



MI Flu Focus

Influenza Surveillance Updates
Bureaus of Epidemiology and Laboratories



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Updates of Interest

- **National:** CDC is reporting 12 additional cases of H3N2 variant virus (H3N2v) infection, as well as the first H3N2v-associated death
- **National:** Minnesota reports 3 human infections with a swine influenza H1N2 virus

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****H3N2v Influenza Update****

Since August 15, MDCH has reported 5 confirmed human cases of variant influenza A (H3N2) (H3N2v). Michigan cases have come from Clinton(1), Shiawassee(2) and Washtenaw(2) counties. All cases have had mild illness and have had either direct or indirect swine exposure at county fairs in Michigan. Updated Michigan case counts of confirmed H3N2v infections will be posted every Friday on the MDCH Influenza Website: www.michigan.gov/flu. In addition, 288 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

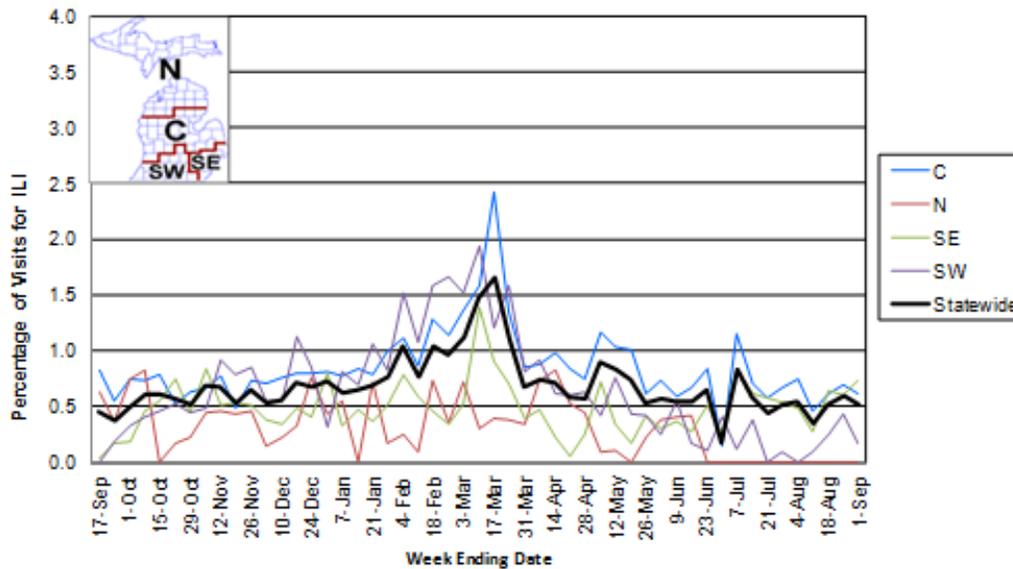
Michigan Disease Surveillance System (as of September 6): MDSS data for the week ending September 1st indicated that compared to levels from the previous week, aggregate and individual reports remained steady at sporadic levels. Individual and aggregate reports are similar to levels seen during the same time period last year.

Emergency Department Surveillance (as of September 6): Compared to levels from the week prior, emergency department visits from both constitutional and respiratory complaints slightly increased. Both constitutional and respiratory complaints are similar to levels reported during the same time period last year. In the past week, there were 10 constitutional alerts in the SE(1), SW(5), C(3) and N(1) Influenza Surveillance Regions and 12 respiratory alerts in the SW(3), C(7) and N(2) Regions. The increase in both constitutional and respiratory alerts during the past week might be artificially increased due to a data issue within the syndromic system.

