



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

May 2, 2013
Vol. 10; No. 17

Current Influenza Activity Levels:

- **Michigan:** Sporadic activity
- **National:** During April 14-20, influenza activity decreased in the United States

Updates of Interest

- **International:** WHO is confirming 128 human cases of avian influenza H7N9
- **International:** Saudi Arabia reports 7 new human coronavirus infections

Table of Contents

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

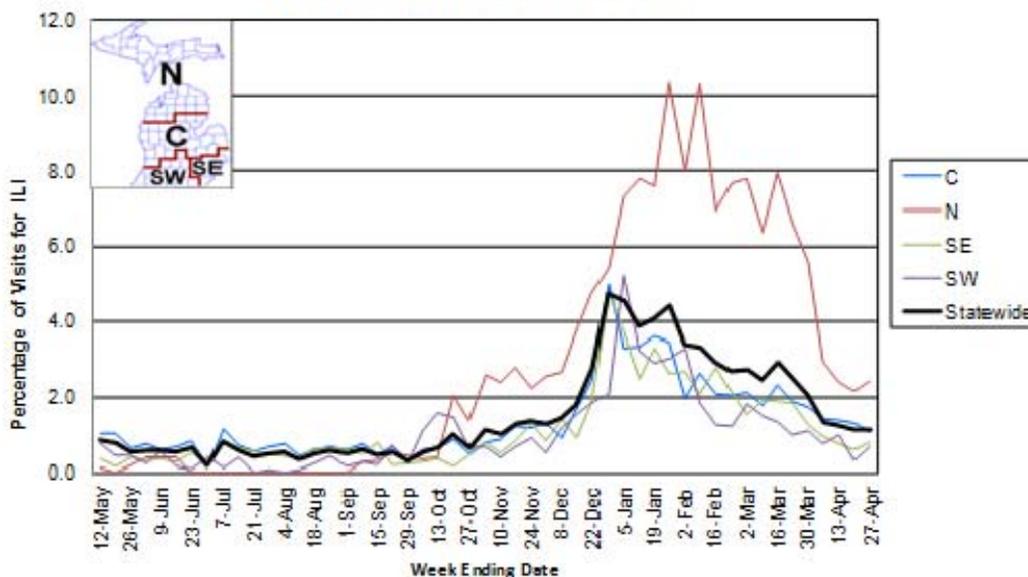
Influenza Surveillance Reports

Michigan Disease Surveillance System (as of May 2): MDSS data for the week ending April 27th indicated that compared to levels from the previous week, individual reports decreased, while aggregate influenza reports slightly decreased. Both individual and aggregate reports are slightly lower than levels seen during the same time period last year.

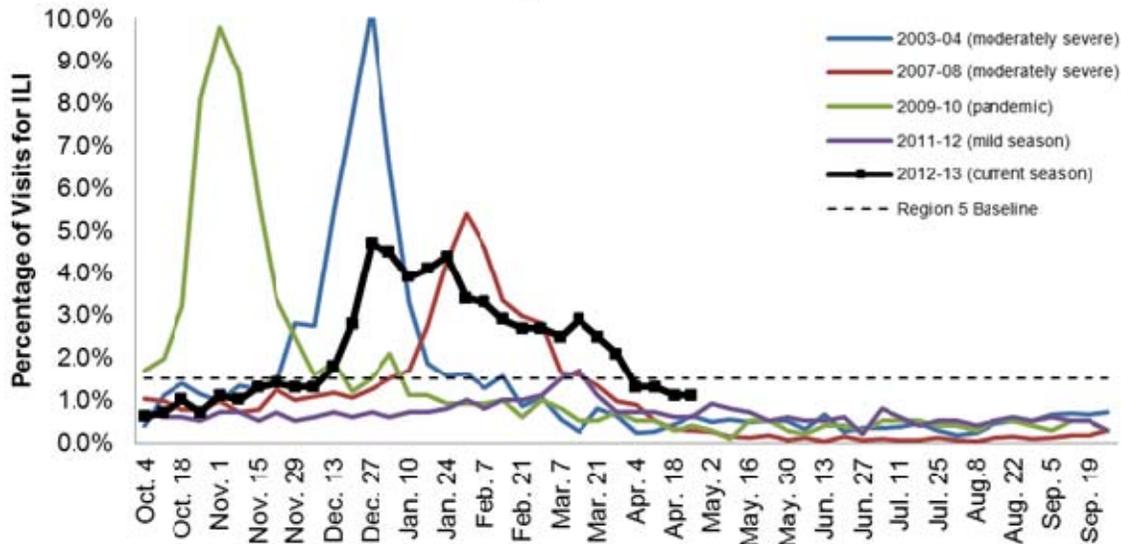
Emergency Department Surveillance (as of May 2): Compared to levels from the week prior, emergency department visits from constitutional and respiratory complaints decreased. Both constitutional and respiratory complaints are similar to levels reported during the same time period last year, with constitutional visits reaching baseline levels in between influenza seasons. In the past week, there were no constitutional alerts and 2 respiratory alerts in the C(1) and N(1) Regions.

