



MI FluFocus

Influenza Surveillance and Avian Influenza Update

Bureau of Epidemiology
Bureau of Laboratories

Michigan Department
of Community Health



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New updates in this issue:

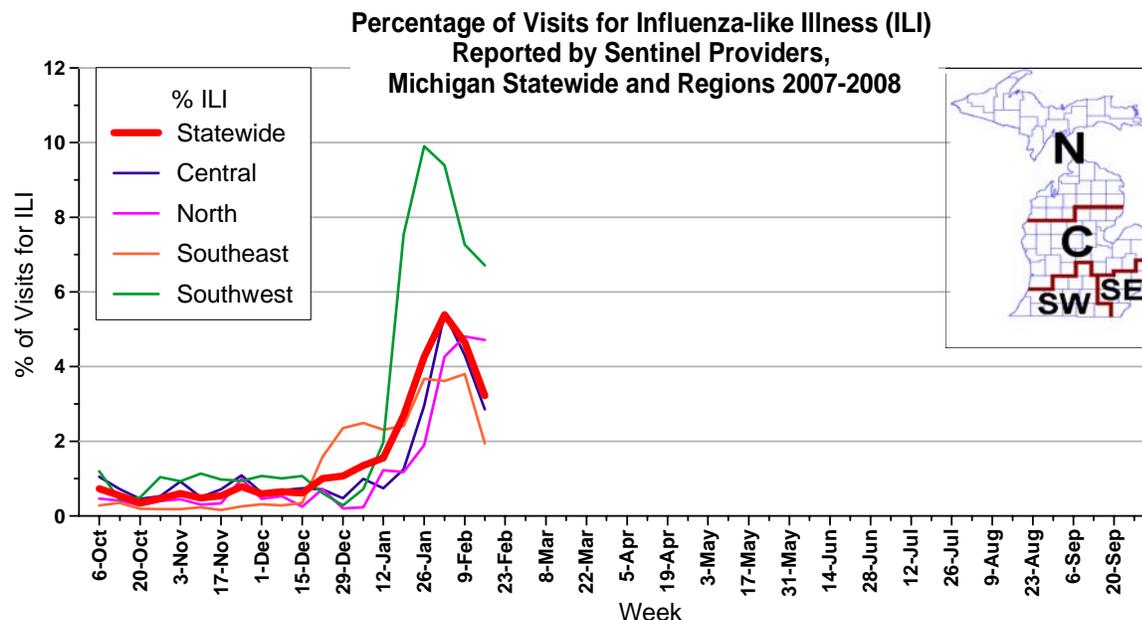
- **Michigan Surveillance:** Indicators show continued elevated activity, but are decreasing in some areas
- **National Surveillance:** Elevated activity still seen across nation; 44 states are widespread for Week 6 (2/9)
- **Avian Influenza:** New human cases in Vietnam, China, and Indonesia; new poultry outbreaks in SE Asia

Michigan Disease Surveillance System: The week ending February 16 saw both aggregate flu-like illness and individual influenza reports decrease following an ongoing upward trend seen since the start of the year. Aggregate flu-like illness reports are comparable with numbers seen this time last year where individual influenza reports are considerably higher.

Emergency Department Surveillance: Emergency department visits due respiratory complaints leveled off this past week where constitutional complaints dropped slightly. Both respiratory and constitutional complaints are slightly higher than numbers that were seen this time last year. Nine constitutional alerts in the C(3), N(5) and SW(1) Influenza Surveillance Regions and three respiratory alerts in the N(1), C(1) and SW(1) Influenza Surveillance Regions were generated last week.

Over-the-Counter Product Surveillance: Overall, OTC product sales activity was steady overall last week. Only thermometer sales showed a slight decrease overall. The indicator levels are comparable to those seen at this time last year.

Sentinel Surveillance (as of February 21): The proportion of visits due to influenza-like illness (ILI) in Michigan remains elevated but is decreasing, and is at 3.2% for the week ending Feb. 16. This represents 355 cases of ILI out of 11001 total patient visits; 41 sentinels provided data for this report. Sentinels throughout the state are reporting high activity. The proportion of visits due to ILI was 2.9% in the Central region, 4.7% in the North region, 1.9% in the Southeast region, and 6.7% in the Southwest region. Note that these rates may change as additional reports are received.



As part of pandemic influenza preparedness, CDC and MDCH highly encourage year-round participation from all sentinel providers. New practices are encouraged to join the sentinel surveillance program today! Contact Rachel Potter at 517-335-9710 or potterr1@michigan.gov for more information.

