



MI FluFocus

Influenza Surveillance and Avian Influenza Update

Bureau of Epidemiology
Bureau of Laboratories

Michigan Department
of Community Health



Jennifer M. Granholm, Governor
Janet Olszewski, Director

Editor: Susan Vagasky, DVM
VagaskyS@Michigan.gov

February 15, 2007
Vol. 4; No. 7

New updates in this issue:

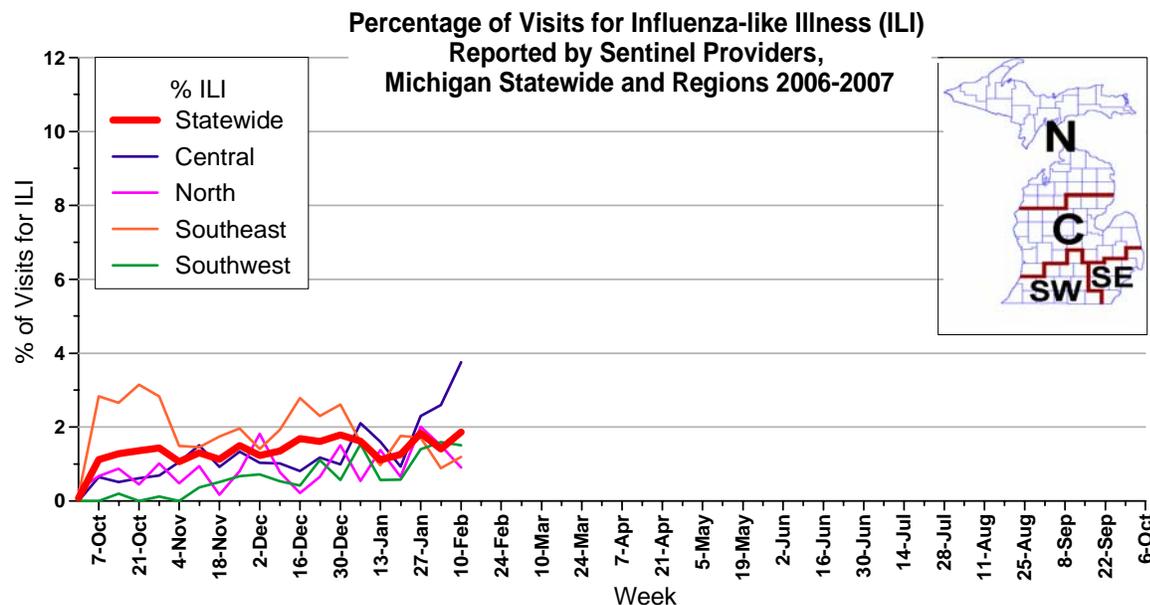
- **Michigan Surveillance:** Most indicators show increasing influenza activity statewide.
- **National Surveillance:** Overall influenza activity is increasing.
- **Avian Influenza:** Human case in Egypt; poultry outbreaks in multiple countries.

Michigan Disease Surveillance System: The last week has seen an increase in both aggregate flu-like illness and individual influenza reports to the local health departments. The current flu-like illness reported levels, however, are comparable to that seen at this time last year.

Emergency Department Surveillance: Emergency department visits due to constitutional and respiratory complaints increased this past week. The levels reported are consistent with levels reported this time last year. Three constitutional alerts in Regions 5(1), 6(1), and 7(1) and three respiratory alerts in Regions 1(1), 5(1), and 6(1) were generated last week.

Over-the-Counter Product Surveillance: OTC product sales generally remained steady or saw a slight increase (chest rubs, children's electrolytes, and internal nasal products). However, the indicators levels are comparable to those seen at this time last year, except for the adult and pediatric cold relief liquid, which seem to be holding about 1-2% below its percentage of total sales for this time last year.