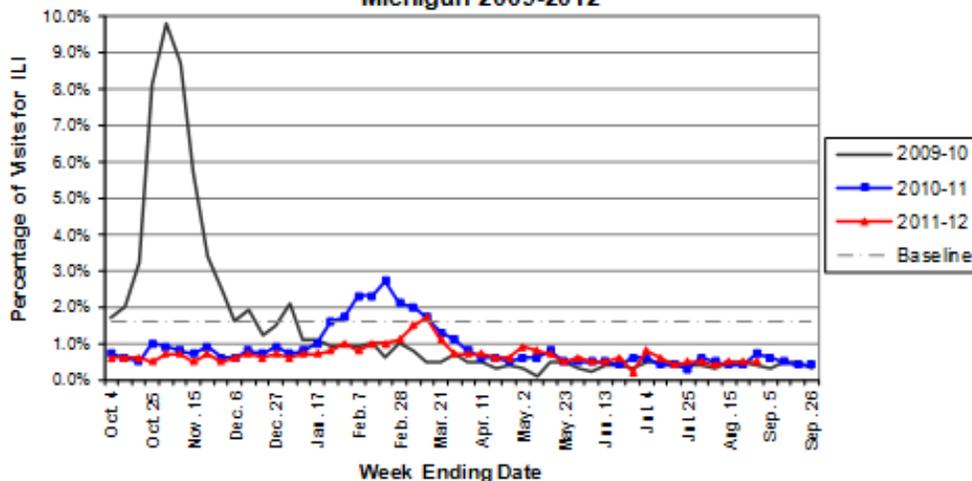
Sentinel Provider Surveillance (as of September 6): During the week ending September 1, 2012, the proportion of visits due to influenza-like illness (ILI) slightly decreased to 0.5% overall; this is below the regional baseline of (1.6%). A total of 38 patient visits due to ILI were reported out of 7,245 office visits. Data were provided by twenty-two sentinel sites from the following regions: C (13), N (2), SE (4) and SW (3). ILI activity increased in one surveillance region: Southeast (0.7%); decreased in two regions Central (0.6%) and Southwest (0.2%); and the remaining region continued to report no ILI activity: North (0.0%). Please Note: 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 September 1): 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 September 1, 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 September 1): During August 26-September 1, no positive influenza results were reported by MDCH BOL. For the 2011-12 season (starting Oct. 2, 2011), MDCH has identified 1168 seasonal influenza results and 5 variant influenza H3N2 results:

- Influenza A(H3): 1056 (608SE, 98SW, 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: 5 (2SE, 1SW, 2C)
- Parainfluenza: 3 (2SE, 1C)
- Adenovirus: 3 (3SE)
- RSV: 4 (1SW, 1C, 2N)

8 sentinel labs (SE, SW, C) reported for the week ending September 1, 2012. One lab (C) reported sporadic RSV activity. One lab (SW) reported sporadic parainfluenza activity. No labs reported influenza A, influenza B, adenovirus or HMPV activity. Testing volumes are at very low levels.

Michigan Influenza Antigenic Characterization (as of September 1): 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 September 1): 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 September 1): 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 September 1): 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 31): 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 has discovered new cases of swine origin influenza A(H3N2)v in humans; no sustained human-to-human transmission has been identified so far. In the tropical zone, the countries reporting notable influenza activity are Brazil, Costa Rica, Cuba, Ecuador, El Salvador, Honduras, Nicaragua Panama, Peru, and Bolivia in the Americas (A(H1N1)pdm09, A(H3N2) and type B); Ghana and Madagascar in sub-Saharan Africa (A(H3N2) and type B); Bhutan, Cambodia, southern China, Hong Kong, India, Lao People's Democratic Republic, Singapore, Sri Lanka and Viet Nam in Asia (A(H3N2) and type B). Influenza activity decreased in temperate countries of the southern hemisphere. Australia, Chile, New Zealand, Paraguay and South Africa, continue to report declines in most transmission indicators. Argentina continues to report very low numbers of detections compared to previous seasons. Influenza A(H3N2) viruses are the most commonly reported type/sub-type in recent weeks in most countries of the southern hemisphere temperate region including Chile, South Africa, and Australia. However, in Central America the previously reported transmission of A(H1N1)pdm09 has now largely transition to a predominance of influenza B. In tropical Asia, southern China and Southeast Asia have been reporting mostly A(H3N2), whereas Bhutan, India and Sri Lanka have had both A(H1N1) and B circulating. Reports of neuraminidase resistance continue to be very uncommon. Notably, Australia reports that a large proportion of the A(H3N2) viruses tested so far this season demonstrated reduced titers in haemagglutination inhibition assays using ferret antisera against the vaccine viruses contained in the current southern hemisphere vaccines.

