



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:

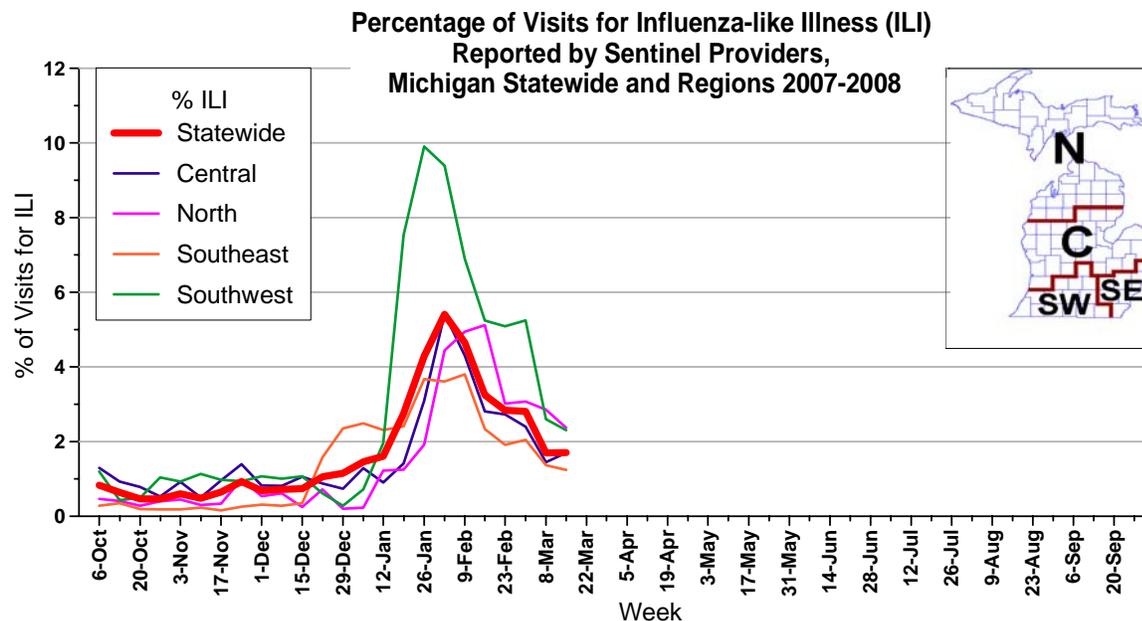
- **Michigan Surveillance:** All surveillance indicators continue to show decreasing influenza activity.
- **National Surveillance:** Influenza activity continues to decrease; 42 states report widespread activity.
- **Avian Influenza:** Viet Nam reports new human H5N1 case; multiple countries with poultry outbreaks.

Michigan Disease Surveillance System: The week ending March 15 saw aggregate flu-like illness and individual influenza reports decline from last week's levels. Aggregate flu-like illness reports are comparable with numbers seen this time last year, while individual influenza reports are notably higher.

Emergency Department Surveillance: Emergency department visits from constitutional complaints dropped again this week, while respiratory complaints remained steady. Respiratory complaints are slightly higher than numbers that were seen this time last year where constitutional complaints are consistent with last year. Six constitutional alerts in the C(3), N(2) and SW(1) Influenza Surveillance Regions and five respiratory alerts in the C(2), SE(1) and SW(2) Influenza Surveillance Regions were generated last week.

Over-the-Counter Product Surveillance: OTC product sales activity was decreasing or steady last week. Chest rubs and children's electrolytes decreased slightly from the previous week. Cough and cold medicine, as well as thermometer sales, remained steady near last week's levels. The indicator levels are comparable to those seen at this time last year.

Sentinel Surveillance (as of March 21): The proportion of visits due to influenza-like illness (ILI) in Michigan has continued to decrease from its peak in late January over the past several weeks, and is at 1.7% for the week ending March 15. This represents 155 cases of ILI out of 9077 total patient visits; 34 sentinels provided data for this report. The proportion of visits due to ILI was 1.7% in the Central region, 2.4% in the North region, 1.2% in the Southeast region, and 2.3% in the Southwest region. These trends 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 for more information.

Laboratory Surveillance (as of March 20): For the 2007-2008 influenza season, the MDCH Bureau of Laboratories has identified 221 influenza isolates:

- 180 A/H3N2: Central (54); Southeast (48); Southwest (47); North (31)
- 3 A/H1N1: Southeast (2); North (1)
- 3 A subtype pending: Southwest (3)
- 2 A subtyping unable to be performed
- 33 B: Southeast (17); North (8); Southwest (4); Central (3); Indiana (1). 31 have been typed as B/Shanghai/361/2002-like and 2 are pending subtyping.

