



MI Flu Focus

Influenza Surveillance Updates
Bureaus of Epidemiology and Laboratories

Michigan Department
of Community Health



Rick Snyder, Governor
James K. Haveman, Director

Editor: Susan Peters, DVM PetersS1@michigan.gov
Surveillance and Infectious Disease Epidemiology

January 24, 2013
Vol. 10; No. 4

Current Influenza Activity Levels:

- **Michigan:** Widespread activity
- **National:** During January 6-12, U.S. activity stayed elevated, but decreased in some areas

Updates of Interest

- **International:** Research finds no association between adverse fetal outcomes and maternal oseltamivir use

Table of Contents

Influenza Surveillance Reports	
Michigan.....	1-3
National.....	3-4
International.....	4-5
Novel Influenza and Other News	
WHO Pandemic Phase.....	5
Avian Influenza Surveillance.....	6
Avian Influenza H5N1 in Humans.....	7

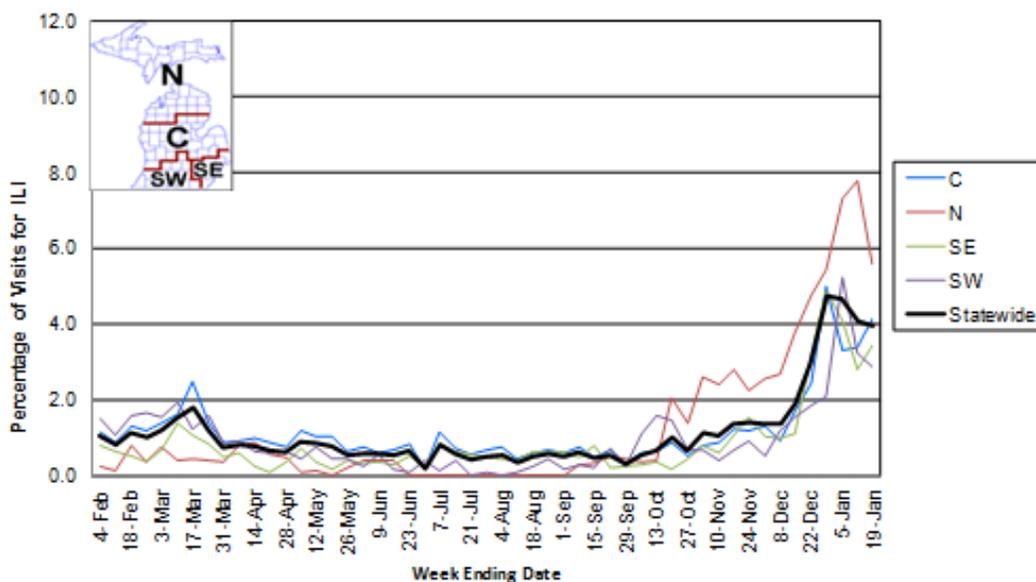
Influenza Surveillance Reports

Michigan Disease Surveillance System (as of January 24): MDSS data for the week ending January 19th indicated that compared to levels from the previous week, aggregate reports increased and individual reports remained steady. Aggregate reports are slightly increased when compared to levels seen during the same time period last year, while individual reports are significantly increased.

