



MI Flu Focus

Influenza Surveillance Updates
Bureaus of Epidemiology and Laboratories



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Updates of Interest

- **National:** Indiana reports 4 confirmed human cases of variant influenza A (H3N2) virus
- **International:** Research shows that influenza B virus infections can also cause severe illness in adults

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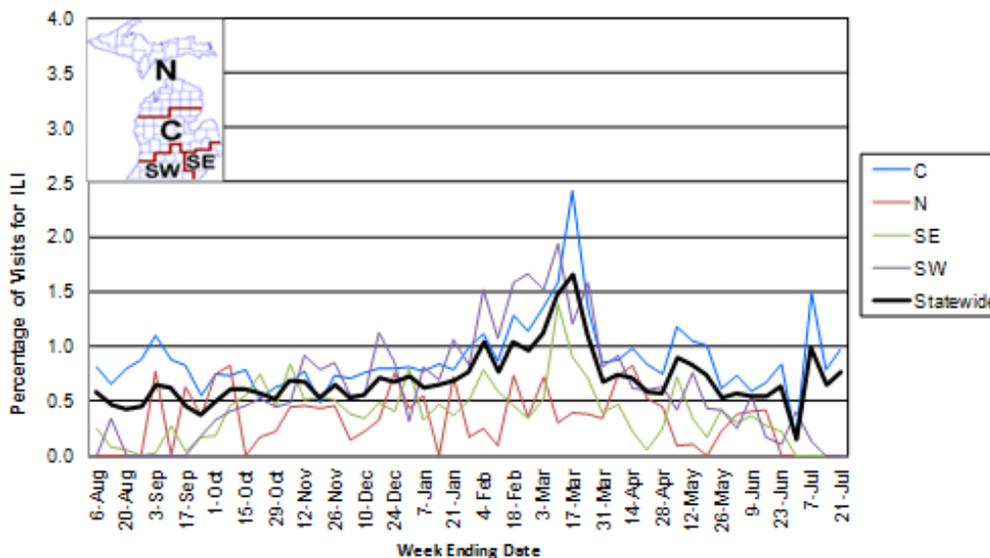
Influenza Surveillance Reports

Michigan Disease Surveillance System (as of July 26): MDSS data for the week ending July 21th 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.

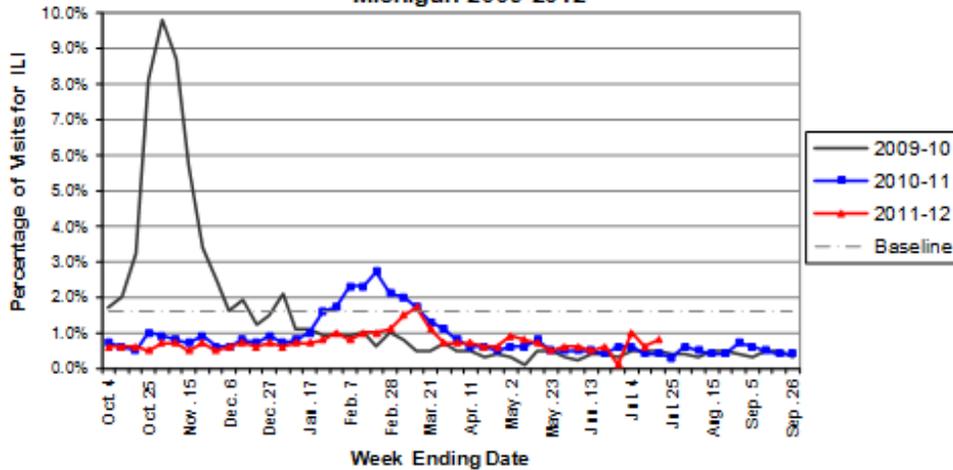
Emergency Department Surveillance (as of July 26): Compared to levels from the week prior, emergency department visits from both constitutional and respiratory complaints remained steady. Both constitutional and respiratory complaints are similar to levels reported during the same time period last year. In the past week, there were 3 constitutional alerts in the C(2) and N(1) Influenza Surveillance Regions and 2 respiratory alerts in the C Region.

Sentinel Provider Surveillance (as of July 26): During the week ending July 21, 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 25 patient visits due to ILI were reported out of 3,262 office visits. Fourteen sentinel sites provided data for this report. ILI activity increased in one surveillance region: Central (1.0%); the remaining three surveillance regions continued to report no ILI activity: North (0.0%), Southwest (0.0%) and Southeast (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
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**



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.

Hospital Surveillance (as of July 21): 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) have been reported in the catchment area.

