



MI Flu Focus

Influenza Surveillance Updates
Bureaus of Epidemiology and Laboratories

Michigan Department
of Community Health



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Updates of Interest

- **National:** A Clinical Infectious Diseases publication summarizes the human cases of influenza A/H3N2v from 2012
- **International:** 2 new human cases of avian influenza H5N1 in Cambodia are confirmed

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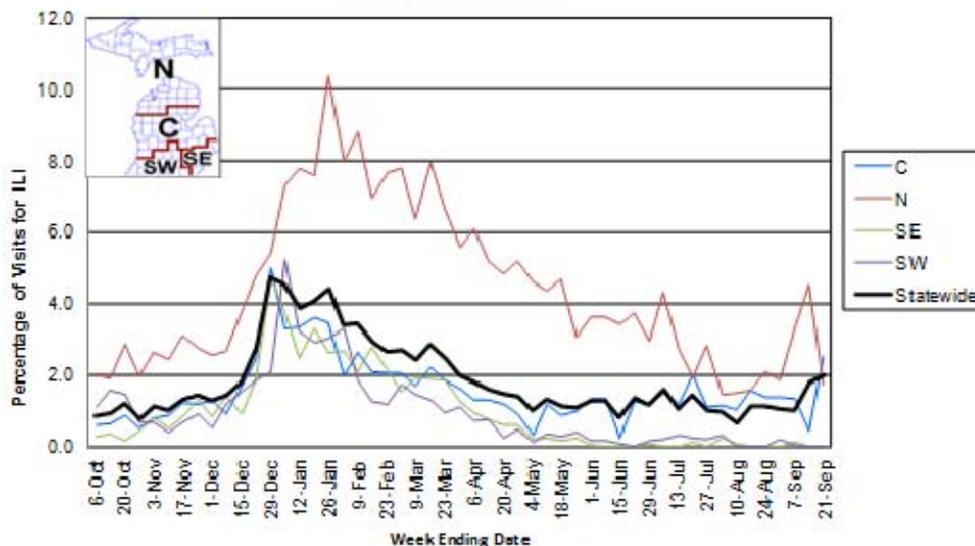
Influenza Surveillance Reports

Michigan Disease Surveillance System (as of September 26): MDSS influenza data for the week ending September 21, 2013 indicated that compared to levels from the previous week, aggregate reports increased, while individual reports remained steady at very low levels. Both aggregate and individual reports are similar to levels seen during the same time period last year.

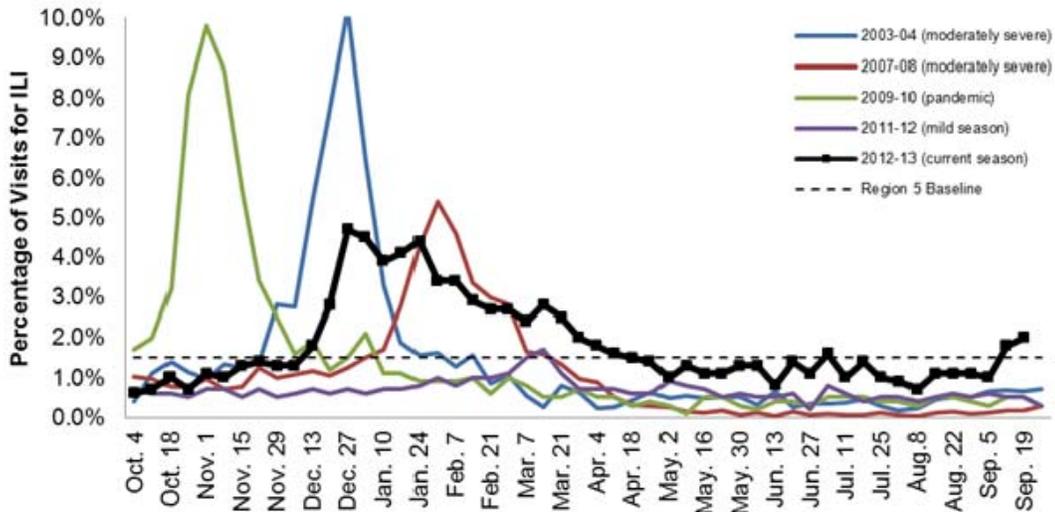
Emergency Department Surveillance (as of September 26): Emergency department visits due to constitutional complaints were similar to levels from the previous week, while respiratory complaints increased. Visits from both constitutional and respiratory complaints are similar to levels during the same time period last year. In the past week, there were 11 constitutional alerts in the SE(1), SW(4), C(5) and N(1) Influenza Surveillance Regions and 20 respiratory alerts in the SE(4), SW(6), C(9) and N(1) Regions and 2 statewide alerts. The recent increase in respiratory complaints is most likely due to the annual increase in fall allergies and other respiratory conditions rather than a true increase in influenza activity.

