



MI Flu Focus

Influenza Surveillance Updates

Bureaus of Epidemiology and Laboratories



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Influenza Surveillance Report for the Week Ending May 7, 2016

MI's Influenza Activity Level:
Local

Updates of Interest:

Swine-origin flu infection *reported* in Minnesota.

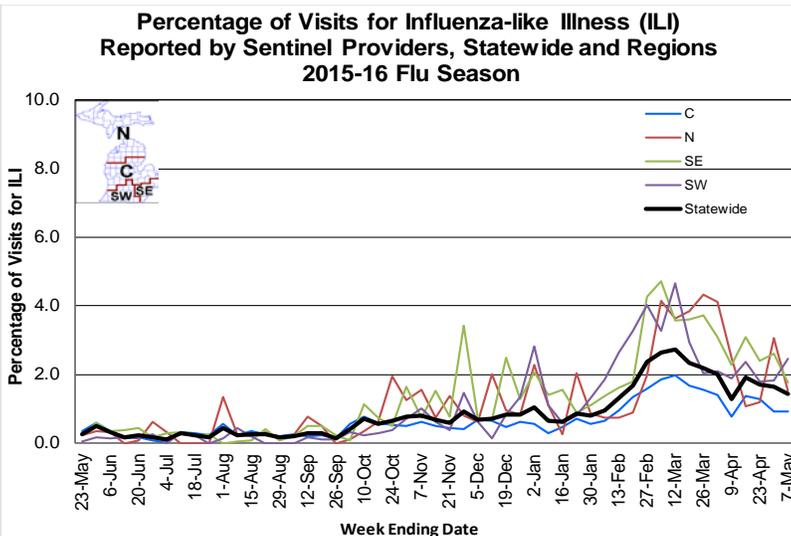
Michigan Disease Surveillance System

MDSS influenza data indicated that compared to levels from the previous week, aggregate reports had decreased, while individual reports were similar. Aggregate reports were lower than levels seen during the same time period last year, while individual reports were higher.

Emergency Department Surveillance

Compared to levels from the week prior, emergency department visits from constitutional and respiratory complaints were both similar. Levels of constitutional and respiratory complaints were lower than those recorded during the same time period last year.

- 2 constitutional alerts (1N, 1C)
- 2 respiratory alerts (2C)
- Last MIFF report: 7 constitutional alerts (5C, 2SW), 9 respiratory alerts (1N, 5C, 3SW)



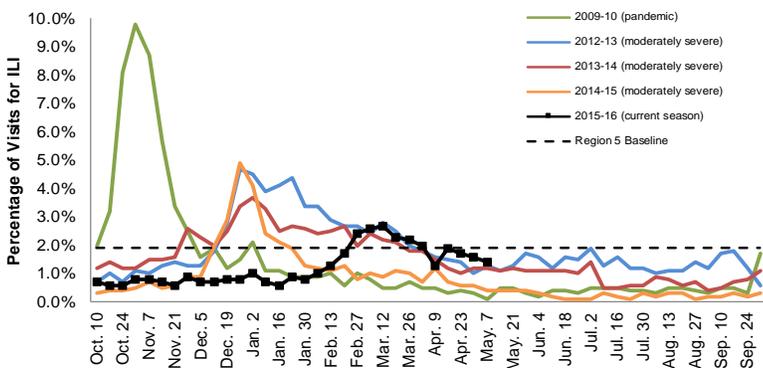
Sentinel Provider Surveillance

The proportion of visits due to influenza-like illness (ILI) decreased to 1.4% overall, which is below the regional baseline of 1.9%. A total of 155 patient visits due to ILI were reported out of 10,736 office visits. Please note: These rates may change as additional reports are received.

Number of Reports by Region (32 total):

- C (7)
- N (3)
- SE (15)
- SW (7)

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



Become a Sentinel Provider!