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 (CDC web update [edited], August 31): Today, CDC is reporting 12 additional cases of H3N2 variant virus (H3N2v) infection, as well as the first H3N2v-associated death, which was reported by the state of Ohio. The death occurred in an older adult with multiple [underlying health conditions](#) who reportedly had direct exposure to pigs in a fair setting. While limited person-to-person spread of this virus has been detected and likely continues to occur sporadically, no sustained community transmission has been found. CDC is monitoring this situation and working with states to respond to these evolving outbreaks. The agency continues to urge people at high risk from serious flu complications to stay away from pigs and pig arenas at fairs this summer.

"We're saddened to hear about the death of one person in Ohio associated with the current H3N2v outbreaks," says CDC's Dr. Lyn Finelli. "Like with seasonal flu, we have been – and continue to be – particularly concerned about people with factors that put them at high risk of serious complications if they get the flu. These people should absolutely not have contact with pigs or visit pig arenas at fairs this summer." Dr. Finelli is Lead for the Surveillance and Outbreak Response Team Influenza Division.

High risk factors for serious flu complications include: being younger than 5 years (especially children younger than 2 years), or 65 and older, pregnancy, and certain chronic medical conditions like asthma, diabetes, heart disease, weakened immune systems, and neurological or neurodevelopmental conditions. [A full list of high risk conditions](#) is available on the CDC seasonal flu website.

"Anyone with a high risk factor should not only avoid pigs and pig arenas at fairs, but they should also seek prompt medical attention if they get flu-like symptoms, especially if they have pig exposure, but even in the absence of pig exposure," Finelli says.

CDC has issued [information for clinicians on H3N2v](#); guidance which underscores the importance of rapid antiviral treatment of influenza, including H3N2v virus infection, in high risk patients. The H3N2v virus is susceptible to the influenza antiviral drugs oseltamivir (Tamiflu ®) and zanamivir (Relenza ®).

For [seasonal flu, CDC recommends](#) that it is best that people with high risk conditions who develop flu-like symptoms contact their doctor, tell them about their symptoms, and remind them about their high risk status. For the current H3N2v outbreaks, if high risk people have exposure to pigs, it's especially important that they tell their doctor about this exposure.

"Like with seasonal flu," Finelli says, "prompt antiviral treatment in a high risk person can mean the difference between having a milder illness versus a very serious illness that could result in a hospital stay or even death." "This message is critical not only for people who are at high risk, but for America's doctors who are treating these patients. We want their suspicion for H3N2v to be high right now. Ask patients with influenza-like-illness if they have pig exposure, but regardless of whether they do, if they have a high risk factor, treat them empirically with antivirals for influenza without waiting for testing results."

The 12 new cases reported this week are from Minnesota (1), Ohio (3), Pennsylvania (1), and Wisconsin (7). Cumulative totals for 2011 and 2012 by state are available in the [H3N2v case count table](#).

Symptoms of H3N2v have been consistent with seasonal influenza and can include some or all of the following: fever, cough, sore throat, runny or stuffy nose, muscle or body aches, headaches and fatigue. Like with seasonal flu, it's possible that not everyone will have a fever. This may be particularly true in

elderly people or people with weakened immune systems, whose bodies may not mount as effective an immune response to the virus infection.

Found in U.S. pigs in 2010 and humans in July 2011, this H3N2v virus appears to spread more easily from pigs to people than other variant influenza viruses. Most reported cases to date have occurred in people who are exhibiting or helping to exhibit pigs at fairs this season after close and prolonged contact with pigs. "So far more than 90 percent of cases have occurred in people who are exhibiting or helping to exhibit pigs, or who are family members of these people. That is why our message is so targeted," says Finelli. CDC has developed recommendations and materials for people attending fairs this summer and is working with states as well as organizations like 4-H National Headquarters and the International Association of Fairs and Expositions to disseminate these [messages and materials](#).

CDC also has developed [supplemental H3N2v guidance for schools](#). Last year, there was at least one outbreak of H3N2v in a day care setting in the fall and CDC believes it possible that localized outbreaks of H3N2v, particularly in schools or day cares, may occur as the weather turns colder and schools across the country are underway. "The guidance document is a heads up for schools to be aware of, and on the look-out for, illness with this virus," Finelli explains.