Sentinel Surveillance (as of February 15, 2007): During the week ending February 10, 2007, the proportion of visits due to influenza-like illness (ILI) increased to 1.9% of all visits, representing 139 cases of ILI out of 7,470 total patient visits; twenty-seven sentinels provided data for this report. On a regional level, the largest increase in the percentage of visits due to ILI occurred in the Central surveillance region. The percentage of visits due to ILI in each of the surveillance regions is 3.8%, Central; 0.9%, North; 0.2% Southeast; and 1.5% 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 February 15): For the 2006-2007 influenza season, there have been 78 culture-confirmed cases from the MDCH Lab:

- 52 A:H1N1 (Southeast (18), Southwest (18), Central (11), North (5))
- 1 A:H1,N pending
- 6 A:H3N2 (Southwest (3), North (2), Southeast (1))
- 19 B (Southeast (6), Central (5), Southwest (4), North (3), Wisconsin (1)).

All influenza B cultures have been B/Malaysia, except for one B/Shanghai from the Southeast region. Overall MDCH submission activity is light to moderate. Sentinel laboratories in the Southeast, Southwest and Central regions are reporting a continued steady increase in the number of positive results. Low but steady levels of parainfluenza, adenovirus and respiratory syncytial virus are being reported as well.

Influenza-Associated Pediatric Mortality (as of February 15): For the 2006-2007 season, there are no confirmed reports of influenza-related pediatric mortality in Michigan.

***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 February 15): No reports were received during the past week. There have been no reports of influenza outbreaks to MDCH for the 2006-2007 influenza season.

National (CDC, February 15): CDC has released an MMWR summary of the current influenza season entitled "Update: Influenza Activity - United States, October 1, 2006-February 3, 2007." It can be found in the MMWR issue for February 16, 2007 (56(06);118-121) or online at http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5606a3.htm?s_cid=mm5606a3_e.

National (CDC, February 9): During week 5 (January 28 - February 3, 2007), influenza activity continued to increase in the United States. During week 5, WHO and NREVSS laboratories reported 4,180 specimens tested for influenza viruses, 820 (19.6%) of which were positive: 128 influenza A (H1) viruses, 21 influenza A (H3) viruses, 578 influenza A viruses that were not subtyped, and 93 influenza B viruses. ILI data was above baseline for week 5. Nine states reported widespread influenza activity; 19 states reported regional influenza activity; 14 states and New York City reported local influenza activity; seven states and the District of Columbia reported sporadic influenza activity; and one state did not report. The reporting of widespread or regional influenza activity increased from 22 states for week 4 to 28 states for week 5. The percent of deaths due to pneumonia and influenza remained below baseline level.

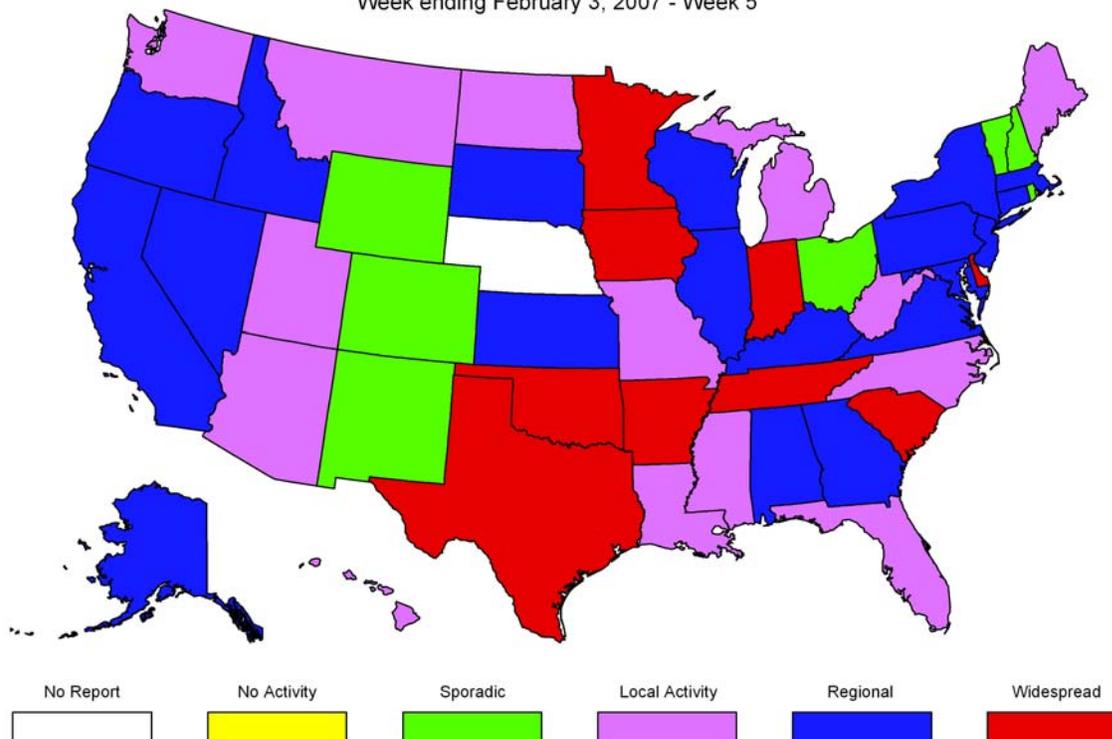
Since October 1, 2006, WHO and NREVSS laboratories have tested a total of 83,332 specimens for influenza viruses and 6,244 (7.5%) were positive. Among the 6,244 influenza viruses, 5,161 (82.6%) were influenza A viruses and 1,083 (17.4%) were influenza B viruses. One thousand six hundred ninety-six (32.9%) of the 5,161 influenza A viruses have been subtyped: 1,507 (88.9%) were influenza A (H1) viruses and 189 (11.1%) were influenza A (H3) viruses. Among specimens tested for influenza during the most recent three weeks (January 14 – February 3, 2007), on a regional basis, the percent of specimens testing positive for influenza were as follows:

