



MI Flu Focus

Influenza Surveillance Updates
Bureaus of Epidemiology and Laboratories

Michigan Department
of Community Health



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Current Influenza Activity Levels:

- **Michigan:** Local activity
- **National:** During March 10 – 16, influenza activity remained elevated in the United States, but decreased in most areas

Updates of Interest

- **International:** WHO reports 2 new human cases of novel coronavirus

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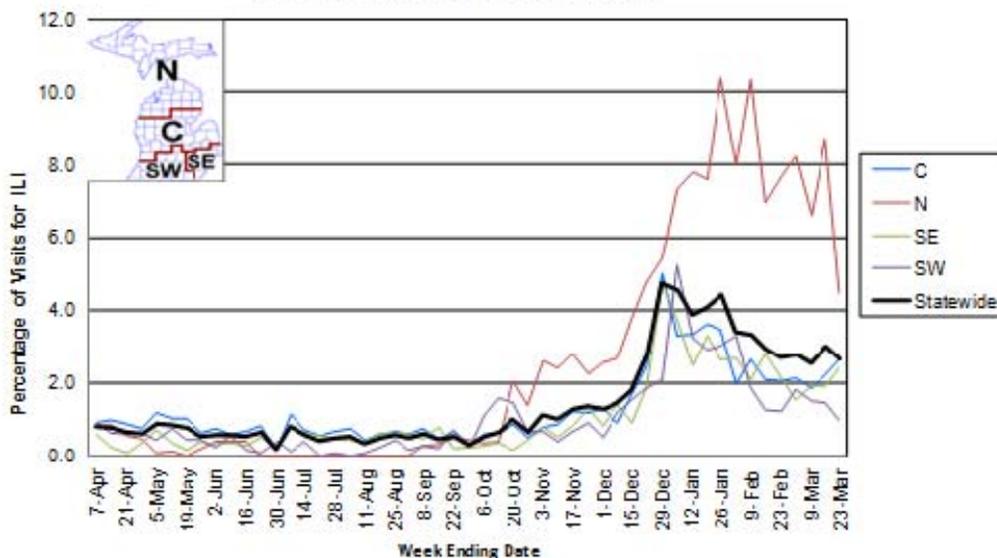
Influenza Surveillance Reports

Michigan Disease Surveillance System (as of March 28): MDSS data for the week ending March 23rd indicated that compared to levels from the previous week, individual reports moderately decreased, while aggregate influenza reports slightly decreased. Aggregate reports are slightly lower than levels seen during the same time period last year, while individual reports are moderately lower.

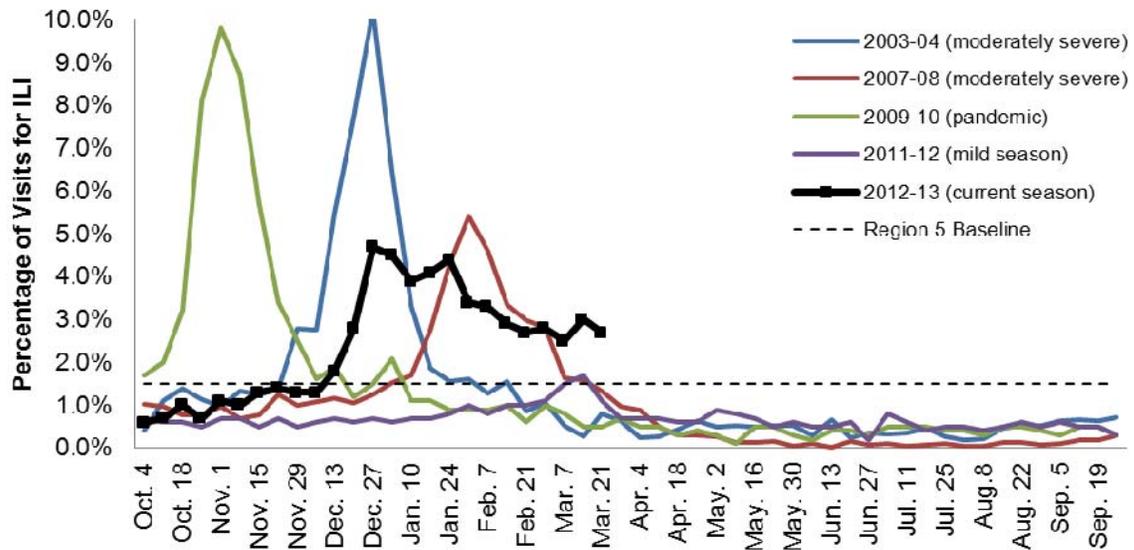
Emergency Department Surveillance (as of March 28): Compared to levels from the week prior, emergency department visits from constitutional complaints increased at the beginning of the week and then steadily decreased, while respiratory complaints remained steady. Both constitutional and respiratory complaints are similar to levels reported during the same time period last year. In the past week, there were 6 constitutional alerts in the SW(2) and C(4) Influenza Surveillance Regions and 2 respiratory alerts in the SW(1) and C(1) Regions.