"It's important to remember that this is an evolving situation that could change quickly." Finelli concludes, "We're constantly looking at our data and re-evaluating."

The update is available online at <http://www.cdc.gov/flu/spotlights/h3n2v-more-cases.htm>.

National, Human (CIDRAP [edited], August 31): Three people contracted H1N2 influenza infections, a strain very rarely seen in humans, after exposure to pigs at the Minnesota State Fair in the Twin Cities, the Minnesota Department of Health (MDH) announced this afternoon.

One of the three cases has been confirmed by the Centers for Disease Control and Prevention (CDC), and test results for the other two cases were pending, the MDH said in a press release. One of the patients was hospitalized, but all three have recovered or are recovering.

The MDH said the variant H1N2, or H1N2v, strain is different from the swine-origin H3N2v strain that has caused about 290 cases so far this year, mostly in people exposed to pigs at county and state fairs.

Two sick pigs at the State Fair swine exhibit were found to be infected with the same H1N2 virus earlier this week, and were isolated from contact with other pigs, the MDH said, adding that H1N2 infections are not considered unusual in pigs.

One of the three human cases has been confirmed in a teenage girl who was exhibiting pigs at the fair and became ill on Aug 26, according to the MDH. Another case occurred in an elementary-school-aged boy who got sick on Aug 27 after spending all day in the swine barn on Aug 24, and the third case involved a woman in her late 70s who became ill on Aug 26 after spending a long time in the swine barn and at the swine show in the fair Exhibit Hall on Aug 24.

Both the boy and the older woman had underlying health conditions and were treated with antiviral drugs, officials said. The woman was hospitalized but has been released. MDH spokesman Buddy Ferguson said he could give no further details on the severity of their illnesses.

The teenager was tested for influenza after she reported her illness to nursing staff at the fair. The other cases were reported to MDH by healthcare providers, the agency said. Healthcare providers have been asked to report cases of flu-like illness in people who have had contact with swine, and swine exhibitors have been asked to report any flu-like symptoms they experience.

"For the past two weeks, we have been looking very hard for cases of influenza in people who have been exposed to swine," Richard Danila, deputy state epidemiologist, said in the press release. "We have also worked closely with our veterinary colleagues to remain informed about potential infections in swine at the Fair. It is because of this careful surveillance that these cases have come to our attention."

MDH officials said they do not expect to change their current recommendation that people at high risk for severe flu should avoid contact with pigs at exhibitions, live markets, and other venues. Those at high risk include children younger than 5 years, pregnant women, people over age 65, and those with chronic medical conditions.

Human H1N2 infections have been reported rarely, but one such case was reported in a Minnesota child in December 2011. The CDC said at the time that a similar case had been reported in Michigan in 2007. Both of those patients recovered.

View the article at <http://www.cidrap.umn.edu/cidrap/content/influenza/general/news/aug3112h1n2v.html>.

International, Poultry (OIE [edited], September 6): Highly pathogenic avian influenza H5N1; Vietnam
Outbreak 1: Lien Loc, Lien Loc, Hau Loc, THANH HOA

Date of start of the outbreak: 10/08/2012; Outbreak status: Continuing; Epidemiological unit: Village
Species: Birds; Susceptible: 725; Cases: 50; Deaths: 0; Destroyed: 725

Outbreak 2: Hoa Loc, Hoa Loc, Hau Loc, THANH HOA

Date of start of the outbreak: 12/08/2012; Outbreak status: Continuing; Epidemiological unit: Village
Species: Birds; Susceptible: 280; Cases: 50; Deaths: 0; Destroyed: 280

Outbreak 3: Hanh Thuan, Hanh Thuan, Nghia Hanh, QUANG NGAI

Date of start of the outbreak: 23/08/2012; Outbreak status: Continuing; Epidemiological unit: Village
Species: Birds; Susceptible: 1200; Cases: 53; Deaths: 53; Destroyed: 1147

Michigan Wild Bird Surveillance (USDA, as of September 6): 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_20120810_CumulativeNumberH5N1cases.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