Laboratory Surveillance (as of February 21): For the 2007-2008 influenza season, the MDCH Bureau of Laboratories has identified 174 influenza isolates:

- 116 A/H3N2: Southeast (41); Central (35); Southwest (23); North (17)
- 3 A/H1N1: Southeast (2); North (1)
- 37 A subtype pending: Southwest (8); Central (15); Southeast (5); North (9)
- 18 B: Southeast (12); North (3); Central (1). 16 have been typed as B/Shanghai/361/2002-like and 2 are pending subtyping.

Sentinel laboratories continue to report elevated levels of positive influenza A tests and very small numbers of positive influenza B tests. Sentinel labs in some regions are beginning to show decreases in flu activity. RSV activity continues to be steady to slightly rising.

***As a reminder, the positive predictive value of influenza rapid tests decreases during times of low influenza prevalence. MDCH suggests that during periods of low influenza activity in your community, all positive rapid tests results be confirmed by sending in a specimen for viral culture; this can be arranged through your local health department.

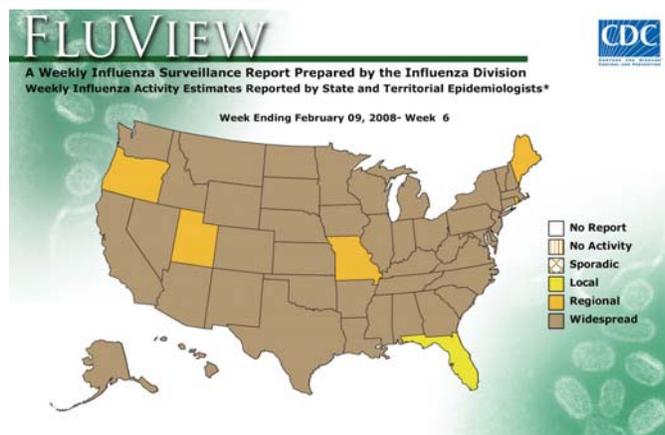
Influenza-Associated Pediatric Mortality (as of February 21): For the 2007-2008 season, there are no confirmed reports of influenza-related pediatric mortality in Michigan.

***The CDC has asked all states to collect information on any pediatric death associated with influenza infection. This includes not only any death in a child (<18 years) resulting from a compatible illness confirmed to be influenza by an appropriate diagnostic test, but also any unexplained death with evidence of an infectious process in a child. See www.michigan.gov/documents/fluletter_107562_7.pdf for the complete protocol. Please immediately call MDCH to ensure that proper clinical specimens are obtained.

Congregate Settings Outbreaks (as of February 21): Congregate setting outbreaks are being reported in all regions of the state. One influenza outbreak has been culture-confirmed at MDCH for the 2007-2008 influenza season, but additional results are still pending.

National (CDC, February 15): During week 6 (February 3 - 9, 2008), influenza activity continued to increase in the United States. Two thousand one hundred twenty-six (33.3%) specimens tested by U.S. World Health Organization (WHO) and National Respiratory and Enteric Virus Surveillance System (NREVSS) collaborating laboratories were positive for influenza. The proportion of deaths attributed to pneumonia and influenza was above the epidemic threshold for the fifth consecutive week. The proportion of outpatient visits for influenza-like illness (ILI) and acute respiratory illness (ARI) was above national baseline levels. ILI increased in eight of the nine regions compared to week 5, and was above region-specific baselines in all nine regions. The East North Central, East South Central, Mountain, Pacific, West North Central, and West South Central regions reported ARI above their region specific baselines. Forty-four states reported widespread influenza activity; five states reported regional influenza activity; one state and the District of Columbia reported local influenza activity; and Puerto Rico reported sporadic influenza activity.

To access the entire CDC weekly surveillance report throughout the influenza season, visit <http://www.cdc.gov/flu/weekly/fluactivity.htm>



National, Current 2007-2008 Vaccine Strain Match (CDC, February 9): The CDC is indicating that protection against circulating influenza A/H3N2 and influenza B virus strains may not be optional this season as the H3N2 and B virus strains are different from those contained in the current vaccine. However, nearly all H1N1 viruses tested to date were well matched to the vaccine. It is still important to remember that even when the viruses are not closely matched that the vaccine can provide cross-protection against related strains of influenza virus thus preventing some illnesses and flu-related complications.

