



MI Flu Focus

Influenza Surveillance Updates
Bureaus of Epidemiology and Laboratories

Michigan Department
of Community Health



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Current Influenza Activity Levels:

- **Michigan:** Sporadic influenza activity
- **National:** During November 3-9, influenza activity increased slightly in the United States

Updates of Interest:

- **International:** 4 new human MERS-CoV cases are reported from the Middle East

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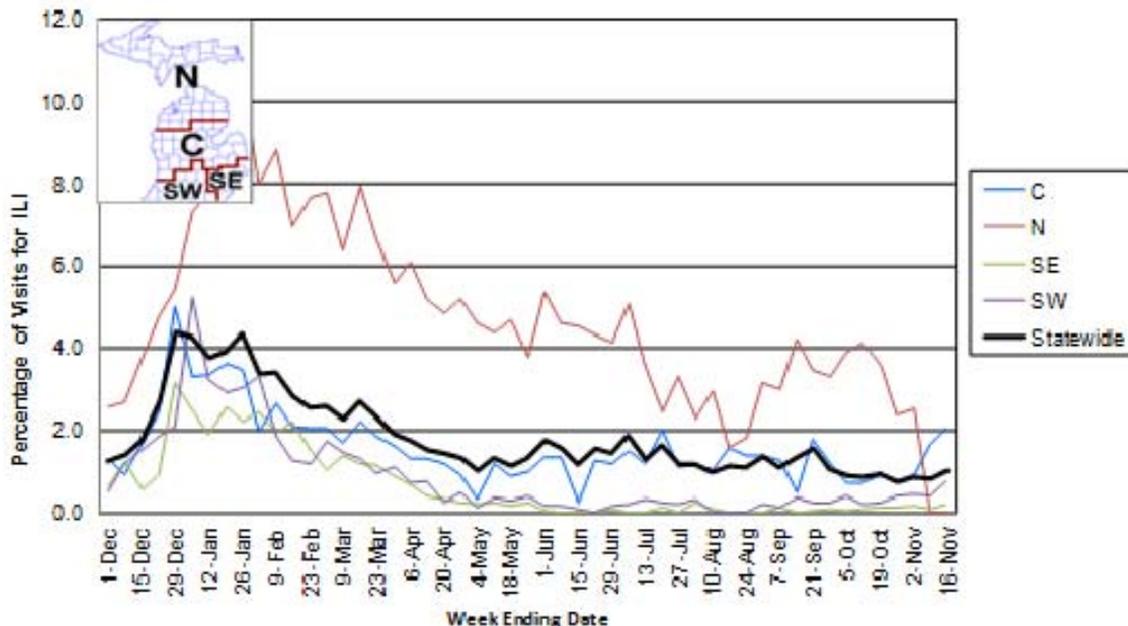
Influenza Surveillance Reports

Michigan Disease Surveillance System (as of November 21): MDSS influenza data for the week ending November 16, 2013 indicated that compared to levels from the previous week, individual reports saw a minimal increase, while aggregate reports moderately increased. Individual reports are similar to levels seen during the same time period last year, while aggregate reports are slightly higher.

