was reported during the previous week; respiratory viral testing was negative. A previously reported outbreak from the C Region was positive for influenza B. 21 respiratory outbreaks (2SE,10SW,7C,2N) have been reported to MDCH during the 2013-14 season:

- Influenza 2009 A/H1N1pdm: 4 (1SE,2SW,1C)
- Influenza A/H3: 1 (1SW)
- Influenza A: 4 (3SW,1C)
- Influenza B: 3 (1SW,1C,1N)
- Influenza positive: 1 (1SW)
- Human metapneumovirus: 2 (1SE,1N)
- RSV: 1 (1SW)
- Negative/no testing: 6 (1SW,5C)

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

National (MMWR abstract, June 6): Epperson S, et al. Influenza Activity - United States, 2013–14 Season and Composition of the 2014–15 Influenza Vaccines. MMWR. June 6, 2014/63(22);483-490.

During the 2013–14 influenza season in the United States, influenza activity increased through November and December before peaking in late December. Influenza A (H1N1)pdm09 (pH1N1) viruses predominated overall, but influenza B viruses and, to a lesser extent, influenza A (H3N2) viruses also were reported in the United States. This influenza season was the first since the 2009 pH1N1 pandemic in which pH1N1 viruses predominated and was characterized overall by lower levels of outpatient illness and mortality than influenza A (H3N2)–predominant seasons, but higher rates of hospitalization among adults aged 50–64 years compared with recent years. This report summarizes influenza activity in the United States for the 2013–14 influenza season (September 29, 2013–May 17, 2014) and reports recommendations for the components of the 2014–15 Northern Hemisphere influenza vaccines.

The full article is available online at <http://www.cdc.gov/mmwr/pdf/wk/mm6322.pdf>.

International (WHO [edited], June 2): Globally the influenza activity was at inter-seasonal levels in most countries. In North America, influenza levels were at inter-seasonal levels with influenza B circulation still detected. In Europe, influenza activity remained at inter-seasonal levels in most countries. In eastern Asia, influenza activity approached interseasonal levels in most countries with influenza B virus predominating at low levels. In southern and south-eastern Asia, influenza activity continued to decline in most countries, except the Islamic Republic of Iran where a slight increase was observed. In northern Africa and western Asia, influenza activity remained low in most countries. In the southern hemisphere, influenza activity remained low, although in some of the countries in the temperate zone of South America increase in ILI activity with small increase in influenza detections was observed. Based on FluNet reporting (as of 2 June 2014, 12:25 UTC), during weeks 19 to 20 (4 May 2014 to 17 May 2014), National Influenza Centres and other national influenza laboratories from 86 countries, areas or territories reported data. The WHO GISRS laboratories tested more than 31706 specimens. 2920 were positive for influenza viruses, of which 1417 (48.5%) were typed as influenza A and 1503 (51.5%) as influenza B. Of the sub-typed influenza A viruses, 241 (29.8%) were influenza A(H1N1)pdm09 and 568 (70.2%) were influenza A(H3N2). Of the characterized B viruses, 32 (94.1%) belong to the B-Yamagata lineage and 2 (5.9%) to the B-Victoria lineage.

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

Weekly reporting of influenza activity to the CDC has ended for the 2013-2014 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.

International, MERS-CoV (WHO [edited], June 4): On 1 June 2014, the National IHR Focal Point for Jordan reported to WHO an additional case of Middle East respiratory syndrome coronavirus (MERS-CoV) in Amman, Jordan.

The case is 26-year-old male health-care worker. He presented with fever on 23 May 2014. His condition deteriorated as he developed pneumonia and gastrointestinal symptoms and he was admitted to the hospital on 30 May 2014. A specimen was collected and tested positive for MERS-CoV on 31 May 2014. He is currently in a stable condition. He has no known comorbidities, but does have a history of contact with a laboratory confirmed MERS-CoV health-care worker case reported to WHO on 11 May 2014. He has no history of travel and no history of contact with animals.

Tracing and screening of 6 family members and 54 health-care workers for MERS-CoV is currently ongoing.

Globally, 681 laboratory-confirmed cases of infection with MERS-CoV including 204 related deaths have officially been reported to WHO. This global total includes all of the cases reported in this update, plus 44 laboratory-confirmed cases officially reported to WHO by Saudi Arabia between 19 May and 2 June. WHO is working closely with Saudi Arabia for additional information on these cases and will provide further updates as soon as possible.

The full report is available online at http://www.who.int/csr/don/2014_06_04_mers/en/.

