



# 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:

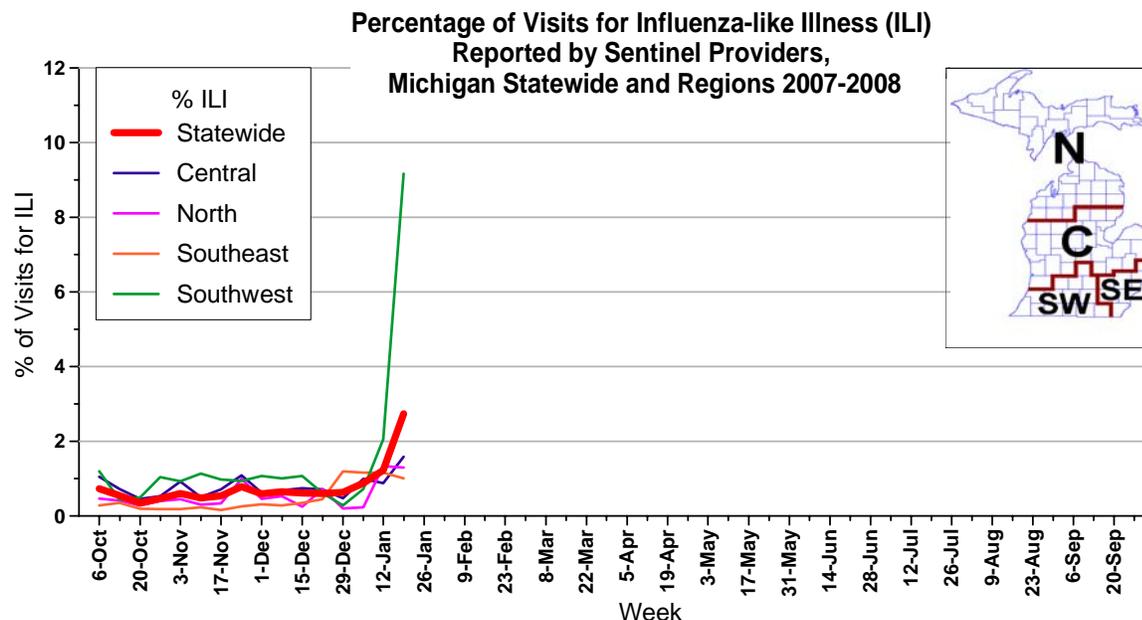
- **Michigan Surveillance:** First outbreak due to influenza confirmed for the 2007-08 influenza season.
- **National Surveillance:** Activity continues to increase, especially in the East North Central region.
- **Avian Influenza:** Multiple human cases and poultry outbreaks in several Asian countries.

**Michigan Disease Surveillance System:** The week ending January 19 saw both individual influenza reports and aggregate flu-like illness reports rise from last week's levels. Aggregate reports are slightly lower than numbers seen this time last year, while individual influenza reports are noticeably higher.

**Emergency Department Surveillance:** Emergency department visits due to constitutional complaints increased slightly this past week, while respiratory complaints dropped slightly. Both respiratory and constitutional complaints, however, are consistent with numbers seen this time last year. Six constitutional alerts in the C(2), N(2) and SE(2) Influenza Surveillance Regions and five respiratory alerts in the SW(5) Influenza Surveillance Region were generated last week.

**Over-the-Counter Product Surveillance:** Overall, OTC product sales activity saw a slight increase this week. Unpromoted chest rub sales, however, remained steady while chest rub sales in general increased slightly. The indicators levels are comparable to those seen at this time last year.

**Sentinel Surveillance (as of January 24):** The proportion of visits due to influenza-like illness (ILI) in Michigan increased over the last three weeks, and is at 2.7% for the week ending Jan. 19. This represents 276 cases of ILI out of 10066 total patient visits; 39 sentinels provided data for this report. The increase was principally due to one practice in Kalamazoo which reported 24% ILI (144/610); this was 52% (144/276) of the ILI cases reported statewide. The proportion of visits due to ILI increased in the Central (1.6%) and Southwest (9.2%) regions; North (1.3%) and Southeast (1.0%) were nearly unchanged. 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 January 24):** For the 2007-2008 influenza season, the MDCH Bureau of Laboratories has identified 49 influenza isolates:

- 21 A/H3N2: Southeast (12); Central (5); Southwest (2); North (2)
- 1 A/H1N1: North (1)
- 21 A subtype pending: Southwest (7); Central (7); Southeast (6); North (1)
- 6 B: Southeast (4); North (1); Central (1)

Sentinel laboratories are reporting increasing positive influenza A tests and rare influenza B positives, with individual labs in the Southwest region seeing a noticeable increase in influenza A positives over the past two weeks. Low but increasing levels of RSV and sporadic adenoviruses were reported statewide.

