



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:** One influenza A/H1N1 isolate characterized as A/Brisbane/59/2007-like (matches the current influenza vaccine).
- **National Surveillance:** CDC issues new interim recommendations for the use of antiviral medications.
- **Avian Influenza:** Multiple countries report avian influenza outbreaks in poultry.

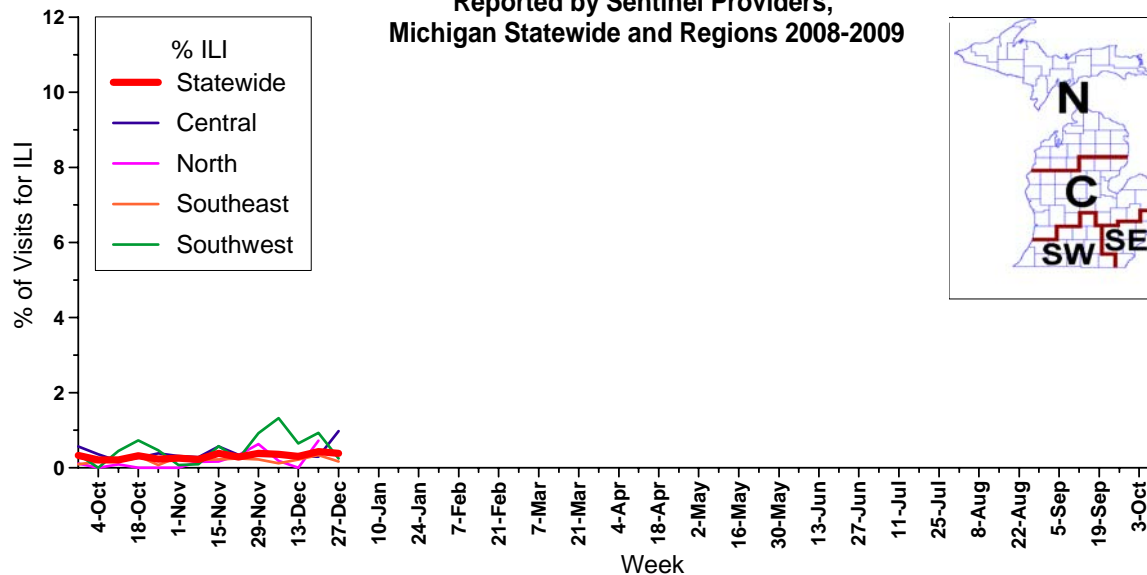
Michigan Disease Surveillance System: The week ending December 27 saw individual influenza disease reports increase slightly, while aggregate flu-like numbers decreased slightly compared to the previous week. Both numbers are consistent with levels seen at this time last year.

Emergency Department Surveillance: Emergency department visits from both constitutional and respiratory complaints increased slightly. These numbers are consistent with those seen this time last year. Eight constitutional alerts in the C(4), N(2) and SE(2) Influenza Surveillance Regions and fourteen respiratory alerts in the C(3), N(4), SE(2) and SW(5) Influenza Surveillance Regions were generated last week.

Over-the-Counter Product Surveillance: Overall, OTC product sales were steady overall last week. The only changes seen were a very slight increase in children's electrolytes and a very slight drop in sales for thermometers. Sales of children's electrolytes and chest rubs have seen an upward trend over the last several weeks. Indicator levels are comparable to those seen at this time last year.

Sentinel Provider Surveillance (as of December 30): During the week ending December 27, 2008, the proportion of visits due to influenza-like illness (ILI) remained unchanged at 0.4% overall; 11 patient visits due to ILI were reported out of 2,831 office visits. This level of ILI activity is slightly below that reported at this time during prior years' surveillance. Activity remains low in three of the four surveillance regions: Central (1.0%), North (No reports), Southeast (0.2%), and Southwest (0.2%). Fifteen 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 for more information.

Laboratory Surveillance (as of December 30): Since 12/18/2008, 8 new influenza A isolates have been identified at the MDCH Bureau of Laboratories (BOL). For the 2008-2009 influenza season, MDCH BOL has identified 12 influenza isolates (followed by Influenza Surveillance Regions of origin):

- 3 A/H1N1 (2 SE, 1 SW)
- 8 influenza A subtype pending (6 SE, 1 SW, 1 C)
- 1 B/Florida/4/2006-like (1 SE).