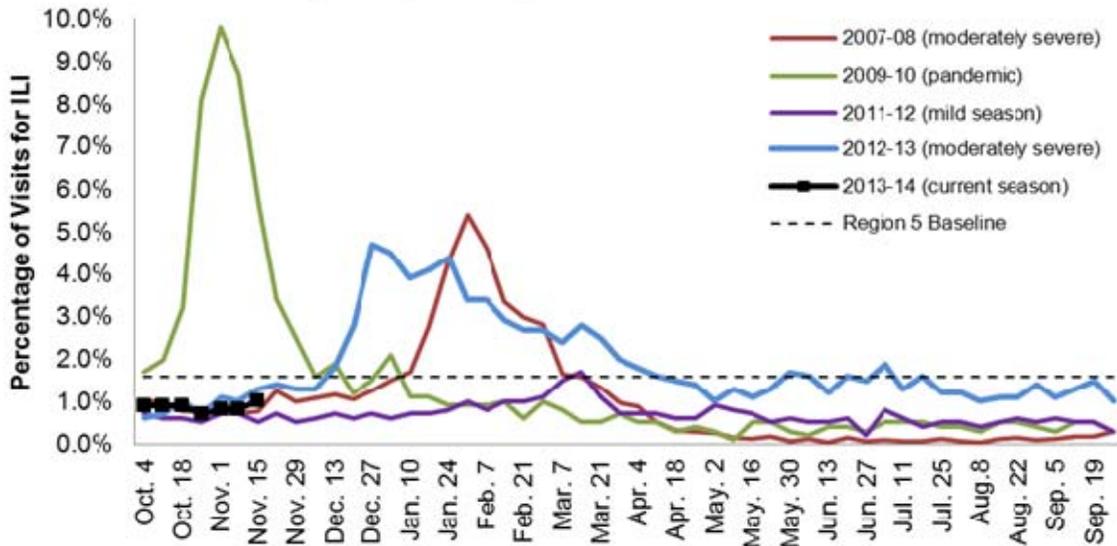
Emergency Department Surveillance (as of November 21): Emergency department visits due to both constitutional and respiratory complaints remained steady during the week ending November 16, 2013. Emergency department visits from both constitutional and respiratory complaints were similar to levels during the same time period last year. In the past week, there were 11 constitutional alerts in the SW(5), C(2) and N(4) Influenza Surveillance Regions and 4 respiratory alerts in the C(2) and N(2) Regions.

Sentinel Provider Surveillance (as of November 21): During the week ending November 16, 2013, the proportion of visits due to influenza-like illness (ILI) increased to 1.0% overall; this is below the regional baseline (1.6%). A total of 79 patient visits due to ILI were reported out of 7,965 office visits. Data were provided by 25 sentinel sites from the following regions: Central (10), North, (1), Southeast (10), and Southwest (4). ILI activity increased in three regions: C (2.0%), SE (0.2%), and SW (0.8%) and remained the same in one region: N (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 November 16): 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, for Clinton, Eaton, Genesee, and Ingham counties. No new cases were identified during the past week. As of November 16th, there have been 3 influenza hospitalizations (2 pediatric, 1 adult) within the catchment area.

The MDCH Influenza Sentinel Hospital Network monitors influenza hospitalizations reported voluntarily by hospitals statewide. Six hospitals (SE,C,N) reported for the week ending November 16, 2013. Results are listed in the table below.

Age Group	Hospitalizations Reported During Current Week	Total Hospitalizations 2013-14 Season
0-4 years	0	1 (1C)
5-17 years	0	1 (1C)
18-49 years	0	0
50-64 years	0	0
≥65 years	0	1 (1SE)
Total	0	3 (1SE, 2C)

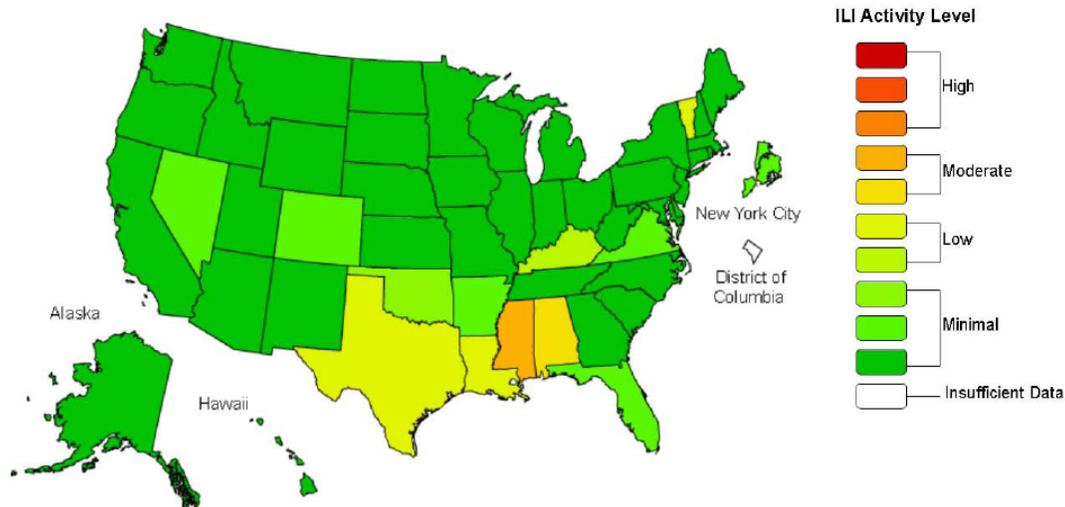
Laboratory Surveillance (as of November 16): During November 10-16, 20 influenza 2009 A/H1N1pdm (11SE,5SW,4C) and 2 influenza A/H3 (2SE) results were reported by MDCH Bureau of Laboratories. For the 2013-14 season (starting Sept. 29, 2013), MDCH has identified 37 positive influenza results:

- Influenza 2009 A/H1N1pdm: 29 (19SE,5SW,5C)
- Influenza A/H3: 4 (4SE)
- Influenza A unsubtypable: 1 (1SE)
- Influenza B: 3 (1SE,1SW,1C)
- Parainfluenza: 1 (1SE)

13 sentinel labs (SE,SW,C,N) reported for the week ending November 16, 2013. 7 labs (SE,SW,C) reported sporadic or slightly increasing influenza A activity. No labs reported flu B activity. 5 labs (SE,C,N) had sporadic RSV activity. 5 labs (SE,SW,C) had sporadic parainfluenza activity. 2 labs (SE,C) had sporadic adenovirus activity. 1 lab (SW) reported sporadic hMPV activity. Most testing volumes are low to moderate and gradually increasing.

Michigan Influenza Antigenic Characterization (as of November 21): For the 2013-14 season, no influenza specimens have been characterized at MDCH BOL.

**Influenza-Like Illness (ILI) Activity Level Indicator Determined by Data Reported to ILINet
2013-14 Influenza Season Week 45 ending Nov 09, 2013**



This map uses the proportion of outpatient visits to healthcare providers for influenza-like illness to measure the ILI activity level within a state. Therefore, outbreaks occurring in a single city could cause the state to display high activity levels. Data collected in ILINet may disproportionately represent certain populations within a state, and therefore, may not accurately depict the full picture of influenza activity for the whole state. Data displayed on this map are based on data collected in ILINet, whereas the State and Territorial flu activity map are based on reports from state and territorial epidemiologists.

Complete weekly FluView reports are available online at: <http://www.cdc.gov/flu/weekly/>.

International (WHO [edited], November 11): Although in many European countries influenza-like illness activity started to increase, influenza detections in the northern hemisphere temperate zones remained low. Influenza transmission in southern Asia was low. In Hong Kong Special Administrative Region, China, and in the south of China influenza detections decreased. In South East Asia, influenza activity decreased in Thailand and Viet Nam, but increased in Cambodia and Lao People's Democratic Republic. In this area, co-circulation of influenza A(H1N1)pdm09, influenza A(H3N2) and influenza B virus was reported. In the Caribbean region of Central America and tropical South America countries, reported cases of influenza A infection remained at low levels among most Caribbean islands and Central American countries, with increased reports of influenza B in certain countries. Respiratory syncytial virus (RSV) continued to predominate in certain countries, but the RSV activity largely remained within expected seasonal levels. Influenza activity peaked in the temperate countries of South America and in South Africa in late June. Temperate South American countries reported cases of A(H1N1)pdm09 A (H3N2) and influenza B, and acute respiratory activity remained low. In Australia and New Zealand, numbers of influenza viruses detected and rates of influenza-like illness decreased. Co-circulation of influenza A(H1N1)pdm09, A(H3N2) and B viruses was reported in both countries.

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

MDCH reported SPORADIC INFLUENZA ACTIVITY to CDC for the week ending Nov. 16, 2013.

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], November 15): WHO has been informed of an additional two laboratory-confirmed cases of infection with Middle East respiratory syndrome coronavirus (MERS-CoV).