Sentinel Provider Surveillance (as of September 26): During the week ending September 21, 2013, the proportion of visits due to influenza-like illness (ILI) decreased to 2.0% overall; this is above the regional baseline (1.5%). A total of 76 patient visits due to ILI were reported out of 3,798 office visits. Data were provided by 16 sentinel sites from the following regions: Central (7), North (4), Southeast (4), and Southwest (1). ILI activity decreased in one region: N (1.7%), increased in one region: C (2.5%), and remained the same in two regions: SE (0.0%) 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
2012-13 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 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 September 21): During September 15-21, no positive influenza results were reported by MDCH. For the 2012-13 season (starting Sept. 30, 2012), MDCH has identified 689 influenza results:

- Influenza A(H3): 500 (124SE, 169SW, 169C, 38N)
- Influenza A(H3N2)v: 2 (2SW)
- Influenza A(H1N1)pdm09: 42 (24SE, 4SW, 11C, 3N)
- Influenza B: 153 (30SE, 31SW, 74C, 18N)
- Parainfluenza: 8 (3SW, 1C, 4N)
- RSV: 1 (1N)
- Adenovirus: 1 (1SW)
- hMPV: 3 (3SW)

7 sentinel labs (SE, SW, C, N) reported for the week ending September 21, 2013. No labs reported influenza A or B, RSV, parainfluenza, adenovirus or hMPV activity. Most sites, with the exception of one SE site, remain at very low testing volumes.

Michigan Influenza Antigenic Characterization (as of September 26): For the 2012-13 season, 120 Michigan influenza B specimens have been characterized at MDCH BOL. 101 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 September 26): For the 2012-13 season, 34 influenza A/H3 specimens and 27 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 September 26): 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 September 26): 1 new respiratory outbreak from a C Region long term acute care facility was reported to MDCH during the past week; no testing was performed. 115 respiratory outbreaks (23SE, 30SW, 42C, 20N) 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)
- Mycoplasma pneumoniae: 1 (1SE)
- Negative/no testing: 25 (8SE, 4SW, 7C, 6N)

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

International (WHO [edited], September 16): Influenza activity in the northern hemisphere temperate zones remained at inter-seasonal levels. The United States of America reported 18 cases of human infection with influenza A(H3N2)v this year, with the first case reported in June. More details can be found at www.cdc.gov/flu/swineflu/h3n2v-cases.htm. In most regions of tropical Asia flu activity decreased. In the Caribbean region of Central America and tropical South America the influenza season appeared to have come to an end. Respiratory Syncytial Virus, influenza A(H1N1)pdm09 and A(H3N2) were the main respiratory viruses reported since May of this year. Influenza activity peaked in the temperate countries of South America and in South Africa in late June. Influenza activity in these areas was primarily associated with A(H1N1)pdm09 throughout the season, but since July greater numbers of A(H3N2) and influenza B were observed. In Australia and New Zealand, numbers of viruses detected and rates of influenza-like illness were lower than those at same time in previous years, but showed an increasing trend since early August. Influenza A(H3N2) and type B were much more commonly detected than A(H1N1)pdm09 in both countries. As of 16 September, a total of 135 cases of influenza A(H7N9) virus infection were reported.

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

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.

National, Human (Clinical Infectious Diseases abstract, September 24): Jung MA, et al. Outbreak of variant influenza A (H3N2v) virus in the United States. Clin Infect Dis 2013 Sep 24.

Background: Variant influenza virus infections are rare but may have pandemic potential if person-to-person transmission is efficient. We describe the epidemiology of a multi-state outbreak of an influenza A H3N2v virus first identified in 2011.

Methods: We identified laboratory-confirmed cases of H3N2v and used a standard case report form to characterize illness and exposures. We considered illness to result from person-to-person H3N2v virus transmission if swine contact was not identified within 4 days prior to illness onset.

Results: From July 9—September 7, 2012, we identified 306 cases of H3N2v in ten states. The median age of all cases was 6 years. Commonly reported signs and symptoms included fever (98%), cough (84%), and fatigue (83%). Sixteen cases (5.2%) were hospitalized, and one fatal case was identified. The majority of cases reported agricultural fair attendance (93%) and/or contact with swine (95%) prior to illness. We identified 15 cases of possible person-to-person transmission of H3N2v virus. Viruses recovered from cases were 93% to 100% identical and similar to viruses recovered from previous cases of H3N2v. All H3N2v viruses examined were susceptible to the oseltamivir and zanamivir and resistant to adamantane antiviral medications.

Conclusion: In a large outbreak of variant influenza, the majority of cases reported exposures suggesting swine contact at an agricultural fair was a risk for H3N2v virus infection. We identified limited person-to-person H3N2v virus transmission, but found no evidence of efficient or sustained person-to-person transmission. Fair managers and attendees should be aware of the risk of swine-to-human transmission of influenza viruses in these settings.

