MI FluFocus

Influenza Surveillance and Avian Influenza Update

Bureau of Epidemiology
Bureau of Laboratories

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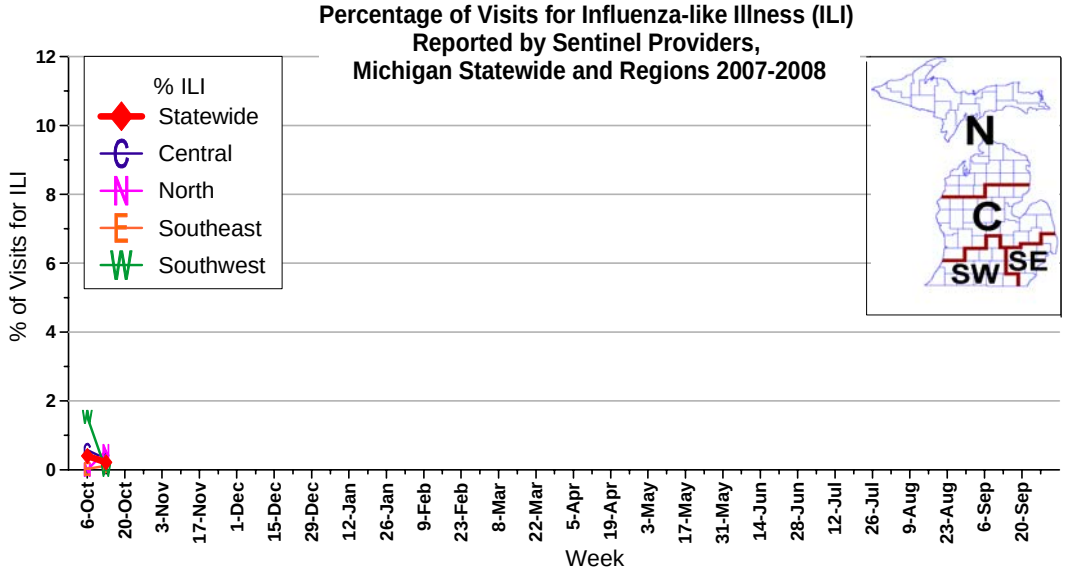
New updates in this issue:

- **Michigan Surveillance:** CDC confirms a case of swine influenza A (H1N2) in a Michigan resident.
- **National Surveillance:** CDC reports a low level of influenza activity for the first week of the season.
- **Avian Influenza:** Indonesia reports another H5N1 human fatality; Vietnam has new poultry outbreak.

Michigan Disease Surveillance System: The week ending October 13 saw aggregate flu-like illness reports rise slightly, while individual influenza reports held steady near the previous week's level. Both aggregate and individual reports are slightly lower, but should be considered consistent with levels seen at this time last year.

Emergency Department Surveillance: Emergency department visits due to respiratory complaints saw a slight decrease in the past week, while constitutional complaints rose slightly again this week. Constitutional complaints are consistent with numbers seen this time last year, while respiratory complaints are slightly lower. Ten constitutional alerts in the C(3), N(1), SE(2), and SW(3) Influenza Surveillance Regions, along with one Statewide alert and ten respiratory alerts in the C(3), N(2), SE(1) and SW(4) Influenza Surveillance Regions were generated last week.

Sentinel Surveillance (as of October 18): During the week ending October 13, 2007, the proportion of visits due to influenza-like illness (ILI) in Michigan remained relatively unchanged from last week at 0.2% of all visits. This represents 10 cases of ILI out of 4500 total patient visits; twenty sentinels provided data for this report. The proportion of visits due to ILI decreased to 0.0% in the southwest surveillance region. The remaining regions continued to report low levels of ILI: 0.3%, Central; 0.5%, North; and 0.1%, Southeast. Note that these rates may change as additional reports are received.



As part of pandemic influenza preparedness, CDC and MDCH highly encourage and recommend 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.

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.

Laboratory Surveillance (as of October 18): The MDCH Lab has not confirmed any cases of influenza for the 2007-2008 influenza season, which started on October 1.