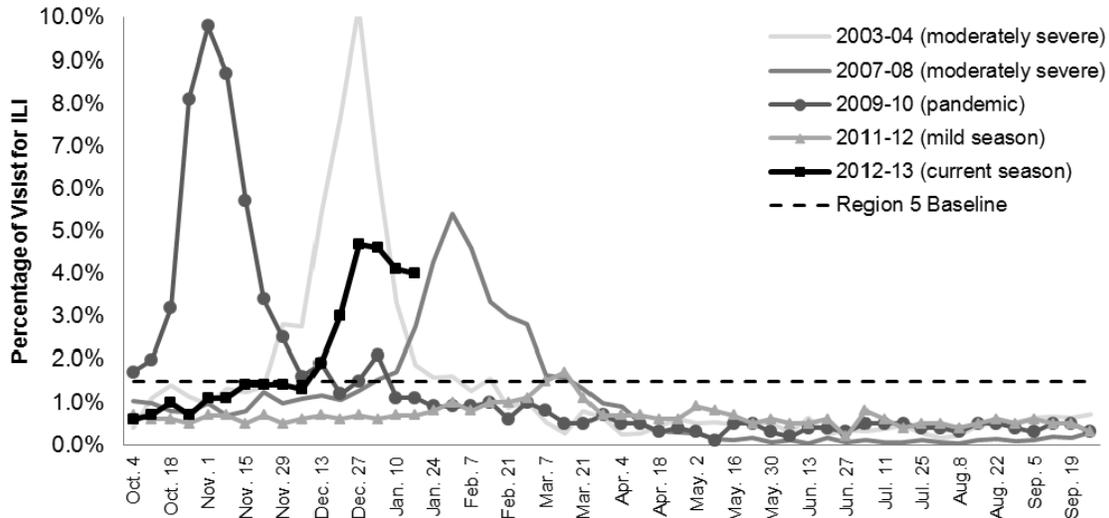
Emergency Department Surveillance (as of January 24): Compared to levels from the week prior, emergency department visits from constitutional complaints increased, while respiratory complaints decreased. Both constitutional and respiratory complaints are higher than levels reported during the same time period last year. In the past week, there were 12 constitutional alerts in the SE(5), SW(1), C(4) and N(2) Influenza Surveillance Regions and 2 respiratory alerts in the C(1) and N(1) Regions.

Sentinel Provider Surveillance (as of January 24): During the week ending January 19, 2013, the proportion of visits due to influenza-like illness (ILI) slightly decreased to 4.0% overall; this is above the regional baseline (1.5%). A total of 510 patient visits due to ILI were reported out of 12,910 office visits. Data were provided by forty-two sentinel sites from the following regions: C (14), N (10), SE (10) and SW (8). ILI activity increased in two surveillance regions: Central (4.1%) and Southeast (3.4%); and decreased in two regions: Southwest (2.9%) and North (5.6%). 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
2011-2012 and 2012-13 Flu Seasons



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

Hospital Surveillance (as of January 19): 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. 26 new cases were identified during the past week. As of January 19th, there have been 131 influenza hospitalizations (96 adult, 35 pediatric) within the catchment area. The incidence rate for adults is 14.1 hospitalizations per 100,000 population and for children is 16.8 hospitalizations per 100,000.

The MDCH Influenza Sentinel Hospital Network monitors influenza hospitalizations reported voluntarily by hospitals statewide. 11 hospitals (SE, SW, C, N) reported for the week ending January 19, 2013. Results are listed in the table below.

Age Group	Hospitalizations Reported During Current Week	Total Hospitalizations 2012-13 Season
0-4 years	7 (2SE, 3C, 2N)	21 (4SE, 14C, 3N)
5-17 years	0	8 (2SE, 5C, 1N)
18-49 years	5 (5SE)	19 (11SE, 7C, 1N)
50-64 years	15 (13SE, 1C, 1N)	35 (22SE, 1SW, 7C, 5N)
≥65 years	44 (37SE, 2SW, 5N)	136 (83SE, 13SW, 14C, 26N)
Total	71 (57SE, 2SW, 4C, 8N)	219 (122SE, 14SW, 47C, 36N)

Laboratory Surveillance (as of January 19): During January 13-19, 56 positive influenza A/H3 results (5SE, 15SW, 30C, 6N) and 7 influenza B (1SW, 5C, 1N) results were reported by MDCH BOL. For the 2012-13 season (starting Sept. 30, 2012), MDCH has identified 508 influenza results:

- Influenza A(H3): 421 (116SE, 142SW, 129C, 34N)
- Influenza A(H1N1)pdm09: 6 (4SE, 2N)
- Influenza B: 81 (19SE, 18SW, 34C, 10N)
- Parainfluenza: 8 (3SW, 1C, 4N)
- RSV: 1 (1N)

17 sentinel labs (SE, SW, C, N) reported for the week ending January 19, 2013. 17 labs (SE, SW, C, N) reported flu A activity; activity at most was at moderate to high levels but is also starting to slowly decrease. 16 labs (SE, SW, C, N) had low or moderate flu B activity, with several sites showing increasing activity. 3 labs (SE, SW) had low parainfluenza activity. 14 labs (SE, SW, C, N) had RSV activity; most were at low to moderate levels with one site (SE) at high levels. 4 labs (SE, SW, C) reported low HMPV activity. Testing volumes continue to be at high or very high levels for most sites.