\*\*\*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 January 24):** For the 2007-2008 season, there are no confirmed reports of influenza-related pediatric mortality in Michigan.

\*\*\*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 January 24):** Two outbreaks have been reported to MDCH for the 2007-2008 influenza season. A respiratory outbreak in a long-term care facility in the Southeast region was confirmed by MDCH BOL testing to be due to influenza A (subtype pending). In the Central region, a K-12 school was closed due to high numbers of students and staff with high fevers and respiratory symptoms; respiratory viral cultures are underway at the MDCH BOL.

**National (CDC, January 18):** During week 2 (January 6 - 12, 2008), influenza activity continued to increase in the United States. Two hundred eighty-three (9.8%) 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 equal to the epidemic threshold. The proportion of outpatient visits for influenza-like illness (ILI) was above national baseline levels, and the proportion of outpatient visits for acute respiratory illness (ARI) was below national baseline levels. The East North Central, Mountain, Pacific, West North Central, and West South Central regions reported ILI above their region-specific baselines. Four states reported widespread influenza activity; 11 states reported regional influenza activity; the District of Columbia and 15 states reported local influenza activity; 19 states reported sporadic influenza activity; and one state reported no 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, January 10):** During week 52 of 2007 and week 1 of 2008, the level of overall influenza activity in the world remained low. An increase in the number of influenza viruses detected was observed in some countries in the northern hemisphere, where mostly influenza A (H1N1) circulated.

**Canada.** The level of influenza (A, B) activity remained unchanged. Two regions under influenza surveillance (Ontario and Saskatchewan) reported localized influenza activity and 17 other regions reported sporadic activity. Influenza A (H1) viruses predominated.

**Croatia.** A regional outbreak of influenza was reported during week 1. Predominantly influenza A (H1) was detected.

**Luxembourg.** A localized outbreak was reported in Luxembourg, with influenza A (H1) and B viruses detected.

**Slovenia.** A localized outbreak was reported in Slovenia, with influenza A (H1) and B viruses detected.

**Switzerland.** The level of influenza activity became regional, with influenza A (H1) and B viruses detected.

**United States of America.** Widespread influenza activity was reported in the United States. Regional influenza activity was reported by 5 states and local influenza activity by 33 states. Sporadic influenza activity was reported by the District of Columbia and Puerto Rico, where influenza A (H3 and H1) viruses predominated and influenza B also occurred.

Between week 52 of 2007 and week 1 of 2008, sporadic influenza activity was detected in Austria (A, H1, B), Belgium (H1), China (B predominant, H3), Denmark (H1), France (A, B, H1), Germany (B, H1), Hong Kong Special Administrative Region of China (B predominant, H3, H1), Islamic Republic of Iran (H1, B), Israel (B, A), Italy (H1, B), Latvia (A, H1, B), Lithuania (A), Madagascar (H1), the Netherlands (A, B), Norway (H1, A, B), Poland (A), Portugal (H1), Serbia and Montenegro (H1), Russian Federation (H3, H1, B), Slovakia (A), Spain (A, B), Sri Lanka (B), Sweden (H1, B) and United Kingdom (H1 predominant). Greece, Morocco, Romania, Senegal and Ukraine reported no influenza activity.

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MDCH reported **LOCAL ACTIVITY** to the CDC for the week ending January 19, 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, January 18):** The Ministry of Health of Indonesia has announced the death of a previously confirmed case of H5N1 infection. The 16-year-old female from West Java Province died on 15 January 2008. Of the 118 cases confirmed to date in Indonesia, 96 have been fatal.

**International, Human (WHO, January 21):** The Ministry of Health of Indonesia has announced a new case of human infection of H5N1 avian influenza. An 8-year-old male from Tangerang District, Banten Province developed symptoms on 7 January 2008, was hospitalized on 16 January and died in an AI referral hospital on 18 January. Investigations into the source of his infection are ongoing, however initial reports indicate the case lived in close proximity to a chicken slaughter house. Of the 119 cases confirmed to date in Indonesia, 97 have been fatal.