As part of pandemic influenza surveillance, CDC and MDHHS highly encourage year-round participation from all sentinel providers. New practices are encouraged to join the sentinel surveillance program today! Contact Stefanie Cole (ColeS4@michigan.gov) for more information.

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Hospital Surveillance

The CDC Influenza Hospitalization Surveillance Project provides population-based rates of hospitalization due to severe influenza illness through active surveillance and chart review of lab-confirmed cases from Oct. 1, 2015 until Apr. 30, 2016, for Clinton, Eaton, Genesee, and Ingham counties. During the surveillance period, there were 75 pediatric (39.3 per 100,000 population) and 217 adult (31.6 per 100,000 population) hospitalizations reported within the catchment area. Note: The catchment period for the IHSP has ended for the 2015-2016 influenza season.

The MDHHS Influenza Sentinel Hospital Network monitors influenza hospitalizations reported voluntarily by hospitals statewide, and 11 hospitals (C, N, SE, & SW) reported. Results for the 2015-16 flu season are listed in the table below. Additional hospitals are welcome to join; please contact Seth Eckel at eckels1@michigan.gov.

Age Group	New Flu Hospitalizations Reported	Total 2015-16 Flu Hospitalizations Reported to Date
0-4 years	2 (N)	40 (22N, 1C, 8SW, 9SE)
5-17 years	0	28 (13N, 1C, 4SW, 10SE)
18-49 years	0	162 (30N, 3C, 32SW, 97SE)
50-64 years	0	225 (30N, 9C, 40SW, 146SE)
65 years & older	1 (N)	260 (30N, 9C, 42SW, 179SE)
Total	3 (N)	715 (125N, 23C, 126SW, 441SE)

Laboratory Surveillance

MDHHS Bureau of Laboratories reported 12 new positive influenza results: One 2009 A/H1N1pdm, five A/H3 and six influenza B. A total of 368 positive influenza results have been reported for the 2015-16 season. Influenza results for the 2015-16 season are in the table below.

Respiratory Virus	# Positive Respiratory Virus Results by Region				Total	# Specimens Antigenically Characterized	# Tested for Antiviral Resistance
	C	N	SE	SW			# Resistant / Total # Tested
2009 A/H1N1pdm	62	19	72	109	262	21* (21 A/California/07/2009-like (H1N1)pdm09**)	2 / 96
Influenza A/H3	14	6	12	16	48	7* (6 A/Switzerland/9715293/2013-like [†])	0 / 20
Influenza B	8	6	17	22	53	43 (18 B/Yamagata lineage [2 B/Phuket/3073/2013-like ^{††}], 21 B/Victoria lineage)	
A / unsubtypeable				5	5		
LAIV recovery				1	1		
RSV			2		2		
Adenovirus	2		1		3		
Parainfluenza type 1			1		1		

*Specimens antigenically characterized by CDC; **A/California/07/2009-like (H1N1)pdm09 is the H1N1 component of the 2015-16 Northern Hemisphere flu vaccines; [†]A/Switzerland/9715293/2013-like (H3N2) is the H3N2 component of the 2015-16 Northern Hemisphere flu vaccines; ^{††}B/Phuket/3073/2013-like virus is the B/Yamagata component of the 2015-16 Northern Hemisphere trivalent and quadrivalent flu vaccines.

In addition, 10 sentinel clinical labs (3SE, 2SW, 5C) reported influenza results. Nine labs (SE, SW, C) reported influenza A positives at further declining or steady levels, with all sites in the low or sporadic range. Nine labs (SE, SW, C) reported influenza B activity at further declining levels ranging from low/sporadic to moderate. One lab (SE) reported low Parainfluenza activity. Four labs (SE, SW) reported low or sporadic RSV activity. Three labs (SE, SW) reported low or sporadic Adenovirus activity. Two labs (SE, SW) reported low hMPV activity. Most testing volumes are in the moderate range and continue to trend down.

