



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

March 29, 2007
Vol. 4; No. 13

New updates in this issue:

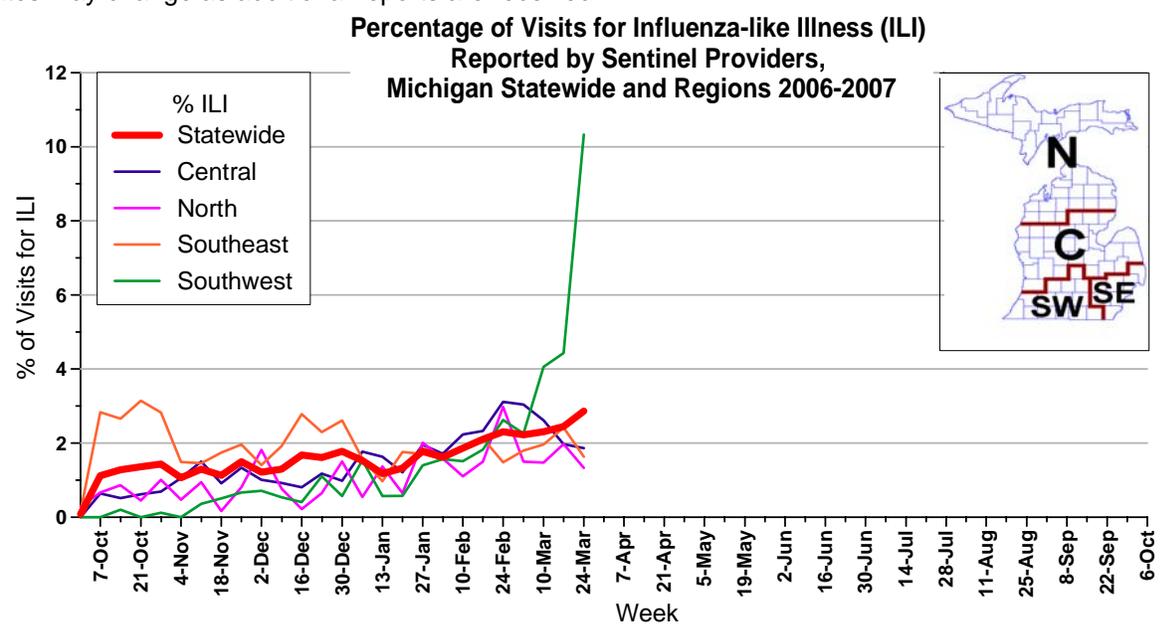
- **Michigan Surveillance:** Influenza activity appears to be peaking, with the highest activity for the season detected over the past 3 weeks.
- **National Surveillance:** Influenza activity decreases for the fifth consecutive week.
- **Avian Influenza:** Humans: Egypt - 3 cases, China-1 death. Poultry: Bangladesh and Saudi Arabia report their first outbreaks.

Michigan Disease Surveillance System: The last week saw a decrease in aggregate flu-like illness to the local health departments and an increase in individual influenza reports. Aggregate reporting levels are similar to this time last year; however, individual influenza reports are lower than this time last year.

Emergency Department Surveillance: Emergency department visits due to constitutional complaints decreased slightly while respiratory complaints remained steady. Constitutional reports are slightly higher than last year, but in general both reported levels are consistent with levels reported this time last year. Six constitutional alerts in Regions 5(1), 7(4) and 8(1) and no respiratory alerts were generated last week.

Over-the-Counter Product Surveillance: OTC product sales reflect a mix of activity last week. Increased sales were seen in pediatric anti-fever, nasal products, and thermometers. Decreases were seen in adult cold relief liquids, chest rubs, and children's electrolytes. The remaining products held steady. 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 March 29, 2007): During the week ending March 24, 2007, the proportion of visits due to influenza-like illness (ILI) in Michigan increased to 2.9% of all visits, representing 202 cases of ILI out of 7,053 total patient visits; twenty-six sentinels provided data for this report. A very large increase in ILI activity was noted in the Southwest surveillance region (10.3%); all but one of the ILI cases in that region were reported by a single large pediatric practice. Activity in the Central region remained elevated at 1.9% of all visits; activity decreased slightly in the North region (1.3%) and Southeast (1.8%). 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 March 29): For the 2006-2007 influenza season, there have been 135 culture-confirmed cases from the MDCH Lab:

- 69 A:H1N1 (Southeast (22), Southwest (21), Central (16), North (10))
- 23 A:H3N2 (North (11), Southeast (6), Southwest (3), Central (3))
- 43 B (Central (17), Southeast (11), Southwest (11), North (4))

All influenza B cultures have been B/Malaysia, except for one B/Shanghai from the Southeast region. Sentinel labs in the Southwest region are reporting their highest activity of the season, while the Southeast is staying somewhat elevated and the Central region is reporting low but steady activity. Both the Southwest and Southeast regions are now reporting more influenza B positive test results than influenza A positives. Low levels of parainfluenza, adenovirus and respiratory syncytial virus are being reported as well.

