



MI FluFocus

Influenza Surveillance and Avian Influenza Update

Bureau of Epidemiology
Bureau of Laboratories

Michigan Department
of Community Health



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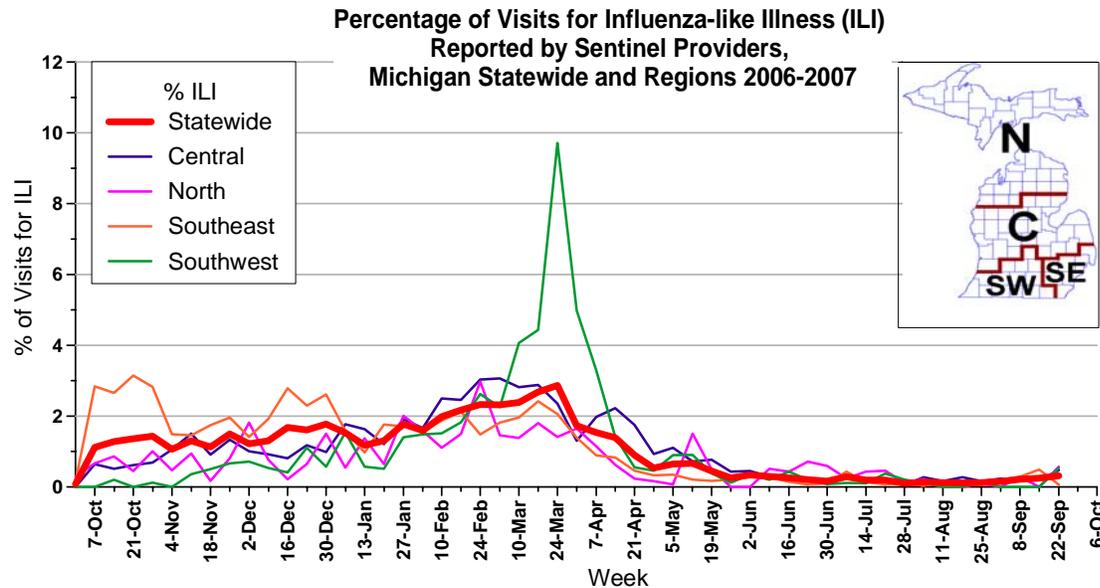
New updates in this issue:

- **Michigan Surveillance:** Respiratory complaints at emergency departments continue to rise, but other indicators do not support the beginning of the influenza season.
- **Avian Influenza:** H5N1 poultry outbreaks in Russia and Bangladesh; H7N3 in Canadian poultry.

Michigan Disease Surveillance System: The week ending September 22 saw the continued rise in aggregate flu-like illness reports due to increasing school reports. Individual influenza reports held steady near the previous week's levels. Increases in aggregate reports are expected to continue for the next few weeks as school reporting season moves into full-swing. Individual flu reporting levels are expected to have a more gradual increase as the influenza season approaches. Both aggregate and individual reports are consistent with levels seen at this time last year.

Emergency Department Surveillance: Emergency department visits due to respiratory complaints continued to rise during the past week, which is consistent with the increasing respiratory activity observed at this time last year. Constitutional complaints remained steady overall. This combination suggests the beginning of the typical fall respiratory season, but these and other indicators do not support the beginning of the influenza season at this time. Nine constitutional alerts in Regions 2N(1), 2S(1), 3(3), 6(2), and 8(1) including one Statewide and nine respiratory alerts in Regions 1(1), 2N(1), 2S(3), 6(1) and 8(1) including two Statewide were generated last week.

Sentinel Surveillance (as of September 27): During the week ending September 22, 2007, the proportion of visits due to influenza-like illness (ILI) in Michigan remained at low a low level; 0.3% of all visits. This represents 12 cases of ILI out of 3761 total patient visits; seventeen sentinels provided data for this report. By surveillance region, the proportion of visits due to ILI was 0.5%, Central; 0.6%, North; 0.1%, Southeast; and 0.5%, Southwest. 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.

Laboratory Surveillance (as of September 27): For the 2006-2007 influenza season, there have been 160 culture-confirmed cases from the MDCH Lab:

- 70 A:H1N1 (Southeast (23), Southwest (21), Central (16), North (10))
- 1 A:H1N2 (Central)
- 35 A:H3N2 (North (12), Southeast (12), Central (8), Southwest (3))
- 54 B (Southeast (18), Central (17), Southwest (12), North (7))

The one influenza A H1N2 specimen was collected in early August from a 17 month old child from the Central region. This strain was last seen in Michigan and other states in the 2002-2003 influenza season; during that season this strain was thought to be a reassortment of the circulating influenza A H1N1 and H3N2 strains. The specimen has been sent to CDC for further antigenic characterization. All influenza B cultures have been B/Malaysia, except for six B/Shanghai results from the Southeast region.