Michigan Influenza Antigenic Characterization (as of January 24): For the 2012-13 season, 41 Michigan influenza B specimens have been characterized at MDCH BOL. 29 specimens are B/Wisconsin/01/2010-like, matching the B component of the 2012-13 influenza vaccine. 12 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 January 24): For the 2012-13 season, 23 influenza A/H3 specimens and 3 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 January 24): 4 pediatric influenza-associated influenza mortalities (2 A/H3, 2B) have been reported for the 2012-13 season.

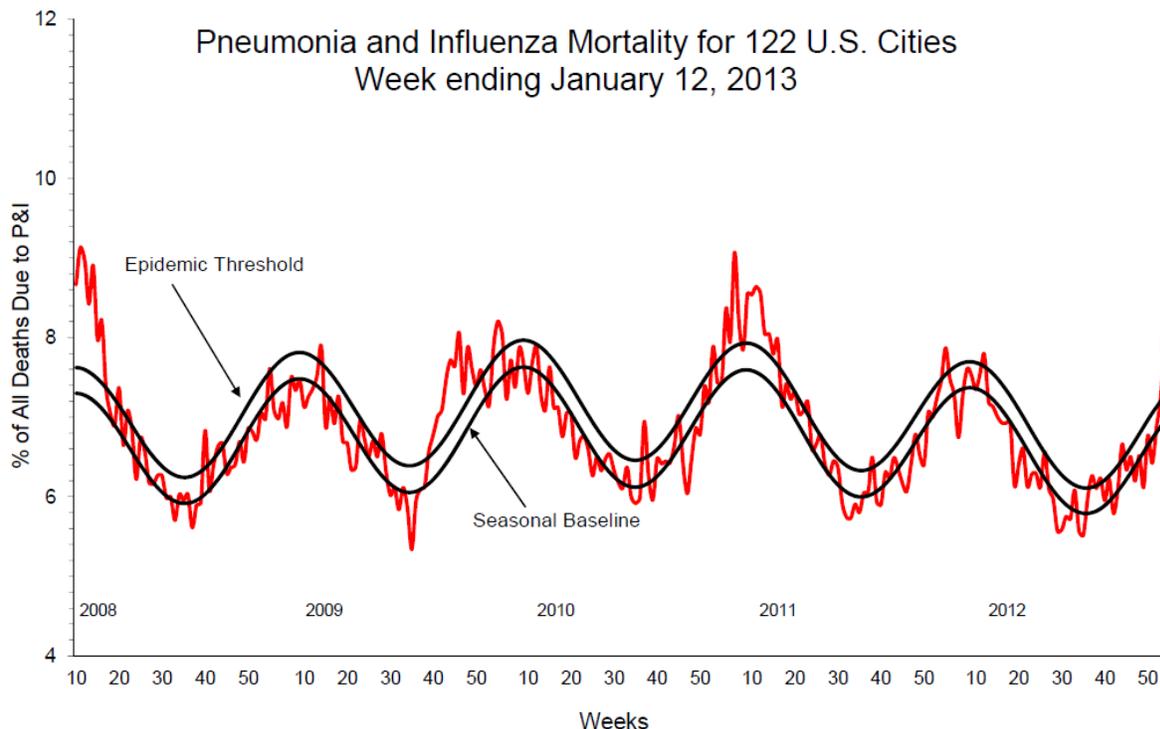
CDC requires reporting of flu-associated pediatric deaths (<18 yrs), including pediatric deaths due to an influenza-like illness with lab confirmation of influenza or any unexplained pediatric death with evidence of an infectious process. Contact MDCH immediately for proper specimen collection. The MDCH protocol is at www.michigan.gov/documents/mdch/ME_pediatric_influenza_guidance_v2_214270_7.pdf.