The MDCH BOL is reporting decreasing numbers of specimen submissions. Sentinel laboratories are reporting decreasing levels of positive influenza A tests and low but steady to slightly increasing numbers of positive influenza B tests. RSV activity continues to be steady.

***As a reminder, the positive predictive value of influenza rapid tests decreases during times of low influenza prevalence. MDCH suggests that during periods of low influenza activity in your community, all positive rapid tests results be confirmed by sending in a specimen for viral culture; this can be arranged through your local health department.

Influenza-Associated Pediatric Mortality (as of March 20): 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 for the complete protocol. Please immediately call MDCH to ensure that proper clinical specimens are obtained.

Congregate Settings Outbreaks (as of March 20): Congregate setting outbreaks have been reported in all regions of the state and appeared to peak in the first two weeks of February. Three outbreaks have been culture-confirmed as influenza A/H3N2 at MDCH for the 2007-2008 influenza season.

National (CDC, March 14): During week 10 (March 2 - 8, 2008), influenza activity continued to decrease in the United States. One thousand nine hundred thirty-six (21.6%) 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 ninth consecutive week. The proportion of outpatient visits for influenza-like illness (ILI) was above national baseline levels, while the proportion of outpatient visits for acute respiratory illness (ARI) was below national baseline levels. ILI decreased in eight of the nine regions compared to week 9, and fell below the region specific baseline in the Mid-Atlantic region, but remained above region-specific baselines in the remaining eight regions. The West North Central region reported ARI above its region-specific baseline. Forty-two states reported widespread influenza activity; eight states reported regional influenza activity; the District of Columbia reported local influenza activity; and Puerto Rico reported sporadic influenza activity.

CDC has antigenically characterized 425 influenza viruses [191 influenza A (H1N1), 107 influenza A (H3N2), and 127 influenza B viruses] collected by U.S. laboratories since September 30, 2007.

Influenza A (H1) [191]

- One hundred forty-seven (77%) of the 191 viruses were characterized as A/Solomon Islands/3/2006-like, the influenza A (H1N1) component of the 2007-08 influenza vaccine for the Northern Hemisphere and the 2008 influenza A (H1N1) component for the Southern Hemisphere.
- Nineteen (10%) of the 191 viruses showed somewhat reduced titers with antisera produced against A/Solomon Islands/3/2006.
- Twenty-five (13%) of the 191 viruses were characterized as A/Brisbane/59/2007-like. A/Brisbane/59/2007 is a recent genetic/antigenic variant which evolved from A/Solomon Islands/03/2006. An A/Brisbane/59/2007-like virus is the WHO recommended strain for the 2008-09 Northern Hemisphere vaccine formulation.

Influenza A (H3) [107]

- Twenty (19%) of the 107 viruses were characterized as A/Wisconsin/67/2005-like, the influenza A (H3N2) component of the 2007-08 influenza vaccine for the Northern Hemisphere.
- Eighty (75%) of the 107 viruses were characterized as A/Brisbane/10/2007-like. A/Brisbane/10/2007-like viruses are a recent antigenic variant which evolved from, but are antigenically distinct from, A/Wisconsin/67/2005-like viruses. A/Brisbane/10/2007-like virus is the recommended influenza A (H3N2) component for the 2008 Southern Hemisphere and 2008-09 Northern Hemisphere vaccines.
- Seven (6%) of the 107 viruses showed somewhat reduced titers with antisera produced against A/Wisconsin/67/2005 and A/Brisbane/10/2007.