***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 September 27): For the 2006-2007 season, there are no confirmed reports of influenza-related pediatric mortality in Michigan. One possible case from the Southwest region is currently 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 September 27): There has been one report of an influenza A outbreak from a Central region extended care facility for the 2006-2007 influenza season.

National, CDC (excerpt from MMWR Weekly, September 28, 56(38);1001-1004): During May 20--September 15, 2007, WHO and NREVSS collaborating laboratories in the United States tested 21,029 respiratory specimens for influenza viruses; 398 (1.9%) were positive. Of these, 330 (83%) were influenza A viruses, and 68 (17%) were influenza B viruses. Of the influenza A viruses, 152 (46%) were subtyped: 67 (44%) were influenza A (H1) viruses, and 85 (56%) were influenza A (H3) viruses. Influenza viruses were reported from 22 states in eight of the nine public health surveillance regions. However, 200 (50%) of all the influenza viruses, including 63 (94%) of the 67 influenza A (H1) viruses, were reported from Hawaii, and 100 (25%) were reported from Florida. Of the 398 influenza viruses reported during the summer months, only 124 (31%) were reported during August and the first half of September. Among this subset of viruses, 105 (85%) were influenza A, and 19 (15%) are influenza B.

During May 20--September 15, data from the U.S. Influenza Sentinel Provider Surveillance System indicated that the weekly percentage of patient visits to U.S. sentinel providers for influenza-like illness (ILI) remained below the national baseline of 2.1% and ranged from 0.6% to 1.0%. The percentage of deaths attributed to pneumonia and influenza (P&I) as reported by the 122 Cities Mortality Reporting System was below the epidemic threshold. One influenza-associated pediatric death occurred during June and was reported to the Influenza-Associated Pediatric Mortality Reporting System.

Two human cases of novel influenza A were reported to NNDSS. Both persons were infected with swine influenza virus and were infected by handling ill pigs at a county fair in Ohio. Both recovered from their illness.

This article can be found in its entirety online at
http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5638a4.htm?s_cid=mm5638a4_e

International, CDC (excerpt from MMWR Weekly, September 28, 56(38);1001-1004): During May 20--September 15, influenza A (H1), influenza A (H3), and influenza B viruses cocirculated worldwide. Influenza A (H3) viruses predominated in Asia; however, influenza A (H1) and B viruses also were reported. In Africa, influenza A viruses predominated, with approximately equal numbers of influenza A (H1) and A (H3) viruses reported and a smaller number of influenza B viruses identified. In Europe and North America, small numbers of influenza A and influenza B viruses were reported. In Oceania, influenza A viruses predominated. Influenza A (H3) viruses were reported more frequently than influenza A (H1) viruses in Australia and New Caledonia; however, in New Zealand, influenza A (H1) viruses predominated. In South America, influenza A (H3) viruses were most commonly reported, although influenza B viruses also were identified.

The WHO Collaborating Center for Surveillance, Epidemiology, and Control of Influenza, located at CDC, analyzes influenza virus isolates received from laboratories worldwide. Of four influenza A (H1) viruses that were collected during May 20--September 8 (three from Asia and one from Europe) and analyzed at CDC, all four (100%) were antigenically similar to A/Solomon Islands/3/2006, the H1N1 component of the 2007--08 influenza vaccine. Of the 94 influenza A (H3) viruses that were characterized (four from Europe, 78 from Latin America, four from Asia, two from Africa, and six from the United States), 17 (18%) were antigenically similar to A/Wisconsin/67/2005, the H3N2 component of the 2007--08 influenza vaccine, whereas 77 (82%) had reduced titers to A/Wisconsin/67/2005.

Circulating influenza B viruses can be divided into two antigenically distinct lineages that have cocirculated worldwide since March 2001, represented by B/Yamagata/16/88 and B/Victoria/02/87 viruses. The B component of the 2007--08 influenza vaccine belongs to the B/Victoria lineage. Of the eight influenza B isolates collected during May 20--September 8 and characterized at CDC, one belonged to the B/Victoria lineage (from Asia). This B/Victoria-lineage virus was similar to B/Ohio/01/2005; B/Ohio/01/2005 is antigenically equivalent to B/Malaysia/2506/2004, the recommended influenza B component for the 2007--08 influenza vaccine. The remaining seven influenza B viruses (three from South America, three from Asia, and one from the United States) belonged to the B/Yamagata lineage.