In September 2007, a positive rapid influenza A test from August 2007 was confirmed at the MDCH Bureau of Laboratories as an influenza A (H1N2) virus. This test result was referenced in the September 20, 2007 edition of *MI FluFocus*. Recent testing by the Centers for Disease Control and Prevention (CDC) has confirmed the strain as A (H1N2); in addition, the strain was determined to be of swine origin. The case was a 16-month-old from the Central Influenza Surveillance region who developed moderate flu-like symptoms and subsequently recovered with no complications. A comprehensive follow-up investigation by MDCH, CDC and the local health department is currently underway. No additional cases have been identified at this time, and this case is believed to be an isolated event with the most probable exposure route being contact with infected swine. This case highlights the value of increased off-season influenza surveillance to detect circulating human and novel influenza viruses.

***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 October 18): For the 2007-2008 season, there are no confirmed reports of influenza-related pediatric mortality in Michigan. One possible case from the 2006-2007 season is still under investigation by MDCH and the CDC.

***Reminder: The CDC has asked all states to continue to collect information on any pediatric death associated with influenza infection. This includes not only any death in a child less than 18 years of age resulting from a clinically compatible illness confirmed to be influenza by an appropriate laboratory or rapid diagnostic test, but also unexplained death with evidence of an infectious process in a child. Refer to http://www.michigan.gov/documents/fluletter_107562_7.pdf for the complete protocol. It is important to immediately call or fax information to MDCH to ensure that appropriate clinical specimens can be obtained.

Congregate Settings Outbreaks (as of October 18): There have been no reports for the 2007-2008 influenza season.

National (CDC, October 12): During week 40 (September 30 – October 6, 2007), a low level of influenza activity was reported in the United States. Twelve (1.5%) 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 slightly above the epidemic threshold. The proportion of outpatient visits for influenza-like illness (ILI) was below national and region-specific baseline levels. One state reported local influenza activity; eight states and Puerto Rico reported sporadic influenza activity; and 41 states and the District of Columbia reported no influenza activity. No influenza-associated pediatric deaths were reported for week 40.

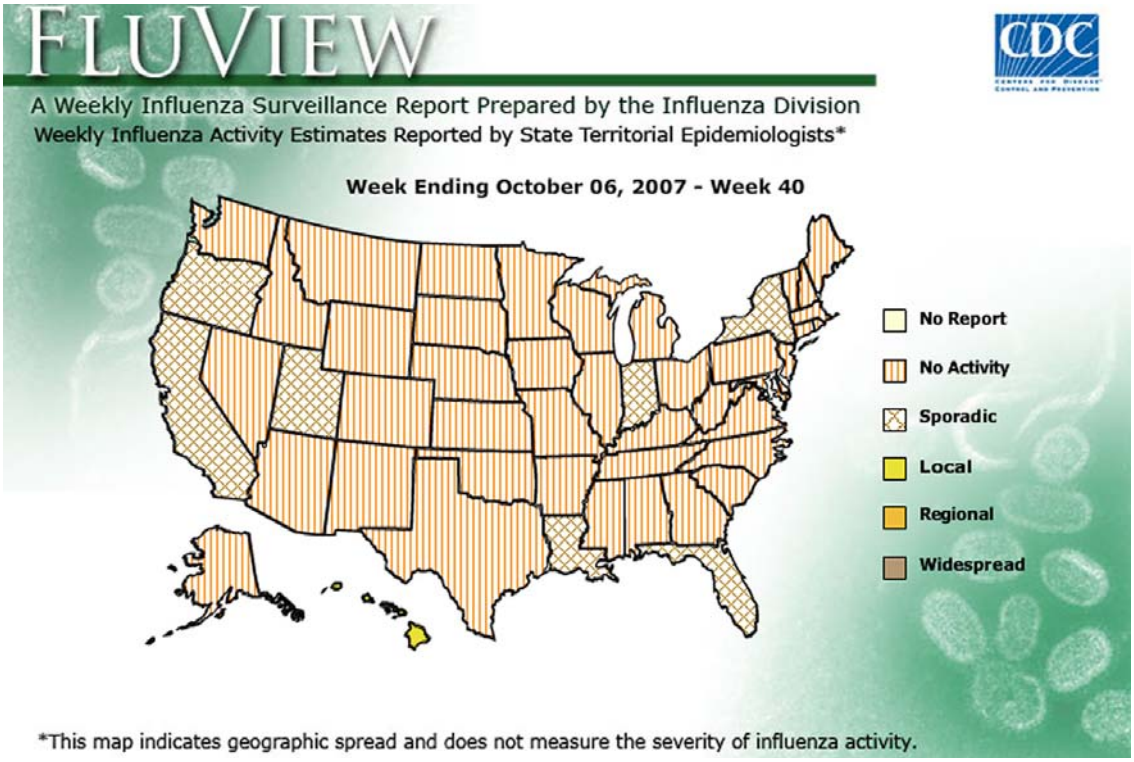
During week 40, WHO and NREVSS laboratories reported 787 specimens tested for influenza viruses, 12 of which were positive: 11 influenza A viruses that were not subtyped (South Atlantic and West South Central regions) and one influenza B virus (South Atlantic region).

