



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, MPH peterss1@michigan.gov
Surveillance and Infectious Disease Epidemiology

February 6, 2014
Vol. 11; No. 6

Current Influenza Activity Levels:

- **Michigan:** Widespread influenza activity
- **National:** During January 19-25, influenza activity remained high in the United States

Updates of Interest:

- **Michigan:** Michigan's second pediatric death is reported
- **International:** Multiple human cases of avian influenza H7N9 are reported from China

Table of Contents

Influenza Surveillance Reports	
Michigan.....	1-3
National.....	3-4
International.....	4
Novel Influenza and Other News	
WHO Pandemic Phase.....	5
MERS-CoV.....	5
Avian Influenza in Humans.....	5-9

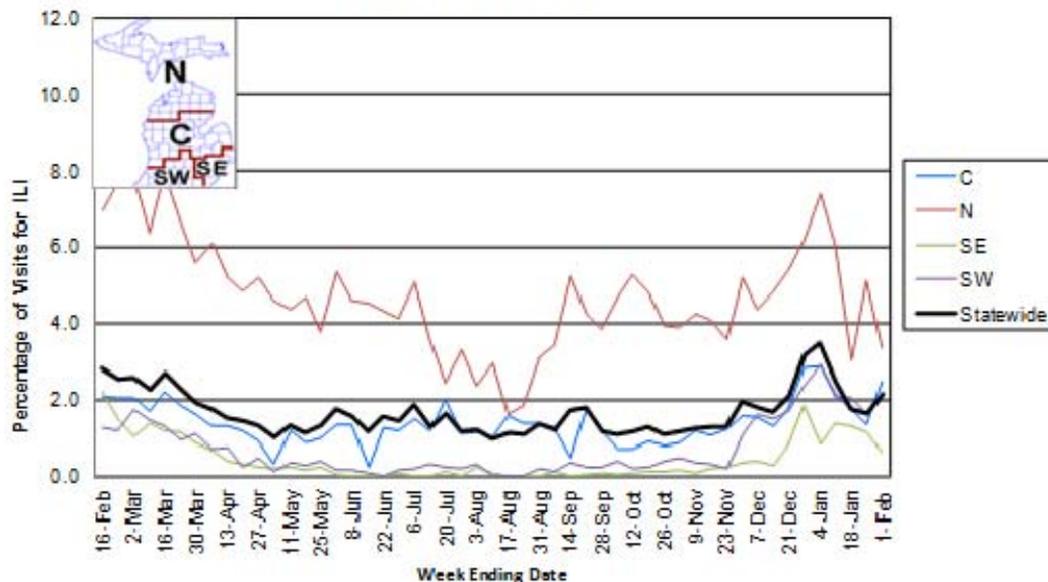
Influenza Surveillance Reports

Michigan Disease Surveillance System (as of February 6): MDSS influenza data for the week ending February 1, 2014 indicated that compared to levels from the previous week, aggregate reports remained steady and individual reports slightly decreased. Aggregate reports are significantly lower than levels seen during the same time period last year, while individual reports are moderately lower.

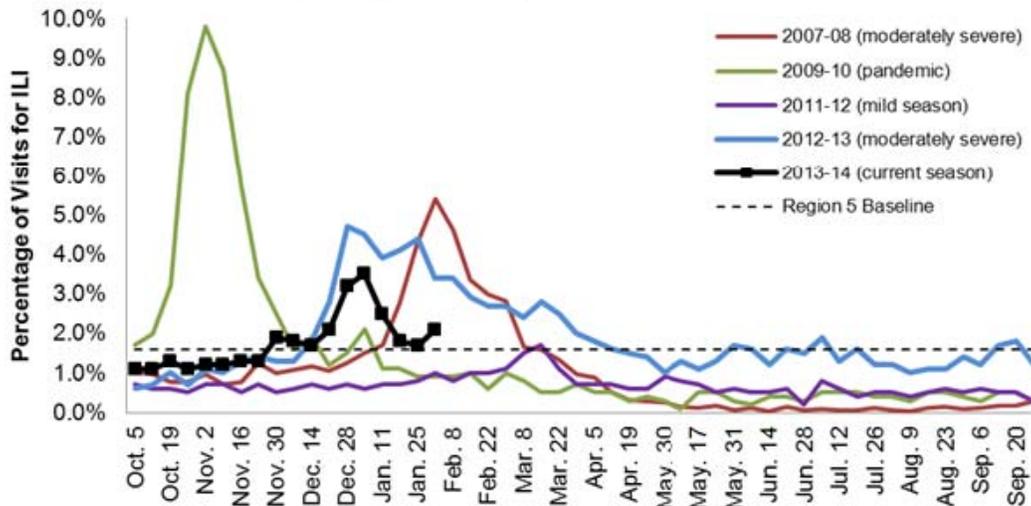
Emergency Department Surveillance (as of February 6): Emergency department visits due to constitutional complaints decreased, while respiratory complaints remained steady, during the week ending February 1, 2014. Visits from constitutional complaints were significantly lower than levels during the same time period last year, while respiratory complaints were moderately lower and similar to levels seen in October 2013. In the past week, there were 9 constitutional alerts in the SW(2), C(3) and N(4) Influenza Surveillance Regions and 3 respiratory alerts in the C(2) and N(1) Regions.