***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 March 29): For the 2006-2007 season, there are no confirmed reports of influenza-related pediatric mortality in Michigan. MDCH, in conjunction with CDC, is currently investigating a possible pediatric death due to influenza from the Southeast region.

***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 March 29): There has been one report of an influenza A outbreak from a Central region extended care facility for the 2006-2007 influenza season. Three facility outbreaks of respiratory illness/suspected influenza, two from the Southwest region and one from the Central region, are currently under investigation.

National (CDC, March 23): During week 11 (March 11 – March 17, 2007), influenza activity continued to decrease in the United States. Data from the U.S. World Health Organization (WHO) and National Respiratory and Enteric Virus Surveillance System (NREVSS) collaborating laboratories indicated a decline in activity for the fifth consecutive week; 17.0% of specimens tested positive for influenza this week. ILI data was similar to the previous week and above baseline for the thirteenth week this season. Fifteen states reported widespread influenza activity; 22 states reported regional influenza activity; nine states, New York City, and the District of Columbia reported local influenza activity; and four states reported sporadic influenza activity. The reporting of widespread or regional influenza activity decreased from 42 for week 10 to 37 for week 11. The percent of deaths due to pneumonia and influenza remained below baseline level.

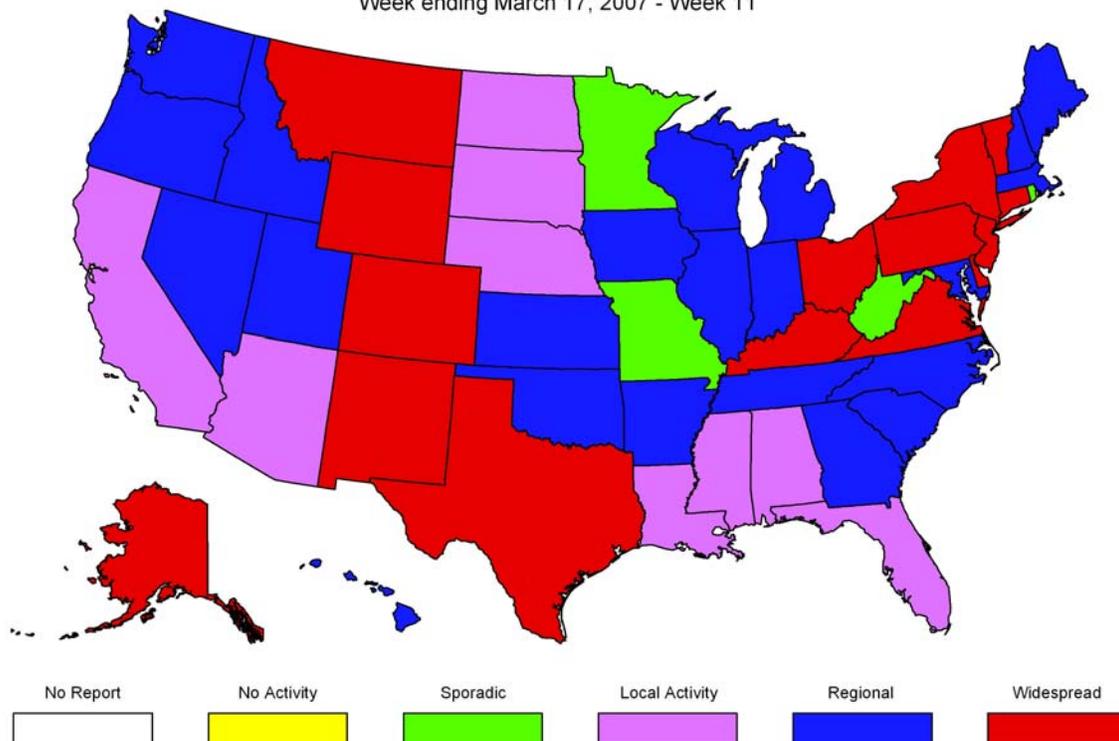
Although influenza A (H1) viruses have predominated in the US this season, the predominant virus has varied by region during the past three weeks. Influenza A has predominated in all but the East South Central region, where 77% of viruses reported from February 25 – March 17, 2007 were influenza B. However, within the eight regions where influenza A continues to predominate, A (H3) viruses have been more frequently reported than A (H1) viruses in the New England, Mid Atlantic, East North Central, and Pacific regions. Influenza A (H3) has accounted for 49% of the subtyped influenza A viruses in the West North Central region.

