



MI Flu Focus

Influenza Surveillance Updates
Bureaus of Epidemiology and Laboratories



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Current Influenza Activity Levels:

- **Michigan:** Local activity
- **National:** During January 22-28, U.S. activity increased slightly, but remained relatively low

Updates of Interest

- **Michigan:** MDCH Bureau of Laboratories identifies first seasonal influenza A(H1N) positive specimen since Spring 2009

Table of Contents

Influenza Surveillance Reports	
Michigan.....	1-3
National.....	3-4
International.....	4-6
Novel Influenza and Other News	
WHO Pandemic Phase.....	6
Avian Influenza Surveillance.....	6-8
Avian Influenza H5N1 in Humans.....	6,8

****Notice to Readers****

Twelve human cases of a novel influenza A (H3N2) virus have recently 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.

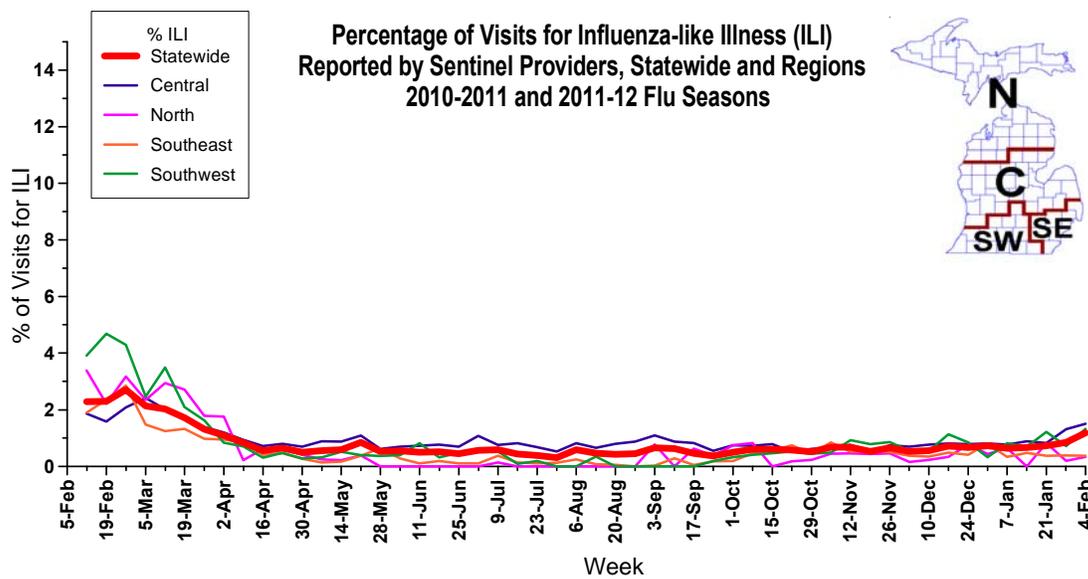
Influenza Surveillance Reports

Michigan Disease Surveillance System: MDSS data for the week ending February 4th indicated that individual influenza cases increased slightly, while aggregate reports remained steady. Both individual and aggregate reports are moderately lower than levels seen during the same time last year.