Sentinel Provider Surveillance (as of February 6): During the week ending February 1, 2014, the proportion of visits due to influenza-like illness (ILI) increased to 2.1% overall; this is above the regional baseline (1.6%). A total of 160 patient visits due to ILI were reported out of 7,524 office visits. Data were provided by 31 sentinel sites from the following regions: Central (13), North (5), Southeast (8), and Southwest (5). ILI activity increased in two regions: C(2.5%) and SW(2.2%) and decreased in two regions: N(3.4%) and SE(0.6%). 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
2013-14 Flu Season



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 517-335-3385 or DeVitaS1@michigan.gov for more information.

Hospital Surveillance (as of February 6): 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, 2013, for Clinton, Eaton, Genesee, and Ingham counties. 6 new cases (1 pediatric, 5 adult) were identified since the last report. As of February 6th, there have been 168 influenza hospitalizations (46 pediatric, 122 adult) within the catchment area. Based on these counts, there are 22.0 pediatric influenza hospitalizations/100,000 population and 17.9 adult influenza hospitalizations/100,000 population within the catchment area.

The MDCH Influenza Sentinel Hospital Network monitors influenza hospitalizations reported voluntarily by hospitals statewide. 7 hospitals (SE,SW,C,N) reported for the week ending February 1, 2014. Additional results for past weeks have also been added to the season totals. Results are listed in the table below.

Age Group	Hospitalizations Reported During the Previous Week	Total Hospitalizations 2013-14 Season
0-4 years	4 (3C,1N)	40 (6SE,1SW,30C,3N)
5-17 years	0	17 (1SE,16C)
18-49 years	3 (1SE,2C)	97 (55SE,2SW,32C,8N)
50-64 years	0	115 (72SE,4SW,26C,13N)
≥65 years	4 (3SE,1N)	89 (59SE,3SW,12C,15N)
Total	11 (4SE,5C,2N)	358 (193SE,10SW,116C,39N)

Laboratory Surveillance (as of February 1): During January 26-February 1, 21 influenza 2009 A/H1N1pdm (3SE,11SW,7C) results were reported by MDCH Bureau of Laboratories. For the 2013-14 season (starting Sept. 29, 2013), MDCH has identified 296 positive influenza results:

- Influenza 2009 A/H1N1pdm: 280 (62SE,100SW,80C,38N)
- Influenza A/H3: 10 (8SE,2SW)
- Influenza A unsubtypeable: 1 (1SE)
- Influenza A and B (LAIV recovery): 1 (1SE)
- Influenza B: 4 (1SE,1SW,2C)
- Adenovirus: 1 (1SE)
- Parainfluenza: 2 (1SE,1SW)

12 sentinel labs (SE,SW,C,N) reported for the week ending February 1, 2014. 11 labs (SE,SW,C) had ongoing or decreasing influenza A activity. 5 labs (SE,SW,C) reported sporadic or decreasing flu B activity. 3 labs (SE,SW,C) had sporadic parainfluenza activity. 12 labs (SE,SW,C,N) had RSV activity, with several sites declining. 3 labs (SE,SW) reported sporadic hMPV activity. 4 labs (SE,SW,C) had sporadic adenovirus activity. Testing volumes at most sites remain moderate to high but overall are declining.

Michigan Influenza Antigenic Characterization (as of February 6): For the 2013-14 season, 2 Michigan influenza specimens (2C) have been characterized at CDC as A/California/07/2009-like/H1N1/

pdm09, matching the influenza A/H1N1pdm09 strain in the 2013-14 Northern Hemisphere vaccine. 1 specimen (1C) has been characterized at CDC as B/Brisbane/60/2008-like, which is a B/Victoria lineage virus; it is not in the 2013-14 Northern Hemisphere trivalent vaccine but is in the quadrivalent vaccine.

