



MI Flu Focus

Influenza Surveillance Updates
Bureaus of Epidemiology and Laboratories



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Updates of Interest

- **Michigan:** MDCH is now reporting 5 confirmed human cases of H3N2v influenza infection from 3 Michigan counties
- **National:** Additional cases of H3N2v influenza infection continue to be reported by the Centers for Disease Control and Prevention

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****H3N2v Influenza Update****

On August 15, MDCH reported the first presumptive positive variant influenza A (H3N2) (H3N2v) infection in Michigan in a Washtenaw county child who had swine exposure at the Ingham County Fair. Additional Michigan cases have also been confirmed from Clinton(1), Shiawassee(2) and Washtenaw(1) counties, for a total of 5 cases. Updated Michigan case counts of confirmed H3N2v infections will be posted every Friday on the MDCH Influenza Website: www.michigan.gov/flu. In addition, 276 human cases of H3N2v have been reported in association with swine exposure since July 2012 in 9 other states. The Michigan Department of Community Health issued updated guidance for healthcare providers, laboratories and local health departments on August 14 on the MDCH Influenza Website. Current information on this situation and updated case counts can be found on the CDC H3N2v website at www.cdc.gov/flu/swineflu/influenza-variant-viruses-h3n2v.htm. Please call the MDCH Division of Communicable Disease at (517) 335-8165 with any questions.

Influenza Surveillance Reports

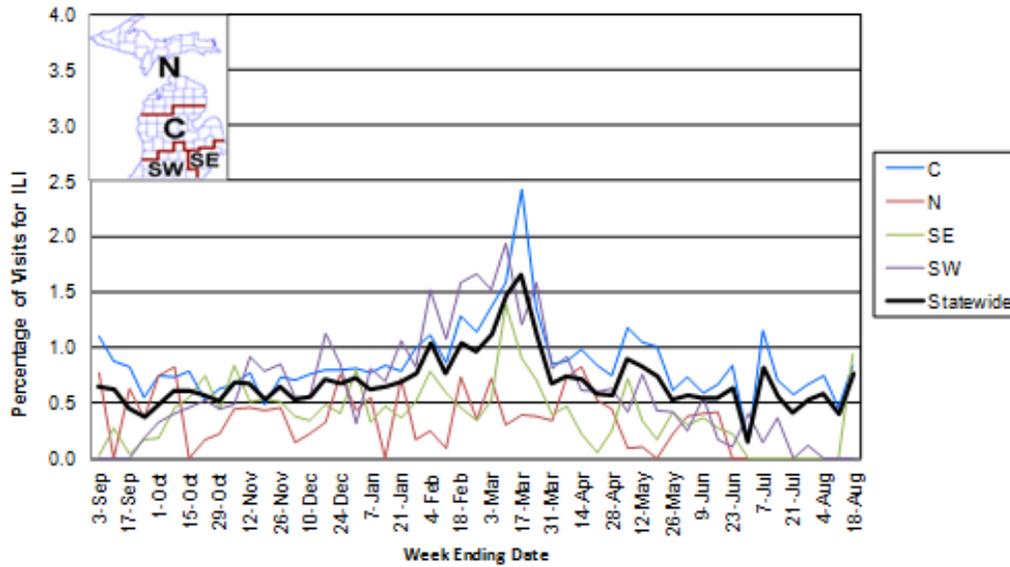
Michigan Disease Surveillance System (as of August 23): MDSS data for the week ending August 18th indicated that compared to levels from the previous week, aggregate and individual reports remained steady at sporadic levels. Individual and aggregate reports are similar to levels seen during the same time period last year. Small numbers of novel influenza case investigations related to the current H3N2v outbreak were also reported into MDSS during the past week.

Emergency Department Surveillance (as of August 23): Compared to levels from the week prior, emergency department visits from constitutional complaints slightly decreased, while respiratory complaints remained steady. Both constitutional and respiratory complaints are similar to levels reported during the same time period last year. In the past week, there were 3 constitutional alerts in the C(2) and N(1) Influenza Surveillance Regions and 5 respiratory alerts in the C Region.

