



# MI FluFocus

## Influenza Surveillance and Avian Influenza Update

Bureau of Epidemiology  
Bureau of Laboratories



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### New updates in this issue:

- **Michigan Surveillance:** Most surveillance systems indicate influenza activity is noticeably increasing.
- **National Surveillance:** For the week ending January 24, influenza activity slowly increased nationwide.
- **Avian Influenza:** China and Egypt each report a new human case of H5N1 avian influenza.

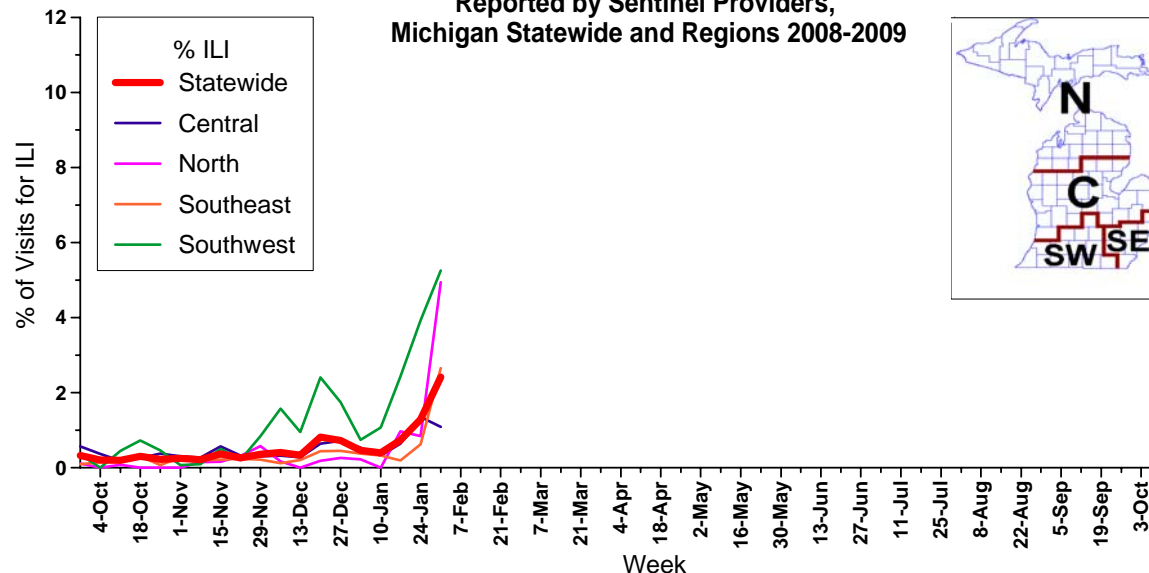
**Michigan Disease Surveillance System:** The week ending January 31 saw both individual influenza disease reports and aggregate flu-like numbers continue to increase compared to what was seen last week. Both numbers are notably lower than levels seen at this time last year.

**Emergency Department Surveillance:** Emergency department visits from both constitutional and respiratory complaints increased slightly. Both of these numbers are lower than those seen this time last year. Four constitutional alerts in the C(1) and N(2) Influenza Surveillance Regions along with one statewide alert and seven respiratory alerts in the C(1), N(3), SE(1) and SW(2) Influenza Surveillance Regions were generated last week.

**Over-the-Counter Product Surveillance:** Overall, OTC product sales were up last week. Most indicators showed a slight increase in sales compared to the previous week, with cough and cold medicine remaining near the previous week's levels. Indicator levels are comparable to those seen at this time last year.

**Sentinel Provider Surveillance (as of February 5):** During the week ending January 31, 2009, the proportion of visits due to influenza-like illness (ILI) increased for the third consecutive week to 2.4% statewide; 216 patient visits due to ILI were reported out of 8,895 office visits. Large increases in activity were reported in three of the four surveillance regions: North (4.9%), Southeast (2.7%), and Southwest (5.3%); the proportion of visits due to ILI remained unchanged in the Central region at 1.1%. Thirty-three sentinels provided data for this report. Note that these rates may change as additional reports are received.

