



# 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:

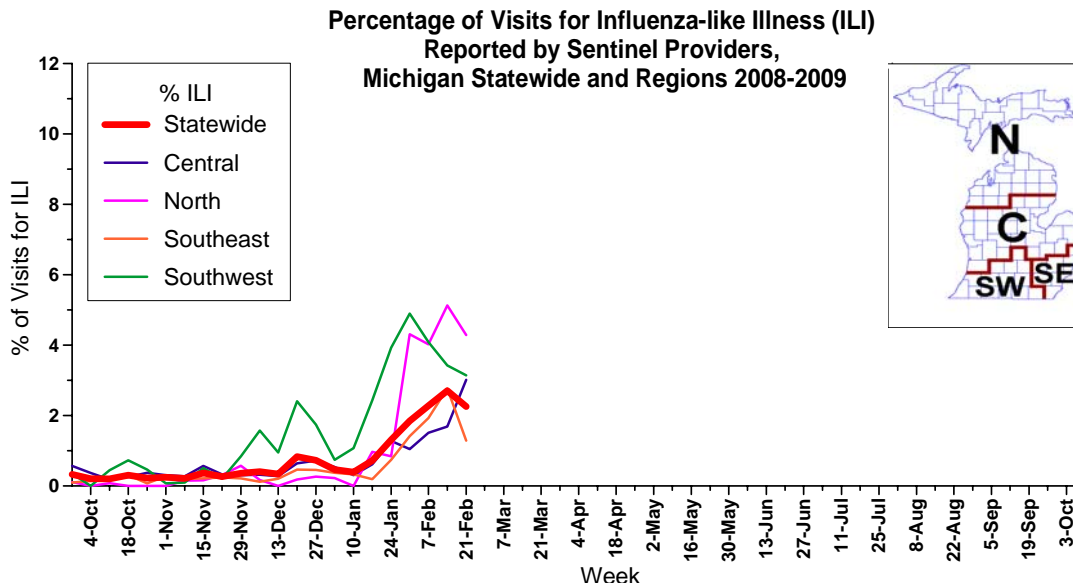
- **Michigan Surveillance:** Surveillance systems indicate sustained influenza activity, but a decreasing trend was evident in week 7.
- **National Surveillance:** In week 6, influenza activity increased; 24 states report “widespread” activity.
- **Avian Influenza:** Previously reported human H5N1 case dies; multiple countries with poultry outbreaks.

**Michigan Disease Surveillance System:** The week ending February 21 saw both individual influenza disease reports and aggregate flu-like numbers decrease slightly compared to what was seen in the previous week. Individual numbers are notably lower than levels seen at this time last year, while aggregate numbers are comparable.

**Emergency Department Surveillance:** Emergency department visits from both constitutional and respiratory complaints leveled off this past week. Both of these numbers are slightly lower than those seen at this time last year. Five constitutional alerts in the C(1), N(2) and SW(2) Influenza Surveillance Regions and two respiratory alerts in the N(2) Influenza Surveillance Region were generated last week.

**Over-the-Counter Product Surveillance:** Overall, OTC product sales were mixed last week. Sales of thermometers decreased slightly, children’s electrolyte sales held steady, and the remaining indicators increased slightly. Over the last month, chest rub sales have increased slightly, while all other indicators show a trend of steady sales overall. Indicator levels are comparable to those seen at this time last year.

**Sentinel Provider Surveillance (as of February 26):** During the week ending February 21, 2009, the proportion of visits due to influenza-like illness (ILI) remains elevated but declined to 2.5% overall; 236 patient visits due to ILI were reported out of 9,262 office visits. Activity declined in three surveillance regions: North (4.5%), Southeast (1.9%) and Southwest (3.1%) regions. Activity increased in the Central (2.9%) region. Urgent Care centers, Pediatrician offices and Student Health centers submitted the majority of the reports. Thirty-three sentinels provided data for this report. 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 Cristi Carlton at 517-335-9104 or [CarltonC2@michigan.gov](mailto:CarltonC2@michigan.gov) for more information.