International, 2008-2009 Vaccine Strain Selection (WHO, February 14): It is recommended that vaccines for use in the 2008-2009 influenza season (northern hemisphere winter) contain the following: an A/Brisbane/59/2007 (H1N1)-like virus, an A/Brisbane/10/2007 (H3N2)-like virus, and a B/Florida/4/2006-like virus. A/Brisbane/10/2007 is a current southern hemisphere vaccine virus. B/Florida/4/2006 and B/Brisbane/3/2007 (a B/Florida/4/2006-like virus) are current southern hemisphere vaccine viruses.

International (WHO, February 8): During weeks 4–5, the level of overall influenza activity in the world increased. A considerable increase in both influenza activity and the number of viruses detected was observed in most countries of the northern European and North America, where mostly influenza A (H1N1) circulated, as well as A (H3N2) and B viruses.

The entire report can be found online at <http://www.who.int/csr/disease/influenza/update/en/>

MDCH reported **WIDESPREAD ACTIVITY** to the CDC for the week ending February 16, 2008.

For stakeholders interested in additional information regarding influenza vaccination and education, the MDCH publication *Michigan FluBytes* is available online at http://www.michigan.gov/mdch/0,1607,7-132-2940_2955_22779_40563-125027--,00.html. *FluBytes* is published weekly during the influenza season.

End of Seasonal Report

Avian Influenza Activity

WHO Pandemic Phase: Phase 3 - Human infection(s) with a new subtype, but no human-to-human spread or rare instances of spread to a close contact.

International, Human (WHO, February 15): The Ministry of Health in Viet Nam has confirmed a new case of human infection of H5N1 avian influenza. The case has been confirmed by the National Institute of Hygiene and Epidemiology (NIHE). The case is a 40 -year old male from Gia Loc district, Hai Duong province. He developed symptoms on 2 February was hospitalized on 8 February and died on 13 February. The case had contact with sick and dead poultry prior to his illness. The Ministry of Health and local health units have implemented control measures and close contacts have been identified. All remain healthy and will continue to be monitored. Of the 103 cases confirmed to date in Vietnam, 49 have been fatal.

International, Human (WHO, February 20): The Ministry of Health in China has reported a new case of human infection with the H5N1 avian influenza virus. The case is a 22-year old male from Jianghua County, Yongzhou Prefecture, Hunan Province. He developed symptoms on 16 January was hospitalized on 23 January and died on 24 January. The case was confirmed by the national laboratory on 17 February. Investigations into the source of his infection are ongoing. Of the 28 cases confirmed to date in China, 18 have been fatal.

International, Human (WHO, February 21): The Ministry of Health of Indonesia has announced two new cases of human H5N1 avian influenza infection. The first is a 16-year-old male from Sragen district, Central Java Province who developed symptoms on 3 February, was hospitalized on 7 February and died on 10 February. Prior to his illness, the case was exposed to sick and dead poultry at his home, where he slaughtered a sick chicken.

The second case is a 3-year-old boy from South Jakarta District, Jakarta Province who developed symptoms on 3 February, was hospitalized on 10 February and died on 15 February. The investigation

team found that chickens & a pet bird had died in the neighborhood in the two weeks prior to the case's onset of symptoms. Of the 129 cases confirmed to date in Indonesia, 105 have been fatal.

International, Human (WHO, February 21): The Ministry of Health in Viet Nam has confirmed a new case of human infection of H5N1 avian influenza. The case has been confirmed by the National Institute of Hygiene and Epidemiology (NIHE). The case is a 27-year old male from Ninh Nhat district, Ninh Binh province. He developed symptoms on 3 February was hospitalized on 12 February and died on 14 February. The case had contact with sick and dead poultry prior to his illness. Of the 104 cases confirmed to date in Vietnam, 50 have been fatal.

National, Human Surveillance (The Associated Press, February 13): Officials of the Centers for Disease Control and Prevention are looking for 200 Anchorage-area sport hunters who have handled wild birds in the last two years.

They want blood samples from hunters for a study of the spread of avian influenza.

Researchers will look for the potentially deadly H5N1 strain of bird flu as well as low-pathogenic strains of influenza.

The H5N1 strain has not been detected in the United States and the principal investigator for the study, Dr. Michael Bruce, does not expect to find it among hunters.

Low-pathogenic strains of bird flu could appear, he said, and studying how people contracted them will help researchers understand risk factors that led to exposure.

"Some of the birds that fly through Asia fly through Alaska, so we theorized that if anyone is at risk in Alaska, it would be the hunters," Bruce said.

The study involves people from across the state who may have contracted avian influenza by different means, he said.

The study calls for a sample of 400 subsistence hunters, 200 sport hunters, 75 wildlife biologists and researchers and a control group of 200 people who have not handled wild birds, Bruce said.

People who have been infected with avian influenza in the past will have developed antibodies that show up in the blood, he said.

