



MI Flu Focus

Influenza Surveillance Updates
Bureaus of Epidemiology and Laboratories

Michigan Department
of Community Health



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Updates of Interest:

- **National:** Ohio reports a human infection with a H3N2V influenza virus
- **National:** In an MMWR report, the latest ACIP recommendations regarding influenza vaccination for the upcoming 2014-2015 influenza season are outlined

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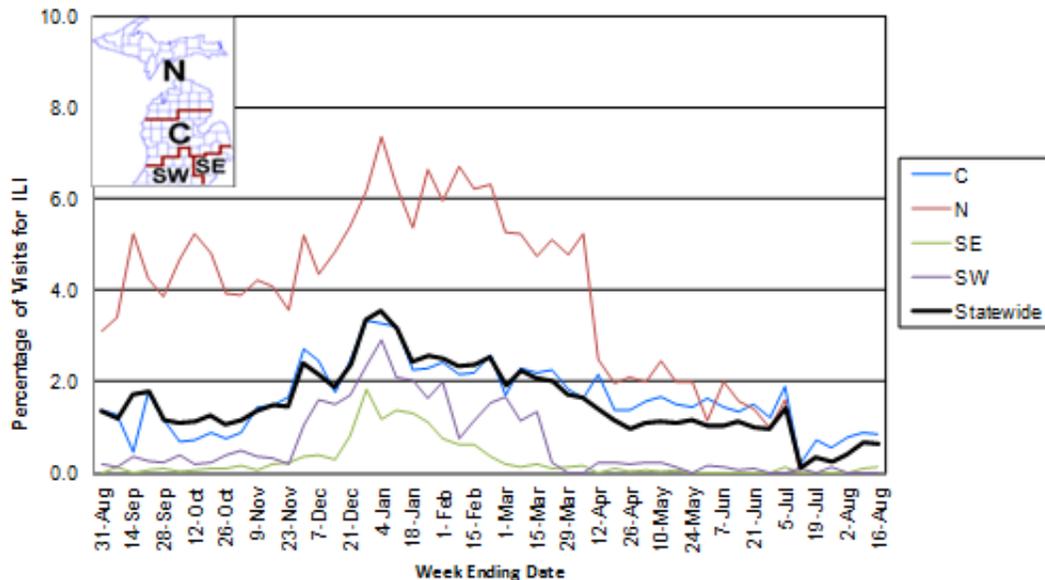
Influenza Surveillance Reports

Michigan Disease Surveillance System (as of August 21): MDSS influenza data for the week ending August 16, 2014 indicated that compared to levels from the previous week, individual and aggregate reports remained steady at very sporadic levels. Individual reports are similar to levels seen during the same time period last year, while aggregate reports are slightly lower.

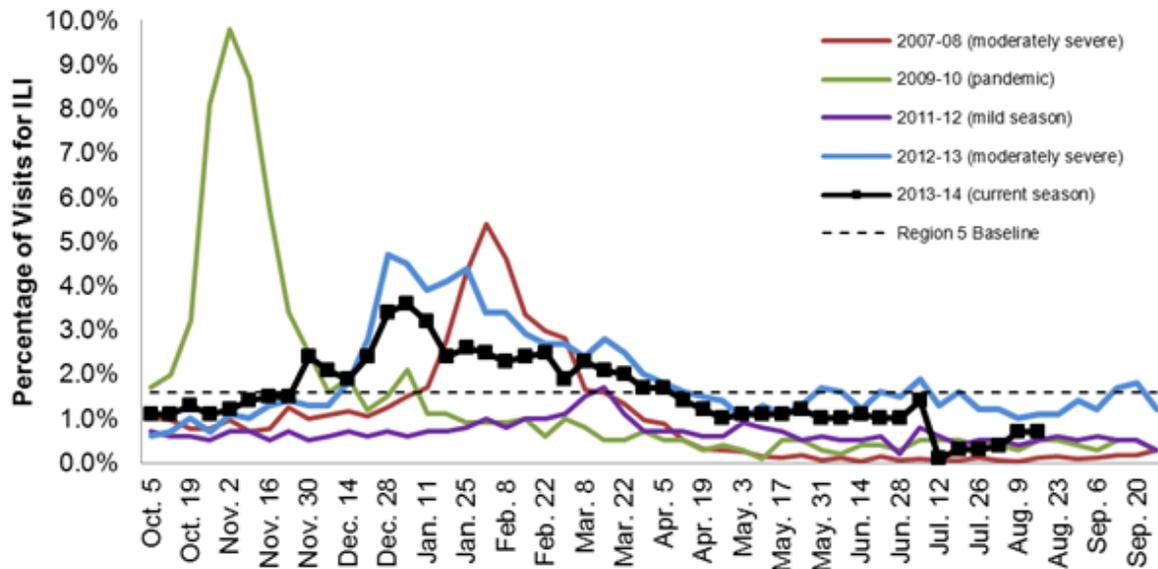
Emergency Department Surveillance (as of August 21): Emergency department visits due to respiratory complaints slightly increased during the week ending August 16, 2014, while constitutional visits were steady with a slight decrease towards the end of the week. Emergency department visits from constitutional complaints are similar to levels during the same time period last year, while respiratory complaints are slightly higher. In the past week, there were 6 constitutional alerts in the SW(3) and C(3) Influenza Surveillance Regions and 3 respiratory alerts in the C(2) and N(1) Regions.