**Laboratory Surveillance (as of February 26):** During the past week, 21 new influenza A isolates and 10 new influenza B isolates were identified at the MDCH Bureau of Laboratories (BOL). For the 2008-2009 influenza season, MDCH BOL has identified 157 influenza isolates (followed by Influenza Surveillance Regions of origin):

- 108 A/H1N1 (39SE, 27SW, 19C, 23N)
- 2 A/H3N2 (1SE, 1C)
- 1 A subtype pending (SW)
- 46 B (12SE, 12SW, 7C, 15N). 8 isolates are B/Florida/4/2006-like (4SE, 1SW, 1C, 2N); 21 are B/Malaysia/2506/2004-like (9SW, 1C, 11N); 17 are pending characterization (8SE, 2SW, 5C, 2N).

During the week ending February 21, 11 sentinel labs reported influenza positives. Influenza A reporting was mixed, with 2 labs (C) reporting increasing numbers of positive tests, 6 labs reporting elevated but steady positives (SE, SW, C, N) and 3 labs (SE, SW) with decreasing A positives. 4 labs (C, SW) reported no influenza B activity, with 5 labs (SE, C, N) reporting level or decreasing amounts of B positives. RSV positives increased in 3 labs (SE, SW).

\*\*\*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 26):** At this time, 14 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 26):** 14 influenza A/H1N1 viruses from the MDCH Bureau of Laboratories have been tested for antiviral resistance at CDC for the 2008-2009 season. All 14 viruses were resistant to oseltamivir (Tamiflu®) and sensitive to zanamivir, amantadine and rimantadine. These viruses were collected in the SE(8) and SW(6) Influenza Surveillance Regions. One influenza A/H3N2, collected in the C Surveillance Region, has been tested for antiviral resistance; that virus was resistant to the adamantanes (amantadine and rimantadine) and sensitive to oseltamivir and zanamivir.

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 26):** 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 26):** Two congregated setting outbreaks (1C, 1N) due to influenza (1 influenza A, 1 influenza B) have been reported to MDCH for the 2008-09 influenza season.

**National (CDC [edited], February 20):** During week 6 (February 8-14, 2009), influenza activity continued to increase in the United States. One thousand three hundred thirteen (24.4%) 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. Six influenza-associated pediatric deaths were reported. The proportion of outpatient visits for influenza-like illness (ILI) was above the national baseline. ILI increased in seven of the nine regions compared to the previous week, and the East North Central, East South Central, Mid-Atlantic, Mountain, New England, South Atlantic, West North Central, and West South Central regions reported ILI above their region-specific baselines. Twenty-four states reported widespread influenza activity, 13 states reported regional activity; the District of Columbia and 11 states reported local influenza activity; and Puerto Rico and two states reported sporadic influenza activity.

CDC has antigenically characterized 390 influenza viruses [239 influenza A (H1), 37 influenza A (H3) and 114 influenza B viruses] collected by U.S. laboratories since October 1, 2008.

All 239 influenza A (H1) viruses are related to the influenza A (H1N1) component of the 2008-09 influenza vaccine (A/Brisbane/59/2007). All 37 influenza A (H3N2) viruses are related to the A (H3N2) vaccine component (A/Brisbane/10/2007).

Influenza B viruses currently circulating can be divided into two distinct lineages represented by the B/Yamagata/16/88 and B/Victoria/02/87 viruses. Thirty-three influenza B viruses tested belong to the B/Yamagata lineage and are related to the vaccine strain (B/Florida/04/2006). The remaining 81 viruses belong to the B/Victoria lineage and are not related to the vaccine strain.