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

January 14 – February 3, 2007 (specimens testing positive)		
(Michigan is in the East North Central Region)		
>20% positive	10-20% positive	<10% positive
East North Central (34.4%)	South Atlantic (13.6%)	New England (5.4%)
West North Central (21.6%)	West South Central (18.6%)	Mid Atlantic (6.9%)
East South Central (20.4%)	Mountain (13.0%)	
	Pacific (10.6%)	

Weekly Influenza Activity Estimates Reported by State & Territorial Epidemiologists

Week ending February 3, 2007 - Week 5



International (WHO, as of January 16): During weeks 51-52 of 2006, overall seasonal influenza activity worldwide remained low, except in the United States, where widespread activity was reported. In Canada, localized activity of influenza A was reported in parts of Canada during weeks 51-52, with an overall influenza-like illness (ILI) consultation rate below the expected range for the time of year. In New Caledonia, an increase of influenza A(H3N2) activity was observed during week 51 for the first time in the past 3 months. Activity was reported as localized. Localized activity of influenza A(H1) was observed in parts of Norway. Regional activity of influenza A continued to be reported in northern part of Sweden. In the United States, influenza activity increased during weeks 51-52 and was reported as widespread. The overall ILI consultation rate was above the national baseline, but the percentage of deaths due to pneumonia and influenza remained below the baseline level. During week 52, 82% of the influenza viruses detected were influenza A and 18% influenza B. Of the A viruses subtyped, 95% were influenza A(H1) and 5% A(H3) viruses.

During weeks 51–52, low influenza activity was reported in Bulgaria, France (H3 and A), Greece (H3), Hong Kong, Special Administrative Region of China (H1, H3 and B), Islamic Republic of Iran (H3 and B), Italy (H3), Japan, Madagascar (B), Mongolia, Portugal (H3), Romania, Russian Federation (H1, H3 and B), Switzerland (H3), Tunisia (H1) and the United Kingdom (H1 and H3). Argentina, Austria, Croatia, Denmark, Finland, Latvia, Mexico, Poland, Senegal, Slovenia, Spain and Ukraine reported no influenza activity.

MDCH reported **LOCAL ACTIVITY** to the CDC for this past week ending February 10, 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, February 15): The Egyptian Ministry of Health and Population has announced a new human case of avian influenza A(H5N1) virus infection. The case was confirmed by the Egyptian Central Public Health Laboratory and by the US Naval Medical Research Unit No.3 (NAMRU-3). The 37-year-old female from Fayyoun Governorate was admitted to hospital with symptoms on February 12, 2007 and her condition remains stable. She was involved in the slaughter and defeathering of sick birds one week prior to the onset of illness. Of the 21 cases confirmed to date in Egypt, 12 have been fatal.