Percentage of Visits for Influenza-like Illness (ILI)  
Reported by Sentinel Providers,  
Michigan Statewide and Regions 2008-2009



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 5):** During the past week, 6 new influenza A isolates and 7 new influenza B isolates were identified at the MDCH Bureau of Laboratories (BOL). For the 2008-2009 influenza season, MDCH BOL has identified 70 influenza isolates (followed by Influenza Surveillance Regions of origin):

- 50 A/H1N1 (15SE, 22SW, 9C, 4N)
- 1 A/H3N2 (C)
- 6 A subtype pending (3SE, 1SW, 1C, 1N)
- 13 B (1SE, 9SW, 3N). 1 isolate is B/Florida/4/2006-like (SE); 2 are B/Malaysia/2506/2004-like (2SW); 10 are pending characterization (7SW, 3N).

During the week ending January 31, small increases in influenza A positives were reported by 8 labs in the SE, SW and C Surveillance Regions, while 2 labs in the SW Region saw slight increases in influenza B activity. Influenza activity reported by most sentinel labs in the C and N Regions appears to be fairly steady. RSV positives are slowly but steadily increasing across the entire state.

\*\*\*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.

**Michigan Antigenic Characterization (as of February 5):** At this time, four influenza A/H1N1 isolates have been antigenically characterized by the CDC; results indicate all isolates are A/Brisbane/59/2007-like, which matches the influenza A/H1N1 component of this season's Northern Hemisphere vaccine. One influenza A/H3N2 has been characterized as A/Brisbane/10/2007-like, which matches the A/H3N2 component of this season's vaccine. The one influenza B isolate has been characterized as B/Florida/4/2006-like, which matches the influenza B component of this season's vaccine.

**Michigan Antiviral Resistance Data (as of February 5):** Three influenza A/H1N1 viruses from the MDCH Bureau of Laboratories have been tested for antiviral resistance at CDC for the 2008-2009 season. All three viruses were resistant to oseltamivir (Tamiflu®) and sensitive to zanamivir, amantadine and rimantadine. These viruses were collected in the SE(2) and SW(1) Influenza Surveillance Regions.

It is difficult to draw any conclusions about antiviral resistance in Michigan influenza viruses at this time, as influenza activity has been low and there have been few positive specimens on which to perform additional testing. Antiviral resistance testing often takes several weeks to complete, and thus cannot be used to guide treatment of individual patients. However, CDC has made interim recommendations regarding the use of antiviral medications for the treatment of influenza and for prophylaxis. This guidance is available at <http://www2a.cdc.gov/HAN/ArchiveSys/ViewMsgV.asp?AlertNum=00279>.

**Influenza-Associated Pediatric Mortality (as of February 5):** No influenza-associated pediatric mortalities have been reported to MDCH for the 2008-2009 influenza season.

\*\*\*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. Please immediately call MDCH to ensure that proper clinical specimens are obtained. View the complete MDCH protocol online at [http://www.michigan.gov/documents/mdch/ME\\_pediatric\\_influenza\\_guidance\\_v2\\_214270\\_7.pdf](http://www.michigan.gov/documents/mdch/ME_pediatric_influenza_guidance_v2_214270_7.pdf).

**Congregate Settings Outbreaks (as of February 5):** One school outbreak due to influenza-like illness in the Northern Surveillance Region (reported during the previous week) was confirmed as influenza B at MDCH. Two congregated setting outbreaks due to influenza have been reported to MDCH for the 2008-2009 influenza season.

**National (CDC [edited], January 30):** During week 3 (January 18-24, 2009), influenza activity continued to slowly increase in the United States. Five hundred eighty-eight (15.8%) specimens tested by U.S. World Health Organization (WHO) and National Respiratory and Enteric Virus Surveillance System (NREVSS) collaborating laboratories and reported to CDC/Influenza Division were positive for influenza. The proportion of deaths attributed to pneumonia and influenza (P&I) was below the