Sentinel Provider Surveillance (as of May 2): During the week ending April 27, 2013, the proportion of visits due to influenza-like illness (ILI) decreased to 1.1% overall; this is below the regional baseline (1.5%). A total of 112 patient visits due to ILI were reported out of 9,940 office visits. Data were provided by 32 sentinel sites from the following regions: Central (12), North (5), Southeast (11) and Southwest (4). ILI activity decreased in one region: C (1.1%). ILI activity increased in three regions: N (2.4%), SE (0.8%), and SW (0.7%). 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 Stefanie DeVita at 517-335-8159 or DeVitaS1@michigan.gov for more information.

Hospital Surveillance (as of April 27): 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. 1 new case was identified during the past week. As of April 27th, there have been 258 influenza hospitalizations (168 adult, 90 pediatric) within the catchment area. The incidence rate for adults is 24.7 hospitalizations per 100,000 population and for children is 42.6 hospitalizations per 100,000.

The MDCH Influenza Sentinel Hospital Network monitors influenza hospitalizations reported voluntarily by hospitals statewide. 9 hospitals (SE, SW, C, N) reported for the week ending April 27, 2013. Results are listed in the table below.

Age Group	Hospitalizations Reported During Current Week	Total Hospitalizations 2012-13 Season
0-4 years	0	34 (6SE, 23C, 5N)
5-17 years	0	15 (3SE, 1SW, 9C, 2N)
18-49 years	1 (1N)	53 (35SE, 2SW, 10C, 6N)
50-64 years	0	86 (63SE, 4SW, 7C, 12N)
≥65 years	1 (1N)	238 (171SE, 14SW, 15C, 49N)
Total	2 (2N)	436 (278SE, 21SW, 64C, 74N)

Laboratory Surveillance (as of April 27): During April 21-27, 1 influenza A(H3) (1N), 3 A(H1N1)pdm09 (1SE, 2SW) and 4 influenza B (2SW, 1C, 1N) results were reported by MDCH. For the 2012-13 season (starting Sept. 30, 2012), MDCH has identified 676 influenza results:

- Influenza A(H3): 500 (124SE, 169SW, 169C, 38N)
- Influenza A(H1N1)pdm09: 33 (17SE, 4SW, 9C, 3N)
- Influenza B: 151 (30SE, 30SW, 74C, 18N)
- Parainfluenza: 8 (3SW, 1C, 4N)
- RSV: 1 (1N)

11 sentinel labs (SE, SW, C) reported for the week ending April 27, 2013. 3 labs (SE, C) reported low or sporadic flu A activity. 4 labs (SE, SW, C) reported declining or low levels of flu B activity. 1 lab (SE) had sporadic parainfluenza activity. 7 labs (SE, SW, C) reported low or sporadic RSV activity. 3 labs (SE, SW, C) had low HMPV activity. Testing volumes are low except for a few SE sites.

Michigan Influenza Antigenic Characterization (as of May 2): For the 2012-13 season, 113 Michigan influenza B specimens have been characterized at MDCH BOL. 94 specimens are B/Wisconsin/01/2010-like, matching the B component of the 2012-13 influenza vaccine. 19 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 May 2): For the 2012-13 season, 30 influenza A/H3 specimens and 19 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 May 2): 6 pediatric influenza-associated influenza mortalities (2 A/H3, 4B) have been reported for the 2012-13 season.