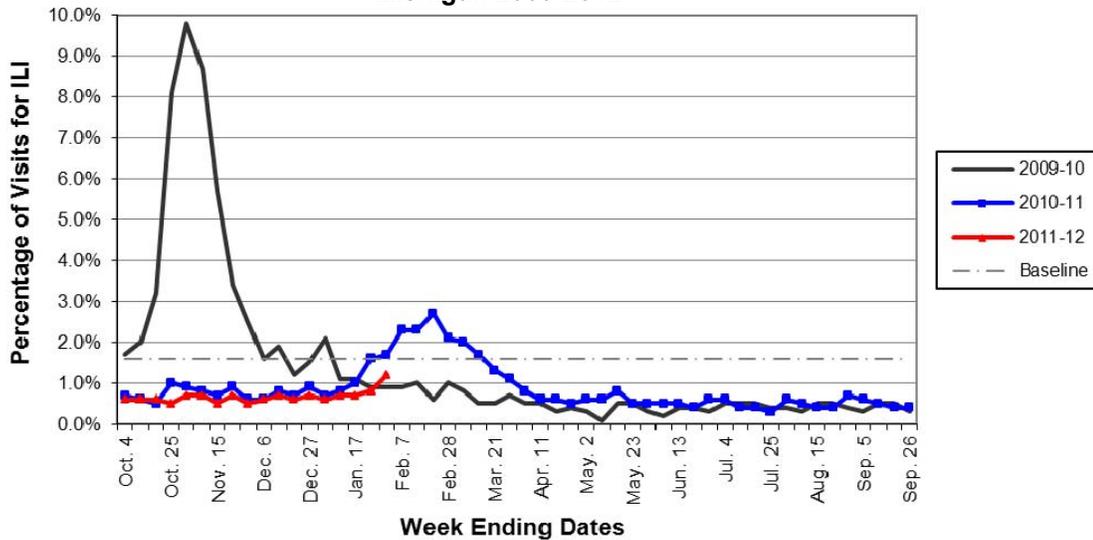
Emergency Department Surveillance: Compared to levels from the week prior, emergency department visits from both constitutional and respiratory complaints increased. Constitutional and respiratory complaints are moderately lower than levels reported during the same time period last year. In the past week, there were seven constitutional alerts in the SE(1), SW(1), C(4) and N(1) Influenza Surveillance Regions and one respiratory alert in the N Region.

Sentinel Provider Surveillance (as of February 9): During the week ending February 4, 2012, the proportion of visits due to influenza-like illness (ILI) increased to 1.2% overall; this is below the regional baseline of 1.6%. A total of 99 patient visits due to ILI were reported out of 8,436 office visits. Thirty-four sentinel sites provided data for this report. Activity increased in three surveillance regions: Central (1.5%), North (0.3%) and Southwest (1.3%); activity stayed the same in the remaining surveillance region: Southeast (0.4%). 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.



Percentage of Visits for Influenza-like Illness (ILI) Reported by the US Outpatient Influenza-like Illness Surveillance Network (ILINet): Michigan 2009-2012



Hospital Surveillance (as of February 4): The Influenza Hospitalization Surveillance Project provides population-based rates of severe influenza illness in Clinton, Eaton and Ingham counties. There were no lab-confirmed influenza hospitalizations during the week ending February 4, 2012. For the 2011-12 season, 2 influenza hospitalizations (one adult, one pediatric) have been reported in the catchment area.

The MDCH Influenza Sentinel Hospital Network monitors influenza hospitalizations reported voluntarily by hospitals statewide. Eight hospitals (SE, SW, C, N) reported for the week ending February 4, 2012. Results are listed in the table below.

Age Group	Hospitalizations Reported During Current Week	Total Hospitalizations 2011-12 Season
0-4 years	0	4
5-17 years	0	1
18-49 years	1	5
50-64 years	1	2
≥65 years	0	0
Total	2	12

Laboratory Surveillance (as of February 4): During January 29-February 4, 49 influenza A/H3 (24SE, 15C, 10N), 1 influenza A(H1N1)pdm09 (N), 1 seasonal A(H1N1) (SW) 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 130 influenza results:

- Influenza A(H3): 121 (60SE, 1SW, 43C, 17N)
- Influenza A(H1N1)pdm09: 3 (1SE, 1C, 1N)
- Influenza A(H1N1) seasonal: 1 (SW)
- Influenza B: 5 (3SE, 1SW, 1C)
- Parainfluenza: 2 (1SE, 1C)
- Adenovirus: 1 (SE)

15 sentinel labs (SE, SW, C, N) reported for the week ending February 4, 2012. 6 labs (SE, C) reported low influenza A activity; no influenza B positives were reported. 11 labs (SE, SW, C, N) reported increasing RSV activity. 1 lab (C) had sporadic parainfluenza activity. 2 labs (SE, SW) reported increases in hMPV positives. Most testing volumes are increasing with a few sites at moderate to high volumes.