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

February 25 – March 17, 2007 (specimens testing positive) (Michigan is in the East North Central region)	
>20% positive	10-20% positive
East North Central (38.5%)	New England (15.7%)
West North Central (20.1%)	Mid Atlantic (17.0%)
East South Central (37.4%)	South Atlantic (15.4%)
West South Central (25.0%)	Mountain (19.7%)
	Pacific (13.2%)

Weekly Influenza Activity Estimates Reported by State & Territorial Epidemiologists

Week ending March 17, 2007 - Week 11



International (WHO, as of February 28): Overall influenza activity in the northern hemisphere increased during weeks 1–7 but remained moderate in general. Influenza A(H3N2) viruses predominated in many European countries and in some Asian countries/areas, where this season's activity started to increase in early January 2007. Influenza A(H1N1) viruses circulated in the United States and in a few eastern European countries. Influenza B viruses circulated at low levels.

For influenza activity from individual countries, please visit the full WHO article "Seasonal Influenza Activity in the World, 2007" at <http://www.who.int/csr/disease/influenza/update/en/>.

For a summary of worldwide influenza activity from September 2006 to January 2007, please see the WHO article "Influenza in the World" in the March 9, 2007 edition of the *Weekly Epidemiological Record*, available at <http://www.who.int/wer/2007/wer8210.pdf>.

MDCH reported **REGIONAL ACTIVITY** to the CDC for this past week ending March 24, 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, March 27): The Egyptian Ministry of Health and Population has announced a new human case of avian influenza A(H5N1) virus infection. The case has been confirmed by the Egyptian Central Public Health Laboratory and by the US Naval Medical Research Unit No.3 (NAMRU-3). The 3-year-old girl from Aswan Governorate developed symptoms on March 22nd and was hospitalized on March 24th where she remains in a stable condition. Investigations indicate a history of contact with backyard poultry. The case is not linked epidemiologically to either of the two recent cases in Aswan Governorate that were announced on March 19 and on March 20.

International, Human (WHO, March 28): The Egyptian Ministry of Health and Population has announced two new human cases of avian influenza A(H5N1) virus infection. The cases have been confirmed by the Egyptian Central Public Health Laboratory and by the US Naval Medical Research Unit No.3 (NAMRU-3). The first case, a 6-year-old girl from Qena Governorate, was admitted to hospital on March 25th with symptoms. The second case, a 5-year-old boy from Menia Governorate, was also hospitalized with symptoms on March 25th. Both children remain in a stable condition. Initial investigations indicate exposure to sick birds in both cases. Of the 29 cases confirmed to date in Egypt, 13 have been fatal.

International, Human (WHO, March 29): The Ministry of Health in China has reported a new fatal case of human infection with the H5N1 avian influenza virus. The case has been confirmed by the national laboratory. The 16-year-old male from Anhui province developed fever and pneumonia-like symptoms on March 17th and was hospitalized on March 20th. He died on March 27th. There is no initial indication to suggest he had contact with sick birds prior to becoming unwell and investigations to identify the source of his exposure are ongoing. Close contacts have been placed under medical observation and all remain well. Of the 24 cases confirmed to date in China, 15 have been fatal.

International, Drug Resistance (Reuters[edited], March 20): Scientists have found that a strain of the H5N1 bird flu virus circulating in Thailand is resistant to the flu drug amantadine, and they called for rigorous study of H5N1 strains to better treat human victims. While the WHO has long recommended that Tamiflu be used as the 1st line of defense against H5N1, it said last May that a "dual therapy" combining amantadine and Tamiflu may be considered in case of an outbreak.

Yong Poovorawan, a medical professor at Chulalongkorn University in Bangkok, and his researchers came to the latest conclusion after studying the molecular structure of the strain, which has been circulating in Thailand, Cambodia and Viet Nam since 2004. "We need to conduct in vitro experiments," he said, referring to experiments in a laboratory or other controlled settings. However, he could not say how effective a dual Tamiflu-amantadine therapy may be, as Thailand has not tried administering such a treatment. Their findings were published in the March 2007 issue of the journal *Emerging Infectious Diseases*.

