



# 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:

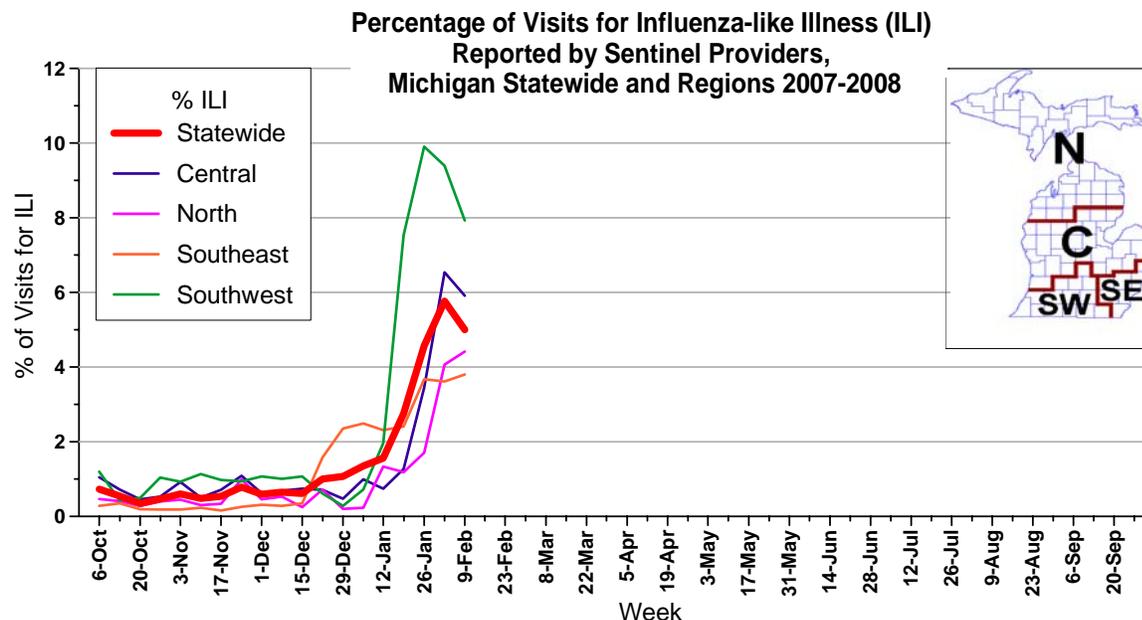
- **Michigan Surveillance:** Influenza activity level upgraded to widespread for the week ending Feb. 9.
- **National Surveillance:** Activity continues to increase; more H3N2 viruses isolated in past two weeks.
- **Avian Influenza:** New human case in Indonesia; poultry outbreaks in Laos and Bangladesh.

**Michigan Disease Surveillance System:** The week ending February 9 saw both aggregate flu-like illness and individual influenza reports increase slightly. Aggregate flu-like illness reports are comparable with numbers seen this time last year, while individual influenza reports are considerably higher.

**Emergency Department Surveillance:** Emergency department visits due to both constitutional and respiratory complaints continued to increase this past week. Both respiratory and constitutional complaints are slightly higher than numbers that were seen this time last year. Eight constitutional alerts in the C(2), SE(4) and SW(1) Influenza Surveillance Regions including one Statewide alert and four respiratory alerts in the N(1), C(2) and SW(1) Influenza Surveillance Regions were generated last week.

**Over-the-Counter Product Surveillance:** Overall, OTC product sales activity was mixed this week; however, it could be characterized as steady overall. Chest rub sales saw a slight decrease, cough/cold medicine sales held steady, and children's electrolytes and thermometer sales saw slight increases. The indicator levels are comparable to those seen at this time last year.

**Sentinel Surveillance (as of February 14):** The proportion of visits due to influenza-like illness (ILI) in Michigan remains high, and is at 5.0% for the week ending Feb. 9. This represents 495 cases of ILI out of 9893 total patient visits; 37 sentinels provided data for this report. Sentinels throughout the state are reporting high activity. The proportion of visits due to ILI was 5.9% in the Central region, 4.4% in the North region, 3.8% in the Southeast region, and 7.9% in the Southwest region. Note that these rates may change as additional reports are received.



