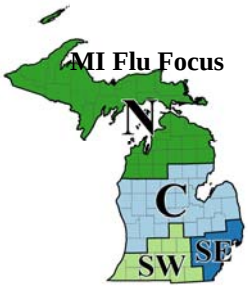

Influenza Surveillance Updates
Bureaus of Epidemiology and Laboratories

Michigan Department of Community Health
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Updates of Interest

- **International:** WHO is reporting 54 human cases of MERS-CoV including 30 deaths.

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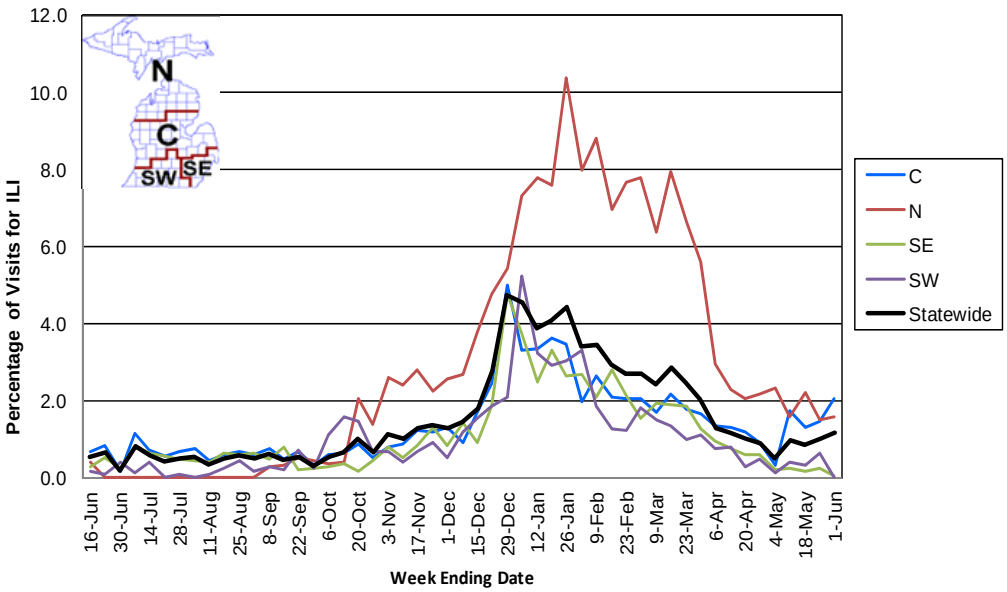
Influenza Surveillance Reports

Michigan Disease Surveillance System (as of June 6): MDSS influenza data for the week ending June 1, 2013 indicated that compared to levels from the previous week, individual reports decreased, while aggregate reports increased. Aggregate reports are similar to levels seen during the same time period last year, while individual reports are lower.

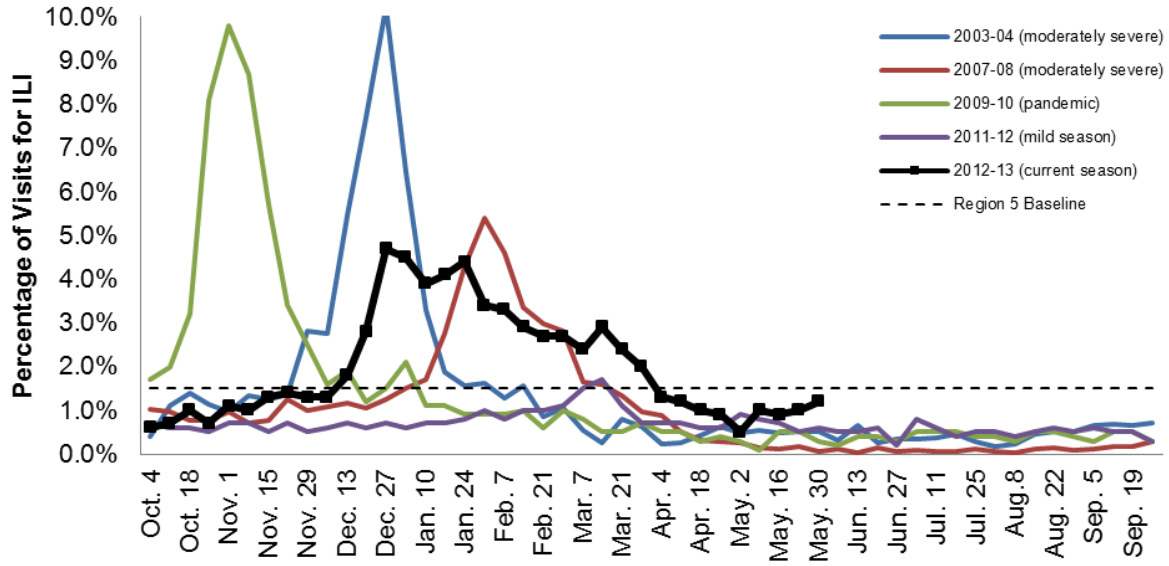
Emergency Department Surveillance (as of June 6): Compared to levels from the week prior, emergency department visits from both constitutional and respiratory complaints continue to remain steady. Levels of constitutional and respiratory complaints are similar when compared to levels reported during the same time period last year. In the past week, there were 7 constitutional alerts in the SE(1), SW(2), C(1), and N(3) Influenza Surveillance Regions and 4 respiratory alerts in the C(4) Region.