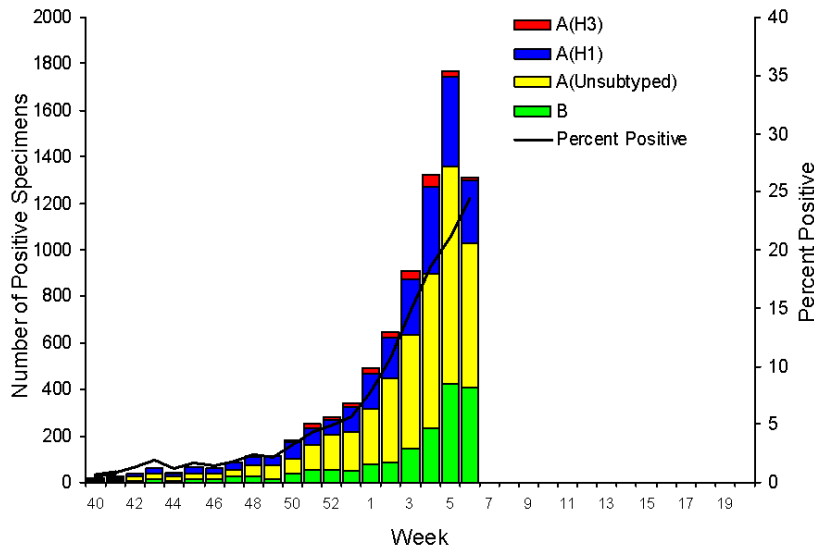
Since October 1, 2008, 268 influenza A (H1N1), 51 influenza A (H3N2), and 110 influenza B viruses have been tested for resistance to the neuraminidase inhibitors (oseltamivir and zanamivir). Two hundred sixty-eight influenza A (H1N1) and 51 influenza A (H3N2) viruses have been tested for resistance to the adamantanes (amantadine and rimantadine). The results of antiviral resistance testing performed on these viruses are summarized in the table below.

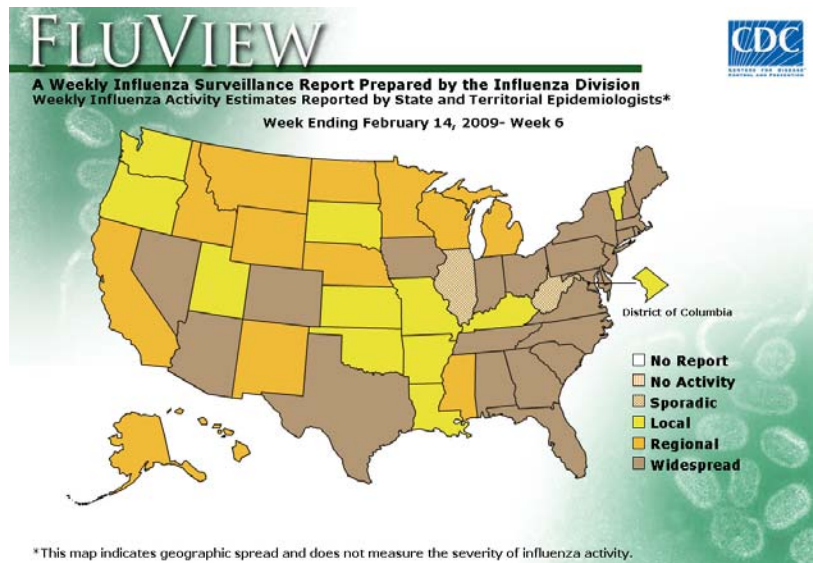
	Isolates tested (n)	Resistant Viruses, Number (%)		Isolates tested (n)	Resistant Viruses, Number (%)
		Oseltamivir	Zanamivir		
<b>Influenza A (H1N1)</b>	268	264 (98.5%)	0 (0)	268	2 (0.7%)
<b>Influenza A (H3N2)</b>	51	0 (0)	0 (0)	51	51 (100%)
<b>Influenza B</b>	110	0 (0)	0 (0)	N/A*	N/A*

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

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

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





**International (WHO [edited], February 20):** During the weeks 5-6, the level of overall influenza activity in the world continued to increase. Influenza activity intensified in central Europe with most countries reporting regional or widespread activity due to influenza A (H3). Activity in western Europe on the other hand declined. In Canada, Hong Kong Special Administrative Region of China, Japan and the United States of America influenza activity increased.