As part of pandemic influenza preparedness, CDC and MDCH highly encourage 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](mailto:potterr1@michigan.gov) for more information.

**Laboratory Surveillance (as of February 14):** For the 2007-2008 influenza season, the MDCH Bureau of Laboratories has identified 144 influenza isolates:

- 115 A/H3N2: Southeast (41); Central (35); Southwest (23); North (16)
- 3 A/H1N1: Southeast (2); North (1)
- 12 A subtype pending: Southwest (4); Central (4); Southeast (2); North (2)
- 14 B: Southeast (11); North (2); Central (1). 8 have been typed as B/Shanghai/361/2002-like.

All sentinel laboratories continue to report high numbers of positive influenza A tests, with some individual labs also reporting small increases in the number of positive influenza B tests. RSV continues to circulate statewide, with moderate numbers being reported; sporadic adenoviruses have also been reported.

\*\*\*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 February 14):** For the 2007-2008 season, there are no confirmed reports of influenza-related pediatric mortality in Michigan.

A death due to influenza A and sepsis in a 25 year old from the Southwest region reported last week to MDCH was confirmed as influenza A H3N2. Unfortunately, confirmation of a possible bacterial co-infection will not be possible.

\*\*\*The CDC has asked all states to collect information on any pediatric death associated with influenza infection. This includes not only any death in a child (<18 years) resulting from a compatible illness confirmed to be influenza by an appropriate diagnostic test, but also any unexplained death with evidence of an infectious process in a child. See [www.michigan.gov/documents/fluletter\\_107562\\_7.pdf](http://www.michigan.gov/documents/fluletter_107562_7.pdf) for the complete protocol. Please immediately call MDCH to ensure that proper clinical specimens are obtained.

**Congregate Settings Outbreaks (as of February 14):** One culture-confirmed influenza outbreak and 14 additional respiratory outbreaks have been reported to MDCH for the 2007-2008 influenza season.

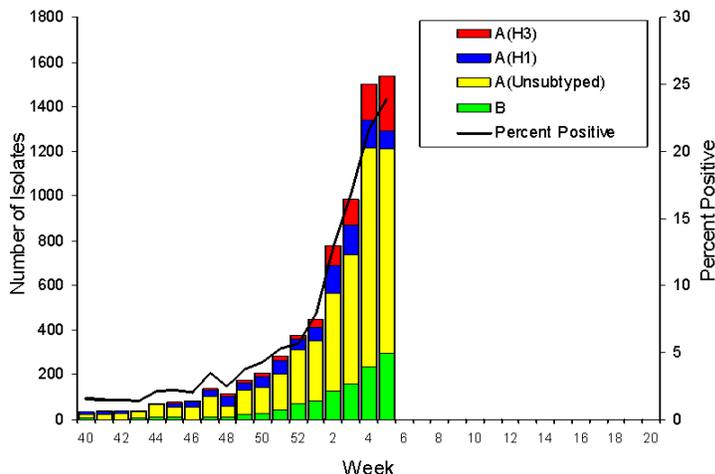
- Southeast: 1 report
  - A long-term care facility outbreak was confirmed by MDCH BOL to be influenza A H3N2.
- Central: 6 reports
  - A K-12 school was closed due to high numbers of students and staff with high fevers and respiratory symptoms; viral cultures at MDCH BOL were negative.
  - 3 nursing homes have had both residents and staff ill with ILI; rapid tests at 2 out of 3 facilities were positive for influenza A. Testing for 2 of the facilities at MDCH BOL was negative for influenza, with one positive RSV specimen.
  - An assisted living facility had residents with ILI; rapid tests were positive for influenza A.
  - A teenage school co-op program reported students with ILI; no testing was available.
- Southwest: 8 reports
  - 7 nursing homes have reported varying degrees of ILI in their residents and staff; all facilities had residents with positive rapid tests for influenza A; cultures are underway.
  - A small college reported large numbers of students with ILI; the outbreak subsided before testing could be conducted.