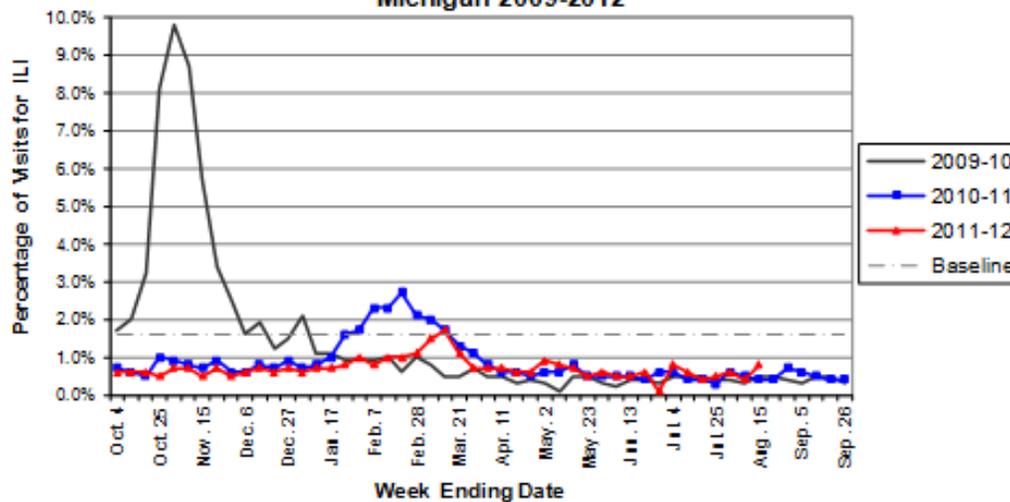
Sentinel Provider Surveillance (as of August 23): During the week ending August 18, 2012, the proportion of visits due to influenza-like illness (ILI) slightly increased to 0.8% overall; this is below the regional baseline of (1.6%). A total of 36 patient visits due to ILI were reported out of 4,710 office visits. Data were provided by twenty sentinel sites from the following regions: C (13), N (1), SE (4) and SW (2). ILI activity increased in two surveillance sites region: Central (0.8%) and Southwest (0.9%). The remaining two surveillance regions continued to report no ILI activity: North (0.0%) and Southeast (0.0%). These rates may change as additional reports are received.

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 Cristi Carlton at 517-335-9104 or CarltonC2@michigan.gov for more information.

**Percentage of Visits for Influenza-like Illness (ILI)
Reported by Sentinel Providers, Statewide and Regions
2010-2011 and 2011-12 Flu Seasons**



**Percentage of Visits for Influenza-like Illness (ILI) Reported by the
US Outpatient Influenza-like Illness Surveillance Network (ILINet):
Michigan 2009-2012**



Hospital Surveillance (as of August 18): The Influenza Hospitalization Surveillance Project provides population-based rates of severe influenza illness in Clinton, Eaton and Ingham counties. For the 2011-12 season, 27 influenza hospitalizations (9 adult, 18 pediatric) were reported in the catchment area.

The MDCH Influenza Sentinel Hospital Network monitors influenza hospitalizations reported voluntarily by hospitals statewide. 3 hospitals (SE, SW) reported for the week ending August 18, 2012. Results are listed in the table below.

Age Group	Hospitalizations Reported During Current Week	Total Hospitalizations 2011-12 Season
0-4 years	0	21
5-17 years	0	23
18-49 years	0	32
50-64 years	0	28
≥65 years	0	43
Total	0	147

Laboratory Surveillance (as of August 18): During August 12-18, two variant H3N2 influenza results (2SE) and 1 seasonal A(H3) result (1SE) were reported by MDCH BOL. For the 2011-12 season (starting Oct. 2, 2011), MDCH has identified 1167 seasonal influenza results and 2 variant influenza H3N2 results:

- Influenza A(H3): 1055 (608SE, 97SW, 303C, 47N)
- Influenza A(H1N1)pdm09: 32 (22SE, 3SW, 5C, 2N)
- Influenza B: 79 (30SE, 32SW, 12C, 5N)
- Influenza A(H3) and B co-infection: 1 (SE)
- Influenza A(H3N2)variant: 2 (2SE)
- Parainfluenza: 3 (2SE, 1C)
- Adenovirus: 3 (3SE)
- RSV: 4 (1SW, 1C, 2N)

9 sentinel labs (SE, SW, C, N) reported for the week ending August 18, 2012. One lab (SW) reported sporadic parainfluenza activity. No labs reported influenza A, influenza B, RSV, adenovirus or HMPV activity. Testing volumes are at very low levels.

Michigan Influenza Antigenic Characterization (as of August 23): For the 2011-12 season, 69 Michigan influenza B viruses have been characterized at MDCH. 8 viruses are B/Brisbane/60/2008-like (included in the 2011-12 vaccine). 61 are B/Wisconsin/01/2010-like (not included in the 2011-12 vaccine).

Michigan Influenza Antiviral Resistance Data (as of August 23): For the 2011-12 season, 26 Michigan influenza A(H1N1)pdm09 specimens and 95 influenza A(H3) specimens have been tested for antiviral resistance at MDCH Bureau of Laboratories; all have tested negative for oseltamivir resistance. 11 Michigan influenza A(H3N2), 2 influenza A(H1N1)pdm09, and 4 influenza B specimens have been tested for antiviral resistance at the CDC; all have tested negative for oseltamivir and zanamivir resistance.

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 23): No pediatric influenza-associated influenza mortalities have been reported to MDCH for the 2011-12 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 August 23): No new respiratory outbreaks were reported to MDCH during the past week. 30 respiratory outbreaks (5SE, 3SW, 20C, 2N) have been reported to MDCH during the 2011-12 season; testing results are listed below.

- Influenza A/H3: 15 (4SE, 1SW, 10C)
- Influenza A: 2 (2C)
- Human metapneumovirus: 1 (SW)
- Negative or not tested: 12 (1SE, 1SW, 8C, 2N)

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

International (WHO [edited], August 17): Most countries in the northern temperate zone have stopped weekly reporting or moved over to out of season surveillance schedules. The United States of America is continuing to detect cases of influenza A(H3N2)v in humans. Most cases have occurred with contact to swine and no sustained human to human transmission has been identified. In the tropical zone, the countries reporting notable influenza activity are Brazil, Cuba, El Salvador, Honduras and Panama in the Americas (influenza A(H1N1)pdm09 and type B); Ghana and Madagascar in sub-Saharan Africa (influenza A(H3N2) and type B); Bangladesh, southern China, India, Singapore, Sri Lanka and Viet Nam in Asia (influenza A(H3N2) or B). While New Zealand continues to report increases in some indicators, influenza activities have decreased in most of the temperate countries of the southern hemisphere. Australia, Chile, Paraguay and South Africa, continue to report declines in indicators. Argentina continues to report very low numbers of detections throughout 2012. Influenza A(H3N2) viruses are the most commonly reported type/sub-type in recent weeks across the southern hemisphere temperate region in Chile, South Africa, and Australia. A(H1N1)pdm09 is the most common influenza virus detected in Paraguay as well as neighbouring areas of southern Brazil and the Plurinational State of Bolivia, whereas Ecuador, El Salvador, Panama and Peru are reporting mostly influenza B.

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 2011-2012 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 (CIDRAP, August 17): Maryland, Pennsylvania, and Wisconsin have confirmed their first novel H3N2 (H3N2v) cases linked to contact with pigs, especially at fairs, this summer, as the national total has grown to 230 cases across nine states, according to state reports and the US Centers for Disease Control and Prevention (CDC).

Indiana reported the highest number of cases at 138, up from 120 reported the previous week. The swine-origin H3N2 virus contains the matrix gene from the 2009 H1N1 virus and so far this summer has been detected in Hawaii, Illinois, Indiana, Maryland, Michigan, Ohio, Pennsylvania, West Virginia, and Wisconsin.