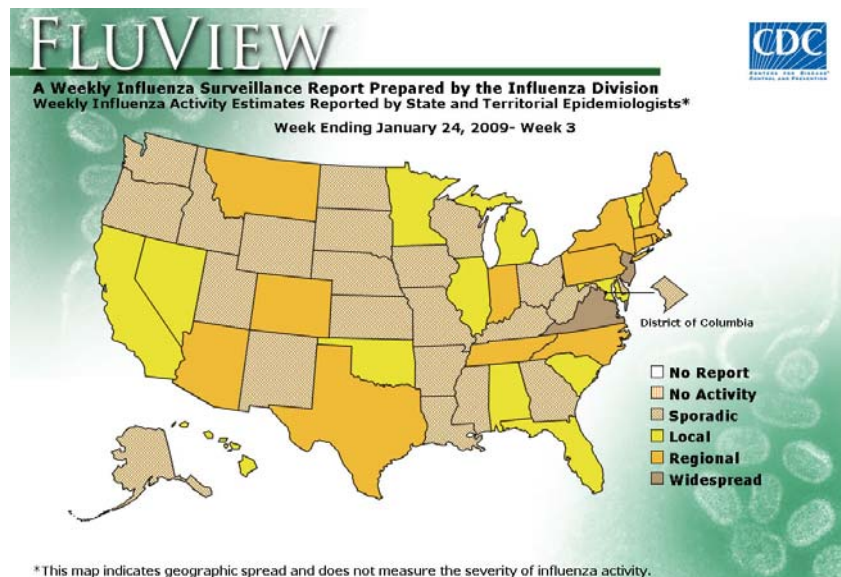
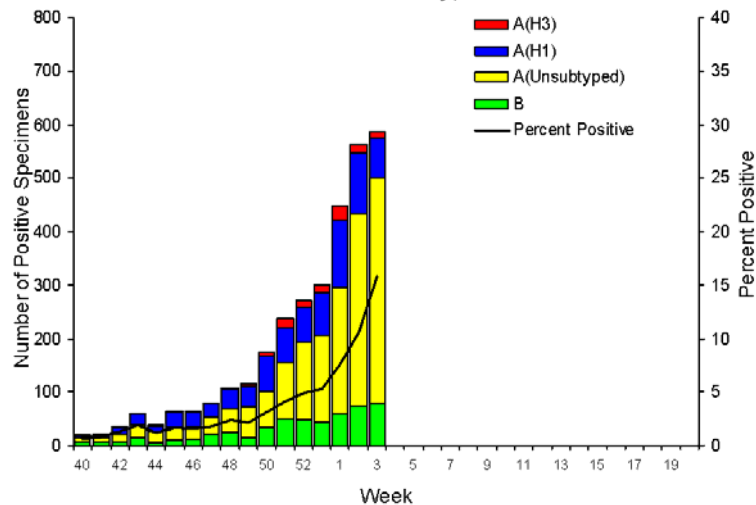
epidemic threshold. The proportion of outpatient visits for influenza-like illness (ILI) was below the national baseline. The New England region reported ILI above its' region-specific baseline. Two states reported widespread influenza activity, 14 states reported regional activity; 12 states reported local influenza activity; and the District of Columbia, Puerto Rico and 22 states reported sporadic influenza activity. One human infection with a novel influenza A virus was reported.

Since October 1, 2008, 165 influenza A (H1N1), 37 influenza A (H3N2), and 67 influenza B viruses have been tested for resistance to the neuraminidase inhibitors (oseltamivir and zanamivir). One hundred sixty-five influenza A (H1N1) and 37 influenza A (H3N2) viruses have been tested for resistance to the adamantanes (amantadine and rimantadine). The results of antiviral resistance testing performed on these viruses are summarized in the table below.

	Isolates tested (n)	Resistant Viruses, Number (%)		Isolates tested (n)	Resistant Viruses, Number (%)
		Oseltamivir	Zanamivir		
<b>Influenza A (H1N1)</b>	165	162 (98.2%)	0 (0)	165	2 (1.2%)
<b>Influenza A (H3N2)</b>	37	0 (0)	0 (0)	37	37 (100%)
<b>Influenza B</b>	67	0 (0)	0 (0)	N/A*	N/A*

\*The adamantanes (amantadine and rimantadine) are not effective against influenza B viruses.