Michigan Influenza Antigenic Characterization (as of February 9): For the 2011-12 season, four Michigan influenza B specimens have been characterized at MDCH BOL. Two influenza B specimens have been characterized as B/Brisbane/60/2008-like; this strain matches the influenza B component for the 2011-12 Northern Hemisphere influenza vaccine. Two influenza B specimens were characterized as B/Wisconsin/01/2010-like, which is from the influenza B lineage not included in the 2011-12 vaccine.

Michigan Influenza Antiviral Resistance Data (as of February 2): For the 2011-12 season, two Michigan influenza A(H1N1)pdm09 specimens have been tested for antiviral resistance at MDCH Bureau of Laboratories. Both specimens 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>.

Influenza-associated Pediatric Mortality (as of February 9): No pediatric influenza-associated influenza mortalities have been reported to MDCH for the 2011-12 season.

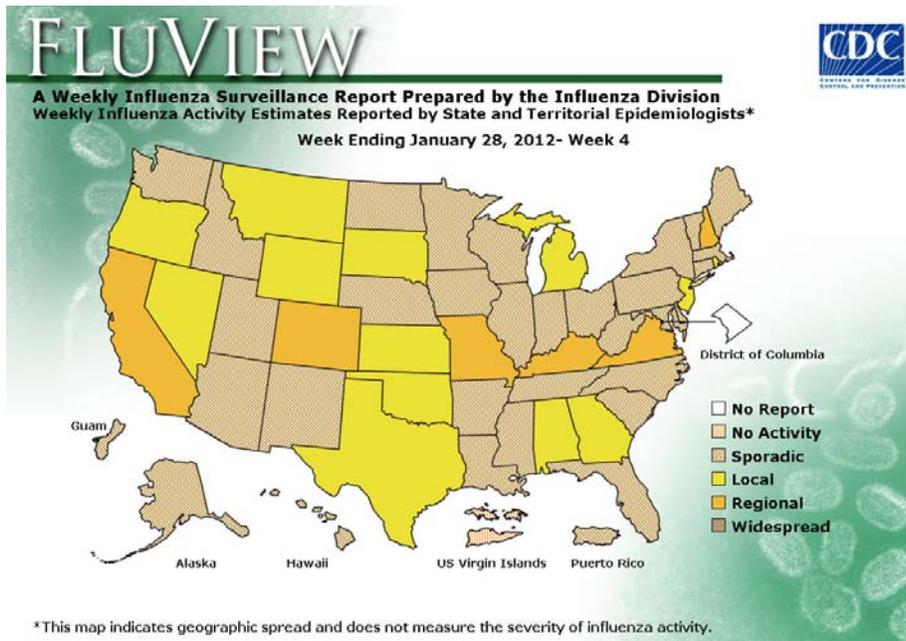
CDC requires reporting of flu-associated pediatric deaths (<18 yrs), including pediatric deaths due to an influenza-like illness with lab confirmation of influenza or any unexplained pediatric death with evidence of an infectious process. Contact MDCH immediately for proper specimen collection. The MDCH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

Influenza Congregate Settings Outbreaks (as of February 9): Two new respiratory outbreaks (1SE, 1C) in schools were reported in the past week; investigations are ongoing. Five respiratory outbreaks (1SE, 4C) have been reported to MDCH during the 2011-12 season; testing results are listed below.