Sentinel Provider Surveillance (as of March 28): During the week ending March 23, 2013, the proportion of visits due to influenza-like illness (ILI) decreased to 2.7% overall; this is above the regional baseline (1.5%). A total of 241 patient visits due to ILI were reported out of 9,089 office visits. Data were provided by thirty-one sentinel sites from the following regions: C (14), N (3), SE (11) and SW (3). ILI activity increased in two surveillance regions: Central (2.6%) and Southeast (2.4%); ILI activity decreased in the remaining two regions: North (4.5 %) and Southwest (1.0%). 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
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 March 23): 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. 7 new cases were identified during the past week. As of March 23th, there have been 235 influenza hospitalizations (156 adult, 79 pediatric) within the catchment area. The incidence rate for adults is 22.9 hospitalizations per 100,000 population and for children is 37.8 hospitalizations per 100,000.

The MDCH Influenza Sentinel Hospital Network monitors influenza hospitalizations reported voluntarily by hospitals statewide. 10 hospitals (SE, SW, C, N) reported for the week ending March 23, 2013. Results are listed in the table below.

Age Group	Hospitalizations Reported During Current Week	Total Hospitalizations 2012-13 Season
0-4 years	0	32 (6SE, 21C, 5N)
5-17 years	1 (1SW)	14 (3SE, 1SW, 8C, 2N)
18-49 years	1 (1SE)	47 (30SE, 2SW, 10C, 5N)
50-64 years	1 (1SE)	76 (55SE, 3SW, 7C, 11N)
≥65 years	9 (8SE, 1N)	232 (156SE, 14SW, 14C, 48N)
Total	12 (10SE, 1SW, 1N)	401 (250SE, 20SW, 60C, 71N)

Laboratory Surveillance (as of March 23): During March 17-23, 1 influenza A(H3) (1C), 1 influenza A(H1N1)pdm09 (1SE), and 7 influenza B (1SE, 6SW) results were reported by MDCH. For the 2012-13 season (starting Sept. 30, 2012), MDCH has identified 643 influenza results:

- Influenza A(H3): 493 (124SE, 169SW, 163C, 37N)
- Influenza A(H1N1)pdm09: 21 (13SE, 2SW, 3C, 3N)
- Influenza B: 137 (29SE, 28SW, 67C, 14N)
- Parainfluenza: 8 (3SW, 1C, 4N)
- RSV: 1 (1N)

14 sentinel labs (SE, SW, C, N) reported for the week ending March 23, 2013. 9 labs (SE, SW, C) reported low or decreasing flu A activity. 11 labs (SE, SW, C) reported flu B activity, with the highest activity occurring in the SE. Flu B activity is higher than flu A activity but is declining. 1 lab (SE) had sporadic parainfluenza activity. 11 labs (SE, SW, C) reported steady or decreasing RSV activity. 3 labs (SE, SW, C) had low HMPV activity. Testing volumes are moderate but falling, with the highest in the SE.

Michigan Influenza Antigenic Characterization (as of March 28): For the 2012-13 season, 102 Michigan influenza B specimens have been characterized at MDCH BOL. 83 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 March 28): For the 2012-13 season, 30 influenza A/H3 specimens and 15 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>.