The MDCH Influenza Sentinel Hospital Network monitors influenza hospitalizations reported voluntarily by hospitals statewide. 2 hospitals (SE, SW) reported for the week ending July 21, 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 July 21): During July 15-21, no positive influenza results were reported by MDCH BOL. For the 2011-12 season (starting Oct. 2, 2011), MDCH has identified 1166 influenza results:

- Influenza A(H3): 1054 (607SE, 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)
- Parainfluenza: 2 (1SE, 1C)
- Adenovirus: 3 (3SE)
- RSV: 4 (1SW, 1C, 2N)

9 sentinel labs (SE, SW, C, N) reported for the week ending July 21, 2012. 1 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 July 26): 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 influenza vaccine). 61 are B/Wisconsin/01/2010-like (not included in the 2011-12 vaccine).

Michigan Influenza Antiviral Resistance Data (as of July 26): 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 July 26): 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_pediatic_influenza_guidance_v2_214270_7.pdf.

Influenza Congregate Settings Outbreaks (as of July 26): No new respiratory outbreaks were reported to MDCH during the previous week. 29 respiratory outbreaks (6SE, 3SW, 19C, 1N) 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: 11 (1SE, 1SW, 8C, 1N)

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], July 20): The influenza season is largely finished in the temperate countries of the northern hemisphere and most countries in the northern temperate zone have stopped weekly reporting or moved over to out of season surveillance schedules. In the tropical zone, the countries to report notable influenza activity are Bolivia, Brazil, and Honduras in the Americas; Ghana in sub-Saharan Africa; southern China, including Hong Kong Special Administrative Region, and Viet Nam in Asia. The influenza season has commenced in most temperate countries of the southern hemisphere. In Argentina, however, influenza remains nearly undetectable. Influenza A(H3N2) viruses were the most commonly reported type/sub-type in recent weeks in the Southern Hemisphere temperate region in Chile, South Africa, and Australia; however, significant numbers of influenza type B were also reported in South Africa and to a lesser extent, Australia. Very few influenza A(H1N1)pdm09 viruses have been reported with exception of Paraguay and some countries in Central and tropical South America.

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 and Swine (Indiana State Department of Health press release, July 25): The Indiana State Department of Health, the Indiana Board of Animal Health, and the LaPorte County Health Department are actively investigating an outbreak of four human illnesses associated with the LaPorte County Fair, held July 8-14. All four individuals had direct contact with swine and all four cases are now recovered.

The State Health Department continues to collect information to determine the extent of the illnesses. Symptoms reported include cough, fever and sore throat. Confirmed test results on patient specimens indicate the cause as a variant influenza A virus. Swine specimens also tested positive for this virus.

Influenza viruses can be directly transmitted from swine to people and from people to swine. Human infections are most likely to occur when people are in close proximity to live infected swine, such as in barns and livestock exhibits at fairs. Influenza viruses are not transmitted by eating pork and pork products.

Since 2011, 17 human cases of variant influenza A virus have been identified nationwide. Six of these cases have been identified in Indiana.

Individuals should always wash hands with soap and water before and after petting or touching any animal. Never eat, drink, or put anything in your mouth in animal areas. Older adults, pregnant women, young children, and people with weakened immune systems should be extra careful around animals.

Hoosiers who have direct, routine contact with swine, such as working in swine barns or showing swine at fairs, and have experienced cough or influenza-like illness should contact their health care provider or local health department. Symptoms include cough, sore throat, fever, body aches, and possibly other symptoms, such as nausea, vomiting, or diarrhea.

While influenza is not an uncommon diagnosis in pigs, the State Board of Animal Health encourages swine owners to contact a veterinarian if their animals show signs consistent with flu, including coughing, respiratory illness, off-feed and fever. Most county fairs have a private veterinary practitioner on call for on-site assistance.

Additional information regarding influenza can be found at the Indiana State Department of Health website at www.in.gov/isdh/25462.htm.

The press release is available online at http://www.in.gov/activecalendar/EventList.aspx?fromdate=7/1/2012&todate=7/31/2012&display=Month&type=public&eventidn=57794&view=EventDetails&information_id=116631.