Influenza Congregate Settings Outbreaks

There were no new respiratory facility outbreaks reported. There have been a total of 33 respiratory facility outbreaks reported to MDHHS for the 2015-16 season. Respiratory facility outbreaks are listed in the table below by facility type and surveillance region.

Facility Type	C	N	SE	SW	Total
K-12 School	1	2		4	7
Long-term Care / Assisted Living Facility	8	1	5	8	22
Healthcare Facility		1	1		2
Daycare				1	1
Correctional Facility		1			1
Total	9	5	6	13	33

Influenza-associated Pediatric Mortality

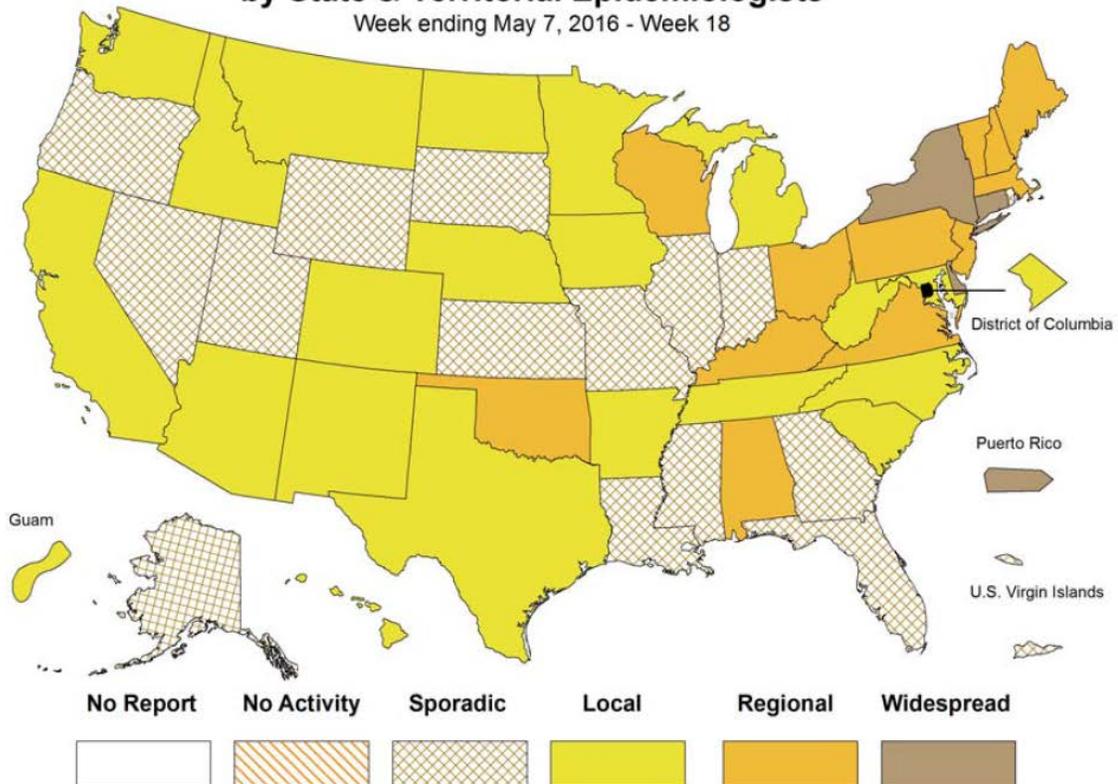
No new influenza-associated pediatric deaths were reported to MDHHS. One influenza-associated pediatric death (SE) has been reported to MDHHS for the 2015-16 season.

National: In the United States, flu activity remained at 1.8% of outpatient visits due to influenza-like illness, which is below the national baseline of 2.1%. Three of 10 regions reported ILI at or above region-specific baselines. Three new influenza-associated pediatric deaths were reported, for a total of 67 pediatric deaths for the 2015-16 flu season. Additional information is in the weekly FluView reports available at: www.cdc.gov/flu/weekly/.