**International, Human (WHO, January 23):** The Ministry of Health of Indonesia has announced a new case of human infection of H5N1 avian influenza. A 30-year-old male from Tangerang District, Banten Province developed symptoms on 13 January 2008, was hospitalized on 19 January and is currently in hospital. Investigations into the source of his infection are ongoing. Of the 120 cases confirmed to date in Indonesia, 97 have been fatal.

**International, Human (WHO, January 24):** The Ministry of Health in Viet Nam has confirmed a new case of human infection of H5N1 avian influenza. The case has been confirmed by the National Institute of Hygiene and Epidemiology (NIHE). The case is a 34 year old male from Tuyen Quang Province. He

developed symptoms on 10 January, was hospitalized on 16 January and died on 18 January. The case had contact with sick and dead poultry prior to his illness. Poultry infected with H5N1 avian influenza were identified in the case's village following his illness.

Control measures have been implemented and close contacts have been identified. All remain healthy and will continue to be monitored. Of the 102 cases confirmed to date in Vietnam, 48 have been fatal.

**International, Human (WHO, January 24):** The Ministry of Health of Indonesia has announced the death of a previously confirmed case of H5N1 infection. The 30-year-old male from Tangerang District, Banten Province died on 24 January 2008. Of the 120 cases confirmed to date in Indonesia, 98 have been fatal.

**International, Human (Reuters [edited], January 17):** The H5N1 bird flu virus may sometimes stick to surfaces or get kicked up in fertilizer dust to infect people, according to a World Health Organization report published on Wednesday.

The WHO team reviewed all known human cases of avian influenza, which has infected 350 people in 14 countries and killed 217 of them since 2003, and found that 25 percent of cases have no explanation. Most are passed directly from bird to people, they noted in their report, published in the *New England Journal of Medicine*. And very rarely one person can infect another -- always close relatives via intimate physical contact.

"In one quarter or more of patients with influenza A (H5N1) virus infection, the source of exposure is unclear, and environment-to-human transmission remains possible," the researchers, led by WHO's Dr. Frederick Hayden, wrote. "For some patients, the only identified risk factor was visiting a live-poultry market."

It could be that small particles of virus-contaminated fluid stuck to surfaces, they said. Or perhaps fertilizer made from infected bird feces somehow carried the virus into people's noses or mouths.

"It is unknown whether influenza A (H5N1) virus infection can begin in the human gastrointestinal tract," they wrote. "In several patients, diarrheal disease preceded respiratory symptoms, and virus has been detected in feces."

Government and health officials have stressed that well-cooked chicken cannot infect people. "Drinking potable water and eating properly cooked foods are not considered to be risk factors, but ingestion of virus-contaminated products or swimming or bathing in virus-contaminated water might pose a risk," the WHO team of bird flu experts noted.

## ENDEMIC IN BIRDS

H5N1 is considered entrenched in parts of Asia, including Indonesia, Africa and the Middle East. It pops up frequently in Europe and has prompted the slaughter of hundreds of millions of chickens.

The researchers noted that people only rarely become infected. The fear is that the virus will mutate into a strain that passes easily from one person to another, setting off a pandemic that could kill millions of people in the space of a few months.

"After exposure to infected poultry, the incubation period generally appears to be 7 days or less, and in many cases this period is 2 to 5 days," the WHO team wrote.

"In clusters in which limited, human-to-human transmission has probably occurred, the incubation period appears to be approximately 3 to 5 days, although in one cluster it was estimated to be 8 to 9 days."

It usually causes severe pneumonia and tests suggest that it rarely or never infects people without causing symptoms.

Avian flu kills on average within nine to 10 days and has killed 61 percent of victims.

Quick use of antiviral drugs can save lives, they noted, although some strains of the virus are more treatable than others with Tamiflu, the drug of choice to treat influenza. It is made by Roche Holdings AG and Gilead Sciences under the generic name oseltamivir.

**International, Poultry (Reuters [edited], January 18):** A new outbreak of the strain of bird flu that is deadly to humans has struck Ukraine after being kept under control for two years, veterinarians said on Friday. Ukraine's Veterinary Inspectorate said the outbreak was detected this week in the village of Rovnoye in the Crimean peninsula, the same region hit in late 2005. A total of 153 birds died suddenly at a private farm where more than 25,000 poultry were kept.

"Yesterday, tests were concluded and DNA of the H5N1 virus was found," a veterinary inspectorate spokesman, Anatoly Osadchi, told Reuters. "The village has been sealed off, guards have been posted at entry points and a quarantine is in place. All the birds are being incinerated."

The inspectorate said the first six deaths were noted on Tuesday, followed by dozens more over the next two days.

