**Notice to Readers**

Twelve human cases of a novel influenza A (H3N2) virus have been reported by CDC. There are no known cases in Michigan to date, but recent investigations in those states with cases have suggested some instances of limited human-to-human transmission. CDC has asked all states to conduct surveillance for suspect cases of this novel virus by increasing influenza testing. Therefore, the Michigan Department of Community Health is requesting all healthcare providers, hospitals and laboratories to assist in this effort. Influenza testing for all patients with an influenza-like illness is highly recommended, and all positive influenza specimens should be forwarded to the MDCH Bureau of Laboratories for additional confirmation. Please call the MDCH Division of Communicable Disease at 517-335-8165 with questions or to report suspect cases. Additional guidance is available at www.michigan.gov/flu.

Influenza Surveillance Reports

**Michigan Disease Surveillance System:** MDSS data for the week ending February 25th indicated that individual influenza cases significantly increased, while aggregate influenza cases increased slightly. Individual reports are moderately lower than levels seen during the same time last year, while aggregate reports are slightly lower.

**Emergency Department Surveillance:** Compared to levels from the week prior, emergency department visits from both constitutional and respiratory complaints moderately increased. Both categories have experienced steady and sustained increases over the past month. Constitutional complaints are moderately lower than levels reported during the same time period last year, while respiratory complaints are slightly lower. In the past week, there were five constitutional alerts in the SE(1), SW(1), and C(3) Influenza Surveillance Regions and five respiratory alerts in the SW(2), C(1), and N(1) Regions.

**Sentinel Provider Surveillance (as of March 1):** During the week ending February 25, 2012, the proportion of visits due to influenza-like illness (ILI) slightly decreased to 1.0% overall; this is below the regional baseline of 1.6%. A total of 105 patient visits due to ILI were reported out of 10,013 office visits. Thirty-three sentinel sites provided data for this report. Activity increased in one surveillance region: Southeast (0.8%); remained the same in one region: Southwest (1.5%) and decreased in the remaining two surveillance regions: Central (1.1%) and North (0.5%). 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.
Hospital Surveillance (as of February 25): The Influenza Hospitalization Surveillance Project provides population-based rates of severe influenza illness in Clinton, Eaton and Ingham counties. 2 lab-confirmed influenza hospitalizations were reported during the week ending February 25, 2012. For the 2011-12 season, 4 influenza hospitalizations (2 pediatric, 2 adult) have been reported in the catchment area.

The MDCH Influenza Sentinel Hospital Network monitors influenza hospitalizations reported voluntarily by hospitals statewide. Seven hospitals (SE, SW, C, N) reported for the week ending February 25, 2012. Results are listed in the table below.

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<th>Age Group</th>
<th>Hospitalizations Reported During Current Week</th>
<th>Total Hospitalizations 2011-12 Season</th>
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Laboratory Surveillance (as of February 25): During February 19-25, 112 influenza A/H3 (58SE, 4SW, 49C, 1N), 3 2009 A/H1N1 (2SE, 1C) and 1 influenza B (SE) results were reported by the MDCH Bureau of Laboratories. For the 2011-12 influenza season (starting October 2, 2011), MDCH has identified 367 influenza results:

- Influenza A(H3): 352 (164SE, 8SW, 153C, 27N)
- Influenza A(H1N1)pdm09: 8 (4SE, 3C, 1N)
- Influenza B: 7 (4SE, 1SW, 2C)
- Parainfluenza: 2 (1SE, 1C)
- Adenovirus: 1 (SE)
14 sentinel labs (SE, SW, C, N) reported for the week ending February 25, 2012. 8 labs (SE, SW, C) reported moderately increasing influenza A activity. 4 labs (SE, C) reported low levels of influenza B positives. 13 labs (SE, SW, C, N) reported steady or increasing RSV activity, with several are at high levels. 2 labs (SE, SW) reported increasing hMPV positives. Most testing volumes are moderate to high.

**Michigan Influenza Antigenic Characterization (as of March 1):** For the 2011-12 season, 5 Michigan influenza B specimens have been characterized at MDCH BOL. 3 specimens have been characterized as B/Brisbane/60/2008-like, matching the B component of the 2011-12 influenza vaccine. 2 influenza B specimens were characterized as B/Wisconsin/01/2010-like, which is not included in the 2011-12 vaccine.

**Michigan Influenza Antiviral Resistance Data (as of March 1):** For the 2011-12 season, three Michigan influenza A(H1N1)pdm09 specimens have been tested for antiviral resistance at MDCH Bureau of Laboratories; all have tested negative for oseltamivir 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](http://www.cdc.gov/flu/professionals/antivirals/index.htm).

**Influenza-associated Pediatric Mortality (as of March 1):** No pediatric influenza-associated mortality has been reported to MDCH for the 2011-12 season.


**Influenza Congregate Settings Outbreaks (as of March 1):** Three outbreaks from the C Region were reported to MDCH during the past week; one long-term care facility positive for influenza A/H3, one long-term care facility positive for flu A, and one school outbreak (no testing). A previously reported long-term care outbreak from the C Region was also confirmed as influenza A/H3. 12 respiratory outbreaks (1SE, 2SW, 9C) have been reported to MDCH during the 2011-12 season; testing results are listed below.