International: In the Northern Hemisphere, influenza activity continued to decrease, with influenza B detections predominating in many parts. In the Southern Hemisphere, slight increases in influenza-like illness activity was reported. More information is available at: www.who.int/influenza/surveillance_monitoring/updates/latest_update_GIP_surveillance/en/.

Weekly Influenza Activity Estimates Reported by State & Territorial Epidemiologists*

Week ending May 7, 2016 - Week 18





INFLUENZA-RELATED JOURNAL ARTICLES

- *Preventive Medicine*: [Self-reported prenatal influenza vaccination and early childhood vaccine series completion](#)
 - Children were vaccinated more often if their mothers reported prenatal vaccination
 - Vaccine completion 8-10% higher when mothers had prenatal flu vaccine
- *Journal of Infectious Diseases*: [Enhanced genetic characterization of influenza A\(H3N2\) viruses and vaccine effectiveness by genetic group, 2014-2015](#)
 - Effectiveness of 2014-15 flu vaccines was 1% (95% CI: -14% to 14%) against drifted A(H3N2) group 3C.2a viruses, versus 44% (95% CI: 16% to 63%) against vaccine-like A(H3N2) group 3C.3b viruses
 - Commentary: [A high resolution look at influenza antigenic drift](#)
- *Emerging Infectious Diseases*: [Heterogeneous and dynamic prevalence of asymptomatic influenza virus infections](#)
 - Prevalence of asymptomatic carriage ranged from 5.2% to 35.5%, subclinical cases ranged from 25.4% to 61.8%
- *Clinical Infectious Diseases*: [The effect of influenza vaccination on birth outcomes in a cohort of pregnant women in Laos, 2014-2015](#)
 - Women who received flu vaccine had reduced risk of delivering preterm during times of high flu virus circulation
 - Vaccination may prevent 1 in 5 preterm births that occur during periods of high flu circulation
- [Factors associated with influenza vaccine uptake during a universal vaccination program of preschool children in England and Wales: a cohort study](#)
 - Children living in areas of higher deprivation, in larger families less likely to receive flu vaccine

AVIAN INFLUENZA INTERNATIONAL NEWS

- US: [Low-pathogenic H5N1 virus prompts turkey culling in Missouri](#)
- [Four countries battle more high-path avian flu outbreaks](#)
- [Egypt reports 2 H5N1 outbreaks in poultry](#)
- [Two Chinese provinces report 7 more H7N9 cases](#)
- [WHO details 2 recent H5N6 avian flu cases in China](#)
- [China: 11 additional H7N9 avian influenza cases reported](#)
- [Taiwan reports H5N8 and H5N2 outbreaks](#)
- [Novel reassortant avian influenza A\(H5N6\) viruses in humans, Guangdong, China 2015](#)
- [Ecosystem interactions underlie the spread of avian influenza A viruses with pandemic potential](#)
 - In general, viral flow from domestic to wild bird populations was restricted to within a geographic region
 - In contrast, spillover from wild to domestic populations occurred both within and between regions
- [Co-circulation of H5N6, H3N2, H3N8, and emergence of novel reassortant H3N6 in a local community in Hunan province, China](#)
 - Phylogenetic analyses suggest H3N6 is highly likely derived from H5N6
- [Multiple gene mutations identified in patients infected with influenza A\(H7N9\) virus](#)
- [Indonesia struggling to curb bird flu by 2020](#)

OTHER INFLUENZA-RELATED NEWS

- [What patients think about flu and Tdap vaccination in pregnancy](#)
- [Influenza virus characterization. Summary Europe, April 2016](#)

FLU WEBSITES

www.michigan.gov/flu
www.cdc.gov/flu
www.flu.gov
<http://vaccine.healthmap.org/>

Archived editions of FluBytes are available [here](#) and MI FluFocus archives are [here](#).

For questions or to be added to the distribution list, please contact Seth Eckel at eckels1@michigan.gov.

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