Michigan Influenza Antiviral Resistance Data (as of February 6): For the 2013-14 season, 59 2009 A/H1N1pdm (16SE,13SW,18C,12N) and 7 A/H3 (5SE,2SW) influenza specimens have been tested at the MDCH BOL for antiviral resistance. None of the influenza specimens 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>.

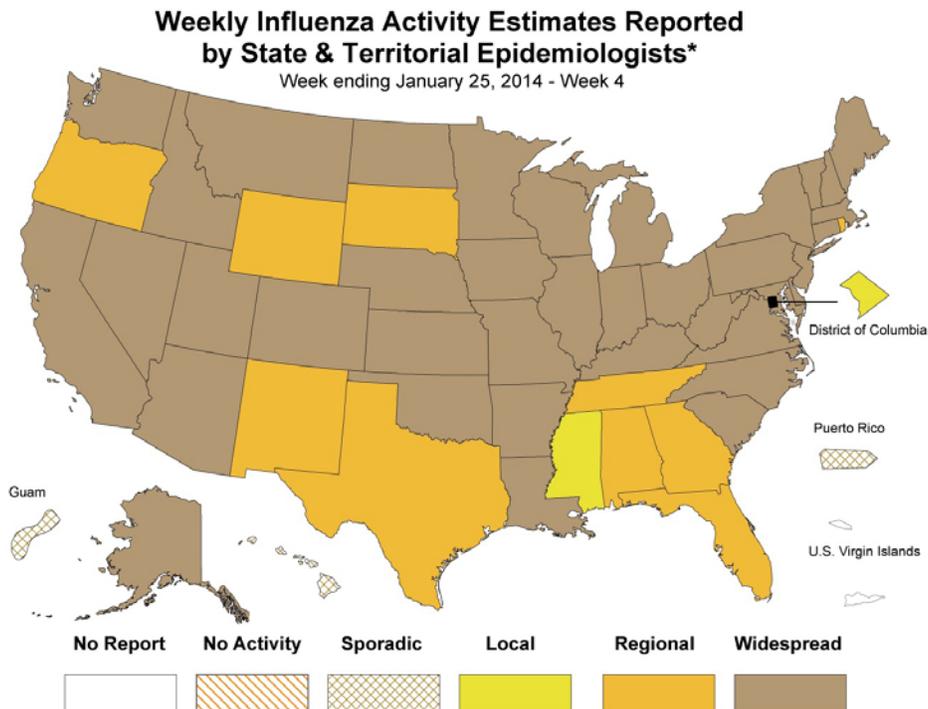
Influenza-associated Pediatric Mortality (as of February 6): One new pediatric influenza-associated deaths in a 0-4 year old from the SE Region, confirmed as 2009 influenza A/H1N1, was reported to MDCH during the previous week. 2 pediatric influenza-associated influenza mortalities (1SE,1C) have been reported to MDCH for the 2013-14 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.

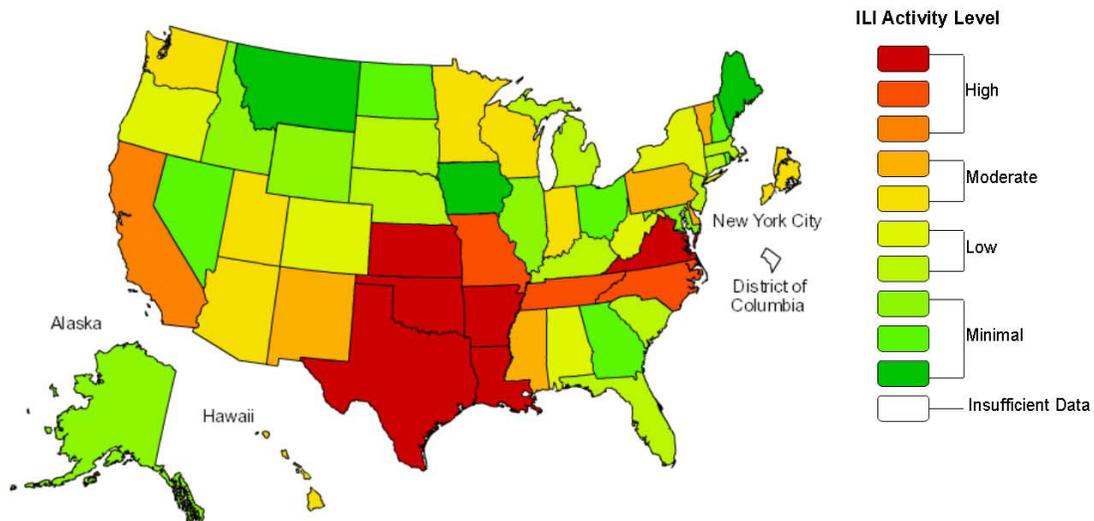
Influenza Congregate Settings Outbreaks (as of February 6): Two new outbreaks, one due to influenza in a correctional facility (SW) and one due to influenza A in a long-term care facility (SW), were reported during the week ending February 1. 11 respiratory outbreaks (6SW,5C) have been reported during the 2013-14 season:

- Influenza 2009 A/H1N1pdm: 3 (2SW,1C)
- Influenza A/H3 positive: 1 (1SW)
- Influenza A positive: 2 (2SW)
- Influenza positive: 1 (1SW)
- Negative/no testing: 4 (4C)

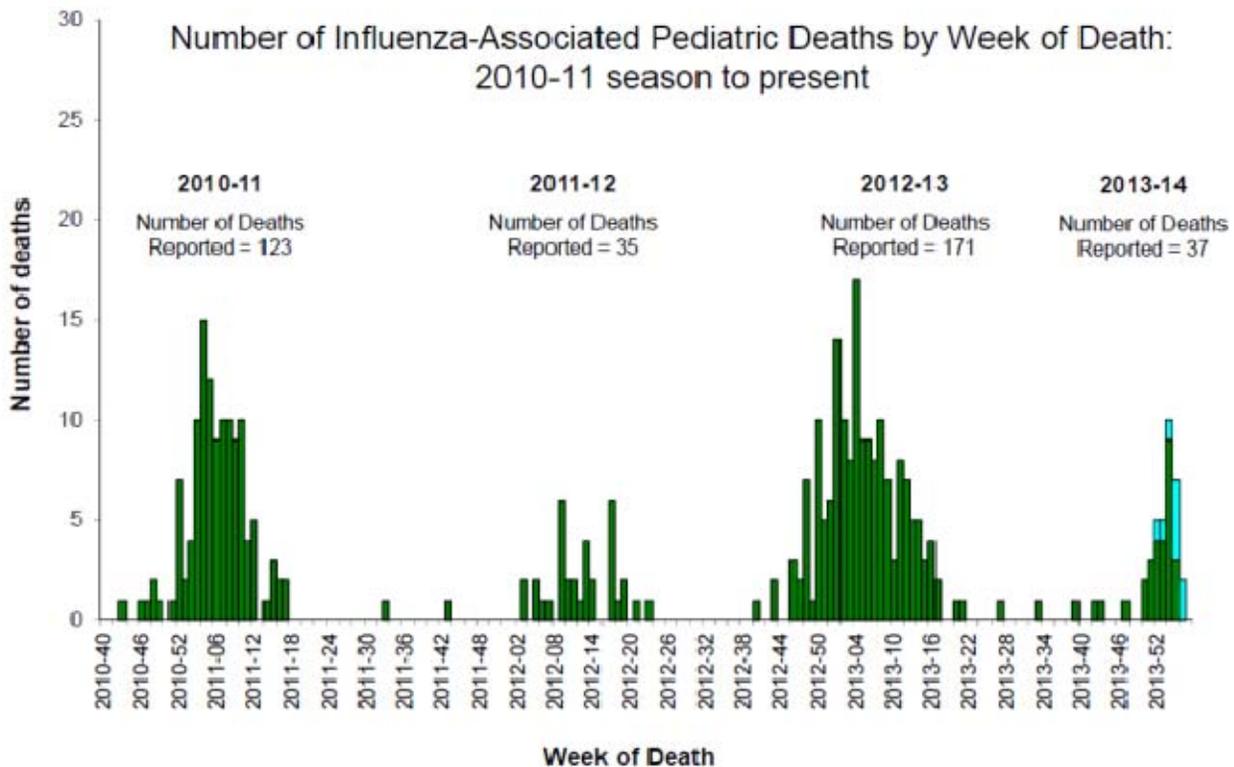
National (CDC [edited], January 31): During week 4 (January 19-25, 2014), influenza activity remained high in the U.S. Of 9,514 specimens tested and reported during week 4 by U.S. WHO and NREVSS collaborating laboratories, 2,006 (21.1%) were positive for influenza. The proportion of deaths attributed to pneumonia and influenza was above the epidemic threshold. Nine influenza-associated pediatric deaths were reported. A season-cumulative rate of 20.3 laboratory confirmed influenza-associated hospitalizations per 100,000 population was reported. The proportion of outpatient visits for influenza-like illness (ILI) was 3.3%, above the national baseline of 2.0%. All 10 regions reported ILI above region-specific baseline levels. 10 states experienced high ILI activity; 12 states and New York City experienced moderate ILI activity; 14 states experienced low ILI activity; 14 states experienced minimal ILI activity, and the District of Columbia had insufficient data. The geographic spread of influenza in 38 states was reported as widespread; 10 states reported regional activity; the District of Columbia and 1 state reported local activity; Guam, Puerto Rico, and 1 state reported sporadic activity, and the U.S. Virgin Islands did not report.