**International, Poultry (Indo-Asian News Service [edited], January 19):** Bird flu in West Bengal has spread to new areas, tests confirmed Saturday [19 Jan 2008] even as efforts were on to contain the outbreak by culling poultry in the affected areas.

"The new areas are Burdwan and Nadia districts. The laboratory tests in Bhopal confirmed the spread of the disease to Mangalkot and Purbasthali in Burdwan and Tehatta in Nadia. It was also confirmed that the deaths in Murshidabad district's Khargram and Baroa were also from the virus," West Bengal Animal Resource Development Minister Anisur Rahman told IANS.

"We have to step up the culling operation further in view of the new reports of bird flu confirmation," Rahman said.

The agriculture ministry said in a statement in New Delhi Saturday: "Samples from 4 blocks of Murshidabad district (Khargram, Burwan, Nowda and Nabagram), one block of Nadia district (Tehatta) and 2 blocks of Burdwan district (Mongalkote and Purbasthali) have been found positive for avian influenza by rapid tests. The state government has been notified.

"The samples from South 24 Parganas, Cooch Behar, Purulia and Hooghly districts have tested negative for avian influenza. Result of the samples sent from Bankura district is awaited from HSADL (High Security Animal Disease Laboratory), Bhopal," it said.

The state had set a target of slaughtering 400,000 poultry birds but with the spread of the disease to new areas at least 200,000 more birds might have to be killed.

"We have been able to cull nearly 60,000 birds so far. The health and animal resource development workers are tirelessly engaged in killing the birds," Rahman said.

The agriculture ministry said: "As per the latest information received, a total mortality of 96,010 poultry birds has been reported from Birbhum, South Dinajpur, Murshidabad, Nadia, South 24 Parganas, Burdwan and Bankura districts of West Bengal. This number stood at 85,006 till yesterday (Fri 18 Jan 2008)."

Meanwhile, Union Minister of State for Health Panabaka Lakshmi said: "We are not satisfied (with the measures to combat bird flu in West Bengal)." Speaking to reporters on the sidelines of a function in Kolkata, she did not specify where the state was lacking. She however alleged the compensation paid for the poultry losers was not properly distributed.

Alarmed by the outbreak of the disease, dubbed the worst in India by the World Health Organization (WHO), West Bengal Chief Minister Buddhadeb Bhattacharya Friday said the state government would slaughter all poultry birds in areas reporting fresh cases of bird flu even before laboratories confirm the H5N1 strain.

"We have earmarked a sum of Rs.30 million [USD 763,942] as compensation for those losing their poultry birds," Rahman said Saturday. Farmers were being handed over tokens at culling sites and asked to contact their panchayat [village council] offices for the money. The payment is Rs.40 [USD 1.02] for a country chicken, Rs.30 [USD 0.765] for a broiler and Rs.10 [USD 0.255] for a chick.

While the minister said the culling operation had been stepped up, reports from the districts said the process was slow, often owing to villagers' resistance to the Rapid Response Team (RRT) carrying out

the cull. But in some areas where a large number of poultry birds had died of the infection, the villagers were more eager to offer their chickens and ducks for culling.

"In the next 7 days we will kill all the birds (an estimated 400,000) by increasing the number of health and animal resource development (ARD) workers," the chief minister told reporters Friday. "Wherever we will hear of new infections, we will kill birds. There are at the moment 60 teams comprising 5 workers each. We will increase the manpower," he said.

**International, Poultry (Agence France-Presse [edited], January 22):** An outbreak of bird flu among poultry in Bangladesh is far worse than the country's government is reporting, experts warned Tuesday.

"Bird flu is now everywhere. Every day we have reports of birds dying in farms," said leading poultry expert and the treasurer of Bangladesh Poultry Association M.M. Khan. "Things are now very very serious and public health is under danger. The government is trying to suppress the whole scenario," Khan said, adding that farmers were also holding back from reporting cases.

The comments came after the government reported a series of outbreaks of the deadly H5N1 strain of bird flu last week in several southern and northern districts of the country.

"The situation is far worse than before. There were huge outbreaks in the past weeks and the disease is now more widespread than before," an expert at an international agency said, speaking on condition of anonymity.

The head of the government's livestock department, Sunil Chandra Ghosh, admitted the situation had worsened in the past week with the onset of winter.

"The intensity of the bird flu has increased with the arrival of winter. There was no detection of the flu several months in late 2007, but the situation has worsened in the last week," Ghosh said. He added, however, that he believed the virus was being contained.