International, Human (WHO, February 9): WHO has published its latest analysis of human avian influenza H5N1 cases, entitled "Update: WHO-confirmed human cases of avian influenza A(H5N1) infection, 25 November 2003 – 24 November 2006", which can be found in the *Weekly Epidemiological Record* (WER) vol. 82, 6 (pp 41–48) or online at <http://www.who.int/wer/2007/wer8206.pdf>.

International, Human (Reuters [edited], February 13): The two latest bird flu deaths in Egypt showed no signs of the mutant virus which is moderately resistance to the antiviral medicine Tamiflu and which killed three people in December, the health minister said on Tuesday. Hatem el-Gabali also appealed for more international aid to help Africa deal with bird flu outbreaks, saying the continent had more difficult problems than Asia because of poverty.

Known as "294S", the mutated strain of the H5N1 virus was first detected in 2005 in a teenage girl in Vietnam who survived. The World Health Organization (WHO) said in January the virus had resurfaced in two members of one family, a factory worker and his teenage niece, in a Nile Delta village in Egypt. Gabali said the mutated virus was also the pathogen which killed a third member of the same family in December. "Tests ... confirmed our initial findings that in those three cases Tamiflu was not effective enough. But the case that followed and the one after showed that Tamiflu was effective," Gabali told reporters at a WHO conference on Global Pandemic Influenza Communications in Cairo.

"Therefore the United Nations until this moment has not changed its treatment strategy," he said. WHO reaffirmed in May that patients should get Tamiflu as a frontline treatment, but said that in certain cases doctors may consider coupling it with amantadine, an older class of effective flu drugs. "The H5N1 virus continues to change. It will continue to change," Paul Gully, a senior WHO adviser, told the conference. "Influenza A viruses replicate but they don't replicate very well. They are bad at replicating themselves so ... mutations continue to occur," he said. Gully said the mutation of the virus in Egypt "probably occurred by chance".

International, Poultry (Reuters, February 8): Turkey's farm ministry confirmed on Thursday an outbreak of bird flu in the southeast of the country, just over a year after the deadly H5N1 strain of the disease killed four children in the region. The ministry said in a statement bird flu was found on Thursday in a village in the Batman province. Authorities have so far culled 170 poultry to contain the disease.

International, Poultry (Reuters, February 13): Tests on H5N1 bird flu viruses found in Britain and Hungary showed they were genetically almost identical and the most likely transmission route was from poultry to poultry, Britain said on Tuesday. The establishment by scientists in Britain of a direct link

between the two outbreaks came the same day Hungary said it had found no evidence poultry there could have transmitted the virus to Britain.

The two countries have been feuding over the likely source of the British contamination, which led to the destruction of tens of thousands of turkeys in Britain. Hungarian officials disputed British statements earlier this week that the virus probably came from turkey meat imports, rather than wild birds.

But scientist John McCauley of the virology division of the Medical Research Council's Institute for Medical Research supported the British contention. "It seems very unlikely that a strain of infection in wild birds could have produced two viruses so closely related," he said.

Britain stressed that while the outbreaks were linked it had not found any evidence of illegal or unsafe movements of poultry products from Hungary to Britain and was still investigating all possible routes of transmission. Asked whether this suggested that biosecurity measures might have been inadequate, a spokeswoman for Britain's Department for Environment, Food and Rural Affairs (DEFRA) said they were not prejudging the full results of the investigation.

A case of H5N1 was discovered in geese in southeast Hungary last month. The tests at Britain's Veterinary Laboratory Agency aimed to establish whether there was a direct link to a similar outbreak this month at a turkey farm in Suffolk, England. DEFRA said the final results showed a very high similarity (99.96 pct) at the whole genome level. "These results indicate that the viruses are essentially identical," it said in a statement. "These levels of identity are much closer than with other Asian lineage H5 viruses for which data is available, including those isolated from wild birds in Europe in 2005/06," the VLA's chief avian virologist Ian Brown said.

Britain's deputy chief veterinarian Fred Landeg said the working hypothesis, based on the work of the VLA, was that the virus had most likely been transmitted from poultry to poultry. "I must reiterate that we are not discounting any line of inquiry and this is an on-going investigation," he said. The EU commission also said that while the tests showed the outbreaks were directly linked, that in itself did not explain how the strain came to Britain. "We are not going to speculate, nor should anybody, as to how it arrived as this is still part of an ongoing investigation. But we reiterate our view that the Hungarian authorities have acted properly and took the right measures," said Philip Tod, spokesman for EU Health Commissioner Markos Kyprianou.