During the past week, a low level of influenza A was reported by one sentinel lab in the SE Influenza Surveillance Region. Steadily increasing levels of positive RSV tests are also being reported from the SE Surveillance Region.

***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 December 30): At this time, one influenza A/H1N1 isolate has been antigenically characterized by the CDC; results indicate this isolate is A/Brisbane/59/2007-like, which matches the influenza A/H1N1 component of this season's Northern Hemisphere 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 Northern Hemisphere influenza vaccine.

Michigan Antiviral Resistance Data (as of December 30): One influenza A (H1N1) virus from the MDCH Bureau of Laboratories has been tested for antiviral resistance at CDC for the 2008-2009 influenza season. This virus was resistant to oseltamivir (Tamiflu®) and sensitive to zanamivir, amantadine and rimantadine.

It is difficult to draw any conclusions about antiviral resistance in Michigan influenza viruses at this time, because it is early in the season and there have been very few positive specimens on which to perform additional testing. Antiviral resistance testing often takes several weeks to months 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. See the CDC Health Advisory below.

Influenza-Associated Pediatric Mortality (as of December 30): 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.

Congregate Settings Outbreaks (as of December 30): No outbreaks were reported to MDCH in the past week. One congregated setting outbreak due to influenza A has been reported to MDCH for the 2008-2009 influenza season; confirmatory testing for the one case associated with this outbreak was negative at MDCH BOL [Ed. note: the patient received oseltamivir before the specimen was collected].

National (CDC Health Advisory [edited], December 19): Although influenza activity is low in the United States to date, preliminary data from a limited number of states indicate that the prevalence of influenza A (H1N1) virus strains resistant to the antiviral medication oseltamivir is high. Therefore, CDC is issuing interim recommendations for antiviral treatment and chemoprophylaxis of influenza during the 2008-09 influenza season. When influenza A (H1N1) virus infection or exposure is suspected, zanamivir or a combination of oseltamivir and rimantadine are more appropriate options than oseltamivir alone. Local influenza surveillance data and laboratory testing can help with physician decision-making regarding the choice of antiviral agents for their patients. The 2008-09 influenza vaccine is expected to be effective in preventing or reducing the severity of illness with currently circulating influenza viruses, including

oseltamivir-resistant influenza A (H1N1) virus strains. Since influenza activity remains low and is expected to increase in the weeks and months to come, CDC recommends that influenza vaccination efforts continue.

Interim Recommendations

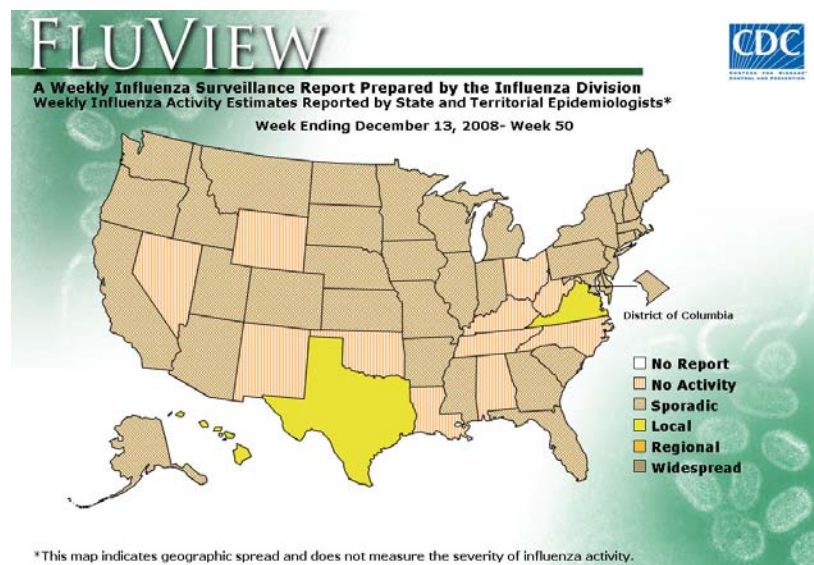
Persons providing medical care for patients with suspected influenza or persons who are candidates for chemoprophylaxis against influenza should consider the following guidance for assessing and treating patients during the 2008-09 influenza season:

- 1) Review local or state influenza virus surveillance data weekly during influenza season, to determine which types (A or B) and subtypes of influenza A virus (H3N2 or H1N1) are currently circulating in the area. For some communities, surveillance data might not be available or timely enough to provide information useful to clinicians.
- 2) Consider use of influenza tests that can distinguish influenza A from influenza B.
 - a. Patients testing positive for influenza B may be given either oseltamivir or zanamivir (no preference) if treatment is indicated.
 - b. At this time, if a patient tests positive for influenza A, use of zanamivir should be considered if treatment is indicated. Oseltamivir should be used alone only if recent local surveillance data indicate that circulating viruses are likely to be influenza A (H3N2) or influenza B viruses. Combination treatment with oseltamivir and rimantadine is an acceptable alternative, and might be necessary for patients that cannot receive zanamivir, (e.g., patient is <7 years old, has chronic underlying airways disease, or cannot use the zanamivir inhalation device), or zanamivir is unavailable. Amantadine can be substituted for rimantadine if rimantadine is unavailable.
 - c. If a patient tests negative for influenza, consider treatment options based on local influenza activity and clinical impression of the likelihood of influenza. Because rapid antigen tests may have low sensitivity, treatment should still be considered during periods of high influenza activity for persons with respiratory symptoms consistent with influenza who test negative and have no alternative diagnosis. Use of zanamivir should be considered if treatment is indicated. Combination treatment with oseltamivir and rimantadine (substitute amantadine if rimantadine unavailable) is an acceptable alternative. Oseltamivir should be used alone only if recent local surveillance data indicates that circulating viruses are likely to be influenza A(H3N2) or influenza B viruses.
 - d. If available, confirmatory testing with a diagnostic test capable of distinguishing influenza caused by influenza A (H1N1) virus from influenza caused by influenza A (H3N2) or influenza B virus can also be used to guide treatment. When treatment is indicated, influenza A (H3N2) and influenza B virus infections should be treated with oseltamivir or zanamivir (no preference). Influenza A (H1N1) virus infections should be treated with zanamivir or combination treatment with oseltamivir and rimantadine is an acceptable alternative.
- 3) Persons who are candidates for chemoprophylaxis (e.g., residents in an assisted living facility during an influenza outbreak, or persons who are at higher risk for influenza-related complications and have had recent household or other close contact with a person with laboratory confirmed influenza) should be provided with medications most likely to be effective against the influenza virus that is the cause of the outbreak, if known. Respiratory specimens from ill persons during institutional outbreaks should be obtained and sent for testing to determine the type and subtype of influenza A viruses associated with the outbreak and to guide antiviral therapy decisions. Persons whose need for chemoprophylaxis is due to potential exposure to a person with laboratory-confirmed influenza A (H3N2) or influenza B should receive oseltamivir or zanamivir (no preference). Zanamivir should be used when persons require chemoprophylaxis due to exposure to influenza A (H1N1) virus. Rimantadine can be used if zanamivir use is contraindicated.

Additional information regarding this advisory can be found on the MDCH Influenza website at http://www.michigan.gov/mdch/0,1607,7-132-2940_2955_22779_40563_48357-191490--,00.html. The entire advisory is available at <http://www2a.cdc.gov/HAN/ArchiveSys/ViewMsgV.asp?AlertNum=00279>.

National (CDC [edited], December 19): During week 50 (December 7-13, 2008), a low level of influenza activity was reported in the United States. One hundred three (3.5%) 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. One pediatric influenza-associated death was reported. The proportion of outpatient visits for influenza-like illness (ILI) was below the national baseline. The Mountain region reported ILI above their region-specific baseline. Three states reported local influenza activity; the District of Columbia, Puerto Rico and 36 states reported sporadic influenza activity; and 11 states 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, December 8): During the weeks 47-48, the level of overall influenza activity in the world remained low with sporadic activity observed in some countries.

Between weeks 47-48 sporadic influenza activity was detected in Belarus (A,B), Cameroon (H1, B), Canada (A,B), China (H1, H3, B), China Hong Kong Special Administrative Region (H1,H3,B), Denmark (H3), France (A), Germany (H1,H3), the Islamic Republic of Iran (H3), Italy (H3), Japan (H1, H3, B), Kenya (A, B), Latvia (A), Norway (H1, H3), Portugal (A, H3), Russian Federation (H1, H3,B), Spain (H3), Sweden (A,B), Switzerland (A), the United Kingdom of Great Britain and Northern Ireland (H3, H1, B) and the United States of America (H1,H3,B).