The study is being done in partnership with the Alaska Native Tribal Health Consortium and the Yukon-Kuskokwim Health Corp.

It could show experts where people are contracting influenza, what precautions should be taken when handling wild fowl, and how easily the viruses are transmitted to people. The study also seeks to establish a benchmark for future studies, Bruce said.

"Even if we don't find any antibodies to any avian influenza, I think it gives us at least a good baseline," he said.

Hunters from Girdwood to Wasilla who have handled wild birds in the past two years are eligible to give blood and answer questions, a process that will take about 15 minutes.

So far, about 80 hunters have given blood and the CDC needs about 120 more.

Participants will be paid \$25.

International, Poultry (ProMed, February 15): Bird flu is on the rise in East Lampung, Indonesia, prompting local authorities to order backyard farmers to keep their chickens inside their coops, local media reported on 13 Feb 2008.

The avian influenza virus had spread through 8 sub districts in East Lampung District, Antara news agency quoted the head of the Participatory Disease Surveillance (PDS) team, Dewanto, as saying.

The virus was detected earlier this month [February 2008] in 6 sub districts, but [now] it has struck poultry in 12 villages in 8 sub districts, Dewanto said, adding it is possible that the poultry will spread the virus to other sub districts.

Lampung is a province of Indonesia, located on the southern tip of Sumatra Island. East Lampung District, Central Lampung District, and Bandarlampung city of the province have seen several bird flu outbreaks over the past few years.

International, Poultry (Reuters [edited], February 19): Dead poultry have been found in rivers and streams in northern Vietnam, a sign of a possible new bird flu outbreak during a prolonged cold spell, officials said on Tuesday.

The Agriculture Ministry said in a report that callers to an animal health department hotline reported large numbers of dead birds in five provinces, but was not specific.

The H5N1 strain of bird flu killed three men in northern Vietnam between Jan. 18 and Feb. 14 during a record-long cold spell. The H5N1 virus seems to thrive best in cool temperatures.

"In recent days the Animal Health Department has received many reports about poultry dying in large numbers in provinces," the Agriculture Ministry-run department said in a report on its Web site (www.dah.gov.vn).

"A bird flu outbreak is forecast to emerge in the northern region when cold days extend," it said.

The department, in a separate report, said that bird flu has killed nearly 2,500 ducks and chickens in the northern provinces of Hai Duong, Nam Dinh and Tuyen Quang, bringing to seven the provinces on the government's bird flu watchlist.

Animal health workers have slaughtered the remaining 1,900 birds at the three infected farms.

International, Poultry (Reuters [edited], February 19): China has reported a bird flu outbreak in poultry in Tibet, the second in the Himalayan region in two weeks.

The outbreak, which started on Feb. 6 in a village outside the regional capital Lhasa, has killed 132 poultry and led to the culling of 7,698 birds, the Agriculture Ministry said.

The National Avian Influenza Reference Laboratory confirmed on Sunday that the virus the birds contracted was a subtype of the H5N1 strain, the ministry said in a statement posted on its Web site (www.agri.gov.cn) late on Monday.

Authorities have taken emergency measures to bring the epidemic under "effective control", it said.

An outbreak of the H5N1 strain in Tibet's Gongga county on Jan. 25 killed 1,000 chickens and ducks. More than 13,000 birds were culled at the time.

Michigan Wild Bird Surveillance (USDA, as of February 21): For the 2007 testing season, 1931 Michigan samples have been taken so far, comprised of 100 live bird samples, 1384 hunter-killed birds, 172 morbidity/mortality samples, and 275 environmental samples.

H5N1 subtype H5N1 has not been recovered from any Michigan samples tested to date, or from the 84,530 birds or environmental samples tested nationwide. The 2007 testing season will run from April 1, 2007-March 31, 2008. For more information, visit the National H5N1 Early Detection Data System website at <http://wildlifedisease.nbio.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>.

Please contact Susan Vagasky at VagaskyS@Michigan.gov with any questions regarding this newsletter or to be added to the weekly electronic mailing list.