During week 40, 5.9% of all deaths reported through the 122-Cities Mortality Reporting System were reported as due to pneumonia or influenza. This percentage is above the epidemic threshold of 5.8% for week 40. This is the fifth consecutive week that the percentage of deaths due to pneumonia or influenza has been above the epidemic threshold. However, no other component of the national surveillance

system showed evidence of increased influenza activity or virus circulation. Potential explanations for the increase in pneumonia and influenza mortality above threshold are being investigated.

Three human cases of novel influenza A infection were reported from two states (Ohio (2) and Illinois (1)) in September. All three persons were infected with swine influenza A virus. Although human infection with swine influenza is uncommon, sporadic cases occur in many years, usually among persons in direct contact with ill pigs or who have been in places where pigs might have been present (e.g. agricultural fairs, farms, or petting zoos). The sporadic cases identified in recent years have not resulted in sustained human-to-human transmission or community outbreaks. Nonetheless, when sporadic cases are identified, CDC recommends thorough investigations to evaluate the extent of the outbreaks and possible human to human transmission as transmission patterns may change with changes in swine influenza viruses. No novel influenza A virus infections were reported for week 40.

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



International, WHO (Weekly Epidemiological Record, October 12): Between September 2006 and August 2007, the level of influenza activity was generally mild to low. In North America, influenza activity began in November and increased in December, while in Asia and Europe, activity started in December and increased in January. Overall activity in the northern hemisphere declined in April-May. In the southern hemisphere, it began in April in South America, increased in May, remained high throughout July and declined in August. In Oceania and South Africa, activity started in June, peaked in July-August and declined in September.

Influenza A(H1N1) viruses circulated and caused outbreaks in some countries of Asia, eastern Europe, North America and Oceania.

Haemagglutination-inhibition tests showed that, while a large proportion of old viruses were antigenically closely related to A/New Caledonia/20/99, the majority of recent viruses were antigenically similar to A/Solomon Islands/3/2006.

Influenza A(H3N2) viruses circulated and caused outbreaks in many countries of Asia, Europe, South American and Oceania. While some viruses were antigenically similar to the vaccine virus

A/Wisconsin/67/2005, the proportion of viruses that were distinguishable from the vaccine virus and antigenically similar to A/Brisbane/10/2007 increased.

Influenza B viruses circulated and caused outbreaks in some countries in Asia, eastern Europe and South America. Viruses of both B/Victoria/2/87 and B/Yamagata/16/88 lineages were detected in many countries but occurred in varying proportions. It has recently been observed that B/Yamagata/16/88 lineage viruses predominated in Australia, Chile, Hong Kong Special Administrative Region of China, New Zealand and some Asian countries.

A total of 84 countries/areas -10 from Africa, 16 from the Americas, 19 from Asia, 35 from Europe and 4 from Oceania – reported influenza activity to WHO between September 2006 and August 2007. Of these, 44 reported regional/widespread outbreaks associated with influenza A(H1N1), A(H3N2) and B viruses.

