



# 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:

- **Syndromic Surveillance:** All surveillance systems show steady to slightly decreasing activity.
- **Sentinel Surveillance:** New sentinel provider data for the week ending November 4.
- **Avian Influenza:** Gene responsible for virulence of H5N1 discovered; U.S. wild bird update.

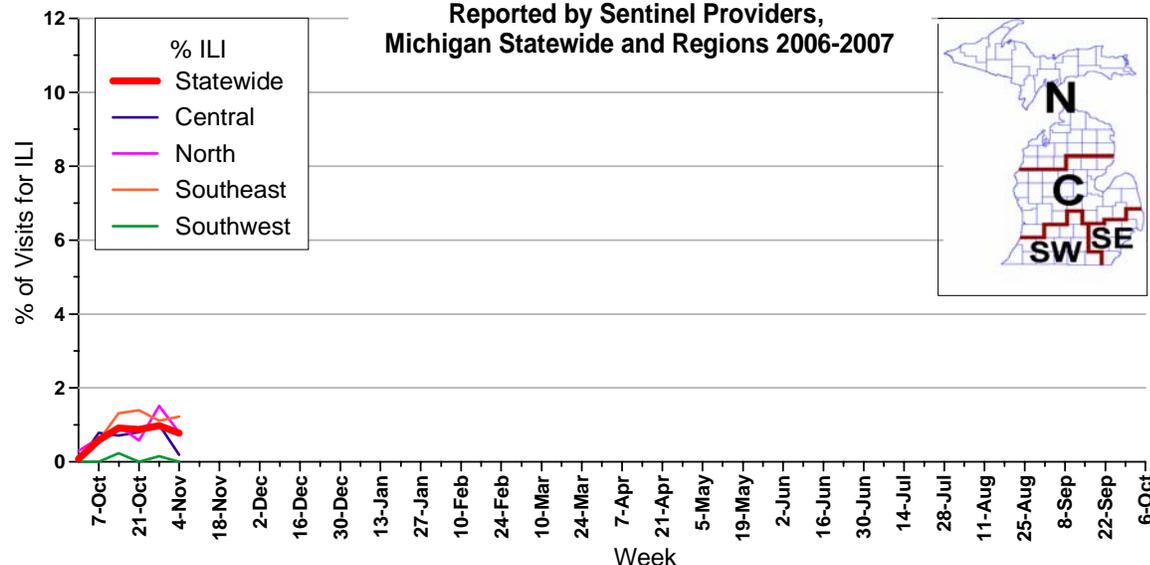
**Michigan Disease Surveillance System:** Last week saw a slight drop in flu-like illness reports. These minor weekly changes can be explained by variations in reporting. These reports are likely to continue to fluctuate in this manner over the next few weeks. The current flu-like illness reported levels are comparable to that seen at this time last year.

**Emergency Department Surveillance:** Emergency department visits due to constitutional and respiratory complaints continue to remain relatively steady. The levels of constitutional syndrome complaints and respiratory syndrome complaints both have only slightly decreased. These levels are consistent with levels seen at this time last year. Five constitutional alerts in Regions 1(1), 5(1), 7(2) and 8(1) and six respiratory alerts in Regions 1(1), 3(1), and 7(4) were generated in the past week.

**Over-the-Counter Product Surveillance:** OTC product sales seem to reflect the very slight decrease in activity seen in the past week. Most sales remained relatively steady with adult liquid cold relief and children's electrolytes seeing a slight decrease and cough/cold medicine showing a slight increase. Chest rubs did show a sharp decrease in sales over the last week, but is not entirely uncharacteristic of that category. However, all eight indicators levels are comparable to those seen at this time last year.

**Sentinel Surveillance (as of November 9, 2006):** During the week ending November 4, 2006, the proportion of visits due to influenza-like illness (ILI) remained relatively unchanged from last week at 0.8% of all visits, representing 44 cases of ILI out of 5686 total patient visits. Twenty-four sentinels provided data for this report. By region, the percentage of visits due to ILI was 0.2%, Central; 0.8% North; 1.2%, Southeast; 0.0%, Southwest.