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 1): During May 26-June 1, one positive influenza result was 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 6): 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 6): 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 6): 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 6): 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], May 25): Influenza activity in the northern hemisphere temperate zones decreased to low levels with some continued transmission in some areas including Canada and Egypt. In the tropical areas, influenza activity varied but was similar to previous weeks. Madagascar reported to be in an epidemic since the beginning of April. Influenza activity in the southern hemisphere was low with a slight increase reported in South Africa.

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

International (WHO [edited], May 31): The 2012–2013 influenza season started earlier in North America than other parts of the northern hemisphere temperate zone; however, transmission across the zone was largely finished by the end of April. The most common virus associated with transmission in this season varied markedly from place to place and throughout the course of the season. Influenza A(H3N2) was the most common in North America for most of the season; A(H1N1)pdm09 in Europe, North Africa and the Middle East; and A(H3N2) mixed with A(H1N1)pdm09 or A(H3N2) alone in much of temperate Asia. Influenza type B was seen more commonly than either of the influenza A subtypes by the end of the season in North America and Europe but not in other parts of the temperate northern hemisphere. The late appearance of influenza type B was associated with a slight prolongation of the season in the areas where it appeared. The season was more severe than usual in North America, particularly for those aged over 65 years, but appeared similar to previous seasons in the rest of the temperate zone. Notably, towards the end of the season in the USA when influenza B became more common, there was a slight transient increase in the number of pediatric deaths.

The antigenic similarity of viruses tested this season to those contained in the trivalent seasonal vaccine suggest that the vaccine was generally a good match in the 2012–2013 season. While there were significant numbers of Victoria lineage viruses circulating, overall they made up a relative small number of the total influenza viruses detected globally. Reduced sensitivity to neuraminidase inhibitors was observed at only very low levels and does not appear to be increasing; however, as in previous years nearly all viruses tested were resistant to adamantanes.

The entire summary review of influenza activity in the northern hemisphere influenza season published in the World Epidemiological Report on 31 May 2013 is available online at
http://www.who.int/influenza/surveillance_monitoring/updates/en/

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, May 31): WHO released provisional recommendation on influenza A(H7N9) vaccine virus. The full report can be found here http://www.who.int/influenza/human_animal_interface/influenza_h7n9/ProvisionalRecommendation_H7N9_31May13.pdf

WHO released an overview of the emergence and characteristics of the avian influenza A(H7N9) virus. The entire report can be found here http://www.who.int/influenza/human_animal_interface/influenza_h7n9/WHO_H7N9_review_31May13.pdf

International, Human (WHO, June 5): 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 14-year-old girl with underlying medical conditions who became ill on 29 May 2013. She is reported from the Eastern region, but not from Al-Ahsa where an outbreak began in a health care facility since April 2013. The patient is in stable condition.

Globally, from September 2012 to date, WHO has been informed of a total of 54 laboratory-confirmed cases of infection with MERS-CoV, including 30 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 travelers 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_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

For questions or to be added to the distribution list, please contact Bethany Reimink at ReiminkB@michigan.gov

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MDCH Bureau of Laboratories – B. Robeson, MT; V. Vavricka, MS

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	2003-2006		2007		2008		2009		2010		2011		2012		2013		Total	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
Azerbaijan	8	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	5
Bangladesh	0	0	0	0	1	0	0	0	0	0	2	0	3	0	1	1	7	1
Cambodia	6	6	1	1	1	0	1	0	1	1	8	8	3	3	11	8	32	27
China	22	14	5	3	4	4	7	4	2	1	1	1	2	1	2	2	45	30
Djibouti	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Egypt	18	10	25	9	8	4	39	4	29	13	39	15	11	5	4	2	173	63
Indonesia	75	58	42	37	24	20	21	19	9	7	12	10	9	9	0	0	192	160
Iraq	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2
Lao PDR	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Myanmar	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Nigeria	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Pakistan	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	3	1
Thailand	25	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	17
Turkey	12	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	4
Vietnam	93	42	8	5	6	5	5	5	7	2	0	0	4	2	2	1	125	62
Total	263	158	88	59	44	33	73	32	48	24	62	34	32	20	18	14	630	375