**National (CDC [edited], February 8):** During week 5 (January 27 – February 2, 2008), influenza activity continued to increase in the United States. One thousand five hundred thirty-eight (23.9%) specimens tested by U.S. World Health Organization (WHO) and National Respiratory and Enteric Virus Surveillance System (NREVSS) collaborating laboratories were positive for influenza. The proportion of deaths attributed to pneumonia and influenza was above the epidemic threshold for the fourth consecutive week. The proportion of outpatient visits for influenza-like illness (ILI) and acute respiratory illness (ARI) was above national baseline levels. ILI increased in eight of the nine regions compared to week 4, and was above region-specific baselines in all nine regions. The West North Central region reported ARI above its region specific baseline. Thirty-one states reported widespread

influenza activity; 17 states reported regional influenza activity; and two states and the District of Columbia reported local influenza activity.

Although influenza A (H1) viruses have been the predominant subtype overall this season, influenza A (H3) viruses have been reported more frequently than A (H1) viruses in the past two weeks. This season influenza A (H3) viruses have been reported more frequently than A (H1) viruses in four of the nine surveillance regions (East North Central, East South Central, South Atlantic, and West South Central).

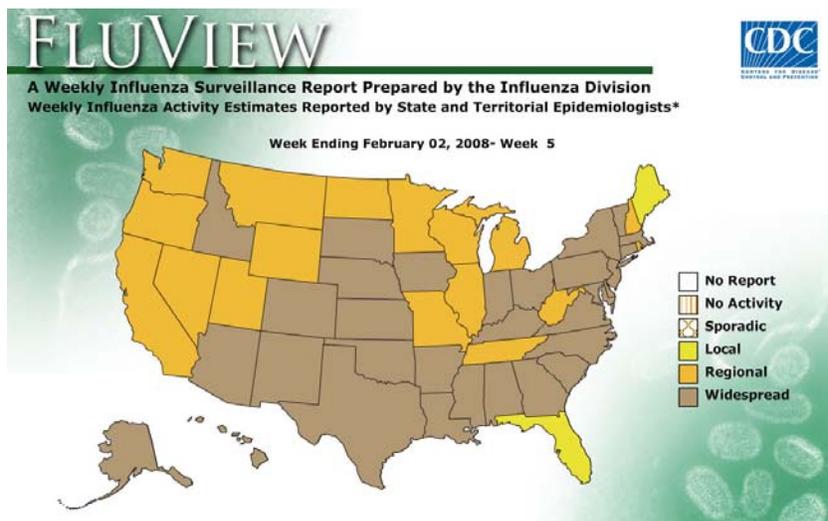
U.S. WHO/NREVSS Collaborating Laboratories  
National Summary, 2007-08



**Neuraminidase Inhibitor Antiviral Drugs:** Small numbers of influenza viruses resistant to the neuraminidase inhibitor oseltamivir have been detected in the United States. Of the 331 influenza A and B viruses tested for antiviral resistance so far this season, 15 (4.5%) have been found to be resistant to oseltamivir. Currently all of the resistant viruses are H1N1 viruses, with 15 (8.1%) of all H1N1 viruses exhibiting a genetic mutation that confers oseltamivir resistance. These resistant viruses have been found sporadically across 4 of the 9 surveillance regions. All tested viruses retain their sensitivity to zanamavir. Additional information on antiviral resistance can be found at: <http://www.cdc.gov/flu/about/qa/antiviralresistance.htm>

**Adamantane Antiviral Drugs:** Resistance to the adamantanes continues to be high. Among 189 influenza A viruses tested, 84 (44.4%) are resistant to adamantanes, including 99% of H3N2 viruses and 8.3% of H1N1 viruses. The adamantanes are not effective against influenza B viruses. Based on the level of oseltamivir resistance observed in only one influenza subtype, H1N1, and persisting high levels of resistance to the adamantanes in both H3N2 and H1N1 viruses, CDC continues to recommend the use of oseltamivir and zanamavir for the treatment or prevention of influenza. Use of amantadine or rimantadine is not recommended. Guidance on influenza antiviral use can be found at: <http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5606a1.htm>

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



**International, Drug Resistance (Reuters [edited], February 7):** Australia and Hong Kong have joined North America and parts of Europe in reporting seasonal influenza viruses with increased resistance to the antiviral drug Tamiflu, the World Health Organization said on Thursday. The WHO said that it was still gathering global data about "an increased number of (seasonal) H1N1 viruses with resistance to oseltamivir" following the first reports which emerged in Europe in late January.