Maryland today reported its first six H3N2v infections, in five children and one adult from Queen Anne's county who had direct contact with pigs. None of the patients had serious infections or were hospitalized.

Also, testing by the Maryland Department of Agriculture has detected a similar virus in pigs that the sick people had contact with at four Queen Anne's county farms. The Maryland Department of Health and Mental Hygiene (MDHMH) said in a statement that the findings in pigs are preliminary and will be confirmed by more testing. It said animal health officials will boost surveillance for the virus and monitor pigs at agricultural fairs in Maryland more closely for flulike symptoms. Fairs are under way in Montgomery and Worcester counties.

Pennsylvania is reporting four confirmed and six probable cases, all youth who participated in the Huntingdon County Fair that took place from Aug 5 through Aug 11, according to a statement today from the Pennsylvania Department of Health (PDH). None of the patients were hospitalized, and though investigations are ongoing, so far authorities have found no evidence of person-to-person spread.

Eli Avila, MD, JD, MPH, Pennsylvania's secretary for health, said the illnesses fit the typical flu profile, and he urged people to take the same precautions as for seasonal flu. "People should use common sense and take steps to protect their health if they're visiting or exhibiting in a county fair in the coming weeks, especially if they are at high risk for illnesses," he added.

Wisconsin health officials today said the Wisconsin State Laboratory of Hygiene has confirmed two H3N2v cases, both with links to the Wisconsin State Fair, according to a statement from the Wisconsin Department of Health Services (WDHS). The Wisconsin State Fair took place from Aug 1 through Aug 11 in West Allis, a suburb of Milwaukee.

One case was in an adult from southeastern Wisconsin who worked at the fair, but did not have direct contact with pigs. The other was in an adolescent from the western part of the state who exhibited swine at the fair.

Neither patient has been hospitalized and both are recovering from their illness, the WDHS said. The Wisconsin Division of Public Health is working with the state lab and local health departments to identify additional cases.

Henry Anderson, MD, Wisconsin's state health officer, said in the statement, "We encourage people to enjoy all their local fairs have to offer this summer, but take precautions to reduce the chances of getting H3N2v influenza." He urged older people, pregnant women, young children, and people with weakened immune systems to avoid swine barns this season.

Meanwhile, Indiana reported that three more counties (Marion, Marshall, and Delaware) are reporting H3N2v cases, pushing the total number of affected counties to 23. In a statement yesterday, the Indiana

State Department of Health (ISDH) said it found some duplicated samples that were submitted to the state lab and it has adjusted the number of confirmed cases in some counties.

Indiana health officials continue to investigate the cases but so far have found no evidence of person-to-person transmission, according to the statement, which said human infections are most likely in people who have close proximity to infected pigs, such as working with them in barns and in livestock exhibits at fairs.

Joe Bresee, MD, medical epidemiologist in the CDC's Influenza Division, told CIDRAP News that most of the H3N2v cases are still occurring in kids and people who have direct exposure to pigs, such as spending all day in a barn with them at a fair. "There have been some casual exposure cases, but not many," he said, adding that the CDC doesn't have enough information about all of the cases yet to assess the relative risks of different types of exposure.

The CDC expects to get more system data from the H3N2v infections in the next few weeks, Bresee said, but so far, more than 90% of the infections are occurring in kids, the same level the CDC reported last week.

In related developments, other countries are taking note of the H3N2v infections in the United States. The European Center for Disease Prevention and Control (ECDC) today updated its risk assessment of the infections, noting that the novel virus doesn't appear to present a serious health risk to humans or a threat to Europe. ECDC said it would reassess the risk if it appears that H3N2v becomes more pathogenic or better equipped to spread among humans.

The ECDC said no swine H3N2 virus that contain the former pandemic virus's matrix gene have been detected in European pigs.

Elsewhere, Hong Kong's Center for Health Protection (CHP) announced today that variant H3N2 has been declared a notifiable disease. A spokesman for the CHP said in a statement that the move was made to prepare for the possible importation of the virus into Hong Kong and that the strengthened surveillance can help streamline prevention and control measures.