Percentage of Visits for Influenza-like Illness (ILI)  
Reported by Sentinel Providers,  
Michigan Statewide and Regions 2006-2007



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 influenza sentinel surveillance program today! Contact Rachel Potter at 517-335-9710 or [potterr1@michigan.gov](mailto:potterr1@michigan.gov) for more information.

**Laboratory Surveillance (as of November 9):** No reports were received for the past week. There are no culture-confirmed cases from the MDCH Laboratory for the 2006-2007 influenza season. In addition, no reports of positive culture-confirmed influenza cases have been reported from the 16 Michigan sentinel laboratories across the state, although low levels of parainfluenza and respiratory syncytial viruses are being identified.

\*\*\*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 November 9):** MDCH received notification of a possible pediatric death in September due to influenza B from the Detroit City Health Department; the case is currently under investigation. For the 2006-2007 season, there are no confirmed reports of influenza-related pediatric mortality.

\*\*\*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](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 November 9):** No reports were received during the past reporting week. There have been no reports of congregated influenza outbreaks to MDCH for the 2006-2007 influenza season.

**National (CDC):** During week 43 (October 22 – October 28, 2006), a low level of influenza activity was reported in the United States. The U.S. World Health Organization (WHO) and National Respiratory and Enteric Virus Surveillance System (NREVSS) collaborating laboratories reported 1,054 specimens tested for influenza viruses, six (0.6%) of which were positive: three influenza A (H1) viruses, two influenza A viruses that were not subtyped, and one influenza B virus. The proportion of patient visits to sentinel providers for influenza-like illness (ILI) and the proportion of deaths attributed to pneumonia and influenza were below baseline levels. Two states reported local influenza activity; ten states reported sporadic influenza activity; 36 states, New York City, and the District of Columbia reported no influenza activity; and two states did not report. To access the CDC weekly surveillance report throughout the influenza season, visit <http://www.cdc.gov/flu/weekly/fluactivity.htm>.

Since October 26, 2006, Yancey County in western North Carolina has experienced high levels of influenza-like illness (ILI). Absenteeism in the public schools has been approximately 15%. On November 2, schools in Yancey County were closed because they could not be adequately staffed due to ILI among employees. Schools are scheduled to reopen on November 13. Viral cultures from ill persons have grown influenza B. Other counties in North Carolina are beginning to report an increase in ILI.

The Texas Department of State Health Services Laboratory has identified the first influenza case of the season in Texas. The case was confirmed from a specimen submitted by the San Antonio Metropolitan Health District as part of their routine influenza culture surveillance. The isolate was identified as B/Malaysia/2506/2004-like and has been sent to CDC for further strain characterization. The specimen was collected on October 23, 2006, from a 14-year-old patient, who had not received this season's influenza vaccine.

The Florida Department of Health has observed an increase in influenza activity in the southeast region of Florida. This increase has occurred primarily among children as detected by the following surveillance



**International (Reuters):** Chinese scientists have identified a gene in the H5N1 bird flu virus which they say is responsible for its virulence in poultry, opening the way for new vaccines. There are many different strains of H5N1, some of which kill more than half the people they infect, while others do little or no harm. "We cannot understand how this virus becomes lethal and the molecular basis for its pathogenicity," Bu Zhigao at the Harbin Veterinary Research Institute told Reuters.

The Chinese researchers zeroed in on the virulent gene after analyzing 2 closely related strains of H5N1 obtained from infected geese in southern Guangdong province in 1996, one highly pathogenic in chickens and the other harmless. Differences between the 2 strains were located in 4 genes, they found. The scientists designed 4 genetically modified viruses, each containing one of the 4 genes in question, and tested them on laboratory chickens. Only chickens infected with the modified virus containing the highly pathogenic gene died. The other chickens had no signs of disease, the scientists wrote in the November 2006 issue of the Journal of Virology.