MDCH reported **NO INFLUENZA ACTIVITY** to the CDC for the week ending October 13, 2007.

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, October 12): The Ministry of Health of Indonesia has announced a new case of human infection of H5N1 avian influenza. A 12-year-old male from Tangerang District in Banten Province developed symptoms on September 30 and is currently in hospital. The investigation team found that he had direct contact with dead chicken near his school in the days before his illness.

Of the 109 cases confirmed to date in Indonesia, 87 have been fatal.

International, Human (WHO, October 17): The Ministry of Health of Indonesia has announced the death of a previously confirmed case of H5N1 infection. The 12-year-old male from Tangerang District in Banten Province died on October 13.

Of the 109 cases confirmed to date in Indonesia, 88 have been fatal.

International, Poultry (Reuters, October 11): Bird flu returned to southern Vietnam this week after an absence of two months, and officials warned farmers of more outbreaks as the weather cools.

Tests performed at a laboratory for the Mekong delta region confirmed the H5N1 virus in the samples taken from ducks at a farm in Tra Vinh province, the Agriculture Ministry said in a report on Thursday.

The infection emerged last week when five ducks died among 300 at the farm. None of the ducks had been vaccinated against the virus, the report said. Animal health workers have since slaughtered the remaining ducks.

A Tra Vinh Animal Health Department official said by telephone that the last bird flu outbreak was found among ducks in the same district in late August.

Agriculture Minister Cao Duc Phat on Tuesday urged animal health authorities to step up vaccinating poultry because bird flu would soon return among unvaccinated birds, especially as the weather cooled in autumn and winter in northern provinces.

The second phase of vaccination is underway in 23 out of Vietnam's 64 provinces and 38.8 million birds have been injected.

Bird flu has infected seven people in Vietnam so far this year, four of whom have died, bringing the death toll since late 2003 to 46. Globally, the H5N1 virus has killed 202 people out of 330 known cases, according to the World Health Organisation. Hundreds of millions of birds have died or been slaughtered.

But Vietnam's poultry stock has been increasing, with 226 million birds reported at the end of August, up 5.3 percent from a year ago, of which the waterfowl stock expanded 8.7 percent to 68 million, government figures showed.

Michigan Wild Bird Surveillance (USDA, as of October 18): For the 2007 testing season, 412 Michigan samples have been taken so far, comprised of 100 live bird samples, 99 hunter-killed birds, 63 morbidity/mortality samples, and 150 environmental samples.

HPAI subtype H5N1 has not been recovered from any Michigan samples tested to date, or from the 27,197 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 HPAI Early Detection Data System website at http://wildlifedisease.nbii.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 October 11, 2007)

(Source: http://www.oie.int/downld/AVIAN%20INFLUENZA/A_AI-Asia.htm Downloaded 10/16/2007)