These include one laboratory-confirmed case from the United Arab Emirates and one laboratory-confirmed case in Qatar.

The patient reported from the United Arab Emirates is a national of Oman. He is 75 years old, with underlying medical conditions. He became ill on 1 October 2013, was hospitalized on 12 October 2013 and died on 10 November 2013.

The patient from Qatar is a 61-year-old man with underlying medical conditions. He became ill on 4 November 2013, and was hospitalised on 7 November 2013. He is in critical condition. Preliminary epidemiological investigation indicates that the patient had exposure to farms where livestock are kept.

Additionally, a previously laboratory-confirmed case from Oman has died.

Globally, from September 2012 to date, WHO has been informed of a total of 155 laboratory-confirmed cases of infection with MERS-CoV, including 66 deaths.

The full report is available online at http://www.who.int/csr/don/2013_11_15/en/index.html.

International, MERS-CoV (WHO [edited], November 18): WHO has been informed of an additional two laboratory-confirmed cases of infection with Middle East respiratory syndrome coronavirus (MERS-CoV) from Kuwait.

The first patient is a 47 year-old man who became ill on 30 October 2013 and was hospitalised on 7 November 2013. He is in critical condition. The second patient is a 52-year-old man with underlying medical conditions. He became ill on 7 November and was hospitalised on 10 November 2013. He is in critical condition.

Globally, from September 2012 to date, WHO has been informed of a total of 157 laboratory-confirmed cases of infection with MERS-CoV, including 66 deaths.

The full report is available online at http://www.who.int/csr/don/2013_11_18/en/index.html.

International, Poultry (OIE [edited], November 18): Low pathogenic avian influenza H5; Germany Outbreak: Mohlsdorf, Mohlsdorf, Greiz, THURINGEN; Date of start of the outbreak:13/11/2013 Epidemiological unit: Farm; Species: Birds; Susceptible: 827; Cases: 4; Deaths: 4; Destroyed: 823

International, Research (Journal of Clinical Virology abstract, November 14): Avian influenza A (H5N1) virus antibodies in pigs and residents of swine farms, southern China. Nan Cao, et al. Journal of Clinical Virology - 14 November 2013 (10.1016/j.jcv.2013.09.017).

Background: Since 1997, the H5 avian influenza viruses (AIVs) circulating in China have become an international concern. Clade 2.3.2 of H5N1 AIVs is genetically distinct from the viruses isolated before 2007 and antigenically different from the vaccine strains widely used in China. Swine farms in rural China are thought to play an important role in AIVs ecology.

Objectives: A seroepidemiological study was undertaken among swine farm residents and pigs to understand the prevalence of antibodies against H5N1 AIVs in southern China.

Study design: During the period March 24, 2008 to December 25, 2012, serum samples were collected from 1606 swine farm residents on 40 swine farms in southern China. A total of 1980 pigs' serum samples were collected in the same swine farms where swine workers' serum samples were collected from March 2009 to March 2013. For a control group, 104 serum samples were collected from healthy city residents in Nanchang. All the serum samples were collected to perform hemagglutination inhibition (HI) and (neutralization) NT assays to investigate the prevalence of H5N1 AIV infections in southern China.

Results: Sixteen human samples were positive by HI assay and 10 of these were also positive by NT assay against H5N1. No serum samples from human control and pigs were HI positive for H5N1 AIV.

Discussion: Our results demonstrate minimal transmission H5N1 AIV from birds to pigs in the swine farms studied and the risk of poultry-to-human and poultry-to-pig transmission for at least clades 2.3.2 seemed very low. This study provides the first data regarding antibodies against H5N1 AIV in humans and pigs on

swine farms in China. The findings of this study can serve as a baseline for additional serologic studies to assess transmission of H5N1 viruses between avian species, pigs and swine workers.

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

MDCH Contributors

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Table. H5N1 Influenza in Humans – As of October 8, 2013. http://www.who.int/influenza/human_animal_interface/EN_GIP_20131008CumulativeNumberH5N1cases.pdf. Downloaded 10/8/2013. 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	20	11	41	30
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	2	2	194	162
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	31	20	641	380