During May 20--September 10, 2007, a total of 21 human cases of avian influenza A (H5N1) infection were reported to WHO from four countries (China, Egypt, Indonesia, and Vietnam). Fourteen (67%) of the cases were fatal. Since December 1, 2003, a total of 328 human avian influenza A (H5N1) infections have been reported to WHO (3). Of these, 200 (61%) were fatal. All cases were reported from Asia (Azerbaijan, Cambodia, China, Indonesia, Iraq, Laos, Thailand, Turkey, and Vietnam) and Africa (Djibouti, Egypt, and Nigeria). In addition, no human case of avian influenza A (H5N1) virus infection has been identified in the United States.

This article can be found in its entirety online at
http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5638a4.htm?s_cid=mm5638a4_e

Weekly reporting to the CDC has concluded for the 2006-2007 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, Poultry (Xinhua News Agency, September 26): Some 6,000 chickens were culled at Sahapur village in Sadar sub-district in Bangladesh's northwestern Bogra district, 170 km from the capital Dhaka Tuesday night following the detection of avian influenza virus in a poultry farm.

The private news agency UNB on Wednesday reported that Nakul Saha, owner of the poultry farm, took

several dead chickens for laboratory test on suspicion that they might have died of bird flu.

The laboratory test confirmed that the chickens died of avian influenza.

The avian influenza virus was first detected in a poultry farm in Savar, 25 km west of the Dhaka in March this year. Laboratory test results showed the existence of influenza virus of H5N1 variety. Tens of thousands of poultry birds were culled.

International, Poultry (RIA Novosti, September 26): About 250,000 birds are to be culled at a poultry farm in south Russia's Krasnodar Territory following an outbreak of bird flu earlier this month, Russia's agriculture watchdog said Wednesday [Sep 26].

A total of 170,600 birds have been slaughtered at the Lebyazh Chepiginskoye farm and the remaining 77,500 are due to be culled in the near future, Alexander Skorikov, the head of the animal health department at Russia's agriculture watchdog said.

On 5 Sep 2007, about 22,000 birds were culled at the farm after a regional laboratory identified the lethal H5N1 virus in dead birds at the farm.

In 2005, 1.3 million birds were culled in Russia, in 2006 the figure stood at 1.04 million, but this year [2007] the figure had dropped to around 260,000.

Krasnodar Territory is on the route taken by migrating birds in winter and is subject to a higher risk of bird flu as a result, although, according to the World Health Organization (WHO), most of the spread is through poultry and the poultry trade.

Since late 2003, according to the World Health Organization, when the virus first hit Asia, the deadly H5N1 strain of bird flu has killed at least 191 people out of 317 known cases. No human deaths from bird flu have been recorded in Russia.

International, Poultry, HPAI H7N3 (Canadian Food Inspection Agency website, September 27): Highly pathogenic H7N3 avian influenza has been detected in a commercial poultry operation in Saskatchewan, the Canadian Food Inspection Agency (CFIA) announced today. This virus is not the same as the strain circulating in Asia, Africa and Europe, which has been associated with human illness. H7N3 is not normally associated with serious human illness.

All birds on the infected premises will be humanely euthanized and disposed of in accordance with provincial regulations and internationally accepted disease control guidelines. Normally, birds on any commercial operations within one kilometre of an infected premises would also be destroyed, but early information indicates that no such operations are present in the immediate area.

Once all birds have been removed, the CFIA will oversee the cleaning and disinfection of the barns, vehicles, equipment and tools to eliminate any infectious material that may remain.

To limit any potential virus spread, the CFIA will apply restrictions on the movement of poultry and poultry products within three kilometres of the infected premises. As an additional safeguard, any poultry operations within ten kilometres of the infected premises will be closely and regularly monitored for signs of illness.

The CFIA is investigating the recent movement of birds, bird products and equipment onto and off of the property. Through this activity, additional cases of infection may be detected.

The CFIA's actions are consistent with internationally recognized animal health guidelines and the CFIA's established avian influenza response protocols.

It may be difficult to identify the source of the virus, but the possibility of exposure to wild waterfowl-which are the natural hosts for the virus-cannot be discounted. Poultry owners are urged to take an active role in protecting their flocks by keeping them away from wild birds and areas frequented by wild birds.

The Province of Saskatchewan and industry are actively collaborating in this response effort. The CFIA wishes to acknowledge the responsible actions of the owner, who reported signs of illness at the earliest possible moment. This commitment to animal health protection has maximized the Agency's ability to contain and eliminate this situation as quickly as possible.

New information emerging from the CFIA's activities will be provided to the public as it becomes available.

Michigan Wild Bird Surveillance (USDA, as of September 27): For the 2007 testing season, 260 Michigan samples have been taken so far, comprised of 100 live bird samples, 99 hunter-killed birds and 61 morbidity/mortality samples.