**Influenza-Like Illness (ILI) Activity Level Indicator Determined by Data Reported to ILINet
2013-14 Influenza Season Week 4 ending Jan 25, 2014**



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.



Complete weekly FluView reports are available online at: <http://www.cdc.gov/flu/weekly/>.

International (WHO [edited], January 27): In North America influenza activity remained high in recent weeks with A(H1N1)pdm09 predominant. In Europe, a slight increase in activity has been observed, which may indicate the start of the influenza season. In China influenza activity continued to increase with influenza (H1N1)pdm09, A(H3N2) and B co-circulating. In the southern hemisphere influenza activity remained low. In countries of tropical areas variable activity was reported. Based on FluNet reporting (as of 23 January 2014), during weeks 1 to 2 (29 December 2013 to 11 January 2014), National Influenza Centres and other national influenza laboratories from 72 countries, areas or territories reported data. The WHO GISRS laboratories tested more than 81261 specimens. 24494 were positive for influenza viruses, of which 22425 (91.6%) were typed as influenza A and 2069 (8.4%) as influenza B. Of the sub-typed influenza A

viruses, 11033 (80.5%) were A(H1N1)pdm09 and 2669 (19.5%) were A(H3N2). Of the characterized B viruses, 220 (84%) belonged to the B-Yamagata lineage and 42 (16%) to the B-Victoria lineage.

The full report is online at

www.who.int/influenza/surveillance_monitoring/updates/latest_update_GIP_surveillance/en/index.html.

MDCH reported WIDESPREAD INFLUENZA ACTIVITY to CDC for the week ending Feb. 1, 2014

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.

International, MERS-CoV (WHO [edited], February 4): On 28 January 2014, the Ministry of Health of Saudi Arabia announced an additional laboratory-confirmed case of Middle East Respiratory Syndrome coronavirus (MERS-CoV) infection.

The case is a 60-year-old man from Riyadh who became ill on 19 January and who had underlying medical conditions. He was hospitalized on 24 January and died on 28 January. Respiratory specimens were collected and sent to the central laboratory in Riyadh and confirmed positive for MERS-CoV on 28 January. Details of his possible contact with animals are unknown, and he has no history of contact with a laboratory-confirmed case.

WHO has also been informed by the United Arab Emirates of the death on 16 January of a previously reported case of a 33 year-old male healthcare worker from Dubai (see Disease Outbreak News update from 3 January 2014).

Globally, from September 2012 to date, WHO has been informed of a total of 181 laboratory-confirmed cases of infection with MERS-CoV, including 79 deaths.

The full report is available online at http://www.who.int/csr/don/2014_02_04mers/en/index.html.

International, Human (WHO [edited], January 24): Influenza at the human-animal interface, Summary and assessment as of 24 January 2014

Human infection with avian influenza A(H5N1) viruses

From 2003 through 24 January 2014, 650 laboratory-confirmed human cases of avian influenza A(H5N1) virus infection have been officially reported to WHO from 15 countries. Of these cases, 386 died. Since the last WHO Influenza at the Human-Animal Interface update on 20 December 2013, two new laboratory-confirmed human cases of influenza A(H5N1) virus infection were reported to WHO (one from Canada and one from Viet Nam).

Canada notified WHO of a human infection with influenza A(H5N1) virus in a previously healthy resident who travelled to Beijing between 6 and 27 of December 2013. The case had an onset of disease on 27 December, when travelling back to Canada, presented with rapidly progressing pneumonia and encephalitis on 1 January 2014, and died on 3 January 2014. This is the first case of infection with H5N1 virus reported in the Americas. Although exposure to the virus most likely happened in Beijing, no clear history of exposure to poultry or poultry-contaminated environments was reported. No further cases were identified through contact follow-up and investigation around this case in Canada. The most recent human cases in China of A(H5N1) infection were reported in February 2013 in Guizhou province.