International, Research (CIDRAP, July 25): Although 2009 H1N1 influenza A (pH1N1) infections have gained more notoriety, influenza B infections, often thought of as mild illnesses in adults, can be just as severe, say results of a Spanish study in the *Journal of Infection*. Fifty adult patients with laboratory-confirmed influenza B and 80 with pH1N1 who were hospitalized or were followed as outpatients because of pregnancy or solid-organ transplant were studied prospectively during the postpandemic 2010-11 flu season to compare features, severity, and outcomes. Median age of the flu B patients was 34 and of the pH1N1 patients 39. Disease was considered severe in 32 (64%) of flu B and in 55 (68%) of pH1N1 cases ($P = 0.57$). Five (10%) of the flu B and 14 (17.5%) of the pH1N1 patients were admitted to the intensive care unit ($P = 0.23$). Fourteen (28%) of the flu B patients and 30 (37.5%) of the pH1N1 patients had pneumonia ($P = 0.26$); in the pneumonia patients, bacterial co-infection was present in 5 (37.7%) with flu B and 4 (13.3%) with pH1N1 ($P = 0.11$). Overall, 5 (10%) flu B patients and 13 (16.3%) pH1N1 patients died ($P = 0.31$); the outcome was worse in those with pneumonia: 4 (28.5%) of the flu B pneumonia patients and 12 (40%) of the pH1N1 pneumonia patients died ($P = 0.46$).

The abstract is available at [http://www.journalofinfection.com/article/S0163-4453\(12\)00196-X/abstract](http://www.journalofinfection.com/article/S0163-4453(12)00196-X/abstract).

International, Research (Emerging Infectious Disease abstract, July 24): Connie Leung YH, Lau EHY, Zhang LJ, Guan Y, Cowling BJ, Peiris JSM. Avian influenza and ban on overnight storage in live poultry markets, Hong Kong. *Emerg Infect Dis* [serial on the internet]. 2012 Aug.

We analyzed ~12 years of surveillance data on avian influenza in Hong Kong live poultry markets. A ban on keeping live poultry overnight in these markets reduced virus isolation rates by 84% in chickens ($p=0.006$) and 100% ($p=0.01$) in minor poultry.

The full article is available online at http://wwwnc.cdc.gov/eid/article/18/8/11-1879_article.htm.

International, Poultry (OIE [edited], July 23): Highly pathogenic avian influenza H5N1; Vietnam
Outbreak 1: Loc Thuy, Loc Thuy, Le Thuy, QUANG BINH
Date of start of the outbreak: 11/07/2012; Outbreak status: Continuing; Epidemiological unit: Village
Species: Birds; Susceptible: 1500; Cases: 500; Deaths: 500; Destroyed: 1000

Outbreak 2: An Ninh, An Ninh, Quang Ninh, QUANG BINH
Date of start of the outbreak: 07/07/2012; Outbreak status: Continuing; Epidemiological unit: Village
Species: Birds; Susceptible: 7500; Cases: 160; Deaths: 160; Destroyed: 7340

Outbreak 3: Son Thuy, Son Thuy, Le Thuy, QUANG BINH
Date of start of the outbreak: 09/07/2012; Outbreak status: Continuing; Epidemiological unit: Village

Species: Birds; Susceptible: 6600; Cases: 2300; Deaths: 2300; Destroyed: 3300

Outbreak 4: Vinh Lap, Vinh Lap, Thanh Ha, HAI DUONG

Date of start of the outbreak: 15/07/2012; Outbreak status: Continuing; Epidemiological unit: Village

Species: Birds; Susceptible: 2042; Cases: 600; Deaths: 600; Destroyed: 1442

International, Poultry (OIE [edited], July 25): Highly pathogenic avian influenza H7N3; Mexico

Outbreak 1: Encarnacion de Diaz, foco 34, Encarnacion de Diaz, JALISCO

Date of start of the outbreak: 23/07/2012; Outbreak status: Continuing; Epidemiological unit: Farm

Species: Birds; Susceptible: 405611; Cases: 0; Deaths: 0; Destroyed: 0

Outbreak 2: Acatic, foco 33, Acatic, JALISCO

Date of start of the outbreak: 16/07/2012; Outbreak status: Continuing; Epidemiological unit: Farm

Species: Birds; Susceptible: 42592; Cases: 0; Deaths: 0; Destroyed: 0

Outbreak 3: Tepatitlan de Morelos, foco 35, Tepatitlan de Morelos, JALISCO

Date of start of the outbreak: 23/07/2012; Outbreak status: Continuing; Epidemiological unit: Farm

Species: Birds; Susceptible: 502688; Cases: 5; Deaths: 5; Destroyed: 0

Michigan Wild Bird Surveillance (USDA, as of July 26): 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 July 6, 2012. http://www.who.int/influenza/human_animal_interface/EN_GIP_20120706CumulativeNumberH5N1cases.pdf. Downloaded 7/9/2012. 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	7	7	190	158
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	29	18	607	358