Oseltamivir is the generic name for Tamiflu, made by Switzerland's Roche Holding AG and Gilead Sciences Inc of the United States, which governments worldwide have been stockpiling as a first line of defense in case the bird flu virus sparks a human influenza pandemic.

The mutated H1N1 showing resistance is a sub-type of ordinary influenza A, different from the H5N1 virus which causes bird flu. But the resistance to Tamiflu has raised questions about its potential effectiveness in a deadly bird flu pandemic.

Spokeswoman Sari Setiogi said that for now the WHO was not changing its recommendation that Tamiflu be used to treat seasonal flu. "We still expect to see more testing be done," she said.

In Hong Kong, 5 of 67 samples of the H1N1 virus tested, or 7 percent, showed resistance to Tamiflu, according to a WHO table. In Australia the rate was 2 out of 36 samples, or 6 percent. In Japan, where Tamiflu is widely prescribed for seasonal flu, none of the 71 samples tested showed resistance, WHO said.

A week ago, the WHO reported that the main seasonal virus circulating in both Canada and the United States showed "elevated resistance" to Tamiflu. These rates are 6 percent and 8 percent, respectively, according to the WHO's latest figures.

A preliminary survey issued by the European Centre for Disease Control (ECDC) last month said that of 148 samples of influenza A virus isolated from 10 European countries during November and December, 19 showed signs of resistance to Tamiflu.

According to WHO's latest figures, seasonal flu viruses from five countries in Europe have shown double-digit resistance to Tamiflu -- Norway (70 percent), Portugal (33 percent); Finland (29 percent), France (17 percent) and Denmark (10 percent). In several of these countries, fewer than 10 samples were tested. Sweden, Germany and Britain showed resistance rates of 8, 7 and 5 percent, respectively. Some European countries reported no resistance at all, including Italy, Spain and Switzerland.

Past studies had found Tamiflu resistance rates ranging from zero to 0.5 percent, according to the United Nations agency.

No countries in Africa, Latin America or the Middle East have yet reported their findings to the 193-member state WHO.

Roche spokeswoman Martina Rupp said more data was needed "to establish the geographic distribution of the virus and evaluate the potential impact of effectiveness of drug use". "What is important is that the mutation has only been seen in H1N1, not in avian strains," she said from Roche's Basel headquarters.

**International (WHO, February 8):** During weeks 4–5, the level of overall influenza activity in the world increased. A considerable increase in both influenza activity and the number of viruses detected was observed in most countries of the northern European and North America, where mostly influenza A (H1N1) circulated, as well as A (H3N2) and B viruses.

The entire report can be found online at <http://www.who.int/csr/disease/influenza/update/en/>

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MDCH reported **WIDESPREAD ACTIVITY** to the CDC for the week ending February 9, 2008.

For stakeholders interested in additional information regarding influenza vaccination and education, the MDCH publication *Michigan FluBytes* is available online at [http://www.michigan.gov/mdch/0,1607,7-132-2940\\_2955\\_22779\\_40563-125027--,00.html](http://www.michigan.gov/mdch/0,1607,7-132-2940_2955_22779_40563-125027--,00.html). *FluBytes* is published weekly during the influenza season.

**End of Seasonal Report**

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## 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 12):** The Ministry of Health of Indonesia has announced a new case of human infection of H5N1 avian influenza. A 15-year-old female from West Jakarta, Jakarta Province developed symptoms on 2 February, was hospitalized on 8 February and is currently in hospital in a critical condition. The case is the daughter of a previously confirmed case, the 38-year-old female from West Jakarta, Jakarta Province who developed symptoms on 23 January.

Investigations into the source of her infection are ongoing. However, she was exposed to her sick mother on 27-28 January and spent time in a neighbourhood where chickens and other birds were found. Samples from these birds have been taken and are undergoing tests to determine whether they may have been the source of infection.

Of the 127 cases confirmed to date in Indonesia, 103 have been fatal.

**International, Poultry (Xinhua News Agency, February 12):** A fresh outbreak of bird flu among fowls has struck Laos' southern Luang Namtha province, Lao newspaper on Tuesday quoted a local agriculture official as saying.