Europe's largest turkey producer, Bernard Matthews, reopened the plant hit by the outbreak earlier this month on Tuesday after 160,000 turkeys at a nearby farm were destroyed.

Editor's Note: For the most up-to-date information regarding the UK poultry outbreak investigation, the following websites may be helpful:

<http://www.defra.gov.uk/animalh/diseases/notifiable/disease/ai/index.htm>

<http://www.promedmail.org/pls/promed/f?p=2400:1000> (Avian Influenza section)

International, Poultry (ProMed via AFP, February 10): Bird flu has spread to a 6th farm in South Korea, despite government efforts to contain the deadly virus by culling more than 2 million birds, officials said on Saturday [10 Feb 2007]. A new outbreak has been discovered at a farm near the capital Seoul, with some 133 000 chickens, the agriculture ministry said. "Test results confirmed that breeding chickens at a farm in Iljuk Village were infected with highly contagious bird flu virus," the ministry said in a statement.

Poultry at the farm in Iljuk Village near Ansong City, some 90 km (56 miles) southeast of Seoul, began dying on Tuesday [6 Feb 2007], and the case was reported to authorities on Friday [9 Feb 2007]. It is not yet known whether the virus is of the highly pathogenic H5N1 strain. Officials immediately ordered the culling of the remaining chickens and of 107 000 other birds at 28 farms within a 3-km radius of the affected farm. They also declared a 10-km quarantine zone, from which movement of birds and eggs will be prohibited. It is the country's 6th outbreak of avian influenza since November 2006.

International, Wild Birds (Xinhau News Agency, February 13): The Hong Kong Agriculture, Fisheries and Conservation Department said Tuesday that two Silver-eared Mesias found earlier were confirmed to be H5N1 positive after a series of laboratory tests. The carcasses of the Silver-eared Mesias were collected by the department staff on Feb. 7 at Boundary Street, Mong Kok.

International, Wild Birds (Canadian Press, February 9): A Canadian study that tested more than 12,000 live and dead wild birds for avian influenza viruses turned up no cases of the highly pathogenic Asian strain of H5N1 viruses in 2006, the Canadian Food Inspection Agency announced Friday. In fact, initial analysis of viruses from tested birds showed no evidence of any highly pathogenic strains of avian influenza, H5 or otherwise, and none from the families of viruses found in wild birds that travel flyways through Europe and Asia, said Patrick Zimmer, director of policy and administration for the Canadian Co-operative Wildlife Health Centre. For the complete story, visit <http://www.canada.com/topics/news/agriculture/story.html?id=73a49f6c-e8d1-448c-a31b-f8eca70498fe&k=48422&p=1>.

Michigan Wild Bird Surveillance (USDA, February 14): According to the National HPAI Early Detection Data System website, available at <http://wildlifedisease.nbj.gov/ai/>, Michigan has results for a total of 1799 samples, from both wild birds and the environment, submitted for testing as of February 14th. 232 of these were live-captured birds, 595 were hunter-killed, 174 were sentinel animals, 591 were dead birds that were submitted for testing, and 207 were environmental samples. HPAI subtype H5N1 has not been recovered from any Michigan samples tested to date, or from the 95,131 birds or environmental samples 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 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 February 13, 2007)

(Source: http://www.oie.int/download/AVIAN%20INFLUENZA/A_AI-Asia.htm Downloaded 2/14/2007)

Outbreaks of Avian Influenza (subtype H5N1) in poultry. From the end of 2003 to 13 February 2007