The article is at <http://www.cidrap.umn.edu/cidrap/content/influenza/general/news/aug1712variant.html>.

National, Human (Minnesota Department of Health press release [edited], August 20): Minnesota has recorded its first confirmed case and a second probable case of a new influenza strain that people acquire through contact with pigs.

The two cases were reported in a pre-school-age child and an older sibling from a family living in the Twin Cities metro area. Both children developed symptoms of the illness two days after the family visited a live animal market in Dakota County on Aug. 10. Neither child required hospitalization, and both are recovering.

Both children were tested for the virus that causes the new flu strain, but only the younger child tested positive. However, the older child is considered a "probable" case, based on the child's history of flu-like illness and the family connection to the younger child.

Officials at the Minnesota Department of Health (MDH) believe both children were most likely exposed to the new flu strain from pigs while they were at the animal market.

The entire press release is at <http://www.health.state.mn.us/news/pressrel/2012/h3n2v082012.html>.

International, Poultry (OIE [edited], August 23): Highly pathogenic avian influenza H5N1; Vietnam
Outbreak 1: Dong Vien, Dong Vien, Cho Don, Bac Kan
Date of start of the outbreak: 16/08/2012; Outbreak status: Continuing; Epidemiological unit: Village
Species: Birds; Susceptible: 543; Cases: 50; Deaths: 0; Destroyed: 543

Outbreak 2: Yen Thuong, Yen Thuong, Cho Don, Bac Kan
Date of start of the outbreak: 28/07/2012; Outbreak status: Continuing; Epidemiological unit: Village
Species: Birds; Susceptible: 1227; Cases: 300; Deaths: 0; Destroyed: 1227

Outbreak 3: Bang Lung, Ban Lung, Cho Don, Bac Kan

Date of start of the outbreak: 10/08/2012; Outbreak status: Continuing; Epidemiological unit: Village
 Species: Birds; Susceptible: 97; Cases: 16; Deaths: 0; Destroyed: 97

Michigan Wild Bird Surveillance (USDA, as of August 23): For the 2012 season (April 1, 2012-March 31, 2013), highly pathogenic avian influenza H5N1 has not been recovered from the 7 samples tested nationwide. For more information, visit <http://www.nwhc.usgs.gov/ai/>. To learn about avian influenza surveillance in wild birds or to report dead waterfowl, go to the Emerging Disease website at <http://www.michigan.gov/emergingdiseases>.

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

Contributors

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Table. H5N1 Influenza in Humans – As of August 10, 2012. http://www.who.int/influenza/human_animal_interface/EN_GIP_20120810CumulativeNumberH5N1cases.pdf. Downloaded 8/13/2012. Cumulative lab-confirmed cases reported to WHO. Total cases include deaths.

Country	2003-2005		2006		2007		2008		2009		2010		2011		2012		Total	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
Azerbaijan	0	0	8	5	0	0	0	0	0	0	0	0	0	0	0	0	8	5
Bangladesh	0	0	0	0	0	0	1	0	0	0	0	0	2	0	3	0	6	0
Cambodia	4	4	2	2	1	1	1	0	1	0	1	1	8	8	3	3	21	19
China	9	6	13	8	5	3	4	4	7	4	2	1	1	1	2	1	43	28
Djibouti	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Egypt	0	0	18	10	25	9	8	4	39	4	29	13	39	15	10	5	168	60
Indonesia	20	13	55	45	42	37	24	20	21	19	9	7	12	10	8	8	191	159
Iraq	0	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	3	2
Lao PDR	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	2	2
Myanmar	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0
Nigeria	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	1
Pakistan	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	3	1
Thailand	22	14	3	3	0	0	0	0	0	0	0	0	0	0	0	0	25	17
Turkey	0	0	12	4	0	0	0	0	0	0	0	0	0	0	0	0	12	4
Vietnam	93	42	0	0	8	5	6	5	5	5	7	2	0	0	4	2	123	61
Total	148	79	115	79	88	59	44	33	73	32	48	24	62	34	30	19	608	359