Some 600 poultry in Nam Ma village, Long district died last week, Bounkhouang Khambounheuang, head of the Department of Livestock and Fisheries under the Ministry of Agriculture and Forestry, said, noting that their specimens have been tested positive to bird flu virus strain H5N1.

The department has banned the movement and sale of poultry or eggs in the village, and sprayed fowls with disinfectants. All poultry within one-km radius of the village will be culled.

"We will compensate people for their losses if we have to cull their birds, according to the rules of the department," he said.

Previous bird flu outbreaks were successfully contained in Vientiane, and in the three provinces of Savannakhet, Champassak and Vientiane last year.

However, the four northern provinces of Oudomxay, Bokeo, Luang Prabang and Phongsaly are at a very high risk of seeing new outbreaks of the disease, he said.

**International, Poultry (Reuters, February 13):** Bird flu has spread to another district in Bangladesh despite efforts by authorities to control it, officials said on Wednesday, bringing the number of affected districts to 41 out of 64.

Health workers culled nearly 1,100 fowl after tests confirmed some chickens had died from the avian influenza virus in western Meherpur, livestock officials said.

The H5N1 virus, first detected in Bangladesh in March last year, was quickly brought under control through aggressive measures, including culling. But it reappeared few months ago apparently because of lax follow-up monitoring, experts say.

So far no human infections have been reported in Bangladesh, a densely populated nation with millions of backyard poultry and thousands of chicken farms.

The government has raised compensation for poultry farmers to encourage them to report and kill sick birds as part of efforts to stamp out the outbreak. Nearly 600,000 birds have been culled across the country against the virus since March 2007, but it continues to spread and now covers nearly two-thirds of the country of more than 140 million people.

Officials blame lack of awareness among poultry breeders and non-compliance with warnings by the health ministry as main reasons for the spread of the virus.

The World Health Organization fears that the H5N1 strain, which has already killed more than 220 people worldwide since 2003, could mutate or combine with the highly contagious seasonal influenza virus and spark a pandemic that could kill millions of people.

**International, Wild Birds (Ukrainian News [edited], February 13):** A highly contagious bird flu virus was confirmed in the samples of nine cormorants found dead in Sevastopol.

Ukrainian News learned this from Anatolii Osadchyi, State Veterinary Medicine Committee press service chief. In his words, dead bodies of nine cormorants were found in the Balaklava bay, the bays of Kamyshev, and on the Omega beach on February 11.

The results of the analysis made by Crimea's state veterinary medicine laboratory on nine samples on February 12 are positive, which means that the birds were killed by a flu virus. As Ukrainian News earlier reported, the agricultural policy ministry does not rule out the possibility of localized cases of bird flu in Ukraine, but it rules out the possibility of mass spread of bird-flu virus in the country.

Bird flu was uncovered in a private farm in the village of Kirovske (Chornomorskyi district of Crimea), where two hens and a cock perished, on February 5.

The State Committee for Veterinary Medicine confirmed the outbreak of bird flu (type A, subtype H5N1) at the Lobzenko poultry farm in the village of Rovnoe (Krasnohvardiiske district of Crimea) on January 17. Mass deaths of birds were registered at the poultry farm during the January 15 - 17 period.

The State Committee for Veterinary Medicine imposed quarantine within a three-kilometer zone around the site of the virus' outbreak on January 18. February 8 the quarantine was lifted.

**International, Wild Birds (The Standard.com, February 13):** Authorities are stepping up health measures at Cheung Sha Wan Wholesale Food Market after an oriental magpie robin found there tested positive for the H5 avian flu virus.

A spokesman for the Agriculture, Fisheries and Conservation Department (AFCD) said last night [12 Feb 2008] the bird, a common species in Hong Kong, was found on Friday [8 Feb 2008].

"In view of the tentative finding, we will conduct a thorough cleansing and disinfection operation in both the Wholesale Food Market and the Temporary Wholesale Poultry Market in Cheung Sha Wan tomorrow," the spokesman said. "We will also step up inspections and surveillance of the wholesale poultry market."

The AFCD will step up farm inspections and phone farmers to remind them to strengthen precautionary measures. Letters will be issued to owners of businesses involving live birds reminding them that proper precautions must be taken.

A black-crowned night heron found at Ocean Park tested positive for H5N1 on 28 Jan 2008.