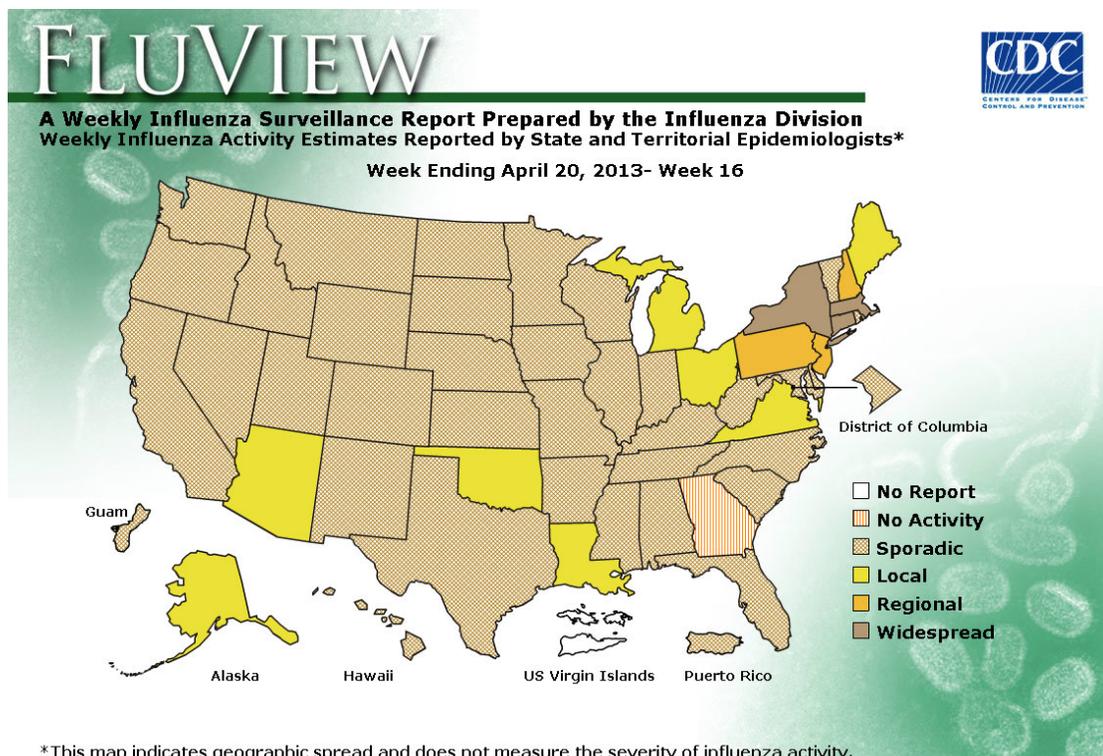
CDC requires reporting of flu-associated pediatric deaths (<18 yrs), including pediatric deaths due to an influenza-like illness with lab confirmation of influenza or any unexplained pediatric death with evidence of an infectious process. Contact MDCH immediately for proper specimen collection. The MDCH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

Influenza Congregate Settings Outbreaks (as of May 2): 111 respiratory outbreaks (22SE, 29SW, 41C, 19N) have been reported to MDCH during the 2012-13 season; testing results are listed below.

- Influenza A/H3: 16 (7SW, 9C)
- Influenza A: 55 (10SE, 13SW, 20C, 12N)
- Influenza B: 8 (1SE, 3SW, 2C, 2N)
- Influenza A and B: 2 (1SE, 1SW)
- Influenza A/H3 and B: 1 (1C)
- Influenza positive: 4 (1SE, 1SW, 2C)
- Influenza and RSV positive: 1 (1C)
- Influenza B and RSV positive: 1 (1SE)
- Negative/no testing: 23 (8SE, 4SW, 6C, 5N)

