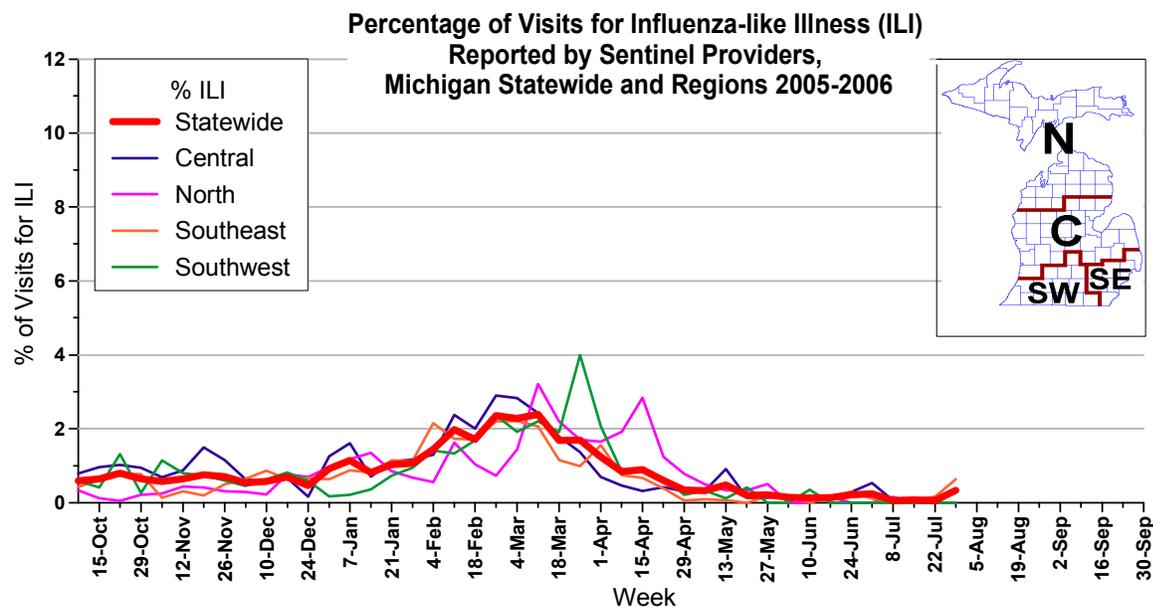


MIFluFocus
August 3, 2006
Weekly Influenza Surveillance and Avian Influenza Update

Syndromic Surveillance System Surveillance: Flu-like illness, as characterized by the syndromic surveillance systems, continues to demonstrate a very low overall level of activity. Flu-like illness reporting through the Michigan Disease Surveillance System has been negligible in recent weeks, as schools are closed for the summer. Over-the-counter pharmaceutical sales have been stable or decreasing for all flu-related products recently and the sales of all products (except for chest rubs) are at or below levels from last year at this time. No statewide alerts for increased respiratory or constitutional emergency department visits have been generated in recent weeks.

Sentinel Surveillance (as of August 3, 2006): During the week ending July 29, 2006, the proportion of visits due to influenza-like illness (ILI) increased slightly from last week to 0.3% of all visits. Low levels of ILI activity were reported in all regions; the percentage of visits due to ILI by region was 0.4%, Central; 0.0%, North; 0.6%, Southeast; and 0.0%, Southwest.



As part of pandemic influenza preparedness, CDC and MDCH highly encourage and recommend year-round participation from all sentinel providers. Data that we obtain over the summer will help us to establish a baseline level of activity during months that are not typically associated with high levels of influenza activity. New practices are encouraged to join influenza sentinel surveillance program today! Contact Rachel Potter at 517-335-9710 or potterr1@michigan.gov for more information.

Laboratory Surveillance (as of August 3, 2006): No reports were received for the past week. The MDCH laboratory has confirmed 138 influenza cases in Michigan over the 2005-2006 season, of which 132 were influenza A (H3N2) and 6 were influenza B.

Influenza-Associated Pediatric Mortality (as of July 20, 2006, CDC data as of May 20): Results received from the CDC on July 24th regarding an ongoing investigation of a pediatric death from Michigan showed no evidence of influenza A or B or respiratory syncytical virus on immunohistochemistry tests. Thus, for the 2005-2006 influenza season, Michigan had one confirmed influenza-associated pediatric death from region 2S. During October 2, 2005 – May 20, 2006, CDC received reports of 35 influenza-associated pediatric deaths, 33 of which occurred during the current influenza season.