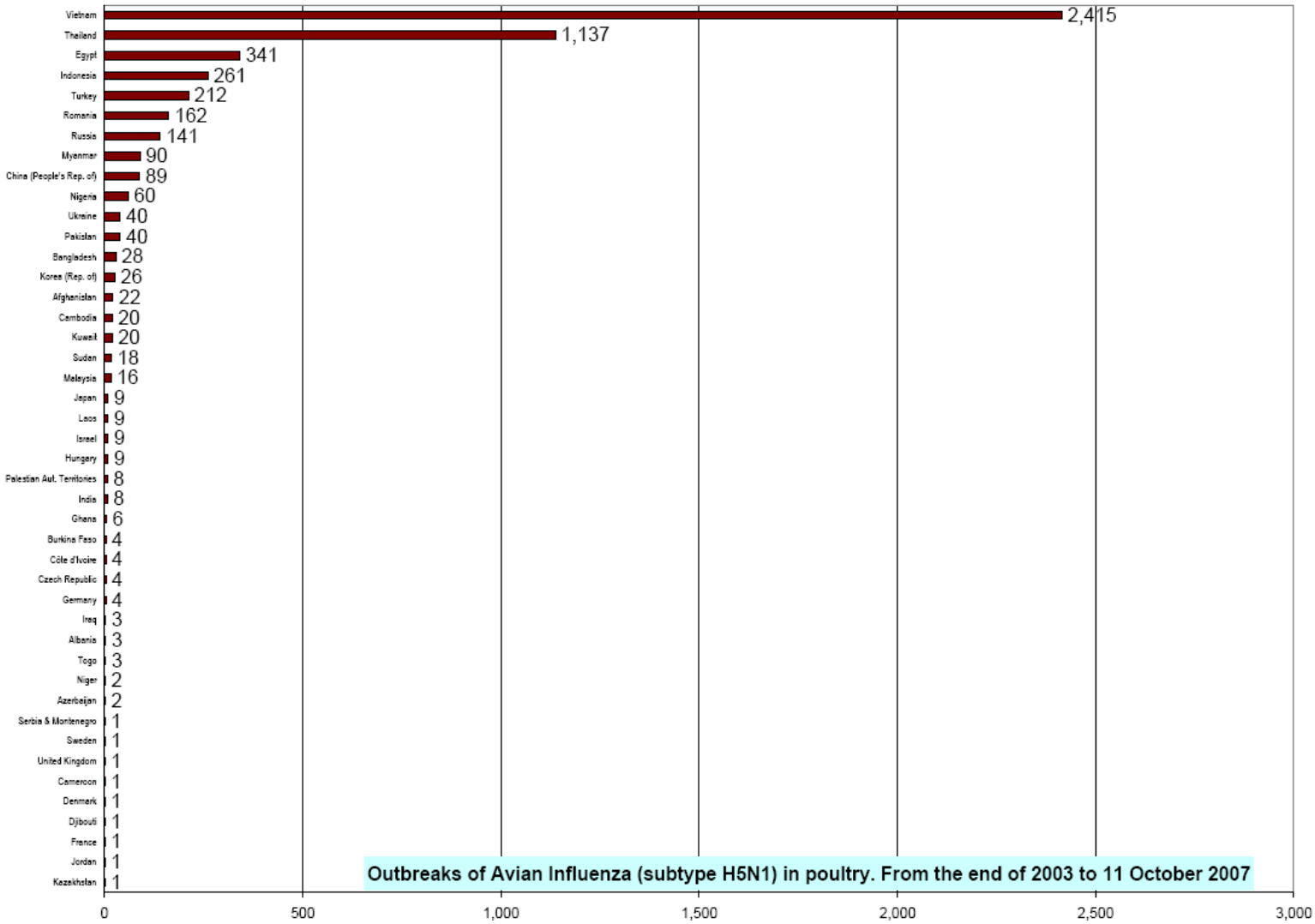

Table 2. H5N1 Influenza in Humans (Cases up to October 17, 2007)

(http://www.who.int/entity/csr/disease/avian_influenza/country/cases_table_2007_10_17/en/index.html Downloaded 10/17/2007)

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

Country	2003		2004		2005		2006		2007		Total	
	cases	deaths	cases	deaths	cases	deaths	cases	deaths	cases	deaths	cases	deaths
Azerbaijan	0	0	0	0	0	0	8	5	0	0	8	5
Cambodia	0	0	0	0	4	4	2	2	1	1	7	7
China	1	1	0	0	8	5	13	8	3	2	25	16
Djibouti	0	0	0	0	0	0	1	0	0	0	1	0
Egypt	0	0	0	0	0	0	18	10	20	5	38	15
Indonesia	0	0	0	0	20	13	55	45	34	30	109	88
Iraq	0	0	0	0	0	0	3	2	0	0	3	2
Lao PDR	0	0	0	0	0	0	0	0	2	2	2	2
Nigeria	0	0	0	0	0	0	0	0	1	1	1	1
Thailand	0	0	17	12	5	2	3	3	0	0	25	17
Turkey	0	0	0	0	0	0	12	4	0	0	12	4
Viet Nam	3	3	29	20	61	19	0	0	7	4	100	46
Total	4	4	46	32	98	43	115	79	68	45	331	203