Influenza B (B/Victoria/02/87 and B/Yamagata/16/88 lineages) [127]

Victoria lineage [7]

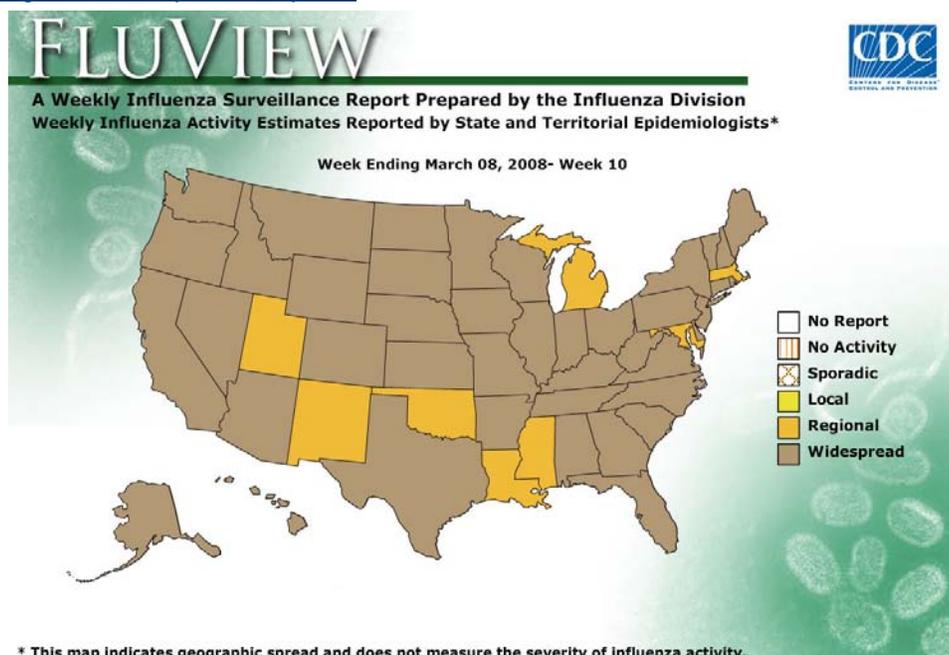
- Seven (6%) of the 127 influenza B viruses characterized belong to the B/Victoria lineage of viruses.
 - Five (71%) of these 7 viruses were characterized as B/Ohio/01/2005-like. The recommended influenza B component for the 2007-08 influenza vaccine is a B/Malaysia/2506/2004-like virus, belonging to the B/Victoria lineage. B/Ohio/01/2005 is a recent B/Malaysia/2506/2004-like reference strain.
 - Two (29%) of these 7 viruses showed somewhat reduced titers with antisera produced against B/Ohio/01/2005 and B/Malaysia/2506/2004.

Yamagata lineage [120]

- One hundred twenty (94%) of the 127 influenza B viruses characterized belong to the B/Yamagata lineage of viruses.
 - One hundred nineteen (99%) of these 120 viruses were identified as B/Florida/04/2006-like, the recommended influenza B component for the 2008-09 Northern Hemisphere vaccine formulation.
 - One (1%) of these 120 viruses showed a somewhat reduced titer with antiserum produced against B/Florida/04/2006.

These data indicate similarities and differences between a sample of circulating strains and this year's vaccine strains as determined by laboratory studies. Clinical vaccine effectiveness cannot be accurately predicted using these data, and in previous years, influenza vaccination has been shown to provide measurable protection against influenza illness and influenza-related complications, even when vaccine strains are antigenically distinct from circulating strains.

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



International (WHO, March 20): During weeks 10–11, the level of overall influenza activity in the world slightly decreased. The majority of countries in the Northern Europe and United States of America reported drop of influenza activity. In Europe influenza B viruses become more abundant, but influenza A (predominantly H1N1) viruses were still circulated. In Canada and Russian Federation influenza activity remained mostly on a widespread level. Significant increase of influenza activity was observed in Hong Kong SAR China.

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

MDCH reported **REGIONAL ACTIVITY** to the CDC for the week ending March 15, 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. *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, March 18): 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 an 11 -year old male from Thanh Liem district, Ha Nam province. He developed symptoms on 4 March was hospitalized on 9 March and died on 14 March. The case had contact with sick and dead poultry prior to his illness.

Control measures have been implemented and close contacts have been identified. All remain healthy and will continue to be monitored. Of the 106 cases confirmed to date in Vietnam, 52 have been fatal.

International, Poultry (The Associated Press, March 16): Chinese officials have confirmed that bird flu was to blame for killing chickens in poultry markets in the southern Chinese city of Guangzhou, Hong Kong's health bureau said.

China's Ministry of Agriculture notified the administration that the birds tested positive for the H5N1 bird flu virus, marking the country's fifth outbreak among poultry this year, Hong Kong's Food and Health Bureau said in a statement Sunday.

The Ministry of Agriculture also said on its Web site that last week's outbreak in Guangzhou killed 114 poultry and resulted in the slaughter of 518 more birds. It has been contained, however, the ministry said.