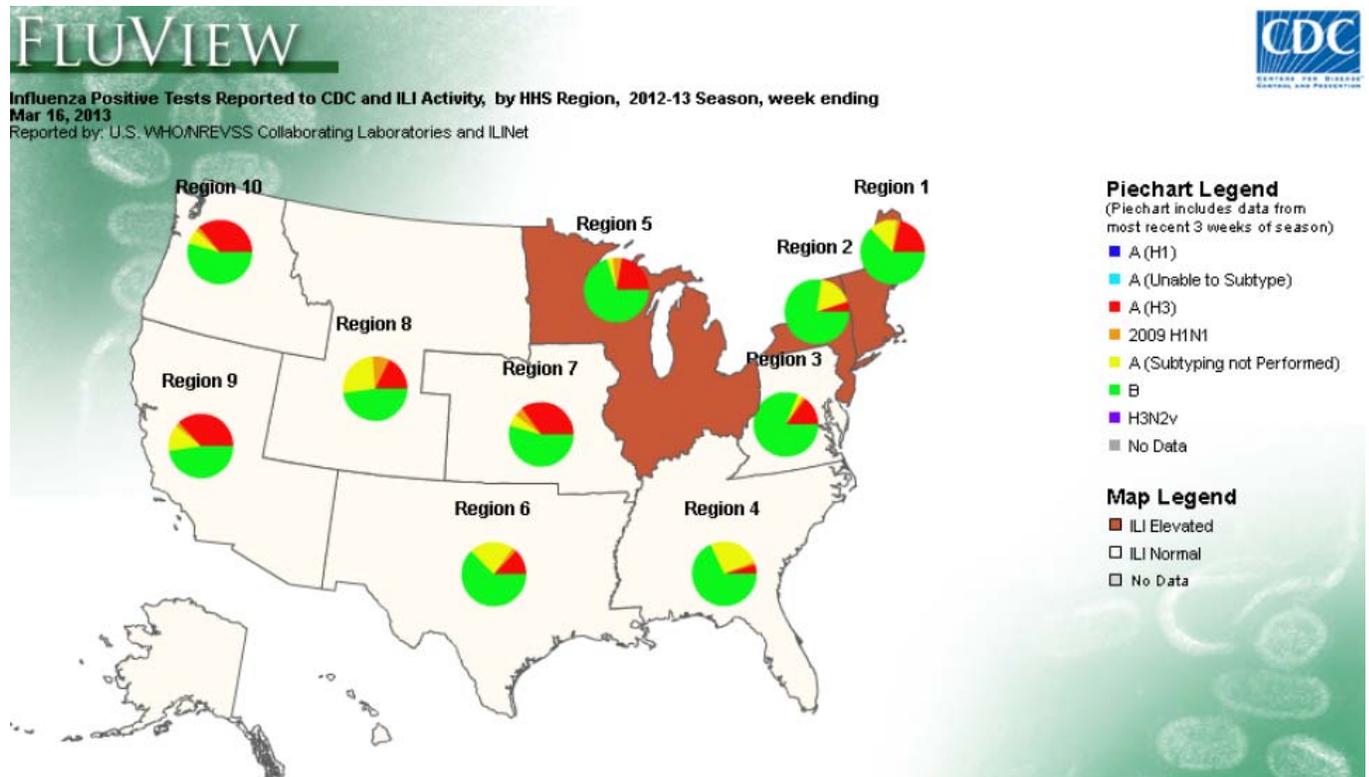
Influenza-associated Pediatric Mortality (as of March 28): 5 pediatric influenza-associated influenza mortalities (2 A/H3, 3B) have been reported for the 2012-13 season.

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 March 28): 103 respiratory outbreaks (20SE, 28SW, 38C, 17N) have been reported to MDCH during the 2012-13 season; testing results are listed below.