- Influenza A/H3: 3 (3C)
- Influenza A: 1 (C)
- Human metapneumovirus: 1 (SW)
- Negative or not tested: 7 (1SE, 1SW, 5C)

**National (CDC [edited], February 24):** During week 7 (Feb. 12-18, 2012), influenza activity in the U.S. increased slightly, but remained relatively low. Of the 4,269 specimens tested by U.S. WHO and NREVSS collaborating labs and reported to CDC/Influenza Division, 614 (14.4%) were positive for influenza. The proportion of deaths attributed to P&I was below the epidemic threshold. No influenza-associated pediatric deaths were reported. The proportion of outpatient visits for influenza-like illness (ILI) was 1.9%, which is below the national baseline of 2.4%. Regions 5 and 7 reported ILI at or above region-specific baseline levels. One state experienced high ILI activity; 2 states experienced moderate ILI activity; 6 states experienced low ILI activity; New York City and 41 states experienced minimal ILI activity, and the District of Columbia had insufficient data. Two states reported widespread geographic activity; 13 states reported regional influenza activity; 20 states reported local activity; the District of Columbia, Puerto Rico, and 15 states reported sporadic activity, and Guam and the U.S. Virgin Islands reported no activity.
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 entire weekly report is available online at http://www.cdc.gov/flu/weekly/fluactivity.htm.


View the article at http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6107a3.htm?s_cid=mm6107a3_e.

**International (WHO [edited], February 17):** Influenza activity in the temperate regions of the northern hemisphere remains low overall. It has continued to increase in the United States and Canada, though overall activity is low. Some countries of western Europe, North Africa, and northern China appear to have reached peak transmission but activity continues to increase in eastern Europe. The levels of both mild and severe disease have been relatively low compared to previous years in most areas reporting. Countries in the tropical zone reported low levels of activity with the exception of a few countries in the Americas and parts of southern Asia. The most commonly detected virus type or subtype throughout the northern hemisphere temperate zone has been influenza A(H3N2) with the exception of Mexico, where A(H1N1)pdm09 is the predominant subtype circulating, and China and the surrounding countries which are reporting a predominance of influenza B. Notable differences have been reported in the distribution of viruses in severe cases and between age groups. In Canada, A(H1N1)pdm09 accounted for 27% of all influenza A viruses that have been subtyped in <5 year olds but only 5% of subtyped A viruses in cases over the age of 65 years. In Europe, A(H1N1)pdm09 was disproportionately found in cases admitted to hospital for severe acute respiratory infection compared to outpatient cases of influenza-like illness (13-20% vs. ~1.5% respectively). Nearly all influenza A viruses detected were antigenically related to the viruses contained in the current northern hemisphere trivalent vaccine. Oseltamivir resistance continues to be observed at very low levels and has not increased notably over levels reported in previous seasons.


MDCH reported **REGIONAL ACTIVITY** to the CDC for the week ending February 25, 2012.

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.
**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.

**International, Vaccine (WHO, February 23):** Recommended composition of influenza virus vaccines for use in the 2012-2013 northern hemisphere influenza season

It is recommended that vaccines for use in the 2012-2013 influenza season (northern hemisphere winter) contain the following:

- an A/California/7/2009 (H1N1)pdm09-like virus;
- an A/Victoria/361/2011 (H3N2)-like virus;
- a B/Wisconsin/1/2010-like virus.


**International, Research (CIDRAP, February 28):** A meta-analysis of studies comparing the performance of rapid influenza diagnostic tests (RIDTs) with more definitive tests such as reverse-transcriptase polymerase chain reaction (RT-PCR) found that RIDTs are useful for confirming flu, but not for ruling it out. The findings from a Canadian and Dutch research team appeared yesterday in *Annals of Internal Medicine*. Their review included 159 studies that compared RIDTs with RT-PCR or viral culture. They also found that the tests were more accurate in children than in adults and that RIDTs were better at detecting influenza A than influenza B. Dr. Madhukar Pai, study coauthor and professor at McGill University's department of epidemiology, said in a press release that with 25 RIDTs on the market, a meta-analysis was needed to help healthcare providers interpret the large amount of studies that have been published. "So many papers have been published, especially since the H1N1 pandemic, but no one had synthesized this body of literature into one single cohesive piece," he said. "Our hope is that this work will help in informing future guidelines on the use of these tests."

The abstract is at [http://www.annals.org/content/early/2012/02/27/0003-4819-156-7-201204030-00403](http://www.annals.org/content/early/2012/02/27/0003-4819-156-7-201204030-00403).


The case is a one year-old female from Gharbeia governorate. She developed symptoms on 14 February 2012 and was admitted to a hospital on 15 February 2012, where she received oseltamivir treatment upon admission. She is in good medical condition.

Epidemiological investigation into the source of infection is ongoing. Preliminary investigations indicate presence of backyard poultry in her area of residence.

The case was confirmed by the Central Public Health Laboratories; a National Influenza Center of the WHO Global Influenza Surveillance Network.