"Now that we know the special role of the (highly pathogenic) NS1 gene, we can think about developing a vaccine," Bu said, adding that a vaccine which neutralizes the gene known as NS1 could be quickly designed. "Technically, that can happen very soon, but it is the tests and other procedures that will take a long time."

The scientists are from the Ministry of Agriculture's Animal Influenza Laboratory, the National Key Laboratory of Veterinary Biotechnology, Chinese Academy of Agricultural Sciences, and the Harbin Veterinary Research Institute.

**National Wild Bird Surveillance (USDA, October 28):** According to the United States Department of Agriculture (USDA) and Department of the Interior's (DOI) Low Pathogenic "North American" H5N1 Avian Influenza website, additional hunter-killed mallard ducks from Grundy County, IL have preliminarily tested positive for the H5 and N1 subtypes. Initial testing indicates that these results are of the low pathogenic "North American" strain and are currently undergoing confirmatory testing.

Because these LPAI H5N1 detections are common and pose no threat to human health, USDA and DOI are transitioning to a new method of notifying the public. DOI will maintain a list of all such routine detections as part of the National Highly Pathogenic Avian Influenza Early Detection Data System. The low path H5N1 detection list can be accessed at <http://wildlifedisease.nbj.gov/ai/LPAITable.pdf>. A link also will be available on USDA's avian influenza Web page at <http://www.usda.gov/birdflu>. In the event of a presumptive H5N1 test result involving a large number of sick or dead birds, or other circumstances that suggest the possibility of a highly pathogenic virus, USDA and DOI will issue a news release or conduct a technical briefing to notify the media and the public.

**Michigan Wild Bird Surveillance (USDA, November 8):** Results from confirmatory testing on samples taken from hunter-killed green-winged teals from Tuscola County on 10/15/06 found that no virus could be isolated. Preliminary results had indicated the presence of the low pathogenic H5 and N1 subtypes. Confirmatory testing was done at the National Veterinary Services Laboratory in Ames, IA.