There are 2 H5N1 strains circulating in Thailand, one in the northeast and the other in the central part of the country. Yong identified the strain in the northeast province of Nakhon Phanom as [a] Fujian-like strain, which an international group of virologists said in October 2006 may start another wave of H5N1 outbreaks in poultry in Southeast Asia and Eurasia. The Fujian-like strain was first isolated in China's southern Fujian province in 2005. "The Nakhon Phanom strain is the same as the Fujian-like strain ... which is also in (the Chinese provinces of) Anhui and Zhejiang, and Laos," Yong said. "From its molecular structure, we would say it is sensitive to Tamiflu and amantadine."

International, Poultry (CIDRAP News, March 23): Agriculture officials in Bangladesh and Saudi Arabia have confirmed outbreaks of H5N1 avian influenza in birds, a first for each country. The outbreak in Bangladesh struck chickens at a state-run poultry farm in Savar, near the capital, Dhaka, the Associated

Press (AP) reported today. Government sources said farm workers had recently culled all 30,000 chickens at the farm after many of them died mysteriously, the AP said.

Preliminary tests at local laboratories suggested in February that the chickens died of exotic Newcastle disease, a respiratory virus that is fatal to birds, but the government later sent samples to a lab in Thailand for more tests, the AP reported. Bangladeshi Health Minister S. M. Matium Rahman told the AP that no human cases have been reported, but citizens have been put on alert. As a precaution, officials culled about 8,000 chickens today on five private farms near Dhaka.

The World Health Organization (WHO) said it would work closely with Bangladesh to curb the spread of the disease, and WHO representative Duangvadee Sungkhobol told reporters today there is no need to panic, because the outbreak has been handled very carefully, the AP story said. The report said an H5N1 outbreak could devastate Bangladesh's poultry industry, which includes about 150,000 farms and does \$750 million of business annually.

Meanwhile, the agriculture ministry in Saudi Arabia said yesterday that the H5N1 virus had been confirmed in samples obtained by a citizen in the eastern part of the country who reported several bird deaths at home earlier this month. The Saudi Press Agency (SPA) said the outbreak involved turkeys, parrots, peacocks, and ostriches on private land, according to an AP story published today. An SPA statement said the birds were destroyed and the site was sterilized.

H5N1 avian flu has been reported in several countries near Saudi Arabia, including Egypt, Israel, Jordan, Iraq, Kuwait, and Sudan. Egypt has had 26 confirmed human cases since Feb. 2006, half of them fatal.

International, Poultry (Xinhua News Agency, March 27): The Myanmar livestock authorities have confirmed that five townships in Yangon have been hit by H5N1 outbreak, according to a statement of the Livestock Breeding and Veterinary Department (LBVD) released today. The five townships are Mayangon, Hlaingtharya, North Okkalapa, Mingaladon and Hmawby.

Poultry, quails and pheasants of the affected farms together with those from possibly affected farms and from farms that are contiguous with the affected farms were culled and necessary preventive measures are being taken, the statement said. Although H5N1 strain of bird flu was found at some poultry farms in the five townships, the dead bodies of some chickens and geese from several other townships in Yangon and Bago divisions were not found to be infected with bird flu, it said. Of the 324 crows, pigeons and sparrows, doves, which died during the period since the end of February, only six crows were suspicious of being infected with the avian influenza. The others died of heat stroke, chronic bronchitis and small pox.

The authorities have warned breeders and those engaged in poultry marketing to use new farm equipment instead of the old ones and to ensure that crows do not enter poultry farms.

Suspicious avian influenza was first detected on February 27 by Myanmar in a small private poultry farm in northwestern Yangon's suburban township of Mayangon. In the outbreak, 1,863 fowls died of the virus with 37,883 culled, according to earlier statement of the LBVD.

Meanwhile, two townships, Mayangon and the Hlaingtharya, have been further confirmed of the bird flu outbreak by experts of the United Nations Food and Agriculture Organization (FAO) and the UNAID. The FAO agreed on March 10 to provide immediate technical assistance to strengthen emergency preparedness for highly pathogenic avian influenza. The assistance also includes equipment worth of US\$600,000 donated by the USAID to be used in preventive measures against the disease.