Influenza Congregate Settings Outbreaks (as of January 24): 10 respiratory outbreaks were reported during the previous week from the SE(3), SW(1), C(4) and N(2) Regions. These facilities were long-term care facilities (5), assisted living facilities (2) and schools (3). 6 were positive for influenza A, 1 was positive for influenza with no subtyping, and 3 had no testing performed. 3 previously reported long-term care outbreaks (1SW, 2C) were confirmed as influenza A/H3. 79 respiratory outbreaks (10SE, 23SW, 32C, 14N) have been reported to MDCH during the 2012-13 season; testing results are listed below.

- Influenza A/H3: 14 (6SW, 8C)
- Influenza A: 38 (4SE, 10SW, 16C, 8N)
- Influenza B: 5 (1SE, 2SW, 1C, 1N)
- Influenza A and B: 2 (1SE, 1SW)
- Influenza positive: 4 (1SE, 1SW, 2C)
- Negative/no testing: 16 (3SE, 3SW, 5C, 5N)

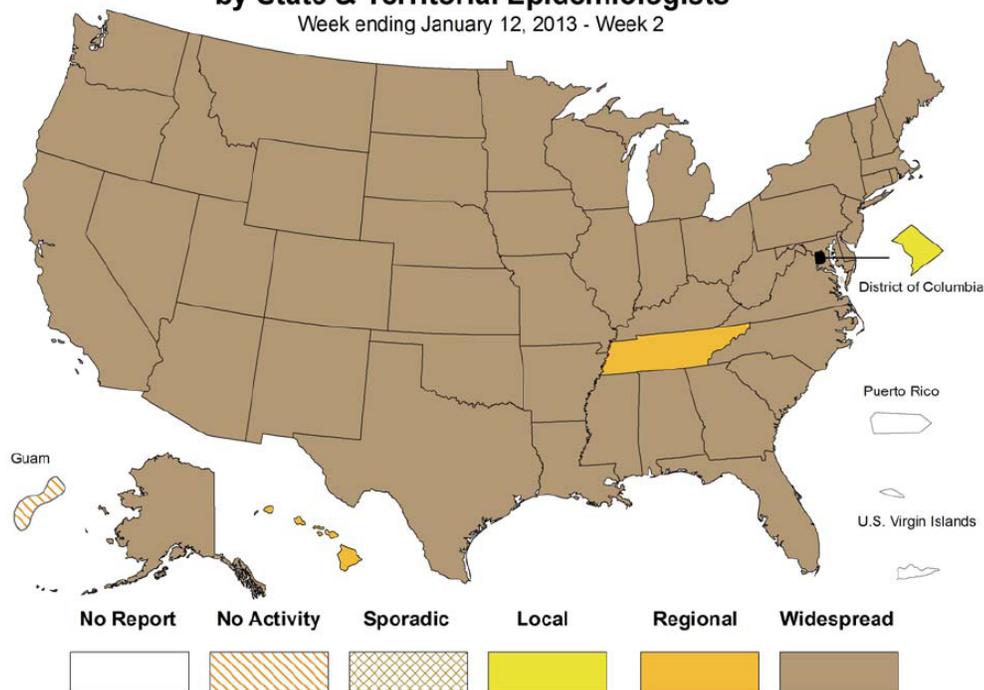
National (CDC [edited], January 18): During week 2 (Jan. 6-12), influenza activity remained elevated in the U.S., but decreased in some areas. Of 12,360 specimens tested and reported by collaborating labs, 3,638 (29.4%) were positive for influenza. The proportion of deaths attributed to pneumonia and influenza (P&I) was above the epidemic threshold. Nine influenza-associated pediatric deaths were reported. A cumulative rate for the season of 18.8 laboratory-confirmed influenza-associated hospitalizations per 100,000 population was reported. Among all cases, 49.6% were in adults 65 years and older. The proportion of outpatient visits for influenza-like illness (ILI) was 4.6%; this is above the national baseline of 2.2%. All 10 regions reported ILI above region-specific baseline levels. 30 states and New York City experienced high ILI activity; 10 states experienced moderate activity; 7 states experienced low activity; 3 states experienced minimal activity, and the District of Columbia had insufficient data. 48 states reported widespread geographic influenza activity; 2 states reported regional activity; the District of Columbia reported local activity; Guam reported no activity, and Puerto Rico and U.S. Virgin Islands did not report.