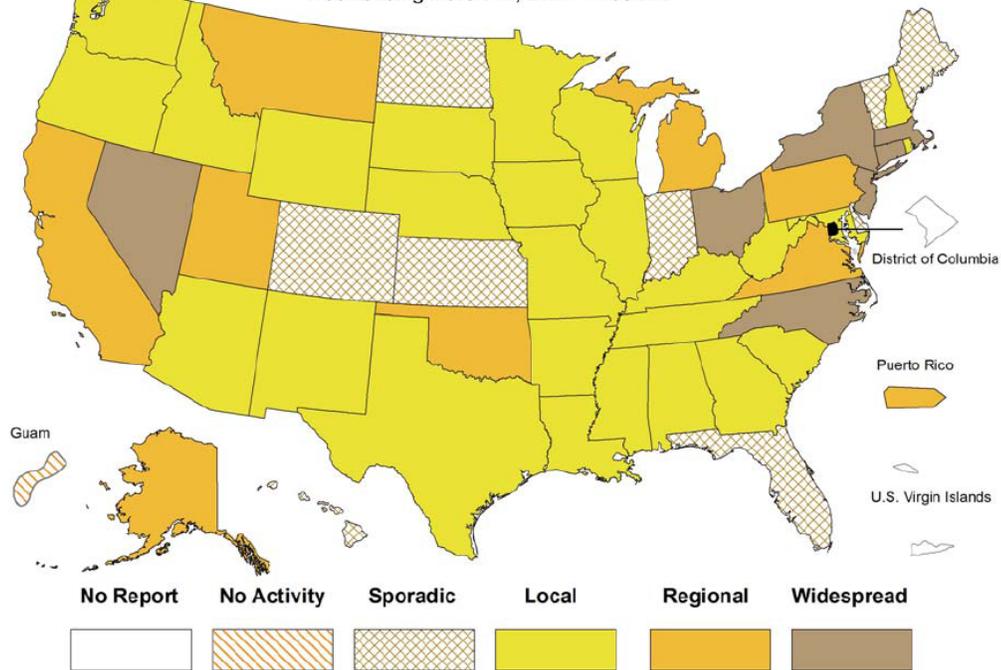
- Influenza A/H3: 16 (7SW, 9C)
- Influenza A: 53 (9SE, 13SW, 19C, 12N)
- Influenza B: 6 (1SE, 3SW, 1C, 1N)
- Influenza A and B: 2 (1SE, 1SW)
- Influenza positive: 4 (1SE, 1SW, 2C)
- Influenza and RSV positive: 1 (1C)
- Negative/no testing: 21 (8SE, 3SW, 6C, 4N)

National (CDC [edited], March 22): During week 11 (March 10 – 16, 2013), influenza activity remained elevated in the United States, but decreased in most areas. Of 5,526 specimens tested and reported by collaborating laboratories, 899 (16.3%) were positive for influenza. The proportion of deaths attributed to pneumonia and influenza (P&I) was above the epidemic threshold. Six pediatric deaths were reported. A cumulative rate for the season of 40.6 laboratory-confirmed influenza-associated hospitalizations per 100,000 population was reported. Of reported hospitalizations, 51% were among adults 65 years and older. The proportion of outpatient visits for influenza-like illness (ILI) was 2.2%. This is at the national baseline of 2.2%. Three of 10 regions reported ILI above region-specific baseline levels. One state experienced high ILI activity; 5 states experienced moderate activity; 6 states and New York City experienced low activity; 38 states experienced minimal activity, and the District of Columbia had insufficient data. Seven states reported widespread influenza activity; Puerto Rico and 8 states reported regional influenza activity; 26 states reported local influenza activity; 9 states reported sporadic influenza activity; Guam reported no activity, and the U.S. Virgin Islands and the District of Columbia did not report.