**Michigan Wild Bird Surveillance (USDA, as of February 14):** For the 2007 testing season, 1931 Michigan samples have been taken so far, comprised of 100 live bird samples, 1384 hunter-killed birds, 172 morbidity/mortality samples, and 275 environmental samples.

H5N1 subtype H5N1 has not been recovered from any Michigan samples tested to date, or from the 84,343 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 H5N1 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](mailto:VagaskyS@Michigan.gov) with any questions regarding this newsletter or to be added to the weekly electronic mailing list.**

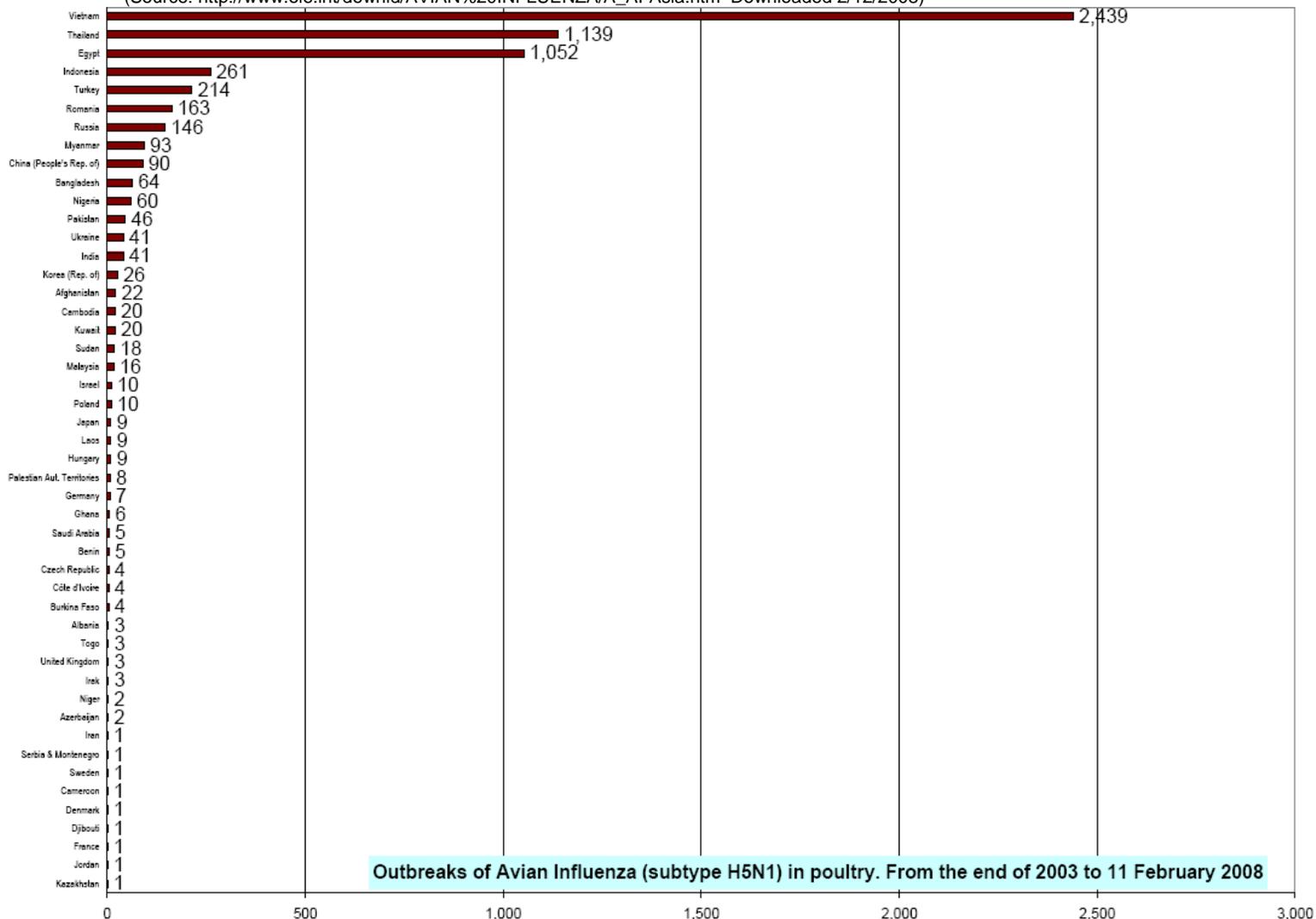
**Contributors**

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**Table 1. H5N1 Influenza in Poultry (Outbreaks up to February 11, 2008)**