Viet Nam notified WHO of one fatal case of human infection with influenza A(H5N1) virus with onset on 11 January 2014 from Binh Phuoc province.

Overall public health risk assessment for avian influenza A(H5N1) viruses: Whenever influenza viruses are circulating in poultry, sporadic infections or small clusters of human cases are possible, especially in people exposed to infected household poultry or contaminated environments. This influenza A(H5N1)

virus does not currently appear to transmit easily among people. As such, the risk of community-level spread of this virus remains low.

Human infections with avian influenza A(H7N9) viruses in China

WHO is closely monitoring this event and separate risk assessments have been posted at http://www.who.int/influenza/human_animal_interface/influenza_h7n9/Risk_Assessment/en/index.html

Human infections with avian influenza A(H9N2) viruses in China

Two human cases of infection with avian influenza A(H9N2) virus were reported to WHO from China. The first case was reported from Hong Kong SAR in an 86-year-old male Hong Kong citizen with underlying medical conditions living in Shenzhen, Guangdong province, China. The patient developed symptoms on 28 December 2013 and was admitted to hospital on the same day. He was reported on 30 December to be in a stable condition. Investigation around this case did not reveal other human cases of infection with this virus. No clear history of exposure to poultry or poultry-contaminated environments was reported. The second case was a 7-year-old boy from Hunan Province, China. He fell ill on 19 November 2013, was treated as an outpatient and fully recovered on 24 November. On 31 December, specimen collected during his outpatient visit was tested positive for influenza A(H9N2). Investigations revealed that the patient had close contact with poultry. No additional human cases were reported among contacts of this case. Low pathogenic avian influenza A(H9N2) viruses are known to be circulating in poultry across Asia and the Middle East. The latest human infection with influenza A(H9N2) virus was reported from Hong Kong, SAR, China in December 2009. Most human infections with influenza A(H9N2) were mild.

Overall public health risk assessment for avian influenza A(H9N2) virus: Further human cases and small clusters could occur as this virus is circulating in poultry populations across Asia and Middle East. This virus does not seem to transmit easily between humans and tends to result in mild clinical disease, therefore the current likelihood of community-level spread and public health impact of this virus is considered low.

The full report is available online at

www.who.int/influenza/human_animal_interface/Influenza_Summary_IRA_HA_interface_24January14.pdf.

International, Human (WHO [edited], January 31): Background and summary of human infection with avian influenza A(H7N9) virus – as of 31 January 2014

This summary report is available online at

www.who.int/influenza/human_animal_interface/20140131_background_and_summary_H7N9_v1.pdf?ua=1.

International, Human (WHO [edited], January 30): On 29 January 2014, the National Health and Family Planning Commission of China notified WHO of 15 additional laboratory-confirmed cases of human infection with avian influenza A(H7N9) virus.

Of these 15 cases, 10 are females. The age range among the cases is 31 to 81 years old. The cases are reported from Guangdong (4), Jiangsu (1), Shanghai (1) and Zhejiang Province (9). Thirteen of the cases are currently in a critical or serious condition. Fourteen of the cases are reported to have had exposure to poultry or a live poultry market/environment.

The full report is available online at http://www.who.int/csr/don/2014_01_30/en/index.html.

International, Human (WHO [edited], January 31): On 29 January 2014, the National Health and Family Planning Commission (NHFPC) of China, and the Centre for Health Protection (CHP), Hong Kong SAR, China notified WHO of six additional laboratory-confirmed cases of human infection with avian influenza A(H7N9) virus including one death.

All of the six cases are males. The age range is 2 to 63 years old. The cases are reported from Fujian (1), Guangdong (1), Hong Kong SAR (1), and Zhejiang (3). Four of the cases are currently in critical or serious condition. Four of the cases are reported to have had exposure to poultry or a live poultry market.

The full report is available online at http://www.who.int/csr/don/2014_01_31/en/index.html.

International, Human (WHO [edited], February 1): On 30 January 2014, the National Health and Family Planning Commission (NHFPC) of China notified WHO of seven additional laboratory-confirmed cases of human infection with avian influenza A(H7N9) virus including one death.