On Sunday alone, police and local health officials destroyed nearly 10,000 birds in two districts.

Bangladesh is the world's most densely populated country, with nearly 1,000 people living per square kilometre (2,600 per square mile). Experts fear bird flu could mutate and develop the ability to pass from human to human. So far there have been no reports of human infection in Bangladesh.

**International, Poultry (Agence France-Presse, January 22):** The bird flu virus found in a village in northern Turkey is of the highly pathogenic H5N1 strain that is potentially deadly to humans, an agriculture ministry spokesman said Tuesday.

Asked by AFP whether the virus detected among poultry in the village of Saz in Zonguldak province on the southern coast of the Black Sea was H5N1, spokesman Tunc Tuncel said: "Yes, That is correct."

"But we believe that it has not spread to any humans," he said, adding that preventive measures were already in place.

**International, Poultry (Reuters [edited], January 22):** Bird flu may have killed a 32-year-old Vietnamese man in a northern province where the virus has been found in poultry, state-run media and a government report said on Tuesday.

The man died at a Hanoi hospital of pneumonia earlier this month, two days after he had been taken in from Tuyen Quang province, the hospital's deputy director Nguyen Hong Ha was quoted by the online VTC News newspaper ([www.vtc.vn](http://www.vtc.vn)) as saying.

The man fell ill on January 16 after eating chicken which had died of unknown cause. Dead chicken and white-winged ducks were also found near his house, the newspaper quoted a relative as saying.

Vietnamese doctors were testing to see if the man had been infected by the H5N1 virus.

The H5N1 virus remains mainly a virus of birds, but experts fear it could mutate into a form easily transmitted from person to person and sweep the world, killing millions.

In a separate report, the Animal Health Department said tests have confirmed that bird flu has infected poultry in Tuyen Quang province.

It said chickens and white-winged ducks died at a farm in the province early this month and health officials took samples from 11 birds on Jan 17 for bird flu tests. They found three of the 11 samples carried the H5N1 virus, the department said.

The finding meant Tuyen Quang joined the northern province of Thai Nguyen and the southern province of Tra Vinh in the government's bird flu watch list which reported the last outbreak among poultry less than 21 days ago.

**International, Wild Birds (The Press Association [edited], January 18):** A fifth dead swan has tested positive for the H5N1 strain of bird flu at a reserve, it was confirmed today. Three other wild swans tested positive for the virus last week after they were found dead at the Abbotsbury Swannery in Dorset, an open reserve in the Chesil Beach area, during routine surveillance. A fourth dead swan was confirmed to have tested positive yesterday.

John Houston, general manager at Abbotsbury Tourism Ltd, said today: "One more swan has tested positive. We are expecting to have a run of positives and negatives while it works its way through the herd."

Restrictions on poultry movements in the area were imposed after the dead birds were confirmed to be infected with the strain of bird flu last Thursday. The Environment Department said there was currently no evidence to suggest the disease was widespread among wild birds in the area, but enhanced surveillance was taking place. The Abbotsbury Swannery will be given the all-clear after 21 days with no birds testing positive for the virus.

Representatives from the Department for Environment, Food and Rural Affairs (Defra) and swannery staff were today taking swab samples from the mouth and rectum of healthy swans, he said. "They are testing this to build up a better picture of the situation on the ground amongst the swans and to test the theory the swans are showing the same pattern seen in wild ducks," he added.

Defra told the swannery that outbreaks of the deadly virus in wild ducks resulted in a low mortality rate of around 1% with the rest of the flock building up an immunity.

The Abbotsbury Swannery is a reserve for free flying swans and wild birds and is part of an internationally important wetland. It is a seasonal tourist attraction which closed to the public on October 28 last year and is due to reopen on March 15, in line with the bird's natural life cycle.

A Defra spokesman said: "We have received positive results this morning for H5N1 in a fifth swan on the same premises in Dorset. We are awaiting confirmation of whether this is highly pathogenic H5N1, which is expected later today."