Pneumonia and Influenza (P&I) Mortality Surveillance: During week 2, 8.3% of all deaths reported through the 122 Cities Mortality Reporting System were due to P&I. This percentage was above the epidemic threshold of 7.3% for week 2.

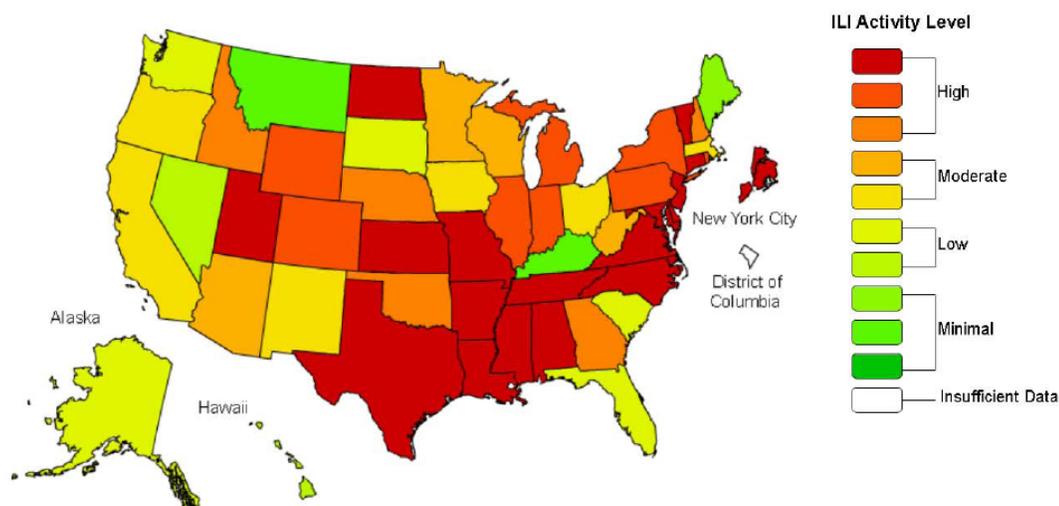


Weekly Influenza Activity Estimates Reported by State & Territorial Epidemiologists*

Week ending January 12, 2013 - Week 2



Influenza-Like Illness (ILI) Activity Level Indicator Determined by Data Reported to ILINet 2012-13 Influenza Season Week 2 ending Jan 12, 2013



This map uses the proportion of outpatient visits to healthcare providers for influenza-like illness to measure the ILI activity level within a state. Therefore, outbreaks occurring in a single city could cause the state to display high activity levels. Data collected in ILINet may disproportionately represent certain populations within a state, and therefore, may not accurately depict the full picture of influenza activity for the whole state. Data displayed on this map are based on data collected in ILINet, whereas the State and Territorial flu activity map are based on reports from state and territorial epidemiologists.

The complete FluView report is available online at <http://www.cdc.gov/flu/weekly/fluactivity.htm>.

International (WHO [edited], January 18): Influenza activity in North America remained high with some indications that activity might have peaked in areas. Some but not all indicators of severity in the United States of America and Canada have been slightly higher than in previous recent seasons. The onset of the season was earlier than usual and coincided with circulation of other respiratory viruses. Influenza A(H3N2) predominates in North America with A(H1N1)pdm09 being uncommon. Many countries in Europe and temperate Asia are reporting increasing influenza activity with A(H1N1)pdm09 being relatively more prominent in Europe than in North America. Some countries in the Eastern Mediterranean and the North Africa have reported declining detections of influenza positive samples. Influenza A(H1N1)pdm09 is predominant in the region. In tropical Asia, the influenza activity is similar to previous

weeks, with persistent low-level circulation. Influenza activity in sub-Saharan Africa has declined in most countries. In the Caribbean, central America and tropical south America, influenza activity decreased to low levels, except for Bolivia, where there is increasing circulation of influenza A(H3N2). Influenza in countries of the southern hemisphere are currently at inter-seasonal levels

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

MDCH reported WIDESPREAD FLU ACTIVITY to CDC for the week ending January 19, 2013.