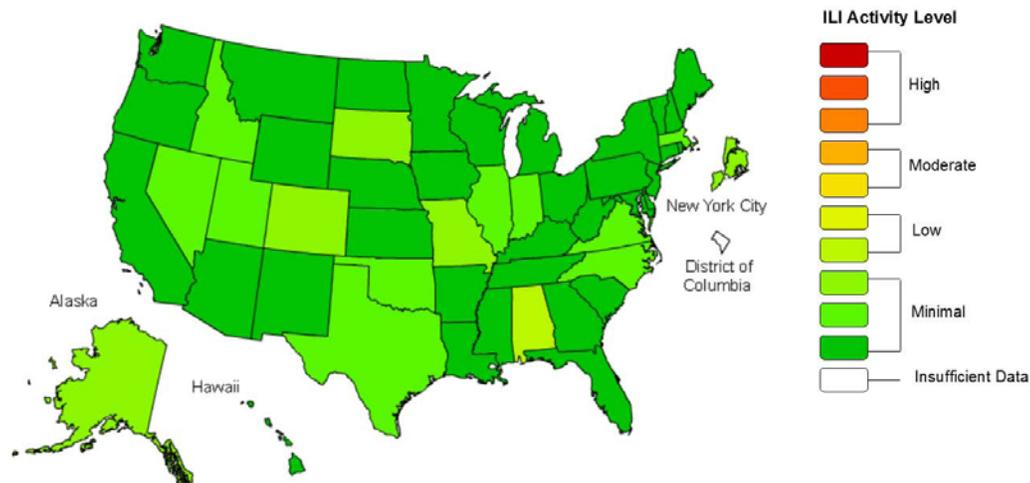
- Influenza A/H3: 1 (C)
- Negative or not tested: 4 (1SE, 1C)

National (CDC [edited], February 3): During week 4 (January 22-28, 2012), influenza activity in the United States increased slightly, but remained relatively low. Of the 3,656 specimens tested by U.S. World Health Organization and National Respiratory and Enteric Virus Surveillance System collaborating laboratories and reported to CDC/Influenza Division, 262 (7.2%) 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 1.5%, which is below the national baseline of 2.4%. All 10 regions reported ILI below region-specific baseline levels. One state experienced low ILI activity, New York City and 49 states experienced minimal ILI activity and the District of Columbia had insufficient data. The geographic spread of influenza in six states was reported as regional; 13 states reported local activity; Guam, Puerto Rico, and 31 states reported sporadic activity; the U.S. Virgin Islands reported no activity, and the District of Columbia did not report.

Nationally, low levels of influenza virus positive specimens have been reported this season, with influenza A (H3N2) being most common. However, there are regional differences in activity levels and which virus predominates. Recent increases in the percent of specimens positive have been noted in Regions 4, 5, 6, and 9. Over the past three weeks, 2009 H1N1 viruses have been most commonly reported in Region 6, while in Regions 4 and 5 A (H3N2) viruses have been most commonly reported. In Region 9 A (H3N2) viruses remain most common, however the proportion of 2009 H1N1 viruses is steadily increasing.



**Influenza-Like Illness (ILI) Activity Level Indicator Determined by Data Reported to ILINet
 2011-12 Influenza Season Week 4 ending Jan 28, 2012**



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>.

International (WHO [edited], February 3): Influenza activity in the temperate regions of the northern hemisphere remains low overall though notable local increases in activity have been reported in North America, the western part of Europe, and northern China. Countries in the tropical zone reported low levels of activity with the exceptions of southern China, Colombia, and Ecuador. Influenza activity in the temperate countries of the southern hemisphere is at inter-seasonal levels. The low level inter-seasonal transmission of A(H3N2) previously noted in Chile and Australia appears to be diminishing and becoming more sporadic. The most commonly detected virus type or subtype throughout the northern hemisphere temperate zone has been A(H3N2) with the exception of China, which is reporting a predominance of influenza type B, and Mexico, where influenza A(H1N1)pdm09 is the predominant subtype circulating. In addition to Mexico, some southern states of the United States of America and Colombia in northern South America have also reported a predominance of A(H1N1)pdm09 in recent weeks. Nearly all influenza A viruses characterized are antigenically related to the viruses contained in the current northern hemisphere trivalent vaccine. About half of the small numbers of type B viruses characterized are of the Yamagata

lineage, which is not contained in the current vaccine. Oseltamivir resistance has been observed at very low levels and has not increased notably over levels reported in previous seasons.