***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 July 20, 2006): No reports were received during the past reporting week. A total of two congregating outbreaks have been reported to MDCH this season; one in Southwest Michigan in late February and one in Southeast Michigan in late March. Both outbreaks were MDCH laboratory confirmed as due to influenza A (H3N2).

The 2005-2006 Michigan Influenza Seasonal Summary is now available at <http://www.michigan.gov/flu> under "Seasonal Influenza – MDCH Laboratory Influenza Testing and Surveillance." Overall, this season was milder than the previous year, peaked in early to mid-March and was comprised mainly of influenza A infections.

National (Associated Press, August 2, 2006): Vaccines that protect against three strains of seasonal influenza considered most likely to strike the northern hemisphere this winter have received federal approval. The Food and Drug Administration said Wednesday that four manufacturers licensed to sell their vaccines in the United States should have 100 million doses available for the 2006-2007 flu season. Barring any changes, that record number would end years of flu shot shortages and production delays. The seasonal formulation includes one strain used in last year's vaccines and two new strains, the FDA said. The four vaccine manufacturers approved to sell flu vaccines in the United States are Chiron Corp., GlaxoSmithKline PLC, MedImmune Inc. and Sanofi Pasteur SA.

International (WHO, as of July 14, 2006): During weeks 23–26, with the exception of Hong Kong Special Administrative Region of China and South Africa, where high levels of influenza activity were reported, overall influenza activity in both northern and southern hemispheres was low. In the Hong Kong Special Administrative Region of China, influenza A(H1N1) virus has been circulating since the first week of 2006, jointly with B virus until week 11 and then predominating. During week 23, A(H1N1) activity started to increase and during week 26, high level activity was noted. New Zealand reported an increase in A(H3N2) activity since week 23. Influenza activity was reported as regional during week 26. Influenza A(H3N2) activity in South Africa was reported as widespread during weeks 23–24, then declined rapidly and was reported as sporadic during week 26. During weeks 23–26, low influenza activity was reported in Argentina (H1, H3 and B), Canada (A and B), Chile (H1, H3 and B), Islamic Republic of Iran (H3 and B), Japan (H1 and B), Madagascar (H1), Mexico (A and B), New Caledonia (A) and Uruguay (A). Mongolia, Portugal, Senegal and Slovenia reported no influenza activity.

Weekly influenza activity reporting to the CDC is finished for the 2005-2006 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 Update (excerpts from Pro-MED mail (www.promedmail.org), July 30-31, 2006): The H5N1 bird flu virus has been found on a poultry farm in Laos, the country's 1st major outbreak since 2004, the U.N. Food and Agriculture Organization (FAO) said on July 28th. The outbreak occurred on a commercial farm 25 km south of Vientiane, where about 2500 chickens died last week, according to state media reports. The same farm experienced an outbreak in early 2004, when the virus swept through parts of Asia, including Communist-led Laos, where most of its 5.6 million people live in remote rural areas. Since then, the only previous discovery of the H5N1 virus in Laos had been in a single duck in May 2006. "The government of Laos has taken immediate action to control the spread of the virus by culling all chickens in the farm, disinfecting the farm and imposed movement restrictions within the 5-km surveillance zone," said an FAO regional coordinator. FAO and Lao investigators were scouring the area

for the source of the outbreak. State media reported the H5 subtype was 1st detected on the Dongbang poultry farm in Xaythany district on July 18th. A Thai lab confirmed later the virus was H5N1. The Prime Minister has ordered officials to step up surveillance, tighten border inspection of imported poultry and warn the public "about the grave danger posed by the disease," the Vientiane Times newspaper said. Laos has reported no human cases of bird flu, but earlier this week, the virus killed a teenager on July 24th in neighboring Thailand, where H5N1 recurred after an 8-month lull. Health experts consider impoverished Laos a weak link in the global fight against the virus, which has killed at least 133 people worldwide. With help from foreign donors, including a USD 3.4 million grant from the United States in 2005, Laos drew up a national bird flu strategy that was approved by the government in January 2006. But Laos still lacked an active avian influenza surveillance system, said the FAO, which is working with other international agencies to strengthen the country's capacity to fight bird flu. Experts fear that a human outbreak in poor countries such as Laos and Cambodia -- where basic health care barely exists outside urban areas -- would not be detected until it's too late.

The H5N1 bird flu virus has been found in the Thai northeast, bordering Laos, prompting culling of 310,000 hens on 78 farms after the virus killed a teenager elsewhere in the country last week, the Agriculture Ministry said on July 30th. "The lab results confirmed last night chickens from a village in Nakohn Panom province have died of bird flu," the Vice Agriculture Minister stated. He said the outbreak might be caused by H5N1-infected egg trays taken from "the other side" of the border, in an apparent reference to Laos. A 17-year-old man died of bird flu on July 24th in the northern province of Phichit, where authorities have slaughtered hundreds of birds and restricted poultry movement in a bid to stamp out Thailand's 1st outbreak in 8 months. The ministry has instructed governors of provinces bordering Laos, Cambodia and Myanmar to step up surveillance on animals transferred from these countries.