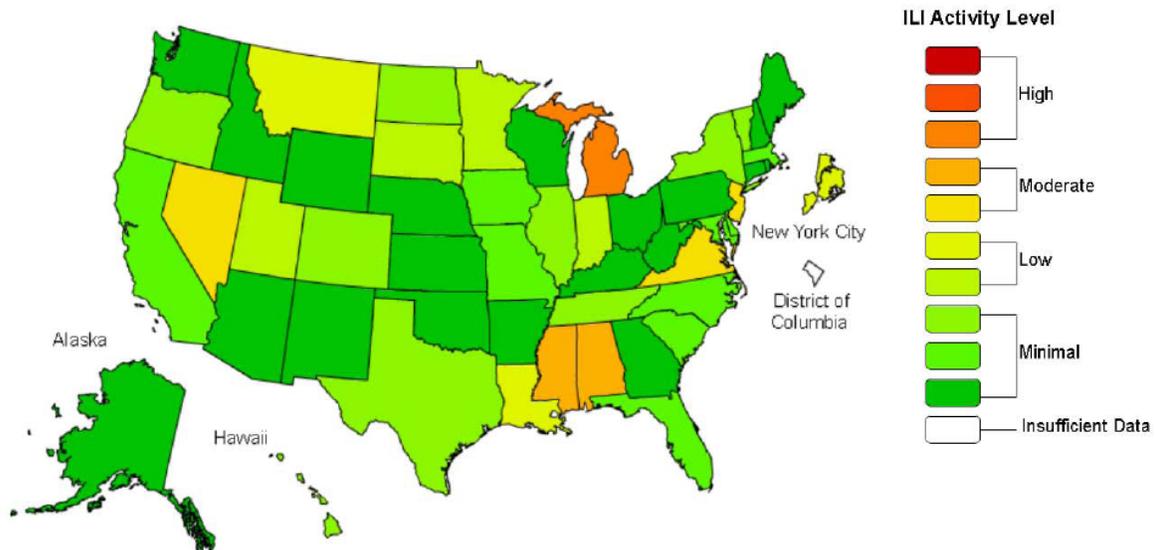


Weekly Influenza Activity Estimates Reported by State & Territorial Epidemiologists*

Week ending March 16, 2013 - Week 11



Influenza-Like Illness (ILI) Activity Level Indicator Determined by Data Reported to ILINet 2012-13 Influenza Season Week 11 ending Mar 16, 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], March 15): Influenza activity in North America continued to decrease overall, though activity remained high in some areas. The proportion of influenza B has increased in the United States of America (USA), but influenza A(H3N2) still remained the most commonly detected virus. The season in the USA has been more severe than any since 2003-4 as reflected in numbers of pneumonia and influenza deaths but the impact has been greatest in individuals over the age of 65 years. Activity in Mexico has also decreased over the past several weeks since peaking in mid to late January. Influenza activity remained high across Europe but an increasing number of countries reported declining

transmission. The proportion of types and subtypes of viruses circulating was not uniform across the continent. Influenza B has been more commonly detected than A in some countries while, mainly in Eastern parts of Europe very little circulation of influenza B has been detected. Excess mortality in most countries has been moderate and most deaths occurred among people aged 65 and older. Influenza activity throughout the temperate region of Asia decreased overall except in Mongolia and the Republic of Korea where activity persists. Low levels of influenza activity were reported across the tropical regions of the world and activity in countries of the southern hemisphere remained at inter-seasonal levels. A couple of viruses with resistance to neuraminidase inhibitors have been detected in countries doing testing. The entire WHO report is available online at www.who.int/influenza/surveillance_monitoring/updates/latest_update_GIP_surveillance/en/index.html.

MDCH reported LOCAL INFLUENZA ACTIVITY to CDC for the week ending March 23, 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 (WHO, March 23): The Ministry of Health in Saudi Arabia has informed WHO of a new confirmed case of infection with the novel coronavirus (nCoV).

The patient is a contact of the previous case reported in the Disease Outbreak News on 12 March 2013. This person suffered a mild illness, and has recovered and been discharged from hospital. Currently, there is insufficient information available to allow a conclusive assessment of the mode and source of transmission.

To date, WHO has been informed of a global total of 16 confirmed cases of human infection with nCoV, including nine deaths.

Based on the current situation and available information, WHO encourages all Member States (MS) to continue their surveillance for severe acute respiratory infections (SARI) and to carefully review any unusual patterns. WHO is currently working with international experts and countries where cases have been reported to assess the situation and review recommendations for surveillance and monitoring.

All MS are reminded to promptly assess and notify WHO of any new case of infection with nCoV, along with information about potential exposures that may have resulted in infection and a description of the clinical course.

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.

WHO continues to closely monitor the situation.

International, Human (WHO, March 26): The Robert Koch Institute informed WHO of a new confirmed case of infection with the novel coronavirus (nCoV).

The patient was a 73-year-old male from United Arab Emirates, who was transferred from a hospital in Abu Dhabi to Munich by air ambulance on 19 March 2013. He died on 26 March 2013.

In the United Kingdom, the index patient in the family cluster reported on 11 February 2013 with travel history to Pakistan and Saudi Arabia prior to his illness, has died.

To date, WHO has been informed of a global total of 17 confirmed cases of human infection with nCoV, including 11 deaths.

Based on the current situation and available information, WHO encourages all Member States (MS) to continue their surveillance for severe acute respiratory infections (SARI) and to carefully review any

unusual patterns. WHO is currently working with international experts and countries where cases have been reported to assess the situation and review recommendations for surveillance and monitoring.