Countries in the temperate zone of the northern hemisphere

Persistent upward trends in influenza activity have been reported across the northern temperate region numbers of both mild and severe cases are low so far.

In Canada, overall influenza activity increased in the third week of January but remained low in some areas of the country. The national consultation rate for influenza-like illness (ILI) in Canada decreased slightly but the proportion of samples testing positive increased to 3.4%. Seven regions reported localized activity and 16 regions reported sporadic activity. Eight outbreaks were reported, three in hospitals and five in long term care facilities, an increase from previous weeks. The national consultation rate for ILI and general level of activity is mid to low range compared to this time period in previous years. Eighteen influenza-associated hospitalizations were reported this week (three pediatric and 15 adult). Since the start of the season, 38% of all pediatric influenza hospitalizations have occurred in children under the age of two years, while 45% of all adult hospitalizations have occurred in patients aged >65 years. In that time frame, 79% of laboratory confirmed cases were type A and 21% type B; of the A viruses that were subtyped, 90% have been A(H3N2). Notably, the distribution of virus types and subtypes has not been uniform across all age groups. 53% of all laboratory confirmed A(H1N1)pdm09 cases, and 36% of all lab-confirmed B cases, have been in patients aged <5 years. A(H1N1)pdm09 accounted for 33% of all A viruses that have been subtyped in <5 years old but only 3% of subtyped A viruses in cases over the age of 65 years. All A viruses characterized this season in Canada are antigenically related to the viruses contained in the current northern hemisphere vaccine; however, only 21 of 35 (60%) B viruses are antigenically related to the vaccine strain contained in the current vaccine. The other 14 B viruses were antigenically related to the reference virus B/Wisconsin/01/2010-like, which belongs to the Yamagata lineage. All 79 A viruses tested for antiviral resistance were susceptible to oseltamivir and zanamivir.

Nationally in the United States of America (USA), ILI consultations were low (1.4%) and remained below the national baseline level (2.4%). The percentage of samples positive for influenza increased to 4.9% but was as high as 14% in one region. ILI activity was reported to be low or minimal in all states. The proportion of deaths due to pneumonia and influenza reported in the 122 cities sentinel surveillance system has reached the epidemic threshold for the first time since the start of the season after being predominantly below the seasonal baseline for several weeks. Since October 2011, 166 laboratory-confirmed influenza hospitalizations were reported. Among these cases, 120 (72.3%) were influenza A, 38 (22.9%) were influenza B, and 2 (1.2%) were influenza A and B co-infections; 6 (3.6%) had no virus type information. Among the 52 of hospitalized cases with A subtype information, 48 (92.3%) were A(H3N2) and four (7.7%) were A(H1N1)pdm09. The most commonly reported underlying medical conditions among adults hospitalized with influenza were chronic lung diseases, asthma and obesity. The most common underlying medical conditions in children hospitalized with influenza were neurologic disorders and obesity. More than a third of hospitalized children had no identified underlying medical condition. In the USA, the circulating virus is almost exclusively A(H3N2), except in 6 States (Arkansas, Louisiana, New Mexico, Oklahoma and Texas) where A(H1N1)pdm09 has been predominant in the past 3 weeks. 99% of A(H3N2) and 97% of A(H1N1)pdm09 viruses characterized were antigenically related to viruses contained in the current seasonal vaccine. Fourteen of the 28 influenza B viruses tested belong to the Victoria lineage of viruses and were characterized as B/Brisbane/60/2008-like, the B component of the 2011-2012 northern hemisphere vaccine. All viruses tested since 01 October 2011 have been susceptible to the neuraminidase inhibitor antiviral medications oseltamivir and zanamivir.

In contrast to Canada and the USA, in Mexico the majority of all laboratory confirmed cases of influenza since late December 2011 were influenza A(H1N1)pdm09. Localized outbreaks of A(H1N1)pdm09 have also been detected in parts of the country, mostly in the southern States. The Ministry of Health of Mexico has reported that the situation there is similar to previous influenza seasons and that there is no evidence that the virus has changed in its behavior.