Influenza Positive Tests Reported to CDC by U.S. WHO/NREVSS Collaborating Laboratories, National Summary, 2008-09



\*This map indicates geographic spread and does not measure the severity of influenza activity.

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

**International (WHO [edited], January 23):** During the weeks 1-2, the level of overall influenza activity in the world increased. In Europe, widespread influenza activity was reported in 14 countries, regional activity in two countries as well as Wales in the United Kingdom of Great Britain and Northern Ireland, local activity in two countries and sporadic activity in 5 countries and one part of the United Kingdom (Scotland). Eight of the nine countries reporting low influenza intensity are located in the eastern and north-eastern part of Europe. The predominant influenza virus circulating in Europe is influenza A (H3). In Canada, Hong Kong Special Administrative Region of China and the United States of America overall influenza activity remained relatively low.

Sporadic influenza activity was observed in Brazil (A), Cameroon (H1, H3, B), China (H1, H3, B), China Hong Kong Special Administrative Region (H1,H3,B), Croatia (H1,H3,B), Czech Republic (H3), Estonia (H1,H3, B), Latvia (H1,H3, B), Mongolia (H1, H3, B), Romania (H1,H3, B), Russian Federation (H1,H3,B), Serbia (H1, H3, B).

Kazakhstan and Turkey reported no activity.

To access the entire report, visit <http://www.who.int/csr/disease/influenza/update/en/>

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MDCH reported **LOCAL INFLUENZA ACTIVITY** to the CDC for the week ending January 31, 2009.

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 2):** The Ministry of Health in China has announced a new confirmed human case of H5N1 infection. The case is a 21-year-old female from Xupu County, Hunan province. She had onset of symptoms on 23 January and remains in hospital in a clinically stable condition. Investigations into the source of her infection indicate possible exposure to sick and dead poultry.

Of the 38 cases confirmed to date in China, 25 have been fatal.

**International, Human (WHO, February 5):** The Ministry of Health and Population of Egypt has announced a new human case of avian influenza A(H5N1) virus infection. The case is a 2-year-old male from Suez Governorate, Ganain District. His symptoms began on 2 February and he was hospitalized at the Suez Fever Hospital on 3 February. He remains in a stable condition. Infection with the H5N1 avian influenza virus was confirmed by the Egyptian Central Public Health Laboratory.

Investigations into the source of his infection indicate a recent history of contact with dead poultry.

Of the 54 cases confirmed to date in Egypt, 23 have been fatal.

**International, Poultry (DEFRA [edited], February 3):** Low Pathogenic Avian Influenza in France: H5 non-N1

#### 1. Disease Report

The French authorities have recently reported an outbreak of Low Pathogenicity Avian Influenza (LPAI) on a duck breeding farm in Vendee region. The birds were 12 months old and at the end of their moult. Preliminary testing confirmed the virus to be of the H5 type (but not N1) [Ed. Note: identified as H5N3 by OIE]. Disease control measures have been put in place, including a 1 km restriction zone.

## 2. Situation assessment

Sporadic findings of LPAI are not uncommon across the EU. This particular [H5N3] strain in France appeared to have caused about one percent mortality in the affected flock. Infection with LPAI in ducks and geese is generally asymptomatic. However, in this specific case, the ducks may have been more susceptible to infection due to stress associated with moulting. According to TRACES (the EU electronic trade notification system), there have been 24 consignments of live poultry from France to the UK since 1 Jan 2009. One consignment originated from the Vendee region; however, it came from a holding at least 45 km away from the affected premises, and it was for turkeys.

**International, Poultry (Toronto Sun, February 4):** The Canadian Food Inspection Agency says the virus responsible for an outbreak of avian influenza in B.C.'s Fraser Valley is an H5N2 virus.

The agency says testing at the National Centre for Foreign Animal Diseases in Winnipeg determined the neuraminidase type or the N in the virus's name.

It has been known for nearly two weeks that the virus was an H5 virus but it took until Tuesday for the agency to announce testing had determined the N type.

The agency says preliminary tests suggest the virus was a low pathogenic type of avian flu.

Approximately 60,000 turkeys on the affected farm were euthanized last week and they are being composted in the barn at temperatures that should ensure any viruses are destroyed.