**Michigan Wild Bird Surveillance (USDA, as of January 24):** For the 2007 testing season, 1756 Michigan samples have been taken so far, comprised of 100 live bird samples, 1209 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 73,194 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](mailto:VagaskyS@Michigan.gov) with any questions regarding this newsletter or to be added to the weekly electronic mailing list.**

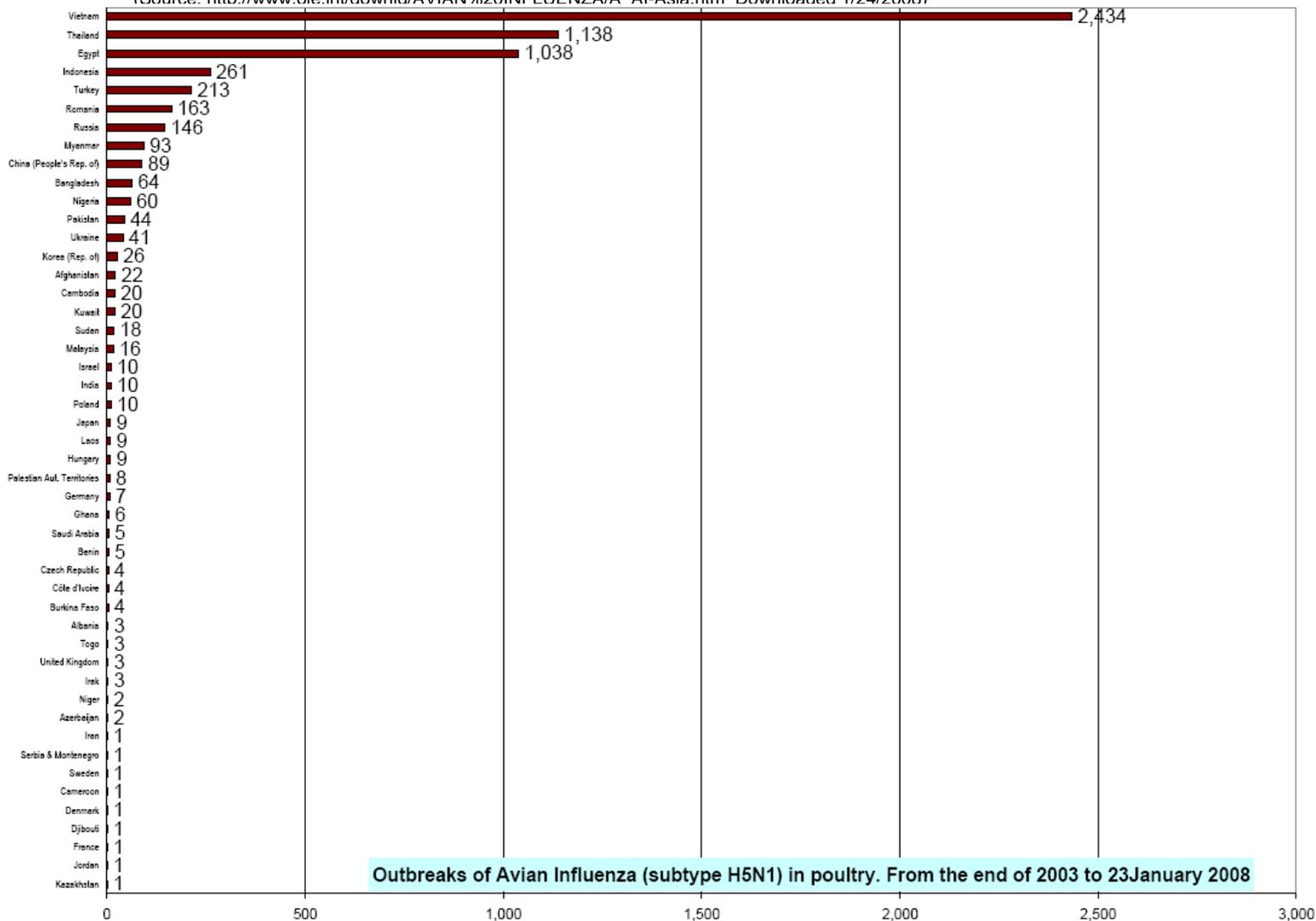
**Contributors**

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**Table 1. H5N1 Influenza in Poultry (Outbreaks up to January 23, 2008)**

(Source: <http://www.oie.int/download/AVIAN%20INFLUENZA/AI-Asia.htm> Downloaded 1/24/2008)



**Outbreaks of Avian Influenza (subtype H5N1) in poultry. From the end of 2003 to 23 January 2008**

**Table 2. H5N1 Influenza in Humans (Cases up to January 24, 2008)**

([http://www.who.int/entity/csr/disease/avian\\_influenza/country/cases\\_table\\_2008\\_01\\_24/en/index.html](http://www.who.int/entity/csr/disease/avian_influenza/country/cases_table_2008_01_24/en/index.html) Downloaded 1/24/2008)

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												
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	3	3	120	98
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
Total	4	4	46	32	98	43	115	79	86	59	4	4	353	221