In Europe, influenza activity is slowly increasing, particularly in the west, and is currently dominated by A(H3N2). In countries in the west of the region, low activity was reported by 23 of the 27 reporting countries while Bulgaria, Iceland, Italy and Spain reported medium activity. Eight countries reported local or regional spread and nine countries reported increasing clinical activity trends relative to the previous week. Notable increasing trends in virus detections have been observed to be persisting over several weeks in Spain, Italy, Turkey, Belgium, Sweden and Norway and across Europe, 29% of samples tested from sentinel outpatient clinics were positive for an influenza virus, a continued increase from recent weeks. Bulgaria, Iceland, Italy and Spain reported medium intensity of activity. Italy also reported a

moderate impact on health care services. All-cause mortality remains low compared to previous years at this time of the season. To the east, in the 11 countries reporting on severe acute respiratory infections (SARI) the number of hospitalizations remained largely unchanged compared to the previous week, except in Kazakhstan, which reported increases in SARI hospitalization mainly in children aged 0–4 years. 95% of viruses detected were type A and of the A viruses subtyped, 99% were A(H3N2). Fifty-six viruses were characterized antigenically: 46 were A(H3N2) and 2 were A(H1N1)pdm09; all were antigenically related to the viruses found in the current Northern Hemisphere trivalent vaccine. Of the eight type B viruses characterized, four were B/Brisbane/60/2008-like, the B/Victoria lineage contained in the vaccine, and four were of the Yamagata lineage). All 35 viruses (including 27 A(H3N2) viruses, four A(H1)pdm09 and four type B) tested for sensitivity to neuraminidase inhibitors were susceptible.

The northern Africa and eastern Mediterranean regions have begun to report a decreasing trend in numbers of positive specimens though virus detection remained widespread. As in Europe, A(H3N2) was the predominant subtype detected, accounting for nearly all of the viruses that have been subtyped.

In northern China, both the percentage of outpatient visits that were due to ILI and the proportion of specimens testing positive for influenza (13%) increased since the last report. In contrast to other reporting regions, influenza type B virus is the predominant type across China. In the first week of 2012, 89% of all viruses subtyped in northern China were influenza type B. The Republic of Korea and Japan have reported a persistent increase in numbers of influenza positive specimens in recent weeks, predominantly A(H3N2). Influenza is spreading nationally across the Republic of Korea.

Countries in the tropical zone

Circulation of influenza A(H1N1)pdm09 and A(H3N2) was reported in Costa Rica, Colombia and Ecuador. Influenza A(H1N1)pdm09 has been the most common virus detected in Colombia and Ecuador and A(H3N2) slightly more common in Costa Rica. Notable increasing trends in virus detections were observed to be persisting over several weeks in Ecuador and Colombia.

In sub-Saharan Africa, only sporadic detections or low level transmission were reported. Sporadic circulation of influenza A(H3N2) and type B has been reported in Togo while Cameroon reported cases of A(H3N2). Kenya has reported increasing case numbers of influenza type B in the past 2 weeks.

Overall, the influenza activity in tropical Asia remained low. Since September, India has continued to report low level influenza B circulation. Southern China is reporting increasing cases of influenza type B and the percentage of hospital visits for ILI has increased to 3.7%, higher than in recent weeks and higher than at the same time last year. The percentage of specimens testing positive for influenza was 34% and of those, 95% were type B. Influenza type B and A(H3N2) continued to be detected in low numbers across other parts the region particularly in Lao People's Democratic Republic, Viet Nam, and Indonesia.

Countries in the temperate zone of the southern hemisphere

In temperate countries of the southern hemisphere, activity is at inter-seasonal levels. The previously noted persistent inter-seasonal transmission of A(H3N2) in Chile and Australia appears to be diminishing. Paraguay has reported an increase in samples testing positive for influenza, predominantly A(H3N2).

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 ACTIVITY** to the CDC for the week ending February 4, 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.