According to the National HPAI Early Detection Data System website, HPAI subtype H5N1 has not been recovered from any Michigan samples tested to date, or from the 18,114 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.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.

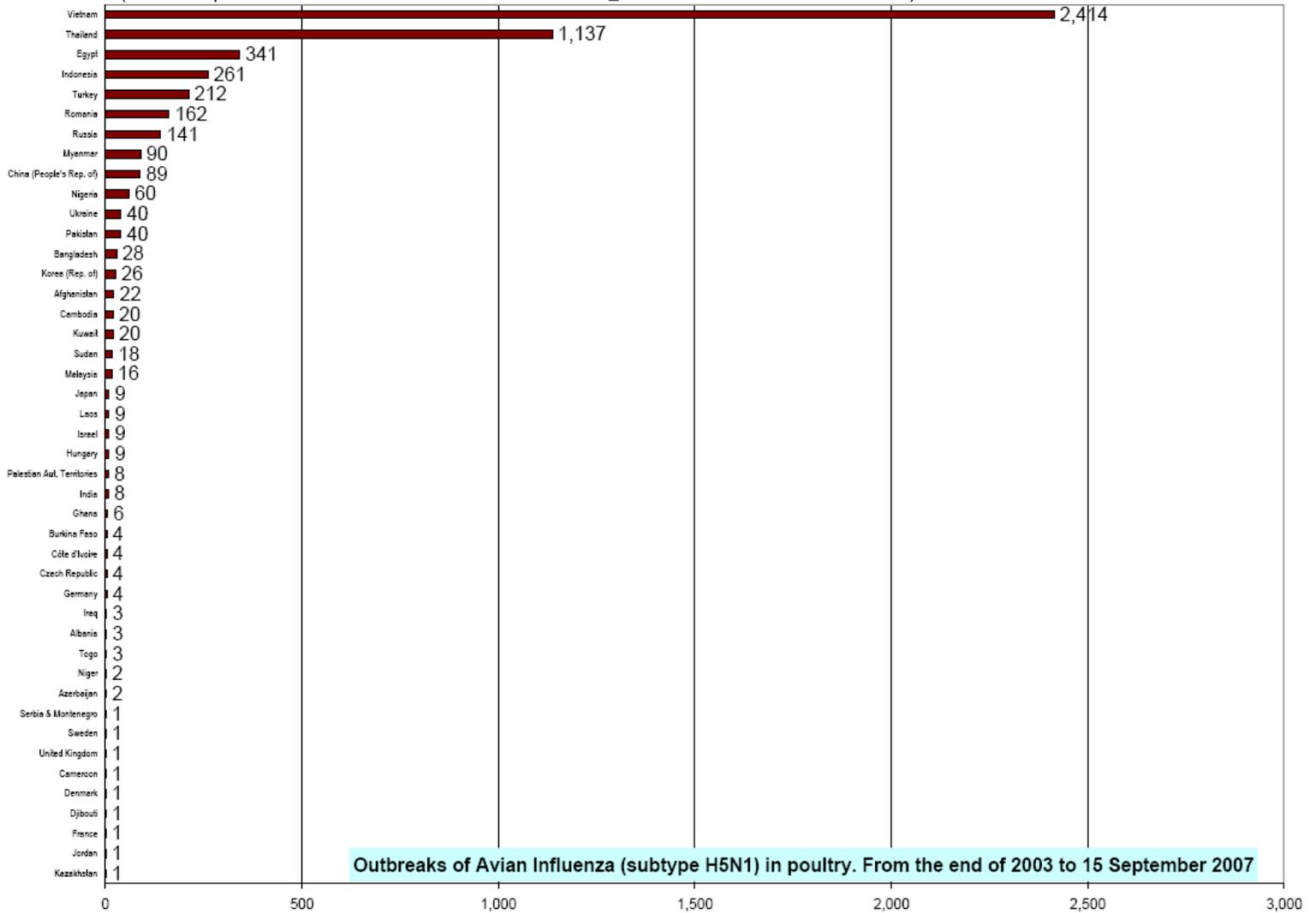
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Table 1. H5N1 Influenza in Poultry (Outbreaks up to September 15, 2007)

(Source: http://www.oie.int/downld/AVIAN%20INFLUENZA/A_AI-Asia.htm Downloaded 9/20/2007)



Outbreaks of Avian Influenza (subtype H5N1) in poultry. From the end of 2003 to 15 September 2007

Table 2. H5N1 Influenza in Humans (Cases up to September 10, 2007)

(http://www.who.int/entity/csr/disease/avian_influenza/country/cases_table_2007_09_10/en/index.html Downloaded 9/10/2007)

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	31	27	106	85
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	65	42	328	200