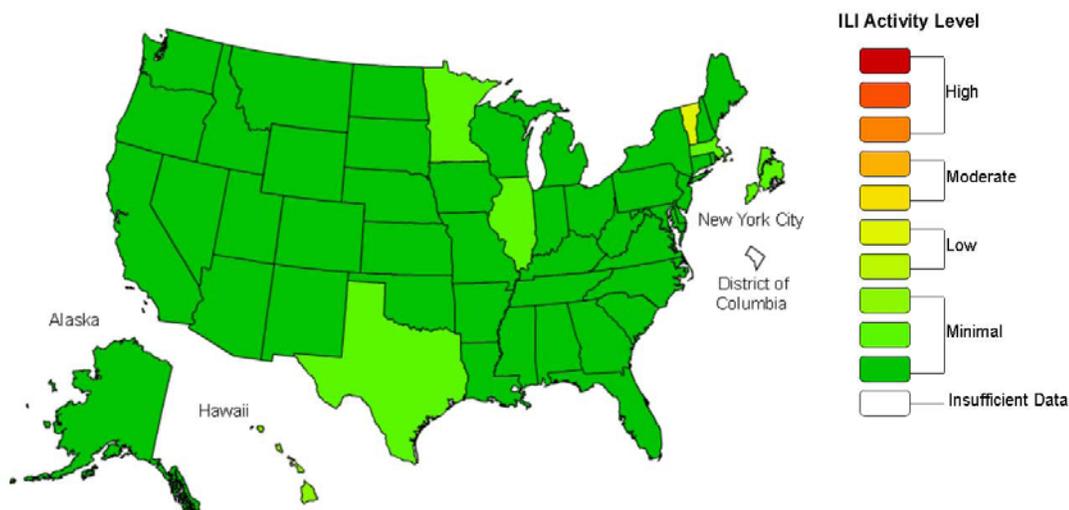
National (CDC [edited], April 26): During week 16 (April 14-20, 2013), influenza activity decreased in the United States. Of 3,384 specimens tested and reported by collaborating laboratories, 250 (7.4%) were positive for influenza. The proportion of deaths attributed to pneumonia and influenza (P&I) was below the epidemic threshold. Five pediatric deaths were reported. A cumulative rate for the season of 43.9 laboratory-confirmed influenza-associated hospitalizations per 100,000 population was reported. Of reported hospitalizations, 50% were among adults 65 years and older. The proportion of outpatient visits for influenza-like illness (ILI) was 1.1%. This is below the national baseline of 2.2%. All 10 regions reported ILI below region-specific baseline levels. One state experienced low activity; 49 states and New York City experienced minimal activity, and the District of Columbia had insufficient data. Three states reported widespread influenza activity; 3 states reported regional influenza activity; 8 states reported local influenza activity; the District of Columbia, Guam, Puerto Rico, and 35 states reported sporadic influenza activity; 1 state reported no influenza activity, and the U.S. Virgin Islands did not report.

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



*This map indicates geographic spread and does not measure the severity of influenza activity.

**Influenza-Like Illness (ILI) Activity Level Indicator Determined by Data Reported to ILINet
2012-13 Influenza Season Week 16 ending Apr 20, 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.

International (WHO [edited], April 26): Influenza activity across the northern temperate regions have continued to decline to near inter-seasonal levels in much of North America, Europe, and northern Asia though low level persistent transmission was still noted in many countries. The persistence of transmission in the northern hemisphere temperate regions has been associated with increasing numbers of influenza type B virus appearing late in the season in a number of countries of North America and Europe. Prior to this, influenza A(H3N2) was the most commonly detected virus in North America, A(H1N1)pdm09 in Europe, and both in varying proportions in different countries of northern Asia. Low levels of influenza activity continued to be reported across the tropical regions of the world and activity in countries of the southern hemisphere remained at inter-seasonal levels. Nearly all influenza A viruses characterized this season have been antigenically related to those contained in the current trivalent vaccine. Among the B viruses characterized, those that were of the Yamagata lineage were antigenically related to the viruses recommended for the trivalent vaccine but a sizable number of B viruses were also of the Victoria lineage. Only very low numbers of oseltamivir and zanamivir resistant viruses have been detected. In China, new cases of H7N9 have been reported with over 100 cases to date; for more information see link below. A summary review of the Northern Hemisphere influenza season will be published in the World Epidemiological Report on 31 May 2013.

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

MDCH reported SPORADIC INFLUENZA ACTIVITY to CDC for the week ending April 27, 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.

International, Human (BBC, May 2): Five people in Saudi Arabia have died from a Sars-like virus and two more are seriously ill, officials say.

The seven cases were all from al-Ahsa governorate in the east of the country, the Saudi news agency SPA said citing health officials.

The novel coronavirus (NCoV) causes pneumonia and sometimes kidney failure.

It is from the same family of viruses as the one that caused an outbreak of Severe Acute Respiratory Syndrome (Sars) that emerged in Asia in 2003.

In the statement released by SPA, the Saudi health ministry said it was taking "all precautionary measures for persons who have been in contact with the infected people... and has taken samples from them to examine if they are infected".

However, the ministry gave no details on how many people had been tested for the disease.

In a statement, the World Health Organization said the cases were not from the same family and preliminary inquiries showed "no indication of recent travel or animal contact" in any of the confirmed cases.