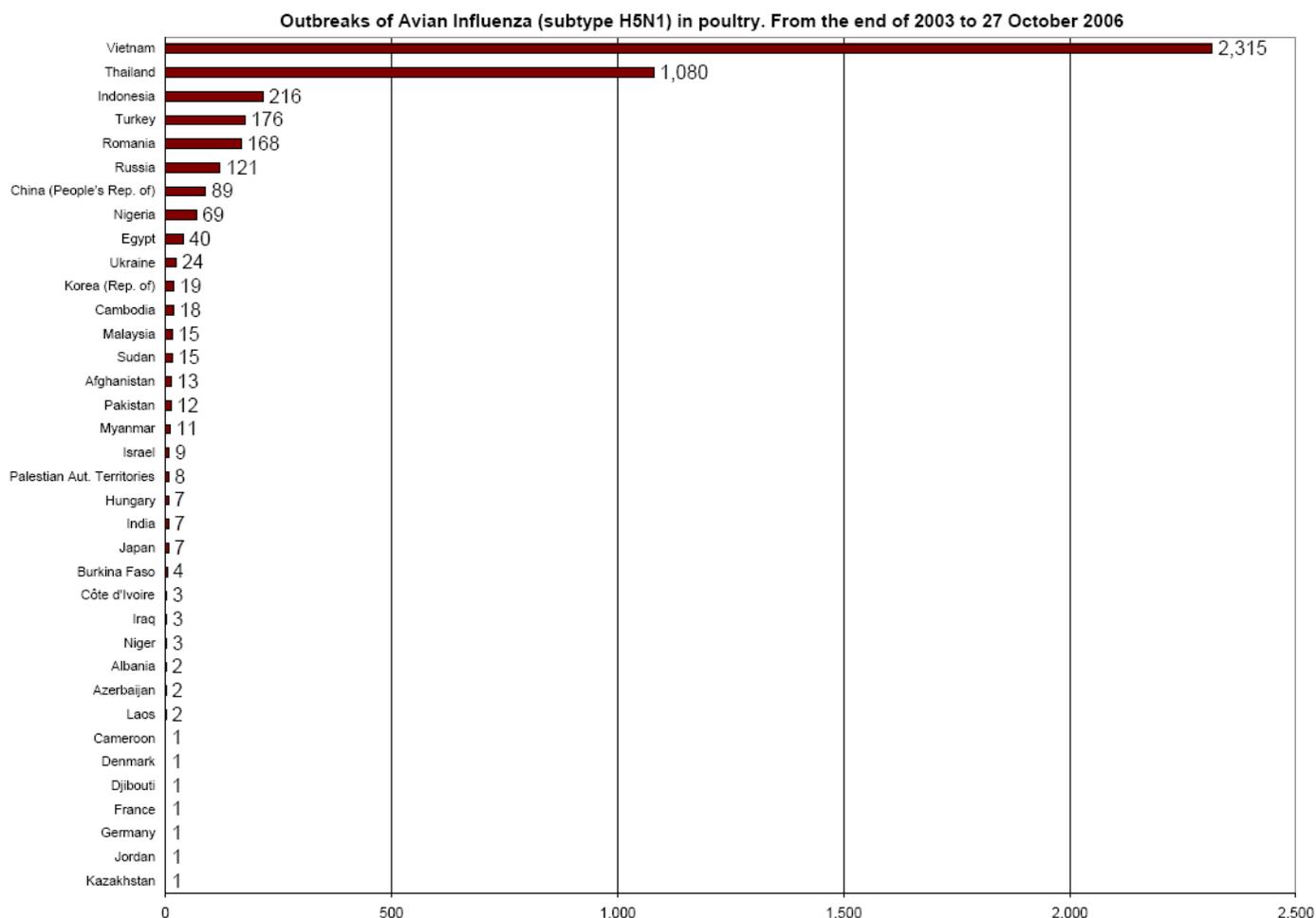
According to the National HPAI Early Detection Data System website, available at <http://wildlifedisease.nbj.gov/ai/>, Michigan has results for a total of 538 wild birds submitted for testing as of November 3. 191 of these birds were live-captured and tested, 222 were hunter-killed, 65 were sentinel animals, and 60 were dead birds that were submitted for testing. HPAI subtype H5N1 has not been recovered from any Michigan samples tested to date, or from the 34,986 birds tested nationwide.

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](mailto:VagaskyS@Michigan.gov) with any questions regarding this newsletter or to be added to the weekly electronic mailing list.**

**Table 1. H5N1 Influenza in Poultry (Outbreaks up to October 27, 2006)**

(Source: [http://www.oie.int/download/AVIAN%20INFLUENZA/A\\_AI-Asia.htm](http://www.oie.int/download/AVIAN%20INFLUENZA/A_AI-Asia.htm) Downloaded 11/3/2006)



**Table 2. H5N1 Influenza in Humans (Cases up to October 31, 2006)**

([http://www.who.int/entity/csr/disease/avian\\_influenza/country/cases\\_table\\_2006\\_06\\_06/en/index.html](http://www.who.int/entity/csr/disease/avian_influenza/country/cases_table_2006_06_06/en/index.html) Downloaded 10/31/2006)

Cumulative number of confirmed human cases of Avian Influenza A(H5N1) reported to WHO. The total number of cases includes number of deaths. WHO only reports laboratory-confirmed cases.

Country	2003		2004		2005		2006		Total	
	cases	deaths								
Azerbaijan	0	0	0	0	0	0	8	5	8	5
Cambodia	0	0	0	0	4	4	2	2	6	6
China	1	1	0	0	8	5	12	8	21	14
Djibouti	0	0	0	0	0	0	1	0	1	0
Egypt	0	0	0	0	0	0	15	7	15	7
Indonesia	0	0	0	0	19	12	53	43	72	55
Iraq	0	0	0	0	0	0	3	2	3	2
Thailand	0	0	17	12	5	2	3	3	25	17
Turkey	0	0	0	0	0	0	12	4	12	4
Viet Nam	3	3	29	20	61	19	0	0	93	42
Total	4	4	46	32	97	42	109	74	256	152