(Source: [http://www.oie.int/downld/AVIAN%20INFLUENZA/A\\_AI-Asia.htm](http://www.oie.int/downld/AVIAN%20INFLUENZA/A_AI-Asia.htm) Downloaded 2/12/2008)



**Outbreaks of Avian Influenza (subtype H5N1) in poultry. From the end of 2003 to 11 February 2008**

**Table 2. H5N1 Influenza in Humans (Cases up to February 12, 2008)**

([http://www.who.int/entity/csr/disease/avian\\_influenza/country/cases\\_table\\_2008\\_02\\_12/en/index.html](http://www.who.int/entity/csr/disease/avian_influenza/country/cases_table_2008_02_12/en/index.html) Downloaded 2/12/2008)

Cumulative number of lab-confirmed human cases reported to WHO. Total number of cases includes deaths.

| Country                | 2003     |          | 2004      |           | 2005      |           | 2006       |           | 2007      |           | 2008      |          | Total      |            |
|------------------------|----------|----------|-----------|-----------|-----------|-----------|------------|-----------|-----------|-----------|-----------|----------|------------|------------|
|                        | cases    | deaths   | cases     | deaths    | cases     | deaths    | cases      | deaths    | cases     | deaths    | cases     | deaths   | cases      | deaths     |
| Azerbaijan             | 0        | 0        | 0         | 0         | 0         | 0         | 8          | 5         | 0         | 0         | 0         | 0        | 8          | 5          |
| Cambodia               | 0        | 0        | 0         | 0         | 4         | 4         | 2          | 2         | 1         | 1         | 0         | 0        | 7          | 7          |
| China                  | 1        | 1        | 0         | 0         | 8         | 5         | 13         | 8         | 5         | 3         | 0         | 0        | 27         | 17         |
| Djibouti               | 0        | 0        | 0         | 0         | 0         | 0         | 1          | 0         | 0         | 0         | 0         | 0        | 1          | 0          |
| Egypt                  | 0        | 0        | 0         | 0         | 0         | 0         | 18         | 10        | 25        | 9         | 0         | 0        | 43         | 19         |
| Indonesia              | 0        | 0        | 0         | 0         | 20        | 13        | 55         | 45        | 42        | 37        | 10        | 8        | 127        | 103        |
| Iraq                   | 0        | 0        | 0         | 0         | 0         | 0         | 3          | 2         | 0         | 0         | 0         | 0        | 3          | 2          |
| Lao People's Dem. Rep. | 0        | 0        | 0         | 0         | 0         | 0         | 0          | 0         | 2         | 2         | 0         | 0        | 2          | 2          |
| Myanmar                | 0        | 0        | 0         | 0         | 0         | 0         | 0          | 0         | 1         | 0         | 0         | 0        | 1          | 0          |
| Nigeria                | 0        | 0        | 0         | 0         | 0         | 0         | 0          | 0         | 1         | 1         | 0         | 0        | 1          | 1          |
| Pakistan               | 0        | 0        | 0         | 0         | 0         | 0         | 0          | 0         | 1         | 1         | 0         | 0        | 1          | 1          |
| Thailand               | 0        | 0        | 17        | 12        | 5         | 2         | 3          | 3         | 0         | 0         | 0         | 0        | 25         | 17         |
| Turkey                 | 0        | 0        | 0         | 0         | 0         | 0         | 12         | 4         | 0         | 0         | 0         | 0        | 12         | 4          |
| Viet Nam               | 3        | 3        | 29        | 20        | 61        | 19        | 0          | 0         | 8         | 5         | 1         | 1        | 102        | 48         |
| <b>Total</b>           | <b>4</b> | <b>4</b> | <b>46</b> | <b>32</b> | <b>98</b> | <b>43</b> | <b>115</b> | <b>79</b> | <b>86</b> | <b>59</b> | <b>11</b> | <b>9</b> | <b>360</b> | <b>226</b> |