International, MERS-CoV (WHO [edited], June 11): On 26 May 2014, the National IHR Focal Point of the Islamic Republic of Iran reported to WHO the first 2 laboratory confirmed cases of infection with Middle East respiratory syndrome coronavirus (MERS-CoV). The 2 patients are sisters and residents of Kerman Province. The following details were provided to WHO:

- A 52-year-old woman who became ill on 11 May and was admitted to the hospital on the same day. The patient is currently in a critical condition. She is known to have an underlying medical condition. The patient did not have a history of travel. She however, had a history of close contact with a woman who had an Influenza Like Illness (ILI) and had travelled to Saudi Arabia to perform Umra. The patient had no history of contact with animals and no history of consumption of raw camel products in the 14 days prior to becoming ill.
- A 50-year-old woman who became ill on 11 May and was admitted to a hospital on 17 May. She is currently in a stable condition. The patient is known to have an underlying medical condition. She does not have a history of travel. She is reported to have had close contact with her sister, above mentioned 52-year-old patient. The patient had no history of contact with animals and no history of consumption of raw camel products in the 14 days prior to becoming ill.

All close contacts of the above mentioned cases, including family members, other patients in the hospital, and health-care workers are currently under investigation by the provincial health authorities and the Iranian Centre for Disease Control. Some control measures have been put in place at the hospital where the two cases are hospitalized. Relevant information and instructions have been disseminated to relatives, airport personnel, pilgrims returning from Umra and travelers.

Globally, 683 laboratory-confirmed cases of infection with MERS-CoV including 204 related deaths have officially been reported to WHO. This global total includes all of the cases reported in this update, plus 44 laboratory-confirmed cases officially reported to WHO by Saudi Arabia between 19 May and 2 June. WHO is working closely with Saudi Arabia for additional information on these cases and will provide further updates as soon as possible.

The full report is available online at http://www.who.int/csr/don/2014_06_11_mers/en/.

International, Human (WHO [edited], June 10): On 4 June 2014, the National Health and Family Planning Commission (NHFPC) of China notified WHO of 4 additional laboratory-confirmed cases of human infection with avian influenza A(H7N9) virus.

Details of the cases are as follows:

- A 61-year-old man from Yantai City, Shandong Province who became ill on 6 May, was admitted to a hospital on 10 May and subsequently died. The patient had exposure to live poultry. He is the father of the 33-year-old man described below.
- A 33-year-old man from Yantai City, Shandong Province who became ill on 16 May and was admitted to a hospital on the same day. He has mild symptoms of illness. The patient did not have exposure to live poultry. He is the son of 61-year-old man described above. He was living and caring for his father during his hospitalization.
- A 51-year-old man from Huaian City, Jiangsu Province, who became ill on 17 May and was admitted to a hospital on 25 May. He is currently in a severe condition. The patient had no exposure to live poultry.
- A 51-year-old woman from Changzhou City, Jiangsu Province, who became ill on 22 May and was admitted to a hospital on 27 May. She is currently in a critical condition. The patient had no exposure to live poultry.

The full report is available online at http://www.who.int/csr/don/2014_06_10_h7n9/en/.

International Poultry and Wild Bird Surveillance (OIE): Reports of avian influenza activity, including summary graphs of avian influenza H5N1 outbreaks in poultry, can be found at the following website: http://www.oie.int/download/AVIAN%20INFLUENZA/A_AI-Asia.htm.

For questions or to be added to the distribution list, please contact Susan Peters at peterss1@michigan.gov
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Table. H5N1 Influenza in Humans – As of January 24, 2014. http://www.who.int/influenza/human_animal_interface/EN_GIP_20130124_CumulativeNumberH5N1cases.pdf. Downloaded 02/05/2014. Cumulative lab-confirmed cases reported to WHO. Total cases include deaths.

Country	2003-2010		2011		2012		2013		2014		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	2	0	3	0	1	1	0	0	7	1
Cambodia	10	8	8	8	3	3	26	14	0	0	47	33
Canada	0	0	0	0	0	0	1	1	0	0	1	1
China	40	26	1	1	2	1	2	2	0	0	45	30
Djibouti	1	0	0	0	0	0	0	0	0	0	1	0
Egypt	119	40	39	15	11	5	4	3	0	0	173	63
Indonesia	171	141	12	10	9	9	3	3	0	0	195	163
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	119	59	0	0	4	2	2	1	1	1	126	63
Total	516	306	62	34	32	20	39	25	1	1	650	386