Thailand is offering help to Laos in stamping out bird flu, a Thai official said on July 31st. A delegation is due to arrive in the Lao capital Vientiane on August 3rd to discuss cooperation in fighting bird flu outbreaks. FAO bird flu expert Laurence Gleeson said he was trying to find out whether the Thai and Lao outbreaks were related. "We do not know whether the recurrence of avian influenza in some parts of the poultry in the 2 countries is a result of low-grade circulation of the virus in backyard farms or a reintroduction from outside," Gleeson said. "A lesson learnt from the outbreaks in the 2 countries is that the animal health surveillance system needs to be reviewed," said Gleeson. Adopting an extra cautious stance, Thai health officials have placed more than 800 people involved in culling in Nakhon Panom or in hospitals in the area on a bird flu watch-list. The Agriculture Ministry also banned imports of poultry and equipment from neighboring countries, with violators facing a maximum penalty of 2 years in jail and/or a 40 000 baht [USD 1000] fine.

National Update (CDC, July 31, 2006): Researchers at the CDC have developed a new research method that may help identify the types of genetic changes necessary for the avian influenza virus (H5N1) to be more easily transmitted among people. CDC scientists then used this method to investigate the ability of a lab-engineered combination of the avian influenza virus and a more common human virus to spread in lab animals. Efficient and sustained human-to-human transmission is the remaining property that H5N1 avian influenza viruses do not yet have that is needed to cause a pandemic.

In this series of experiments, published in the July 31 issue of the journal Proceedings of the National Academy of Sciences, genes from a human H3N2 influenza virus were added to genes from an H5N1 avian influenza virus to create new hybrid viruses. The new viruses were tested in ferrets because their susceptibility to flu viruses is similar to that of humans. The animals were then placed in close proximity, to see if infected ferrets passed the new virus to uninfected animals and whether they transmitted it more easily than the original H5N1 virus. In this model, human H3N2 viruses transmitted efficiently between the ferrets, but avian H5N1 viruses did not. When the hybrid viruses were tested it was found that these viruses also did not pass easily between ferrets.

Researchers then swapped genes from a 1997 H5N1 avian flu virus with genes from an H3N2 virus, in a process called reassortment. When tested using the ferret model, these "hybrid" viruses did not pass easily between ferrets and, in fact, caused less severe disease than the original H5N1 virus. The reassortment work was designed to mirror the phenomenon that occurs in nature when two flu viruses combine to form a new virus, a process that led to the 1957 and 1968 pandemics. It is still unknown whether the H5N1 virus could reassort with a human influenza virus in nature.

In a final study, CDC researchers passed a hybrid virus through a series of ferrets to see if the virus would accumulate genetic changes necessary to transmit more easily. The researchers found the process introduced only one genetic change in the virus but didn't enhance its transmissibility.

National Wild Bird Surveillance (July 27, 2006): 1068 cloacal samples collected by U.S. Fish and Wildlife Services were shipped to the National Wildlife Health Center from the Alaska Science Center this week. Samples were collected through live bird sampling, but also included seven samples from subsistence and two samples from mortalities. Samples from the YK Delta were collected from black brant, spectacled and common eiders, and Canada geese. Tundra swan samples collected on the Alaska Peninsula and shorebird samples from the North Slope were also included in this shipment. 596 analytical results from FWS samples were received from NWHC this week. Eight of the samples were AI positive, none were positive for the H5 subtype. To date, Region 7 FWS has received analytical results from the NWHC on 5,548 samples. Of these, 77 have tested positive for AI virus. Nine samples have tested positive for the H5 subtype – no sample has tested positive for H5N1. One sample was an LPAI H5N2. Three dead tundra swans were sent to the NWHC this week. Two of the swans were found during live collection efforts on the Alaska Peninsula (samples included above) and one swan found in Chevak and euthanized when it was determined that its condition was too severe for rehabilitation. Five projects were completed this week and six new projects have begun sampling. A total of 27 projects are in the field this week. Due to the success of sampling during the spring subsistence hunt, we plan to sample the fall subsistence hunt on the YK Delta and Seward Peninsula. This will be a smaller scale effort than the spring and focus on villages that will potentially harvest priority species that have proven elusive under previous sampling efforts.