Sentinel Provider Surveillance (as of August 20): During the week ending August 16, 2014, the proportion of visits due to influenza-like illness (ILI) remained the same at 0.7% overall; this is below the regional baseline (1.6%). A total of 27 patient visits due to ILI were reported out of 4,143 office visits. Data were provided by 12 sentinel sites from the following regions: C (5), N (1), SE (5), and SW (1). ILI activity remained the same in three regions: C (0.9%), N (0.0%), and SE (0.1%). No reports were submitted from the Southwest Region last week so activity cannot be compared. 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 August 21): 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. Through an audit, an additional 5 pediatric cases and 17 adult cases were identified. There are now 254 influenza hospitalizations (74 pediatric, 180 adult) within the catchment area for the 2013-14 season. Based on these counts, within the catchment area there are 35.4 pediatric influenza hospitalizations/100,000 population and 26.4 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 August 16): During August 3-16, 1 positive A/H3 (SE) influenza result was reported by MDCH Bureau of Laboratories. For the 2013-14 season (starting Sept. 29, 2013), MDCH has identified 412 positive influenza results:

- Influenza 2009 A/H1N1pdm: 340 (77SE,132SW,94C,38N)
- Influenza A/H3: 34 (15SE,12SW,6C, 1N)
- 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 August 16, 2014. One lab (SE) reported sporadic RSV activity. 1 lab (SW) reported sporadic adenovirus activity. No labs reported influenza A or B, parainfluenza or hMPV activity. Testing volumes are at sporadic levels.

Michigan Influenza Antigenic Characterization (as of August 21): 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. 29 specimens (7SE,11SW,6C,5N) 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 August 21): 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 August 21): 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 August 21): One new respiratory outbreak in a C Region long-term care facility was reported to MDCH during the previous weeks; no testing was performed. 24 respiratory outbreaks (2SE,11SW,8C,3N) 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)
- Parainfluenza: 1 (1SW)
- Negative/no testing: 7 (1SW,5C,1N)

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): Grohskopf L, et al. Prevention and Control of Seasonal Influenza with Vaccines: Recommendations of the Advisory Committee on Immunization Practices (ACIP) — United States, 2014–15 Influenza Season. MMWR. August 15, 2014 / 63(32);691-697.

This report updates the 2013 recommendations by the Advisory Committee on Immunization Practices (ACIP) regarding use of seasonal influenza vaccines. Updated information for the 2014–15 influenza season includes 1) antigenic composition of U.S. seasonal influenza vaccines; 2) vaccine dose considerations for children aged 6 months through 8 years; and 3) a preference for the use, when immediately available, of live attenuated influenza vaccine (LAIV) for healthy children aged 2 through 8 years, to be implemented as feasible for the 2014–15 season but not later than the 2015–16 season. Information regarding issues related to influenza vaccination not addressed in this report is available in the 2013 ACIP seasonal influenza recommendations.