All MS are reminded to promptly assess and notify WHO of any new case of infection with nCoV, along with information about potential exposures that may have resulted in infection and a description of the clinical course.

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.

WHO continues to closely monitor the situation.

The alert is available online at http://www.who.int/csr/don/2013_03_26/en/index.html.

International, Human (Emerging Infectious Diseases abstract, March 27): Kuster SP, Coleman BL, Raboud J, McNeil S, De Serres G, Gubbay J, et al. Risk factors for influenza among health care workers during 2009 pandemic, Toronto, Ontario, Canada. *Emerg Infect Dis* [Internet]. 2013 Apr.

This prospective cohort study, performed during the 2009 influenza A(H1N1) pandemic, was aimed to determine whether adults working in acute care hospitals were at higher risk than other working adults for influenza and to assess risk factors for influenza among health care workers (HCWs). We assessed the risk for influenza among 563 HCWs and 169 non-HCWs using PCR to test nasal swab samples collected during acute respiratory illness; results for 13 (2.2%) HCWs and 7 (4.1%) non-HCWs were positive for influenza. Influenza infection was associated with contact with family members who had acute respiratory illnesses (adjusted odds ratio [AOR]: 6.9, 95% CI 2.2–21.8); performing aerosol-generating medical procedures (AOR 2.0, 95% CI 1.1–3.5); and low self-reported adherence to hand hygiene recommendations (AOR 0.9, 95% CI 0.7–1.0). Contact with persons with acute respiratory illness, rather than workplace, was associated with influenza infection. Adherence to infection control recommendations may prevent influenza among HCWs.

The full article is available online at http://wwwnc.cdc.gov/eid/article/19/4/11-1812_article.htm.

International, Poultry (OIE [edited], March 20): Low pathogenic avian influenza H7N7; Netherlands
Outbreak 1: Zeewolde, FLEVOLAND

Date of start of the outbreak: 15/03/2013; Outbreak status: Continuing; Epidemiological unit: Farm
Species: Birds; Susceptible: 23500; Cases: 60; Deaths: 0; Destroyed: 23440

International, Poultry (OIE [edited], March 22): Low pathogenic avian influenza H5N1; Germany
Outbreak 1 (13-614-00002): Lippstadt, Soest, NORDRHEIN-WESTFALEN

Date of start of the outbreak: 05/03/2013; Outbreak status: Continuing; Epidemiological unit: Farm
Species: Birds; Susceptible: 22; Cases: 1; Deaths: 1; Destroyed: 21

International, Poultry (OIE [edited], March 23): Highly pathogenic avian influenza H7N3; Mexico
Summary of outbreaks: Total outbreaks: 13

Total animals affected: Species: Birds; Susceptible: 2453380; Cases: 473306

Epidemiological comments: Following the epidemiological investigation on the event occurred in Guanajuato, 7 outbreaks due to highly pathogenic avian influenza virus were identified (5 heavy breeder farms and 2 backyards) with a total affected population of 146, 240 birds. These outbreaks were located in the municipalities of Dolores Hidalgo (4), Juventino Rosas (1) and San Miguel de Allende (2). In Jalisco, 2 outbreaks in broiler farms, one in Lagos de Moreno (15 flocks) and another in Encarnacion de Diaz (2 flocks) were identified. In commercial layer farms, one outbreak was identified in Tepatitlan de Morelos (4 flocks), one in quails (Lagos de Moreno) and 2 in backyards (Tepatitlan de Morelos and Union de San Antonio). The affected population is 2,307,140 birds. Simultaneously, depopulation activities have begun in the affected farms and preventive vaccination is still on-going in high risk birds. From January to 15 March 2013, 44.6 million doses were applied.

Michigan Wild Bird Surveillance (USDA, as of March 28): For the 2012 season (April 1, 2012-March 31, 2013), highly pathogenic avian influenza H5N1 has not been recovered from the 201 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_Al-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 March 12, 2013. http://www.who.int/influenza/human_animal_interface/EN_GIP_20130312CumulativeNumberH5N1cases.pdf. Downloaded 3/20/2013. 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	0	0	6	0
Cambodia	6	6	1	1	1	0	1	0	1	1	8	8	3	3	9	8	30	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	1	1	170	61
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	0	0	123	61
Total	263	158	88	59	44	33	73	32	48	24	62	34	32	20	12	11	622	371