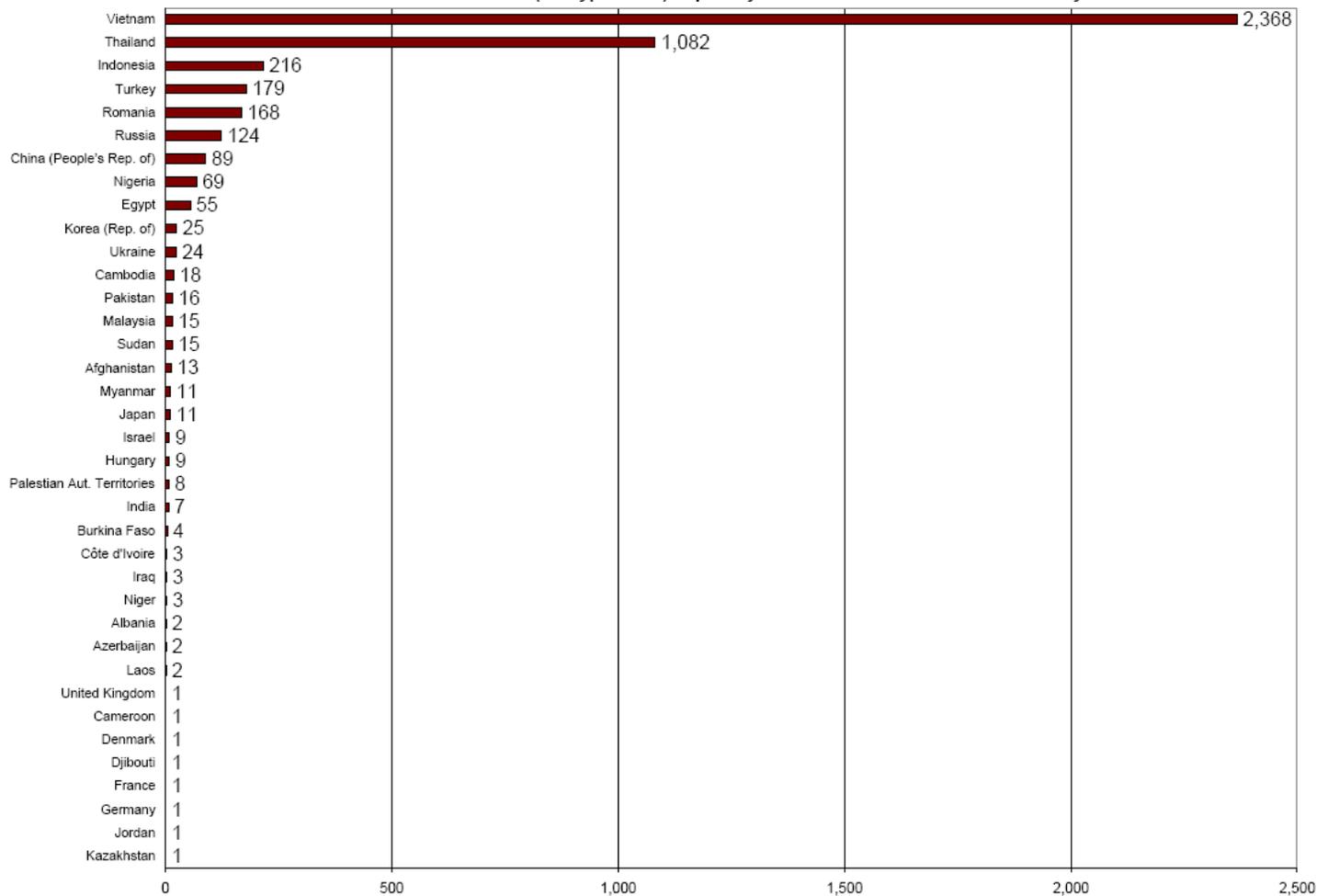


Table 2. H5N1 Influenza in Humans (Cases up to February 15, 2007)

(http://www.who.int/entity/csr/disease/avian_influenza/country/cases_table_2006_06_06/en/index.html Downloaded 2/15/2007)

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		2007		Total	
	cases	deaths										
Azerbaijan	0	0	0	0	0	0	8	5	0	0	8	5
Cambodia	0	0	0	0	4	4	2	2	0	0	6	6
China	1	1	0	0	8	5	13	8	0	0	22	14
Djibouti	0	0	0	0	0	0	1	0	0	0	1	0
Egypt	0	0	0	0	0	0	18	10	3	2	21	12
Indonesia	0	0	0	0	19	12	56	46	6	5	81	63
Iraq	0	0	0	0	0	0	3	2	0	0	3	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	0	0	93	42
Total	4	4	46	32	97	42	116	80	10	8	273	166