The full article is available online at <http://www.cdc.gov/mmwr/pdf/wk/mm6332.pdf>.

International (WHO [edited], August 11): Globally influenza activity continues to increase in the southern hemisphere. In Europe and North America, overall influenza activity remained at inter-seasonal levels. In eastern Asia, influenza activity reached inter-seasonal levels in most countries with influenza A(H3N2) and influenza B virus predominating. Influenza activity still continued in the south region of China mainly due to influenza A(H3N2) viruses. In Africa and western Asia, influenza activity was low. In the southern hemisphere, influenza activity continued to increase in most countries. In the temperate zone of South America influenza-like illness continued to increase, but was predominantly due to respiratory syncytial virus. Influenza A(H3N2) was the most commonly detected influenza virus. In Australia and New Zealand, the influenza season seemed to have started with increased influenza-like illness and increasing number of influenza detections reported. Influenza A(H1N1)pdm09 the most commonly detected virus. In South Africa the influenza detection rate increased with influenza A(H3N2) the most frequently detected virus. Based on FluNet reporting (as of 11 August 2014), during weeks 29 to 30 (13 July to 26 July 2014), National Influenza Centres and other national influenza labs from 51 countries, areas or territories reported data. The WHO GISRS labs tested more than 16203 specimens. 1579 were positive for influenza, of which 1274 (80.6%) were typed as influenza A and 305 (19.3%) as influenza B. Of the sub-typed influenza A viruses, 426 (42.9%) were A(H1N1)pdm09 and 568 (57.1%) were A(H3N2). Of the characterized B viruses, 21 (56.8%) belong to the B-Yamagata lineage and 16 (43.2%) 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.

National, Human (Epi-X, August 20): The Ohio Department of Health has recently reported a case of Influenza A H3N2 variant (H3N2v) to the Centers for Disease Control and Prevention (CDC). The patient is a female under 5 years-old who presented to the emergency department of a local hospital with respiratory symptoms after exposure to swine at a county agricultural fair. The child was admitted to the hospital on August 4, 2014 with symptoms including fever and respiratory distress. A respiratory specimen was tested after the patient was admitted and reported as Influenza A H3 by the hospital laboratory. Further testing of the specimen was performed by the Ohio Department of Health Laboratory (ODH Lab) and was found to be presumptively positive for H3N2v by RT-PCR; at which point the specimen was forwarded to CDC for additional analysis. CDC later confirmed that the specimen was positive for H3N2v.

The child was discharged from the hospital on August 6th and has fully recovered. There is no evidence of human to human transmission of the virus and no increase in influenza-like illness have been reported in the surrounding community.

This is the first report of a human infection with influenza A (H3N2v) in the United States in 2014. The total number of human infections with influenza A (H3N2v) virus reported in the United States was 309 in 2012 and 19 in 2013.

National, Human (Emerging Infectious Diseases abstract, August 18): Sfeir MM, Najem CE. Cerebellitis associated with influenza A(H1N1)pdm09, 2013, United States [letter]. *Emerg Infect Dis.* 2014 Sep.

Central nervous system (CNS) manifestations of influenza are uncommon, especially in adults, and influenza-associated cerebellitis is exceedingly rare: 8 cases have been reported. We describe a case of cerebellitis caused by influenza A(H1N1)pdm09 in an adult woman.

The full article is available online at http://wwwnc.cdc.gov/eid/article/20/9/14-0160_article.

National, Swine (Emerging Infectious Diseases abstract, August 13): Bowman AS, et al. Swine-to-human transmission of influenza A(H3N2) virus at agricultural fairs, Ohio, USA, 2012. *Emerg Infect Dis.* 2014 Sep

Agricultural fairs provide an opportunity for bidirectional transmission of influenza A viruses. We sought to determine influenza A virus activity among swine at fairs in the United States. As part of an ongoing active influenza A virus surveillance project, nasal swab samples were collected from exhibition swine at 40 selected Ohio agricultural fairs during 2012. Influenza A(H3N2) virus was isolated from swine at 10 of the fairs. According to a concurrent public health investigation, 7 of the 10 fairs were epidemiologically linked to confirmed human infections with influenza A(H3N2) variant virus. Comparison of genome sequences of the subtype H3N2 isolates recovered from humans and swine from each fair revealed nucleotide identities of >99.7%, confirming zoonotic transmission between swine and humans. All influenza A(H3N2) viruses isolated in this study, regardless of host species or fair, were >99.5% identical, indicating that 1 virus strain was widely circulating among exhibition swine in Ohio during 2012.