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, February 8): The Ministry of Health (MoH) has announced a confirmed case of human infection with avian influenza A (H5N1) virus.

The case was a 26 year-old pregnant female from Soc Trang province. She developed symptoms on 23 January 2012, and was admitted to hospital on 25 January. She was treated with Oseltamivir on 27 January, she died on 28 January. Confirmatory test results for influenza A (H5N1) were obtained on 30 January by Pasteur Institute, the WHO National Influenza Centre in Ho Chi Minh City, Viet Nam. Samples from the newborn infant of the fatal case tested negative for H5N1.

The case had slaughtered and eaten sick chickens. MoH, the local health sector and Pasteur Institute in Ho Chi Minh City are conducting epidemiological investigation and strengthening surveillance and response activities. Close contacts of the fatal case have received prophylaxis and are being monitored; to date all remain well. The Department of Animal Health is collaborating with the human health sector.

The case is the 121st person in Viet Nam to become infected with the H5N1 virus. To date, 61 of these cases have died from complications of the disease.

International, Poultry (OIE [edited], February 2): Low pathogenic avian influenza H5N2; Sri Lanka
Date of first confirmation of the event: 02/02/2012; Date of Start of Event: 20/01/2012
Province: KURUNEGALA; District: Kurunegala; Secretary Division: Bingiriya; Location: Panawewa
Species: Birds; Susceptible: 14600; Cases: 100; Deaths: 100; Destroyed: 0; Slaughtered: 0
Epidemiological comments: Two layer farms in nearby location owned by the same farmer have been affected. Samples have been dispatched to the OIE Reference Laboratory for avian influenza in Weybridge (United Kingdom) for further laboratory confirmation.

International, Poultry (OIE [edited], February 3): Highly pathogenic avian influenza H5N1: Vietnam
Outbreak 1: Dan Luc, Dan Luc, Trieu Son, THANH HOA
Date of start of the outbreak: 19/01/2012; Outbreak status: Continuing; Epidemiological unit: Village
Species: Birds; Susceptible: 822; Cases: 278; Deaths: 100; Destroyed: 722; Slaughtered: 0

Outbreak 2: Hai Tho, Hai Tho, Hai Lang, QUANG TRI
Date of start of the outbreak: 27/01/2012; Outbreak status: Continuing; Epidemiological unit: Village
Species: Birds; Susceptible: 1110; Cases: 500; Deaths: 0; Destroyed: 1110; Slaughtered: 0

Outbreak 3: Trieu Phuoc, Trieu Phuoc, Trieu Phong, QUANG TRI
Date of start of the outbreak: 25/01/2012; Outbreak status: Continuing; Epidemiological unit: Village
Species: Birds; Susceptible: 1700; Cases: 815; Deaths: 100; Destroyed: 1600; Slaughtered: 0

International, Poultry (OIE [edited], February 4): Highly pathogenic avian influenza H5N1; India
Outbreak: Nayapalli (Ward No.10) of Bhubaneswar Municipality, Nayapalli, Khordha, ORISSA
Date of start of the outbreak: 01/02/2012; Outbreak status: Continuing; Epidemiological unit: Farm
Species: Birds; Susceptible: 34857; Cases: 5015; Deaths: 5015
Affected population: A government poultry farm

International, Poultry (OIE [edited], February 8): Highly pathogenic avian influenza H5N1; Vietnam
Outbreak 1: Hai Ba, Hai Ba, Hai Lang, QUANG TRI
Date of start of the outbreak: 29/01/2012; Outbreak status: Continuing; Epidemiological unit: Village
Species: Birds; Susceptible: 300; Cases: 200; Deaths: 100; Destroyed: 200

Outbreak 2: Van Thien, Van Thien, Nong Cong, THANH HOA
Date of start of the outbreak: 04/02/2012; Outbreak status: Continuing; Epidemiological unit: Village
Species: Birds; Susceptible: 880; Cases: 435; Deaths: 435; Destroyed: 445