Sporadic influenza activity was observed in, Egypt (B), Georgia (B), Iran (H3), Italy (H1,H3, B), Portugal (H3), Slovakia (H3) and Turkey (H3, B). Argentina, Bulgaria, Chile and Honduras reported no activity.

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

MDCH reported **REGIONAL INFLUENZA ACTIVITY** to the CDC for the week ending February 21, 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

### 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 24):** The Ministry of Health in Viet Nam has announced the death of a previously confirmed case of H5N1 infection. The 23 year old female from Dam Ha District, Quang Ninh Province died on 21 February. Of the 109 cases confirmed to date in Viet Nam, 53 have been fatal.

**International, Poultry (Xinhua News Agency [edited], February 18):** Korea's Ministry for Food, Agriculture, Forestry and Fisheries confirmed on 18 Feb 2009 that avian influenza recently occurred on 3 chicken farms in Korea's Suncheon and other parts of Jeollanam-do [South Jeolla] Province.

The Ministry said that tests carried out on blood samples taken from poultry on 3 chicken farms in Suncheon, Gokseong County, and Boseong County in Jeollanam-do Province confirmed that the avian influenza virus found on all 3 chicken farms is low pathogenic H5 subtype. A total of 22 000 chickens on the 3 farms have been culled.

**International, Poultry (The Business Standard, February 19):** In spite of repeated attempts to check the outbreak of bird flu, the disease has once again surfaced in South Dinajpur district of the state [India].

The government had set a target on culling about 30,000 birds in the district in the next couple of days, said Anisur Rehman, minister for animal resources development, government of West Bengal. The repeated outbreak of bird flu in the state is on account of the inability of the Bangladesh government to check the disease, the minister said.

In this regard, the state government had also written several letters to the Union government for initiating talks with Bangladesh to control the spread of disease, he added.

The samples of dead birds from Harirampur in the district, sent to the High Security Disease Diagnostic Laboratory in Bhopal last week, contained H5N1 strain of the avian flu.

Recently, bird flu was detected in Cooch Behar district of the state.

Last year over four million birds were culled in the state, and the World Health Organization (WHO) described it as India's worst-ever bird flu outbreak.

Bird flu first broke out in India in 2006 and millions of chicken and ducks have been culled since to contain the virus, but it has resurfaced from time to time. Hundreds of thousands of birds were also culled in the northeastern India after the virus was detected there in November.

Experts have warned that the H5N1 virus might mutate or combine with the highly contagious seasonal influenza virus and spark a pandemic that could kill millions of people across the world.

Recently, the Nepal government had issued bird flu alert in 26 districts bordering India. The disease was also reported in Sikkim last month. Bird flu was also reported in nine provinces in Vietnam.

The minister said, the present bird flu outbreak was limited to one district, and there was not threat of the disease spreading to other areas.

**International, Poultry (BBC, February 19):** Hundreds of fowl in three sub-districts in the city of Serang, Banten Province [Bangladesh], have died suddenly. Tests have been carried out and show that some of the fowl were infected with avian influenza.

In Curug Sub-district, the villages of Kemanisan, Sukajaya and Pancalaksana were affected. Tests carried out on the chickens from Kemanisan and Sukajaya villages were positive for bird flu, however tests have not carried out in Pancalaksana Village. According to the Serang Agriculture Agency, previously 120 chickens had died suddenly in the village of Kemanisan.

In Walantaka Sub-district, at least 140 chickens, suspected of being infected with bird flu, have died in Kalodran and Kepuran villages.

In Kasemen Sub-district ducks have also died suddenly but they have not yet been tested.