China has reported three bird flu deaths among humans this year, including that of a 44-year-old migrant worker last month in southern Guangdong province. It has recorded 20 human deaths since the virus began ravaging Asian poultry stocks in late 2003.

China, which raises more poultry than any other country, has vowed to aggressively fight the virus that has killed at least 235 people worldwide, according to the World Health Organization. Scientists fear it could mutate into a form that spreads easily among humans, potentially sparking a pandemic that kills millions. So far, most human cases have been linked to contact with infected birds.

Sunday's announcement came as Hong Kong is experiencing a bad year for seasonal human influenza. Last week, Secretary for Food and Health York Chow made an abrupt nighttime announcement that all kindergartens and grade schools would be closed for two weeks. The decision came after two children were infected with the flu and died. Autopsies later confirmed that they suffered from underlying health conditions likely complicated by influenza infection and that they were sickened by viruses circulating elsewhere in the region.

The decision was the most drastic public health precaution Hong Kong has taken since it was hit with

severe acute respiratory syndrome five years ago. SARS killed 299 people in the territory and sparked public fear with many people donning surgical masks whenever they went outside. The virus killed nearly 800 people worldwide.

International, Poultry (Thanhnie News, March 17): About 300 ducks have died of bird flu in the central province of Quang Nam [Vietnam], the province's People's Committee announced Sunday. Tests on the dead birds from a Thang Binh District farm were positive for the H5N1 virus. Local authorities incinerated all the infected ducks and destroyed chickens from nearby farms.

The Zone Four Agency of Animal Health also confirmed bird flu in Quang Nam.

Bird flu cases have previously been reported in the provinces of Quang Ninh, Hai Duong, Nam Dinh, Tuyen Quang, Ninh Binh, Vinh Long, Phu Tho, Ha Nam and Hanoi.

Under local government regulations, a province is considered clear of bird flu if no new cases are reported during a 21 day period.

International, Poultry (CIDRAP News [edited], March 19): Veterinary officials in Turkey have confirmed an H5N1 avian influenza outbreak in the western part of the country near the border with Greece, according to a report yesterday [18 Mar 2008] from the World Organization for Animal Health.

The virus struck 22 backyard chickens at a village near Ipsala in Edirne province, according to the OIE report. The remaining 16 birds were destroyed. Turkish officials listed fomites, which could involve contamination spread by humans, vehicles, or animal feed, as the source of the outbreak.

Turkey's last H5N1 outbreaks occurred over several weeks in January and February 2008 at 6 sites, all of which involved backyard poultry. The OIE report on the outbreaks said the source of the virus was contact with wild species.

All of the previous outbreaks occurred near villages along the Black Sea, an area that officials from the United Nations Food and Agriculture Organization (FAO) have said is vulnerable to H5N1 outbreaks, because surrounding countries are a winter home to migratory birds from Siberia and often have poor separation between wild and domestic birds. However, the OIE report map detailing the most recent outbreak location shows that the Ipsala area is close to the Mediterranean Sea.

International, Poultry (Agence France-Presse [edited], March 19): Authorities in Laos have reported a fresh outbreak of bird flu in the northwest of the country near the border with China and Myanmar, the foreign ministry said Wednesday. The outbreak was detected in a village in Luang Namtha province, the sixth registered there in a month, foreign ministry spokesman Yong Chanthalangsy told AFP.

"About 100 chickens died," he said, adding that subsequent tests had revealed the birds had died from the H5N1 virus. The government took quick action, he said, destroying about 800 chickens within a three-kilometre (two-mile) radius. The spokesman said authorities had not reported any humans falling ill in the remote area.

Michigan Wild Bird Surveillance (USDA, as of March 20): For the 2007 testing season, 1936 Michigan samples have been taken so far, comprised of 100 live bird samples, 1385 hunter-killed birds, 176 morbidity/mortality samples, and 275 environmental samples.

H5N1 subtype H5N1 has not been recovered from any Michigan samples tested to date, or from the 90,952 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 with any questions regarding this newsletter or to be added to the weekly electronic mailing list.