Of the 161 cases confirmed to date in Egypt, 55 have been fatal.


The first case is a thirty-two year old male from Behira governorate, in the Abo Elmatameer District. He developed symptoms on 16 February 2012 and was admitted to hospital on 21 February 2012 where he received oseltamivir treatment upon admission. He died on 28 February 2012.

The second case was a thirty seven year-old female from Kafr Elshihk governorate in the Kelleen District. She developed symptoms on 18 February 2012 and was admitted to hospital on 23 February 2012 where she received oseltamivir treatment upon admission. She died on 26 February 2012.

Preliminary investigations into both cases with regard to the source of infection indicate close contact with sick or deceased backyard poultry at the cases' respective residences.
Both cases were confirmed by the Central Public Health Laboratories, a National Influenza Center of the WHO Global Influenza Surveillance Network.

Of the 163 cases confirmed to date in Egypt 57 have been fatal.

International, Bats (Proceedings of the National Academy of Sciences abstract, February 27):  
A distinct lineage of influenza A virus from bats. Suoxiang Tong, Yan Li, Pierre Rivailler, Christina Conrardy, Danilo A. Alvarez Castillo, et al.

Influenza A virus reservoirs in animals have provided novel genetic elements leading to the emergence of global pandemics in humans. Most influenza A viruses circulate in waterfowl, but those that infect mammalian hosts are thought to pose the greatest risk for zoonotic spread to humans and the generation of pandemic or panzootic viruses. We have identified an influenza A virus from little yellow-shouldered bats captured at two locations in Guatemala. It is significantly divergent from known influenza A viruses. The HA of the bat virus was estimated to have diverged at roughly the same time as the known subtypes of HA and was designated as H17. The neuraminidase (NA) gene is highly divergent from all known influenza NAs, and the internal genes from the bat virus diverged from those of known influenza A viruses before the estimated divergence of the known influenza A internal gene lineages. Attempts to propagate this virus in cell cultures and chicken embryos were unsuccessful, suggesting distinct requirements compared with known influenza viruses. Despite its divergence from known influenza A viruses, the bat virus is compatible for genetic exchange with human influenza viruses in human cells, suggesting the potential capability for reassortment and contributions to new pandemic or panzootic influenza A viruses.

The abstract is available online at http://www.pnas.org/content/early/2012/02/17/1116200109.abstract?sid=8355f955-01dd-414c-8831-508fead5430e.

International, Poultry (OIE [edited], February 23):  
High path avian influenza H5N2; South Africa  
Outbreak 1: AI_WCP2011_47, Uniondale, WESTERN CAPE PROVINCE  
Date of start of the outbreak: 13/01/2012; Outbreak status: Continuing; Epidemiological unit: Farm  
Species: Birds; Susceptible: 2963; Cases: 662  
Affected Population: Commercial ostriches. PCR positive for H5.

International, Poultry (OIE [edited], February 24):  
Highly pathogenic avian influenza H5N1; Vietnam  
Outbreak 1: Yen Thang, Yen Thang, Y Yen, NAM DINH  
Date of start of the outbreak: 20/02/2012; Outbreak status: Continuing; Epidemiological unit: Village  
Species: Birds; Susceptible: 180; Cases: 145; Deaths: 100; Destroyed: 80

International, Poultry (OIE [edited], February 29):  
Highly pathogenic avian influenza H5N1; Myanmar  
Outbreak: Myothit Quarter, Chaung U, Monywa, SAGAING  
Date of start of the outbreak: 20/02/2012; Outbreak status: Continuing; Epidemiological unit: Farm  
Species: Birds; Susceptible: 1060; Cases: 61; Deaths: 61; Destroyed: 999  
Epidemiological comments: 5-month and 18-month-old layer chickens in two establishments, with a total of 1,060 chickens. A few chickens were found dead on 20 February 2012. A total of 61 chickens died within 4 days. There are 40,000 chickens reared in 139 farms in Chaung U township. All are layers and broilers of different ages.

International, Poultry (OIE [edited], March 1):  
Highly pathogenic avian influenza H5N1; Bhutan  
Outbreak: Bunagu, Chukha, CHUKHA  
Date of start of the outbreak: 08/01/2012; Outbreak status: Continuing; Epidemiological unit: Farm  
Species: Birds; Susceptible: 123; Cases: 37; Deaths: 35; Destroyed: 86  
Affected population: A backyard poultry farm adjacent to the national highway.

Michigan Wild Bird Surveillance (USDA, as of March 1): For the 2011 season (April 1, 2011-March 31, 2012), highly pathogenic avian influenza H5N1 has not been recovered from 7 Michigan samples or 408 samples tested nationwide. For more information, visit http://www.nwhc.usgs.gov/ai/.

To learn about avian influenza surveillance in Michigan wild birds or to report dead waterfowl, go to Michigan's 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:
For questions or to be added to the distribution list, please contact Susan Peters at peterss1@michigan.gov

**Contributors**

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


CumulativeNumberH5N1cases.pdf. Downloaded 2/29/2012. Cumulative lab-confirmed cases reported to WHO. Total cases includes deaths.

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