International, Poultry (Reuters Alertnet, March 28): New cases of a deadly strain of bird flu have been confirmed in Afghanistan's capital, Kabul, and in the southern province of Kandahar over the past week, according to the Afghan health ministry. A dead bird found in the garden of the Turkish embassy in Kabul on March 20 was infected with the H5N1 strain of the avian influenza virus, health officials confirmed on March 28. A quarantine that had been imposed on the embassy compound was lifted after a team of medical workers from the health ministry completed a bird-culling operation there. "The blood test of an embassy driver who was injured by a bird has shown no sign of avian influenza," the ministry report said.

On March 23, 2 more cases of bird flu [in poultry] were confirmed in Kabul, a city with an estimated population of more than 3.5 million people. Over the past week, bird flu was also detected in the Damaan

and Shah Wali Kot districts of Kandahar province in the south of the country. Officials in Kabul say that insecurity is impeding their efforts to curb the spread of the virus in Shah Wali Kot, where insurgents have repeatedly attacked government employees.

In an effort to mitigate the outbreak of avian influenza in Afghanistan, the WHO on March 25 called on Afghans to stop buying and selling live birds. "To prevent transmission of avian influenza to humans, WHO is recommending that persons residing in Kabul, Nangarhar and Kunar provinces avoid the live bird markets until no disease has been reported for several months, because avian influenza can spread to humans from contaminated dust and feathers of infected birds," WHO said in a statement. In addition, WHO has requested Afghan bird-lovers to refrain from petting and touching their birds.

But given the important socio-economic role of birds in the life of many ordinary Afghans, both recommendations are difficult, if not unrealistic, for civilians. "I have been doing this business [selling live birds] for over 4 years. I have no other means to feed my extended family," said one bird-seller in Kabul. Officials in Afghanistan's committee against avian influenza said it would be difficult to close live bird markets in the country. "I think both economically and socially it is impossible to close all bird markets," Abdullah Fahim, a spokesman for Afghanistan's Ministry of Health, told IRIN on March 28.

Afghanistan's 1st bird flu case was reported in March 2006. More than 20 cases of bird flu [in poultry] have been confirmed in the country since February 2007, many in the eastern provinces of Nangarhar and Kunar. The Afghan government has prohibited the importation of live birds and poultry products from neighboring Pakistan, where several cases of avian influenza [in poultry] have also been confirmed.

International, Wildlife (Reuters Alertnet, March 19): The H5N1 bird flu virus killed a rare species of eagle, captured within 75 km (47 miles) of sites of 3 Japanese outbreaks of the virus among poultry earlier this year, the environment ministry said on Monday [March 19, 2007]. Further tests are under way to see whether it is a highly pathogenic strain of the H5N1 virus as well as genetic tests to determine its roots, but the discovery has increased chances that the virus has been carried to Japan by wildlife.

Spizaetus nipalensis orientalis, often called Hodgson's hawk eagle, is an endangered species in Japan. It does not migrate, and eats small birds and animals. The ministry said the adult female bird was found sick but uninjured on January 4, 2007 in Sagara village, Kumamoto prefecture, on the island of Kyushu.

Japan later in the month confirmed its 1st outbreak of the H5N1 virus since 2004 in neighbouring Miyazaki prefecture, the country's biggest poultry-producing region. Two other outbreaks have since hit Miyazaki and another occurred in the western prefecture of Okayama.

While tests on whether the eagle suffered from lead poisoning proved negative, a test for bird flu was positive followed by a later test in which the H5N1 virus was isolated, the ministry said. The ministry said it plans to resume surveillance of wild birds around the site where the bird was captured. The results of earlier tests for bird flu on samples of ducks and other wild birds taken in areas immediately surrounding the 4 outbreaks had all been negative.

Michigan Wild Bird Surveillance (USDA, March 27): According to the National HPAI Early Detection Data System website, available at <http://wildlifedisease.nbj.gov/ai/>, Michigan has results for a total of 1856 samples submitted for testing as of March 27th. 232 of these were live-captured birds, 634 were hunter-killed, 174 were sentinel animals, 609 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 115,090 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.