In March, WHO said it had been informed of 17 confirmed cases of NCoV worldwide, including 11 deaths.

Cases have been detected in Saudi Arabia, Jordan, Germany and the UK.

Correspondents say the exact source of the new virus and how it spreads are still unknown. One theory is that it comes from animals.

The threat to the general population is thought to be small, although the virus has shown signs of spreading in people.

According to WHO, the last known death from NCoV was a 73-year-old man from the United Arab Emirates in March.

In February, a patient died in a hospital in Birmingham, England, after three members of the same family became infected.

It is thought a family member had picked up the virus while travelling to the Middle East and Pakistan.

The article is available online at <http://www.bbc.co.uk/news/world-middle-east-22378541>.

International, Human (WHO, May 2): As of 2 May 2013 (16:00 CET), the National Health and Family Planning Commission, China notified WHO of an additional two laboratory-confirmed cases of human infection with avian influenza A(H7N9) virus.

The first patient is a 58-year-old man from Fujian province who became ill on 21 April 2013 and the second patient is a 69-year-old man from Hunan province who became ill on 23 April 2013.

Additionally, two patients earlier reported have died.

To date, a total of 128 laboratory-confirmed cases of human infection with avian influenza A(H7N9) virus including 26 deaths have been reported to WHO. Contacts of the confirmed cases are being closely monitored.

The authorities in the affected locations continue to implement prevention and control measures.

Investigations into the possible sources of infection and reservoirs of the virus are ongoing. Until the source of infection has been identified and controlled, it is expected that there will be further cases of human infection with the virus.

So far, there is no evidence of sustained human-to-human transmission.

WHO does not advise special screening at points of entry with regard to this event, nor does it recommend that any travel or trade restrictions be applied.

The update is also available online at http://www.who.int/csr/don/2013_05_02/en/index.html.
April 29 WHO update: http://www.who.int/csr/don/2013_04_29/en/index.html

International, Human (MMWR [edited], May 1): Emergence of Avian Influenza A(H7N9) Virus Causing Severe Human Illness — China, February–April 2013. MMWR Early Release Vol. 62: May 1 2013.

On March 29, 2013, the Chinese Center for Disease Control and Prevention completed laboratory confirmation of three human infections with an avian influenza A(H7N9) virus not previously reported in humans. These infections were reported to the World Health Organization (WHO) on March 31, 2013, in accordance with International Health Regulations. The cases involved two adults in Shanghai and one in Anhui Province. All three patients had severe pneumonia, developed acute respiratory distress syndrome (ARDS), and died from their illness. The cases were not epidemiologically linked. The detection of these cases initiated a cascade of activities in China, including diagnostic test development, enhanced surveillance for new cases, and investigations to identify the source(s) of infection. No evidence of sustained human-to-human transmission has been found, and no human cases of H7N9 virus infection have been detected outside China, including the United States. This report summarizes recent findings and recommendations for preparing and responding to potential H7N9 cases in the United States. Clinicians should consider the diagnosis of avian influenza A(H7N9) virus infection in persons with acute respiratory illness and relevant exposure history and should contact their state health departments regarding specimen collection and facilitation of confirmatory testing.

The full article is available online at <http://www.cdc.gov/mmwr/pdf/wk/mm62e0501.pdf>.

International, Human (WHO [edited], April 26): Human infection with avian influenza A(H5N1) viruses and associated animal health events

From 2003 through 26 April 2013, 628 laboratory-confirmed human cases with avian influenza A(H5N1) virus infection have been officially reported to WHO from 15 countries, of which 374 died.

Since the last update on 12 March 2013, 6 new laboratory-confirmed human cases with influenza A(H5N1) virus infection were reported to WHO from Bangladesh (1), Cambodia (1), Egypt (2) and Viet Nam (2). The investigations into these concluded that they were sporadic cases and that the appearance of sporadic cases is expected and will likely occur in the future.

Since the beginning of 2013, Cambodia has reported ten human cases with influenza A(H5N1) virus infection including eight fatal cases. These cases come from five provinces all located in southern Cambodia. These cases do not seem to be linked directly, and most had contact with sick poultry in their villages. The clade 1.1 viruses that have been isolated from cases are very similar to those isolated from poultry in the region. Investigations around these cases did not detect additional cases. This evidence suggests sporadic infections from exposure to infected poultry or contaminated environments, rather than human-to-human transmission. It has been suggested that the A(H5N1) virus is circulating endemically in poultry in Cambodia, as such, additional sporadic human cases might be expected.