The H5N2 virus is not related to the H5N1 avian flu virus that has been decimating poultry flocks and killing people in Asia, the Middle East, Africa and parts of Eastern Europe for the last five years.

It is, however, the same type of virus that caused an outbreak in the Fraser Valley in late 2005. More than 62,000 poultry had to be destroyed in that outbreak.

A total of 36 premises in the surrounding area remain under quarantine, either because they are located within three kilometres of the affect farm or because they were known contact with the farm when the virus might have been present.

They are being quarantined as a precautionary measure, the agency says.

To date there have been no signs of any human infections with the virus.

**International, Poultry (Thanh Nien Daily, February 5):** An official from the provincial Bird Flu Prevention Committee [Vietnam] said after the virus broke out in the flock belonging to Nguyen Van Dong in Khanh Binh Commune late last month, the disease spread to nine more household duck flocks in Khanh Binh and Khanh Binh Dong communes.

Five out of nine hamlets in Khanh Binh have been infected, with hundreds of ducks in three Khanh Binh Dong households tested positive to the H5N1A virus.

The outbreak is the first this year in Ca Mau Province.

**International, Poultry (RIA Novosti, February 5):** Three birds that were found dead on a beach on Hong Kong's largest island have tested positive for bird flu, regional radio said on Thursday, citing local authorities.

Officials said the dead goose and two dead ducks that were found on Lantau Island last week contained the deadly H5N1 strain. The birds are believed to have washed up in Hong Kong after dying in China.

Around 20 other birds have been found in the past six days in Hong Kong, where private poultry farms have been banned since 2006. Officials suspect that all of the birds came from China, where five people died from the H5N1 virus in January.

In December, more than 90,000 chickens were culled at a Hong Kong poultry farm following a bird flu outbreak. Hong Kong's biggest bird flu outbreak was in 1997 when seven people died. The last death in the former British colony was reported in 2003.

Although there have been no incidences of human to human infection, experts fear that bird flu may mutate into a form that could easily be transmitted from person to person, causing a global pandemic.

**Michigan Wild Bird Surveillance (USDA, as of February 5):** For the 2008 testing season, 2105 Michigan samples have been taken so far, comprised of 327 live birds, 1218 hunter-killed birds, 35 morbidity or mortality samples and 525 environmental samples.

H5N1 subtype H5N1 has not been recovered from any Michigan samples tested to date, or from the 75,942 birds or environmental samples tested nationwide for the 2008 testing season, which will run from April 1, 2008 - March 31, 2009. 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.