Of these seven cases, four are male. The age range is 56 to 78 years old. The cases have been reported from Guangdong (1), Guangxi (1), Jiangsu (1) and Zhejiang (4). For Guangxi Province, this is the first laboratory confirmed case of human infection with avian influenza A(H7N9). Six of the cases are currently in critical or serious condition. Seven of the cases are reported to have had exposure to poultry or a live poultry market.

The full report is available online at http://www.who.int/csr/don/2014_02_01/en/index.html.

International, Human (WHO [edited], February 3): The National Health and Family Planning Commission (NHFPC) of China has notified WHO of nine additional laboratory-confirmed cases of human infection with avian influenza A(H7N9) virus, including one death.

Details of four cases notified on 1 February 2014 are as follows:

All four cases are male. The age range is 5 to 80 years old. Cases have been reported from Guangdong (2), and Zhejiang (2). Two cases are currently in critical condition and the other two cases are in stable condition. Three of the cases are reported to have had exposure to poultry or a live poultry market.

Details of five cases notified on 31 January 2014 are as follows:

Of these, four cases are male. The age range is 28 to 82 years old. Cases have been reported from Guangdong (4), and Hunan (1). One case is fatal and the rest are currently in critical or serious condition. Four of the cases are reported to have had exposure to poultry or a live poultry market.

The full report is available online at http://www.who.int/csr/don/2014_02_03/en/index.html.

International, Human (WHO [edited], February 4): On 2 February 2014, the National Health and Family Planning Commission (NHFPC) of China notified WHO of five additional laboratory-confirmed cases of human infection with avian influenza A(H7N9) virus including one death.

Four cases are male. The age range is 8 to 63 years old. Cases have been reported from Guangdong (2), Hunan (1), Fujian (1) and Zhejiang (1). Three cases are currently in serious condition, one in critical condition. All cases are reported to have had exposure to poultry or a live poultry market.

The full report is available online at http://www.who.int/csr/don/2014_02_04/en/index.html.

International, Human (Ministry of Health of Cambodia press release [edited], February 4): The Ministry of Health (MOH) of the Kingdom of Cambodia wishes to advise members of the public that one new human case of avian influenza has been confirmed for the H5N1 virus. This is the 1st case of this year and the 48th people to become infected with the H5N1 virus in Cambodia. Case is from Kampong Thom province and he is currently in a stable condition. Of the 48 confirmed cases, 36 were children under 14, and 27 of the 48 were female. In addition, since the first case happened in Cambodia in 2005 there were only 15 cases survived.

The full press release is online at <http://www.cdc-moh.gov.kh/PressRelease/48-PressRelease.Eng.pdf>.

International, Human (CIDRAP [edited], February 4): Chinese scientists reported today that the first human infection with an H10N8 avian influenza virus involved a new strain that carries genes from H9N2 viruses and has a mutation associated with adaptation to mammals.

Writing in *The Lancet*, the scientists detailed the results of their genomic analysis of the virus, which was isolated from a 73-year-old Chinese woman who died Dec 6. Her illness was the first known human case involving that strain.

A second human case in China was reported by the country's government news agency on Jan 27. "The pandemic potential of this novel virus should not be underestimated," the *Lancet* authors warn.

The study says the genes for all six of the virus's internal proteins were derived from H9N2 viruses, which circulate in poultry and occasionally infect humans in China, usually causing a mild illness.

The authors say H9N2 viruses also provided the internal protein genes for the H7N9 virus, which has caused scores of deaths in China since last spring, and the H5N1 virus, which has killed more than 380 people since 2003.

The full article is available online at <http://www.cidrap.umn.edu/news-perspective/2014/02/study-h10n8-virus-first-human-case-novel-strain>.

International, Human (WHO [edited], February 5): On 3 February 2014, the National Health and Family Planning Commission (NHFPC) of China notified WHO of four additional laboratory-confirmed cases of human infection with avian influenza A(H7N9) virus, including one death.

Two of the cases are male. The age range is 2 to 76 years old. Cases were reported from Guangdong (2), Hunan (1) and Fujian (1). One case is currently in a serious condition, one is in a critical condition, one is in a mild condition. All cases are reported to have had a history of exposure to poultry or a live poultry market.

The full report is available online at http://www.who.int/csr/don/2014_02_05/en/index.html.

International, Human (WHO [edited], February 5): On 4 February 2014, the National Health and Family Planning Commission (NHFPC) of China notified WHO of eight additional laboratory-confirmed cases of human infection with avian influenza A(H7N9) virus, including two deaths.