The full report is available online at www.who.int/influenza/human_animal_interface/Influenza_Summary_IRA_HA_interface_26Apr13.pdf.

International, Human (The Pediatric Infectious Disease Journal [abstract], April 25): Calvo C et al. Prospective Study of Influenza C in Hospitalized Children. *Pediatr Infect Dis J.* 2013 Apr 25. [Epub]

We present a prospective study of influenza C virus infections in hospitalized children in Spain during six years, including the influenza A (H1N1)pdm pandemic. Influenza C infections accounted for 13.3% of influenza positive cases. The patients with simple influenza C infection were clinically similar to other influenza types, but a high rate of co-infection (81%) makes it difficult to assess its clinical role.

The abstract is available online at http://journals.lww.com/pidj/Abstract/publishahead/Prospective_Study_of_Influenza_C_in_Hospitalized.98336.aspx.

International, Poultry (OIE [edited], April 26): Low pathogenic avian influenza H7N9; China Outbreak 1: Lin'an, Hangzhou, ZHEJIANG
Date of start of the outbreak: 04/04/2013; Outbreak status: Continuing
Species: Birds; Cases: 3; Deaths: 0; Destroyed: 0

International, Poultry (OIE [edited], April 26): Low pathogenic avian influenza H5N1; Germany
 Outbreak 1: Badbergen, Osnabrück, NIEDERSACHSEN
 Date of start of the outbreak: 24/04/2013; Outbreak status: Continuing; Epidemiological unit: Farm
 Species: Birds; Susceptible: 19000; Cases: 10; Deaths: 0; Destroyed: 19000

International, Poultry (OIE [edited], April 29): Highly pathogenic avian influenza H5N1; Bangladesh
 Outbreak 1: Index poultry Private Limited, Mithapukur, Shathibari, Rajghat, Rangpur, RANGPUR
 Date of start of the outbreak: 27/02/2013; Outbreak status: Resolved; Epidemiological unit: Farm
 Species: Birds; Susceptible: 12394; Cases: 3420; Deaths: 3420; Destroyed: 8974
 Affected population: A commercial poultry farm

Outbreak 2: Mr Sirajul poultry farm, Indro-Narayanpur, Rajbari Sadar, Rajbari, DHAKA
 Date of start of the outbreak: 09/03/2013; Outbreak status: Resolved; Epidemiological unit: Farm
 Species: Birds; Susceptible: 1800; Cases: 558; Deaths: 558; Destroyed: 1242
 Affected population: A commercial poultry farm

Michigan and National Wild Bird Surveillance (USDA, as of May 2): For the 2012 season (April 1, 2012-March 31, 2013), highly pathogenic avian influenza H5N1 has not been recovered from the 213 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; S. DeVita, RN, MPH; R. Sharangpani, MD, MPH

MDCH Bureau of Laboratories – B. Robeson, MT; V. Vavricka, MS

Table. H5N1 Influenza in Humans – As of April 26, 2013. http://www.who.int/influenza/human_animal_interface/EN_GIP_20130426CumulativeNumberH5N1cases.pdf. Downloaded 4/29/2013. Cumulative lab-confirmed cases reported to WHO. Total cases include deaths.

Country	2003-2006		2007		2008		2009		2010		2011		2012		2013		Total	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
Azerbaijan	8	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	5
Bangladesh	0	0	0	0	1	0	0	0	0	0	2	0	3	0	1	1	7	1
Cambodia	6	6	1	1	1	0	1	0	1	1	8	8	3	3	10	8	31	27
China	22	14	5	3	4	4	7	4	2	1	1	1	2	1	2	2	45	30
Djibouti	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Egypt	18	10	25	9	8	4	39	4	29	13	39	15	11	5	3	2	172	62
Indonesia	75	58	42	37	24	20	21	19	9	7	12	10	9	9	0	0	192	160
Iraq	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2
Lao PDR	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Myanmar	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Nigeria	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Pakistan	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	3	1
Thailand	25	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	17
Turkey	12	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	4
Vietnam	93	42	8	5	6	5	5	5	7	2	0	0	4	2	2	1	125	62
Total	263	158	88	59	44	33	73	32	48	24	62	34	32	20	18	14	628	374