**International, Poultry (Vietnam News Agency [edited], February 20):** Bird flu has emerged in central Khanh Hoa Province [Vietnam], raising the number of provinces hit by bird flu to 10, according to the animal health department. Nguyen Van Trung's unvaccinated ducks and fowls tested positive yesterday [19 Feb 2009] for the H5N1 virus in Khanh Hoa Province's Vinh Phuong Commune.

Officials are worried because 10 days ago, upon realizing that 3 fowls had died with virus symptoms, Trung's 6-member family and their guests ate them all. Trung threw other fowls away as they continued to die without informing local officials, according to the province's animal health department. Finally when 22 fowls had died he informed the department.

Yesterday, the locality decontaminated Vinh Phuong Commune and checked the health of people who had eaten the contaminated birds. The Khanh Hoa provincial People's Committee also asked other localities to strictly supervise livestock breeding farms to facilitate quick discovery of, and solutions to, epidemic outbreaks.

Bird flu has recently broken out in some Cuu Long delta provinces, primarily infecting flocks of free-range ducks, according to the region's animal health departments. Professor Vo Tong Xuan, former rector of An Giang University, said free-range ducks could carry the bird flu virus to disease-free provinces as they move to eat from harvested rice paddy fields.

"Healthy people without protective clothing and masks who come within one metre of an infected bird are at high risk of contamination," said Tran Tinh Hien, deputy director of HCM City Tropical Disease Hospital. Not all fowls stricken with the virus show the symptoms, so it is necessary for people to be equipped with anti-virus clothes, according to Hien.

Provinces with confirmed cases of bird flu include: Khanh Hoa, Thanh Hoa, Thai Nguyen, Ca Mau, Soc Trang, Nghe An, Hau Giang, Quang Ninh, Bac Ninh and Quang Tri. Approximately 30,000 fowls have been culled.

**International, Poultry (NewKerala.com [edited], February 20):** Less than a fortnight [2 weeks] after Nepal's government said the situation was under control in eastern Nepal, where the 1st bird flu outbreak was reported last month [January 2009], fresh fears of another outbreak rose with another village in the same area close to the Indian border reporting poultry deaths.

"Bird flu has been detected in Sharanmati village in Jhapa district," said Hari Dahal, spokesman at Nepal's Agriculture and Cooperatives Ministry. The village lies close to Nepal's border with India's West Bengal state, about 40 km [24.8 miles] south west of the border town of Kakarbhitta, where the 1st outbreak was reported in mid-January 2009.

During the weekend, 150 chickens died in Sharanmati, Dahal said, leading to the government bringing samples to Kathmandu for examination. After the tests confirmed the presence of the H5N1 virus, the samples were sent to London's Weybridge Laboratory for further tests. "They have just informed us that all the 7 samples tested positive," Dahal said.

The government is sending a rapid action team to the village and setting up a control room. It is going to sound a high alert and declare emergency operations in and around the village. The culling of poultry will start afresh in the bird flu-hit tea district and surveillance on the border entries with India tightened.

Dahal expressed fears that the ailing birds could have been smuggled from India for sale in Nepal. "India has bird flu outbreak in West Bengal, Sikkim and Assam states," he said. "The birds are likely to have been brought from there. They were hidden in a backyard." Dahal said that Kakarbhitta, where the first outbreak was reported, leading to the destruction of nearly 25,000 chickens and poultry products, had not reported any fresh signs of the disease. The disease has not been reported in humans in Nepal, the government said.

**International, Poultry (Thai Daily News, February 25):** Laos' Phongsaly province has become the first locality in the country this year where bird flu was detected when an avian influenza outbreak was confirmed by Food and Agriculture Organisation (FAO) last week.

According to the source from FAO Lao office, two red zones of 1 km radius around a place in Muang Koua District where the fatal disease was detected, have been declared.

Lao News Agency (KPL) said one red zone is located directly in the district capital city and the centre of the other is located approximately three kilometres away on the road to Oudomxay.

A joint Department of Livestock and Fisheries (DLF) and Food and Agriculture Organization (FAO) team has been on field mission since Feb. 14 to directly advise the local authorities on adequate control measures and enabled good coordination.