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, Vaccine (CIDRAP, January 23): The trivalent inactivated flu vaccine (TIV) for 2010-11 was 63% effective against lab-confirmed influenza during that season, while the previous year's pandemic 2009 H1N1 (pH1N1) vaccine offered no protection against pH1N1 for the 2010-11 season, according to a study yesterday in the *Journal of Infectious Diseases*. The study, from the Marshfield Clinic in Wisconsin, involved more than 1,500 patients in the Marshfield area. Researchers found TIV effectiveness against polymerase chain reaction–confirmed influenza A to be 63% (95% confidence interval [CI], 37%-78%) and against lab-confirmed pH1N1 to be 77% (95% CI, 44%-90%). They also found that receiving both the pH1N1 vaccine in 2009-10 and the TIV in 2010-11 did not change vaccine effectiveness in 2010-11 in a statistically significant way. In a subset of only 17 patients, they found the effectiveness of the previous year's pH1N1 monovalent vaccine to be -1% (95% CI, -146% to 59%) against pH1N1 in 2010-11. They conclude, "This waning effectiveness supports the need for annual revaccination, even in the absence of antigenic drift."

The abstract is available online at <http://jid.oxfordjournals.org/content/early/2013/01/20/infdis.jit020.short>.

International, Human (WHO, January 16): Human infection with avian influenza A(H5N1) viruses and associated animal health events

From 2003 through 16 January 2013, 610 laboratory-confirmed human cases with avian influenza A(H5N1) virus infection have been officially reported to WHO from 15 countries, of which 360 died. Since the last update on 17 December 2012, no new laboratory-confirmed human cases with influenza A(H5N1) virus infection were reported to WHO.

Recent poultry outbreaks in Indonesia have been attributed to influenza virus A(H5N1) clade 2.3.2.1. This clade has not been previously detected in Indonesia, although it has been circulating for some years in poultry and has been isolated from a few human cases with H5N1 infection in other countries.

Any time influenza viruses are circulating in poultry there is a risk of sporadic infections or small clusters of human cases. Based on current information, the public health risk from the H5N1 virus of the 2.3.2.1 clade (e.g. pathogenicity, transmissibility in humans) does not seem to be different from the public health risk associated with other H5N1 virus clades.

Public health risk assessment of avian influenza A(H5N1) viruses: The public health risk remains unchanged.

The assessment is available online at www.who.int/influenza/human_animal_interface/Influenza_Summary_IRA_HA_interface_16Jan13.pdf.

International, Antivirals (American Journal of Obstetrics and Gynecology abstract, January 17): Hai-yan Xie, Abdool S. Yasseen III, Ri-hua Xie, Deshayne B. Fell, Ann E. Sprague, Ning Liu, Graeme N. Smith, Mark C. Walker, Shi Wu Wen, Infant outcomes among pregnant women who used oseltamivir

for treatment of influenza during the H1N1 epidemic, American Journal of Obstetrics and Gynecology, Available online 17 January 2013.

Background: This study was undertaken to examine the association between maternal oseltamivir treatment for influenza and infant outcomes during the 2009 H1N1 influenza pandemic.

Methods: This was a retrospective cohort study using a population-based maternal newborn database including women who gave birth to a singleton infant in the Canadian province of Ontario between November 2009 and April 2010. Risks of small for gestational age (SGA, 10th percentile and 3rd percentile), preterm birth (<37 weeks of gestation), very preterm birth (<32 weeks of gestation), and five-minute Apgar score <7 associated with maternal exposure to oseltamivir were analyzed by multivariable regression.

Results: A total of 55,355 women with a singleton birth were included in this study. Among them, 1,237 (2.2%) women received oseltamivir for treatment or prevention of influenza during pregnancy. Women who took oseltamivir during pregnancy were less likely to have a SGA infant based on the 10th percentile for growth (aRR 0.77; 95% confidence interval (CI) 0.60-0.98). No association between maternal use of oseltamivir with SGA on 3rd percentile, preterm birth, very preterm birth and low Apgar score was observed.

Conclusion: There is no evidence of an association between maternal use of oseltamivir for influenza and early birth, low Apgar at birth, and poor fetal growth.

The abstract is available online at <http://www.sciencedirect.com/science/article/pii/S0002937813000513>.