Contributors

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Table 1. H5N1 Influenza in Poultry (Outbreaks up to February 18, 2008)

(Source: http://www.oie.int/downld/AVIAN%20INFLUENZA/A_AI-Asia.htm Downloaded 2/20/2008)

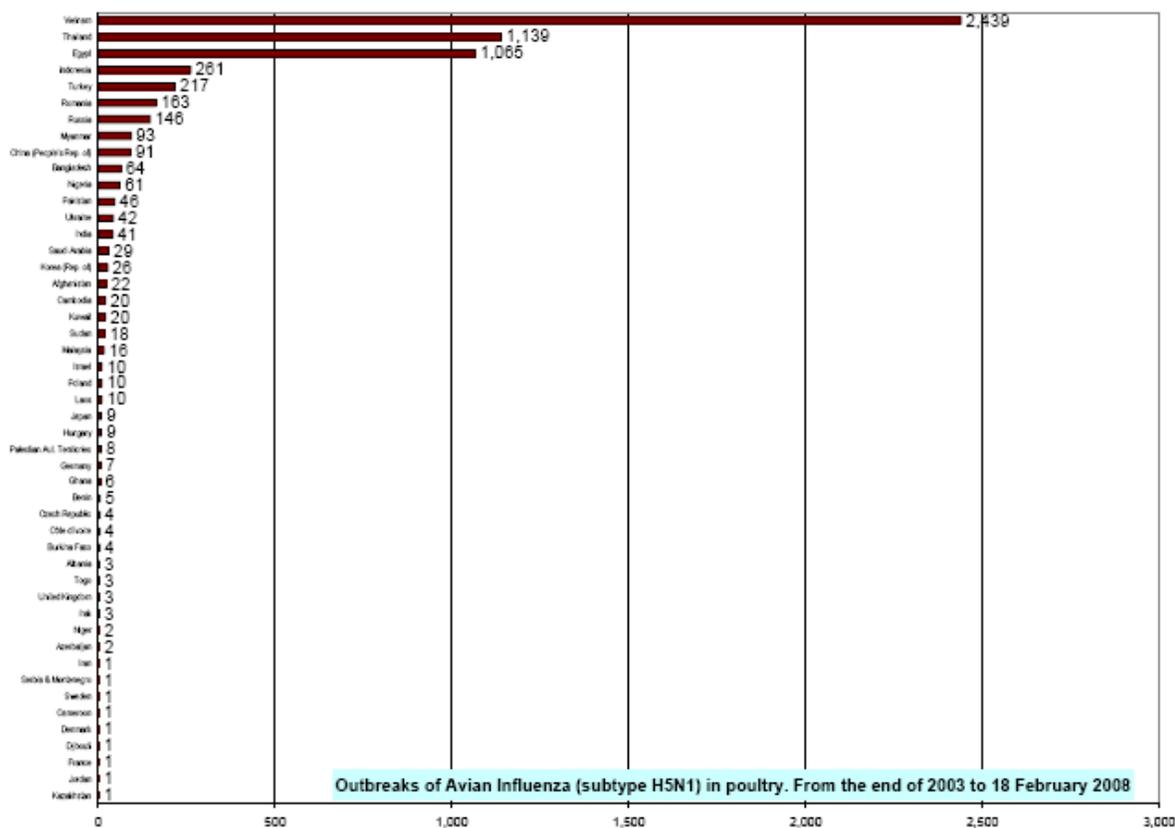


Table 2. H5N1 Influenza in Humans (Cases up to February 21, 2008)

(http://www.who.int/csr/disease/avian_influenza/country/cases_table_2008_02_21/en/index.html Downloaded 2/21/2008)

Cumulative number of lab-confirmed human cases reported to WHO. Total number of cases includes deaths.

Country	2003		2004		2005		2006		2007		2008		Total	
	cases	deaths												
Azerbaijan	0	0	0	0	0	0	8	5	0	0	0	0	8	5
Cambodia	0	0	0	0	4	4	2	2	1	1	0	0	7	7
China	1	1	0	0	8	5	13	8	5	3	1	1	28	18
Djibouti	0	0	0	0	0	0	1	0	0	0	0	0	1	0
Egypt	0	0	0	0	0	0	18	10	25	9	0	0	43	19
Indonesia	0	0	0	0	20	13	55	45	42	37	12	10	129	105
Iraq	0	0	0	0	0	0	3	2	0	0	0	0	3	2
Lao People's Democratic Republic	0	0	0	0	0	0	0	0	2	2	0	0	2	2
Myanmar	0	0	0	0	0	0	0	0	1	0	0	0	1	0
Nigeria	0	0	0	0	0	0	0	0	1	1	0	0	1	1
Pakistan	0	0	0	0	0	0	0	0	1	1	0	0	1	1
Thailand	0	0	17	12	5	2	3	3	0	0	0	0	25	17
Turkey	0	0	0	0	0	0	12	4	0	0	0	0	12	4
Viet Nam	3	3	29	20	61	19	0	0	8	5	3	3	104	50
Total	4	4	46	32	98	43	115	79	86	59	16	14	365	231