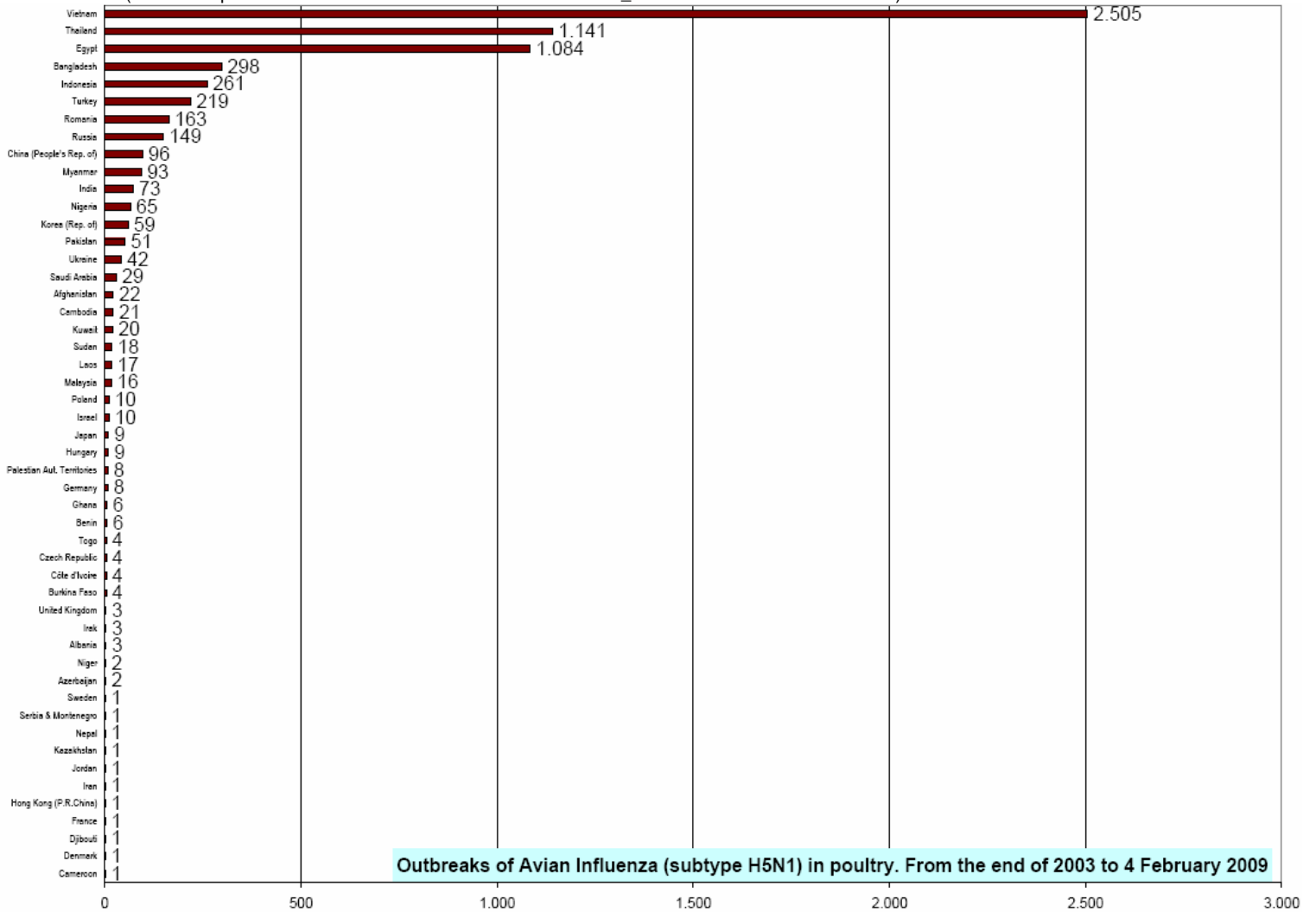
**Contributors**

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**Table 1. H5N1 Influenza in Poultry (Outbreaks up to February 4, 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 2/4/08)



**Table 2. H5N1 Influenza in Humans (Cases up to February 5, 2008)**

([http://www.who.int/csr/disease/avian\\_influenza/country/cases\\_table\\_2009\\_02\\_05/en/index.html](http://www.who.int/csr/disease/avian_influenza/country/cases_table_2009_02_05/en/index.html) Downloaded 2/5/2009)

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

Country	2003		2004		2005		2006		2007		2008		2009		Total	
	cases	deaths	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	0	0	8	5
Bangladesh	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0
Cambodia	0	0	0	0	4	4	2	2	1	1	1	0	0	0	8	7
China	1	1	0	0	8	5	13	8	5	3	4	4	7	4	38	25
Djibouti	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
Egypt	0	0	0	0	0	0	18	10	25	9	8	4	3	0	54	23
Indonesia	0	0	0	0	20	13	55	45	42	37	24	20	0	0	141	115
Iraq	0	0	0	0	0	0	3	2	0	0	0	0	0	0	3	2
Lao People's Democratic Republic	0	0	0	0	0	0	0	0	2	2	0	0	0	0	2	2
Myanmar	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0
Nigeria	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	1
Pakistan	0	0	0	0	0	0	0	0	3	1	0	0	0	0	3	1
Thailand	0	0	17	12	5	2	3	3	0	0	0	0	0	0	25	17
Turkey	0	0	0	0	0	0	12	4	0	0	0	0	0	0	12	4
Viet Nam	3	3	29	20	61	19	0	0	8	5	6	5	0	0	107	52
Total	4	4	46	32	98	43	115	79	88	59	44	33	10	4	405	254