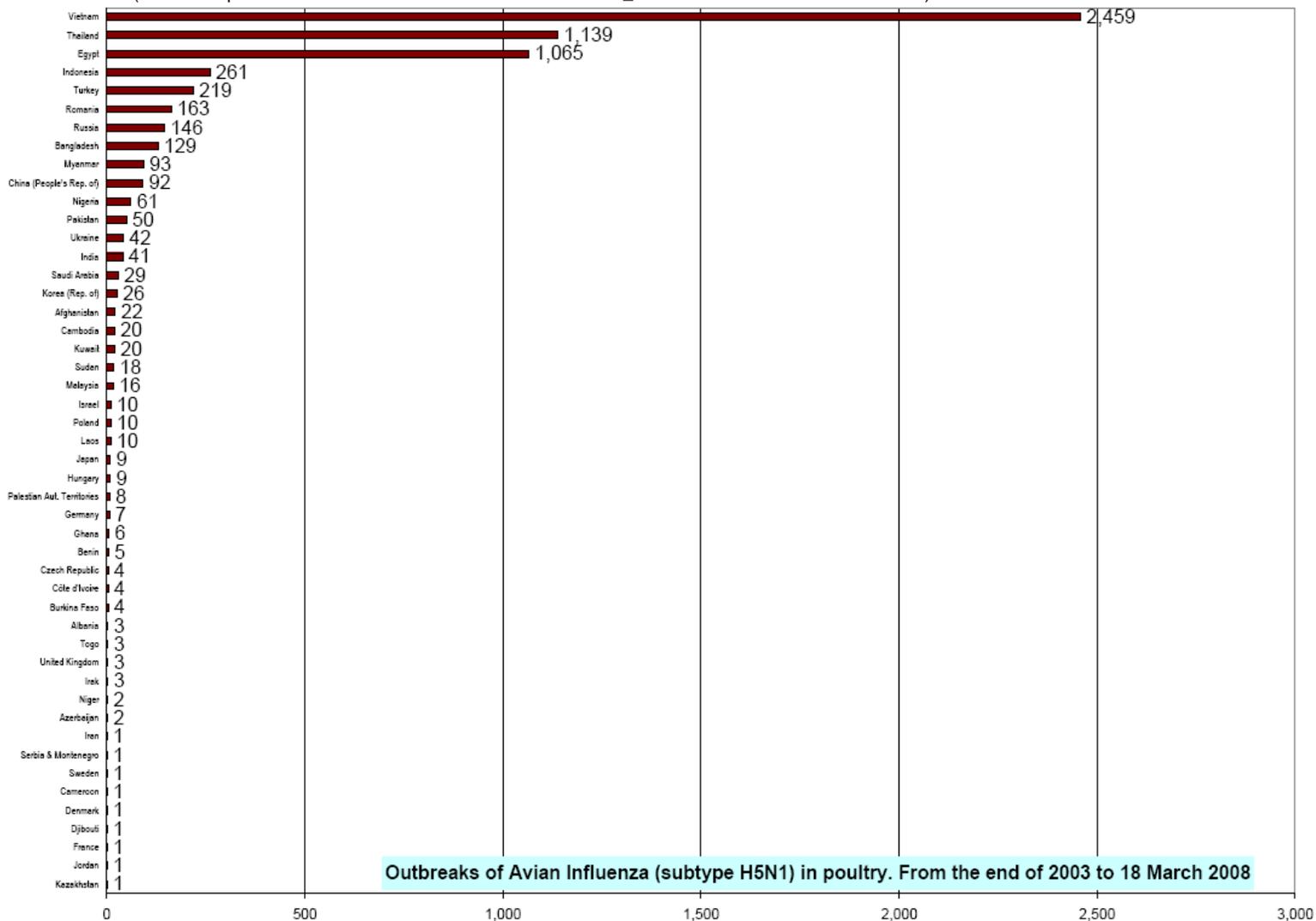
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Table 1. H5N1 Influenza in Poultry (Outbreaks up to March 18, 2008)

(Source: http://www.oie.int/downld/AVIAN%20INFLUENZA/A_AI-Asia.htm Downloaded 3/20/2008)



Outbreaks of Avian Influenza (subtype H5N1) in poultry. From the end of 2003 to 18 March 2008

Table 2. H5N1 Influenza in Humans (Cases up to March 18, 2008)

(http://www.who.int/csr/disease/avian_influenza/country/cases_table_2008_03_18/en/index.html Downloaded 3/18/2008)

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	3	3	30	20
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	4	1	47	20
Indonesia	0	0	0	0	20	13	55	45	42	37	12	10	129	105
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	5	5	106	52
Total	4	4	46	32	98	43	115	79	86	59	24	19	373	236