The villagers of the bird flu stricken area were informed of the necessary actions to control the disease, including movement control, culling and disinfection, and ban on poultry selling.

At present, the ongoing surveillance is being conducted not only in Phongsaly but also in the other neighboring provinces in order to ensure the rapid detection of new avian flu cases in the poultry population.

**International, Poultry (BBC News [edited], February 26):** Birds on two poultry farms in Suffolk and Norfolk have tested positive for a strain of avian flu.

Vets from Defra carried out the tests at Bernard Matthews breeder sites at Arran farm near Yaxham, Norfolk, and Laurel farm, in Ubbeston, Suffolk.

The birds tested positive for avian influenza but not the highly pathogenic H5 or H7 types. Defra has not advised a cull of the birds but has placed a movement restriction on them.

A Defra spokesman said: "A routine veterinary investigation is ongoing at poultry premises into the possible presence of a notifiable avian disease. Laboratory tests are ongoing and there is no conclusion yet.

"Routine veterinary investigations into notifiable diseases occur on a regular basis. It is a legal requirement to notify the Animal Health Agency of the possibility of such diseases whenever these cannot be ruled out by a vet or an animal keeper as part of the diagnosis of illness in animals or birds."

A second series of tests is taking place to identify the strain of influenza.

Bernard Matthews said in a statement: "Whilst the two small breeder farms remain under movement restrictions until Defra has completed its tests, other operations continue to run as normal.

"As a precautionary measure and out of a duty of care for our employees, we have sought guidance from the Health Protection Agency and are providing Tamiflu treatment to our staff, who work on the affected farms.

**International, Wild Birds (Prague Daily Monitor, February 24):** Czech vets on Tuesday discovered a virus of bird flu when checking the breeding of waterfowl in the Rybarstvi Hodonin fishing company, local vet authority head Jaroslav Salava told CTK.

It was discovered in nine out of the 60 randomly checked geese near the Pisecensky pond. However, it is not the risky type H5N1, but the much less dangerous H7 stem, Salava said.

Nevertheless, vets will still order the putting down of all the roughly 3000 geese and 350 ducks, Salava said.

An area with the 1-km radius was created around the focus of the epidemic, Salava said, adding that special veterinary measures for the disinfection of the farms and movement of people and poultry would be in effect there.

Salava said the staff and locals were not exposed to any serious danger in the area.

"The found H7 stem is among the low pathogenic stems of bird flu with a minimum risk. The transfer of the infection to humans can be discounted," Renata Vaverkova from the regional sanitation authority told CTK.

The low pathogenic stem of bird flu was recently discovered also in Germany, France, Belgium and Italy. There are about 90 ponds with the acreage of 520 hectares in the Hodonin region.

**Michigan Wild Bird Surveillance (USDA, as of February 26):** 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.

HPAI subtype H5N1 has not been recovered from any Michigan samples tested to date, or from the 77,060 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 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.**