The full article is available online at http://wwwnc.cdc.gov/eid/article/20/9/13-1082_article.

International, Human (Emerging Infectious Diseases abstract, August 14): Chen Z, et al. Asymptomatic, mild, and severe influenza A(H7N9) virus infection in humans, Guangzhou, China. *Emerg Infect Dis.* 2014 Sep.

Targeted surveillance for influenza A(H7N9) identified 21 cases of infection with this virus in Guangzhou, China, during April 1, 2013–March 7, 2014. The spectrum of illness ranged from severe pneumonia to asymptomatic infection. Epidemiologic findings for a family cluster of 1 severe and 1 mild case suggested limited person-to-person transmission of this virus.

The full article is available online at http://wwwnc.cdc.gov/eid/article/20/9/14-0424_article.

International, Poultry (OIE [edited], August 12): Highly pathogenic avian influenza H5N6; Vietnam
Outbreak 1: Keo Quang, Chi Lang, Trang Dinh, LANG SON

Date of start of the outbreak: 22/04/2014; Epidemiological unit: Village
Species: Birds; Susceptible: 80; Cases: 40; Deaths: 15; Destroyed: 65

Outbreak 2: Tan Son, Ky Tho, Ky Anh, HA TINH

Date of start of the outbreak: 25/06/2014; Epidemiological unit: Village
Species: Birds; Susceptible: 1900; Cases: 950; Destroyed: 1900

International, Poultry (OIE [edited], August 19): Low pathogenic avian influenza H7N7; South Africa
Outbreak 1 (LPAI_2014_H7N7_003): Mossel Bay, WESTERN CAPE PROVINCE

Date of start of the outbreak: 22/05/2014; Epidemiological unit: Farm
Species: Birds; Susceptible: 45; Cases: 28; Deaths: 0; Destroyed: 0
Affected population: Commercial ostriches

International, Poultry (OIE [edited], August 19): Low pathogenic avian influenza H5N2; South Africa
Outbreak 1 (LPAI_2014_H5N2_004): Breede Valley, WESTERN CAPE PROVINCE

Date of start of the outbreak: 28/01/2014; Epidemiological unit: Farm
Species: Birds; Susceptible: 898; Cases: 60; Deaths: 0; Destroyed: 0
Affected population: Commercial ostriches

Outbreak 2 (LPAI_2014_H5N2_002): Hessequa, WESTERN CAPE PROVINCE

Date of start of the outbreak: 08/04/2014; Epidemiological unit: Farm
Species: Birds; Susceptible: 178; Cases: 75; Deaths: 0; Destroyed: 0
Affected population: Commercial ostriches

Outbreak 3 (LPAI_2014_H5N2_003): Hessequa, WESTERN CAPE PROVINCE

Date of start of the outbreak: 07/05/2014; Epidemiological unit: Farm
Species: Birds; Susceptible: 403; Cases: 47; Deaths: 0; Destroyed: 0
Affected population: Commercial ostriches

Outbreak 4 (LPAI_2014_H5N2_001): George, WESTERN CAPE PROVINCE

Date of start of the outbreak: 14/05/2014; Epidemiological unit: Farm
Species: Birds; Susceptible: 6169; Cases: 3599; Deaths: 0; Destroyed: 0
Affected population: Commercial ostriches

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.

International Human Surveillance (WHO): Reports of novel influenza activity in humans, including avian influenza A/H5N1 and A/H7N9, are available online at www.who.int/influenza/human_animal_interface/en/.

For questions or to be added to the distribution list, please contact Susan Peters at peterss1@michigan.gov

MDCH Contributors

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