Contributors

MDCH Bureau of Epidemiology - Sally Bidol, MPH; Edward Hartwick, MS; Elizabeth Lewis, MHS; Rachel Potter, DVM, MS

MDCH Bureau of Laboratories – Patricia Clark, MPH

Table 1. H5N1 Influenza in Poultry (Outbreaks up to March 23, 2007)

(Source: http://www.oie.int/download/AVIAN%20INFLUENZA/A_AI-Asia.htm Downloaded 3/26/2007)

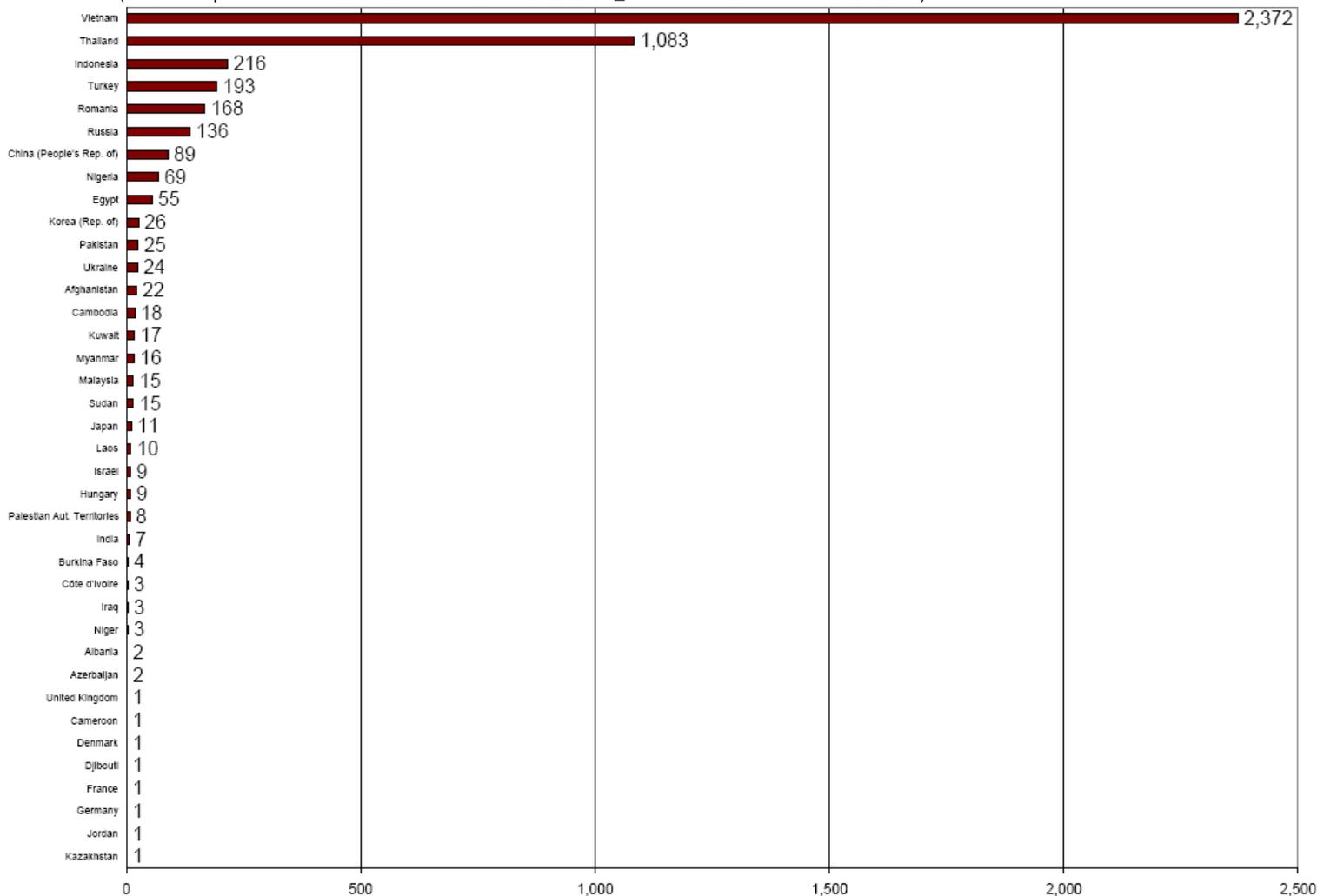


Table 2. H5N1 Influenza in Humans (Cases up to March 29, 2007)

(http://www.who.int/entity/csr/disease/avian_influenza/country/cases_table_2007_03_29/en/index.html Downloaded 3/29/2007)

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										
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	1	0	24	15
Djibouti	0	0	0	0	0	0	1	0	0	0	1	0
Egypt	0	0	0	0	0	0	18	10	8	3	29	13
Indonesia	0	0	0	0	20	13	55	45	6	5	81	63
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	0	0	93	42
Total	4	4	46	32	98	43	115	79	18	11	285	170