Six of the cases are male. The age range is 4 to 84 years old. Cases were reported from Zhejiang (4), Guangdong (3) and Jiangsu (1). Three cases are currently in a critical condition, two cases are currently in a severe condition and one is currently in a mild condition. All cases are reported to have had a history of exposure to poultry or a live poultry market.

The full report is available online at http://www.who.int/csr/don/2014_02_05bis/en/index.html.

International, Human (New England Journal of Medicine abstract, February 6): Epidemiology of Human Infections with Avian Influenza A(H7N9) Virus in China. Qun Li, et al. N Engl J Med 2014; 370:520-532. February 6, 2014.

Background: The first identified cases of avian influenza A(H7N9) virus infection in humans occurred in China during February and March 2013. We analyzed data obtained from field investigations to describe the epidemiologic characteristics of H7N9 cases in China identified as of December 1, 2013.

Methods: Field investigations were conducted for each confirmed case of H7N9 virus infection. A patient was considered to have a confirmed case if the presence of the H7N9 virus was verified by means of real-time reverse-transcriptase–polymerase-chain-reaction assay (RT-PCR), viral isolation, or serologic testing. Information on demographic characteristics, exposure history, and illness timelines was obtained from patients with confirmed cases. Close contacts were monitored for 7 days for symptoms of illness. Throat swabs were obtained from contacts in whom symptoms developed and were tested for the presence of the H7N9 virus by means of real-time RT-PCR.

Results: Among 139 persons with confirmed H7N9 virus infection, the median age was 61 years (range, 2 to 91), 71% were male, and 73% were urban residents. Confirmed cases occurred in 12 areas of China. Nine persons were poultry workers, and of 131 persons with available data, 82% had a history of exposure to live animals, including chickens (82%). A total of 137 persons (99%) were hospitalized, 125 (90%) had pneumonia or respiratory failure, and 65 of 103 with available data (63%) were admitted to an intensive care unit. A total of 47 persons (34%) died in the hospital after a median duration of illness of 21 days, 88 were discharged from the hospital, and 2 remain hospitalized in critical condition; 2 patients were not admitted to a hospital. In four family clusters, human-to-human transmission of H7N9 virus could not be ruled out. Excluding secondary cases in clusters, 2675 close contacts of case patients completed the monitoring period; respiratory symptoms developed in 28 of them (1%); all tested negative for H7N9 virus.

Conclusions: Most persons with confirmed H7N9 virus infection had severe lower respiratory tract illness, were epidemiologically unrelated, and had a history of recent exposure to poultry. However, limited, nonsustained human-to-human H7N9 virus transmission could not be ruled out in four families.

The full publication is available online at www.nejm.org/doi/full/10.1056/NEJMoa1304617#t=articleTop.

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

MDCH Contributors

Bureau of Epidemiology – S. Bidol, MPH, S. DeVita, RN, MPH; Bureau of Labs – B. Robeson, MT, V. Vavricka, MS

Table. H5N1 Influenza in Humans – As of January 24, 2014. http://www.who.int/influenza/human_animal_interface/EN_GIP_20130124_CumulativeNumberH5N1cases.pdf. Downloaded 02/05/2014. Cumulative lab-confirmed cases reported to WHO. Total cases include deaths.

Country	2003-2010		2011		2012		2013		2014		Total	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
Azerbaijan	8	5	0	0	0	0	0	0	0	0	8	5
Bangladesh	1	0	2	0	3	0	1	1	0	0	7	1
Cambodia	10	8	8	8	3	3	26	14	0	0	47	33
Canada	0	0	0	0	0	0	1	1	0	0	1	1
China	40	26	1	1	2	1	2	2	0	0	45	30
Djibouti	1	0	0	0	0	0	0	0	0	0	1	0
Egypt	119	40	39	15	11	5	4	3	0	0	173	63
Indonesia	171	141	12	10	9	9	3	3	0	0	195	163
Iraq	3	2	0	0	0	0	0	0	0	0	3	2
Lao PDR	2	2	0	0	0	0	0	0	0	0	2	2
Myanmar	1	0	0	0	0	0	0	0	0	0	1	0
Nigeria	1	1	0	0	0	0	0	0	0	0	1	1
Pakistan	3	1	0	0	0	0	0	0	0	0	3	1
Thailand	25	17	0	0	0	0	0	0	0	0	25	17
Turkey	12	4	0	0	0	0	0	0	0	0	12	4
Vietnam	119	59	0	0	4	2	2	1	1	1	126	63
Total	516	306	62	34	32	20	39	25	1	1	650	386