Outbreak 3: Hai Thien, Hai Thien, Hai Lang, QUANG TRI
Date of start of the outbreak: 03/02/2012; Outbreak status: Continuing; Epidemiological unit: Village
Species: Birds; Susceptible: 1000; Cases: 400; Deaths: 400; Destroyed: 600

International, Wild Birds (OIE [edited], February 3): High path avian influenza H5N1: Hong Kong
Outbreak 1: Man Tung Road, Tung Chung, HONG KONG
Date of start of the outbreak: 30/01/2012; Status: Resolved; Species: Wild species; Cases: 1; Deaths: 1
Affected population: A peregrine falcon (*Falco peregrinus calidus*) was collected on 30 January 2012 at Tung Chung. The peregrine falcon is a rare winter visitor in Hong Kong.

Outbreak 2: Chun Yin Square Playground, Yuen Long, HONG KONG

Date of start of outbreak: 30/01/2012; Status: Resolved; Species: Wild species; Cases: 1; Deaths: 1
 Affected population: A black-headed gull (*Chroicocephalus ridibundus*) was collected on 30 January 2012 at Yuen Long. The black-headed gull is a common winter visitor in Hong Kong.

International, Wild Birds (OIE [edited], February 6): Highly pathogenic avian influenza H5N1; India
 State: JHARKHAND; District: Jamshedpur; Village: Tata Steel Command area Location: Jamshedpur
 Species: Wild species; Cases: 1143; Deaths: 1143
 Affected Population: The crow (*Corvus macrorhynchos*) mortality was from parts of the Jharkhand State.

State: MAHARASHTRA; District: Gondia; Village/Block: Sadak Arjuni; Location: Sadak Arjuni
 Species: Wild species; Cases: 5; Deaths: 5
 Affected Population: The crow (*Corvus macrorhynchos*) mortality was from the village Sadak Arjuni.

State: ORISSA; District: Mayurbhanj; Village/Block: Keranga; Location: Mayurbhanj
 Species: Wild species; Cases: 5; Deaths: 5
 Affected Population: The crow (*Corvus macrorhynchos*) mortality was reported from parts of Orissa State.

State: BIHAR; District: Gaya; Village/Block: Fatehpur; Location: Fatehpur
 Species: Wild species; Cases: 6; Deaths: 6
 Affected Population: The crow (*Corvus macrorhynchos*) mortality was reported from the village Fatehpur.

Michigan Wild Bird Surveillance (USDA, as of February 9): 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: 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

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Table. H5N1 Influenza in Humans – As of January 24, 2012. http://www.who.int/influenza/human_animal_interface/EN_GIP_20120208_CumulativeNumberH5N1cases.pdf. Downloaded 1/25/2012. Cumulative lab-confirmed cases reported to WHO. Total cases includes deaths.

Country	2003-2005		2006		2007		2008		2009		2010		2011		2012		Total	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
Azerbaijan	0	0	8	5	0	0	0	0	0	0	0	0	0	0	0	0	8	5
Bangladesh	0	0	0	0	0	0	1	0	0	0	0	0	2	0	0	0	3	0
Cambodia	4	4	2	2	1	1	1	0	1	0	1	1	8	8	1	1	19	17
China	9	6	13	8	5	3	4	4	7	4	2	1	1	1	1	1	42	28
Djibouti	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Egypt	0	0	18	10	25	9	8	4	39	4	29	13	39	15	1	0	159	55
Indonesia	20	13	55	45	42	37	24	20	21	19	9	7	12	10	1	1	184	152
Iraq	0	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	3	2
Lao PDR	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	2	2
Myanmar	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0
Nigeria	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	1
Pakistan	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	3	1
Thailand	22	14	3	3	0	0	0	0	0	0	0	0	0	0	0	0	25	17
Turkey	0	0	12	4	0	0	0	0	0	0	0	0	0	0	0	0	12	4
Vietnam	93	42	0	0	8	5	6	5	5	5	7	2	0	0	2	2	121	61
Total	148	79	115	79	88	59	44	33	73	32	48	24	62	34	6	5	584	345