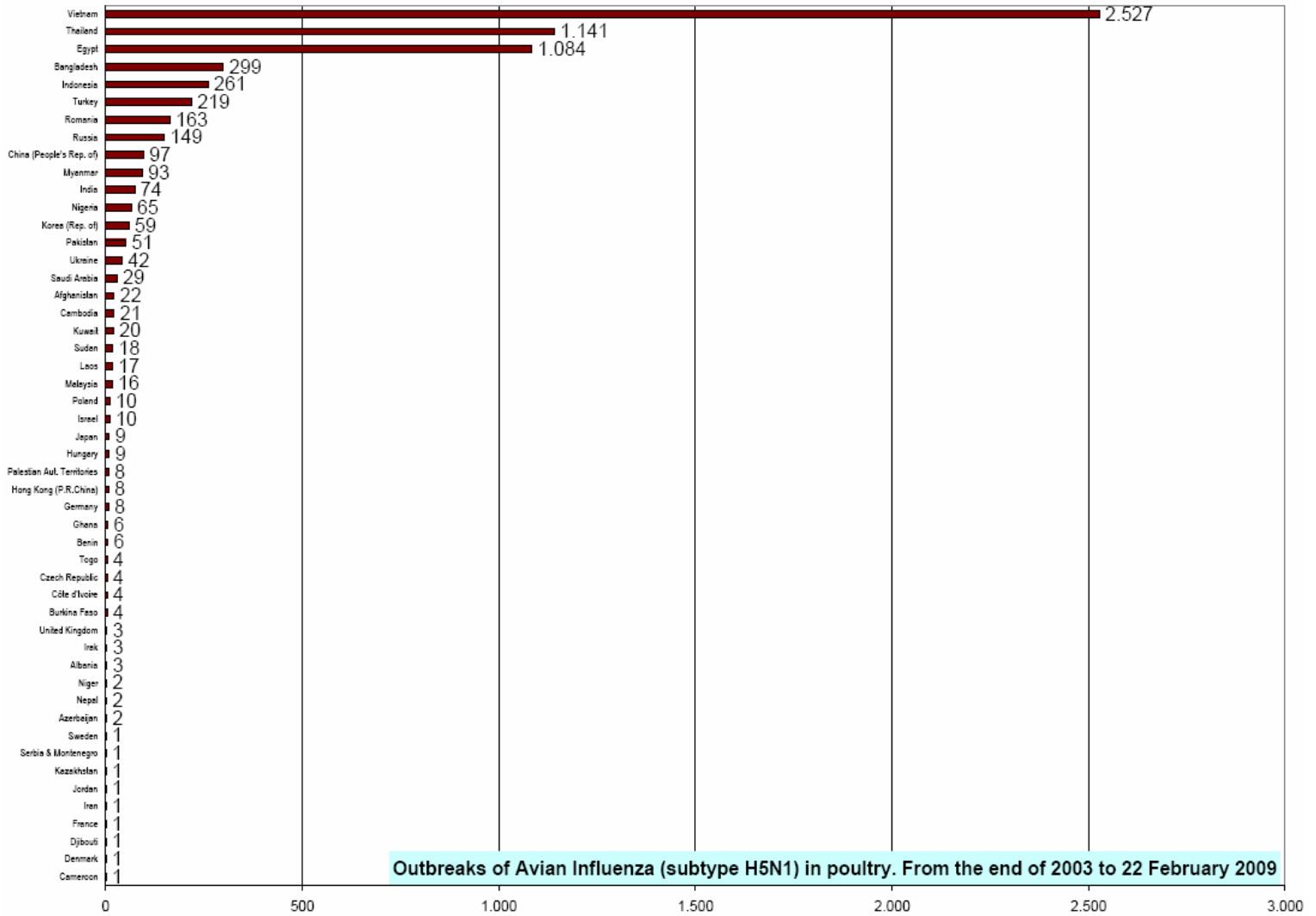
**Contributors**

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**Table 1. H5N1 Influenza in Poultry (Outbreaks up to February 22, 2009)**

(Source: [http://www.oie.int/downld/AVIAN%20INFLUENZA/A\\_AI-Asia.htm](http://www.oie.int/downld/AVIAN%20INFLUENZA/A_AI-Asia.htm) Downloaded 2/23/09)



**Outbreaks of Avian Influenza (subtype H5N1) in poultry. From the end of 2003 to 22 February 2009**

**Table 2. H5N1 Influenza in Humans (Cases up to February 24, 2009)**

([http://www.who.int/csr/disease/avian\\_influenza/country/cases\\_table\\_2009\\_02\\_24/en/index.html](http://www.who.int/csr/disease/avian_influenza/country/cases_table_2009_02_24/en/index.html) Downloaded 2/24/2009)

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	4	0	55	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	2	1	109	53
Total	4	4	46	32	98	43	115	79	88	59	44	33	13	5	408	255