Michigan Wild Bird Surveillance: 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>

Table 1. H5N1 Influenza in Poultry (Outbreaks up to July 19, 2006)

(Source: http://www.oie.int/download/AVIAN%20INFLUENZA/A_AI-Asia.htm Downloaded 8/1/2006)

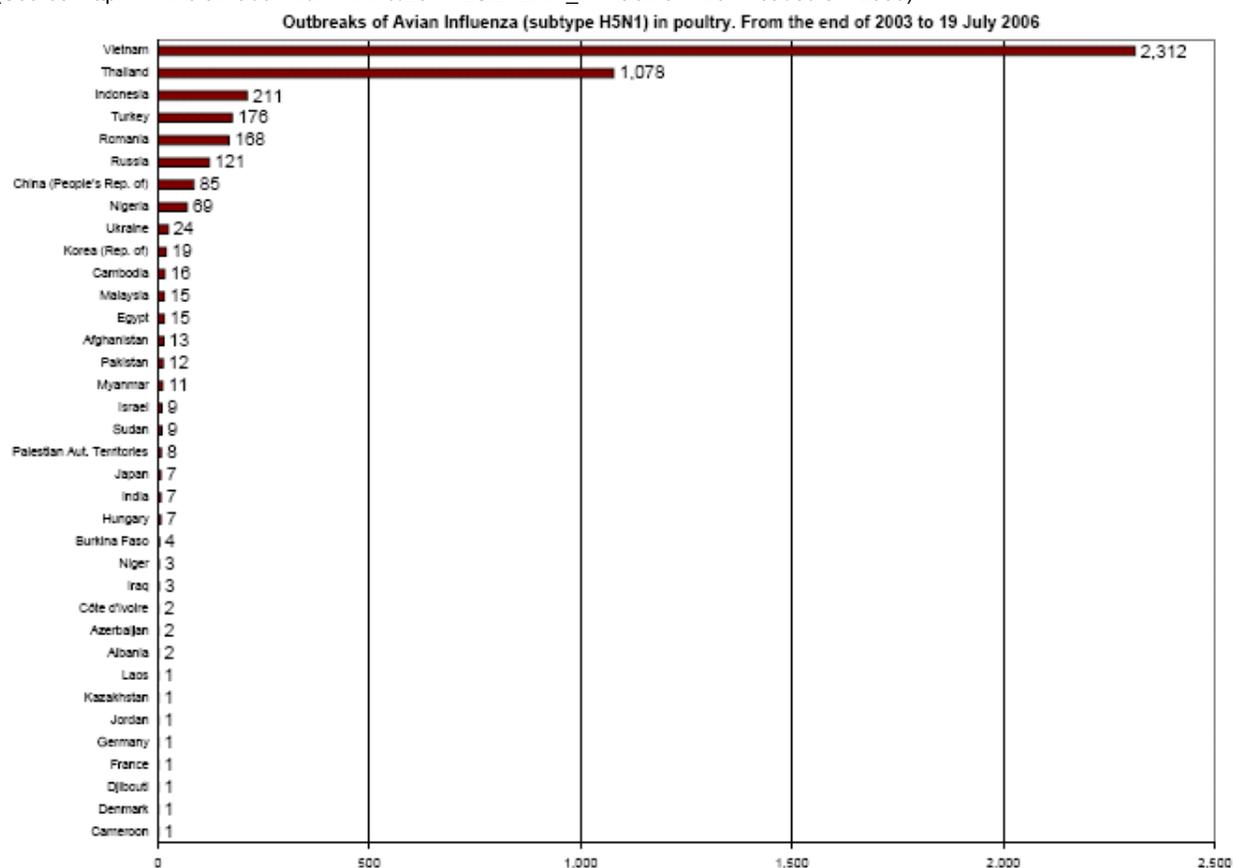


Table 2. H5N1 Influenza in Humans (Cases up to July 26, 2006)

(http://www.who.int/entity/csr/disease/avian_influenza/country/cases_table_2006_06_06/en/index.html Downloaded 7/26/2006)

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	0	0	0	0	8	5	11	7	19	12
Djibouti	0	0	0	0	0	0	1	0	1	0
Egypt	0	0	0	0	0	0	14	6	14	6
Indonesia	0	0	0	0	17	11	37	31	54	42
Iraq	0	0	0	0	0	0	2	2	2	2
Thailand	0	0	17	12	5	2	1	1	23	15
Turkey	0	0	0	0	0	0	12	4	12	4
Viet Nam	3	3	29	20	61	19	0	0	93	42
Total	3	3	46	32	95	41	88	58	232	134