International, Poultry (OIE [edited], January 18): Highly pathogenic avian influenza H5N1; Nepal
Outbreak 1: Manohara Phat, Madhyapur Thimi – 16, Bhaktapur, BAGMATI
Date of start of the outbreak: 08/01/2013; Outbreak status: continuing; Epidemiological unit: Village
Species: Birds; Susceptible: 10; Cases: 10; Deaths: 10; Destroyed: 0
Affected population: Backyard chicken raised by a household in confined area

International, Poultry (OIE [edited], January 18): Low path avian influenza H5N2; Chinese Taipei
Outbreak 1: Ma-Gong, P'ENG-HU
Date of start of the outbreak: 20/12/2012; Outbreak status: continuing; Epidemiological unit: Farm
Species: Birds; Susceptible: 1211; Cases: 38; Deaths: 23
Affected population: 1206 native chickens and 5 turkeys

Outbreak 2: Zao-Ciao, MIAO-LI
Date of start of the outbreak: 27/12/2012; Outbreak status: Continuing; Epidemiological unit: Farm
Species: Birds; Susceptible: 268; Cases: 18; Deaths: 12
Affected population: 237 native chickens, 19 ducks and 12 geese

International, Poultry (OIE [edited], January 21): Highly pathogenic avian influenza H5N1; Nepal
Outbreak 1: Kosheghari, Pokhara Sub Metro Polis 17, Kaski, GANDAKI
Date of start of the outbreak: 02/01/2013; Outbreak status: Resolved; Epidemiological unit: Farm
Species: Birds; Susceptible: 1100; Cases: 272; Deaths: 272; Destroyed: 828
Affected population: A commercial broiler farm with birds raised in an intensive farming system

Outbreak 2: Sedibagar, Sarangkot – 7, Kaski, GANDAKI
Date of start of the outbreak: 06/01/2013; Outbreak status: Resolved; Epidemiological unit: Farm
Species: Birds; Susceptible: 1605; Cases: 600; Deaths: 600; Destroyed: 1005
Affected population: A commercial broiler farm with birds raised in an intensive farming system

Outbreak 3: Simpani, Pokhara Sub Metro Polis 1, Kaski, GANDAKI
Date of start of the outbreak: 06/01/2013; Outbreak status: Resolved; Epidemiological unit: Farm
Species: Birds; Susceptible: 255; Cases: 150; Deaths: 150; Destroyed: 105
Affected population: A commercial broiler farm with birds raised in an intensive farming system

Outbreak 4: Batulechaur, Pokhara Sub Metro Polis 16, Kaski, GANDAKI
Date of start of the outbreak: 06/01/2013; Outbreak status: Resolved; Epidemiological unit: Farm
Species: Birds; Susceptible: 200; Cases: 90; Deaths: 90; Destroyed: 110
Affected population: A commercial broiler farm with birds raised in an intensive farming system

International, Wild Birds (OIE [edited], January 18): Highly pathogenic avian influenza H7; Denmark
 Outbreak 1: Hylleslev Enge, Varde, WEST
 Date of start of the outbreak: 14/12/2012; Outbreak status: Continuing
 Species: Mallard: *Anas platyrhynchos*; Cases: 5
 Affected population: Wild mallards (*Anas platyrhynchos*) were shot on 14 December 2012 at Hylleslev Enge in Varde Kommune in Jutland. A pool of 5 mallards were found positive by PCR and sequence analyse on 18 January 2013.

Michigan Wild Bird Surveillance (USDA, as of January 24): For the 2012 season (April 1, 2012-March 31, 2013), highly pathogenic avian influenza H5N1 has not been recovered from the 68 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

MDCH Bureau of Epidemiology – S. Bidol, MPH; C. Carlton, MPH; R. Sharangpani, MD, MPH

MDCH Bureau of Laboratories – A. Muyombwe, PhD; V. Vavricka, MS

Table. H5N1 Influenza in Humans – As of December 17, 2012. http://www.who.int/influenza/human_animal_interface/EN_GIP_20121217CumulativeNumberH5N1cases.pdf. Downloaded 12/17/2012. 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	11	5	169	60
Indonesia	20	13	55	45	42	37	24	20	21	19	9	7	12	10	9	9	192	160
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	32	20	610	360