The abstract is available at <http://cid.oxfordjournals.org/content/early/2013/09/24/cid.cit649.abstract>.

International, Human (WHO [edited], September 19): The Ministry of Health (MoH) of the Kingdom of Cambodia wishes to advise members of the public that two new human cases of avian influenza have been confirmed for the H5N1 virus. These are the 19th and 20th cases this year and the 40th and 41st persons to become infected with the H5N1 virus in Cambodia. The 20th case died on 17th September. Of the 41 confirmed cases, 30 were children under 14, and 24 of the 41 were female. In addition, only 9 cases out of the 20 cases this year survived.

The 19th case, a 5-year-old girl from Prey Slek village, Prey Slek commune, Traing district in Takeo province confirmed positive for human H5N1 avian influenza on 14th September by *Institut Pasteur du Cambodge*. The girl developed fever on 7th September and her family initially sought treatment for her in a private clinic. Her condition later worsened and the girl was admitted to Kantha Bopha Hospital on 12th September with fever, dyspnea, cyanosis, somnolence, cough and chest pain. Laboratory samples were taken and Tamiflu administered on 13th September. The girl recovers and is discharged from the hospital today.

Investigations by the Ministry of Health's Rapid Response Teams (RRT) in Prey Slek village revealed that the girl came into direct contact with sick and dead chickens in her village.

The 20th case, a 2-year-old girl from Trapaing Chrab village, Thmey commune, Thek Chhou district in Kampot province confirmed positive for human H5N1 avian influenza on 16th September by *Institut Pasteur du Cambodge*. The child developed fever on 11th September. On 12th September, her parents sought treatment for her in a local village clinic. The child's condition worsened and on 14th September her parents sought treatment in a clinic in Kampot town. On 15th September, the child was admitted to Kantha Bopha Hospital with fever, dyspnea, somnolence, diarrhea, cough and a distended abdomen. Laboratory samples were taken and Tamiflu administered on 16th September 2013. The child died on 17th September.

The child went to her neighbor's house, with her mother, to 'watch' villagers prepare a meal from chickens that had died earlier. The villagers also shared the meal with the girl's family.

The Ministry of Health's RRTs and the Ministry of Agriculture, Forestry and Fishery's Animal Health Task Force are working together closely in Prey Slek village in Takeo and Trapaing Chrab village in Kampot to investigate and implement control measures. The RRTs are trying to identify the cases' close contacts, any epidemiological linkage among the 20 cases and initiate preventive treatment as required. The Animal Health Task Force is investigating cases of poultry deaths in the villages.

The full article is available at www.wpro.who.int/mediacentre/releases/2013/20130920/en/index.html.

International, MERS-CoV (WHO [edited], September 20): Two patients earlier reported as laboratory-confirmed with Middle East respiratory syndrome coronavirus (MERS-CoV) infection in Italy in the Disease Outbreak News on 2 June 2013 are being reclassified as probable cases.

The reclassification follows further analysis of the laboratory tests performed in May 2013, which has shown that the two cases do not fulfill the current WHO case definition for a "confirmed case" for MERS-CoV. The two cases are the two-year-old girl and a 42-year-old woman who were identified as close contacts of the index case who travelled from Jordan.

A "probable" designation by WHO criteria refers to patients who are considered to have a high likelihood of having been infected with MERS-CoV, but from whom adequate samples could not be obtained for complete testing according to the current criteria established for laboratory confirmation.

Globally, from September 2012 to date, WHO has been informed of a total of 130 laboratory-confirmed cases of infection with MERS-CoV, including 58 deaths.

The full article is available online at www.who.int/csr/don/2013_09_20/en/index.html.

International, Poultry (OIE [edited], September 19): High path avian influenza H5N1; Nepal
 Total outbreaks: 43
 Total animals affected: Susceptible: 349839; Cases: 55628; Deaths: 55628; Destroyed: 294211

International, Poultry (OIE [edited], September 23): Low path avian influenza H5N2; Chinese Taipei
 Outbreak: Yuli Township, HUALIEN COUNTY; Date of start of the outbreak: 09/09/2013
 Susceptible: 13000; Cases: 20; Deaths: 0; Destroyed: 0; Slaughtered: 0; Affected population: Duck
 Epidemiological comments: During the second round of surveillance conducted on the poultry farms around the H5N2 infected duck farm in Hualien County, the H5N2 avian influenza virus was detected from swabs taken from a meat-type duck farm. Movement restriction was conducted. The result of clinical investigation showed that the duck were in healthy condition. The national laboratory confirmed on 23 September 2013 this H5N2 outbreak as LPAI by virological test and pathogenicity test. The surveillance of poultry farms around the H5N2 affected farm is in progress.

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 August 29, 2013. http://www.who.int/influenza/human_animal_interface/EN_GIP_20130829CumulativeNumberH5N1cases.pdf. Downloaded 08/29/2013. 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	17	10	38	29
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	1	1	193	161
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	27	18	637	378