Argentina, Estonia, Finland, Mexico, the Netherlands, Poland, Romania and Slovenia reported no influenza activity.

MDCH reported **SPORADIC INFLUENZA ACTIVITY** to the CDC for the weeks ending Dec. 20 and Dec. 27, 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, Poultry (Cloppenburg County official Web site [Trans. from German, edited], December 20): The number of poultry holdings [in the Cloppenburg County] infected by the low-pathogenic avian influenza virus [H5N3] has risen to 20, as of Sat [20 Dec 2008] afternoon. 2 suspected cases of the last few days have, according to County Cloppenburg, been confirmed by the official investigation. This relates to a holding in Friesoythe-Schwaneburg, where 10,800 turkeys had already been precautionarily culled at the beginning of the week, as well as a suspected outbreak reported on Thursday [18 Dec 2008] from the municipality of Garrel where nearly 15,000 turkeys have been killed.

Since the outbreak in Friesoythe-Schwaneburg has now been officially confirmed, a 1000 meters [1093 yards] radius zone has been declared as an exclusion zone around the farm. No additional poultry farms are located within the said zone, leading to a limited impact of the declaration.

A new suspected case was reported on Saturday [20 Dec 2008] from the municipality Bosel, where 17,500 turkeys have been killed a precaution, according to the district. The official investigation's result is not yet available. So far, approximately 300,000 birds have been culled and destroyed.

International, Poultry (Agence France-Presse via Straits Times [edited], December 21): Taiwanese agricultural authorities on Sunday [21 Dec 2008] confirmed that they had slaughtered 18,000 chickens after an outbreak of bird flu. The authorities said when a farm in Luchu, southern Kaohsiung county, reported some of their chickens had died of an unknown disease on 21 Oct 2008, they immediately banned movement of the birds from the farm.

An inspection report released Saturday [20 Dec 2008] showed that the chickens had contracted the H5N2 strain of the disease, a less virulent strain than H5N1, which can be transmitted to humans. However, the findings of the report came too late for the 18,000 chickens on the farm that were slaughtered on 14 Nov 2008.

"We took the most stringent measures in dealing with the episode as according to the rules of the World Organisation for Animal Health (OIE), there was no need to slaughter those chickens," Mr. Huang Kwo-ching, deputy director of the Bureau of Animal and Plant Health Inspection and Quarantine, told AFP. "The OIE was informed of the outbreak yesterday," he said, adding that the origin of the outbreak remains unclear.

Since the outbreak 76 chicken farms within 3 km [1.86 miles] of the epicentre have been monitored to ensure the disease does not spread, he added. Taiwan has suspended its poultry exports, but will be allowed to resume them if no fresh outbreak of H5N2 is reported within the next 3 months, Huang said.

There have been no recorded cases of the deadly H5N1 strain in Taiwan, although in 2005 authorities here said 8 pet birds smuggled from China had tested positive for the strain and had been destroyed. The virus has killed about 250 people worldwide since late 2003.

International, Poultry (Agence France-Presse, December 24): Almost 10,000 birds have been slaughtered in Bangladesh in the past two months, an official said Wednesday, as the impoverished country faces a new outbreak of deadly avian flu.

Mozammel Haq, officer in charge of the government's response to the H5N1 strain, told AFP the birds had been killed since the virus re-emerged in Bangladesh in November.

Bangladesh was hit by bird flu in February 2007 and the virus made a comeback in January. Earlier this year, 50 of the country's 64 districts were affected and more than a million birds were slaughtered.

Industry officials said that outbreak led to the closure of 40 percent of the nation's poultry farms and left half a million workers jobless.

Bangladesh's poultry industry is one of the world's largest, producing 220 million chickens and 37 million ducks annually.

The country reported its first confirmed human case of bird flu in May but the government said the 16-month-old baby who contracted the virus had recovered.

International, Poultry (Xinhua News Agency, December 24): Emergency measures have been taken after an outbreak of bird flu was detected in 2 farms in northern Belgium, Belgian media reported on

Tuesday [23 Dec 2008]. Control tests showed last Friday [19 Dec 2008] that some ducks and geese in a farm in Bocholt, which borders the Netherlands, were infected with the H5 bird flu virus. The same virus was also detected in a farm in Buggenhout in the province of East Flanders.

The H5 virus is not dangerous to human beings and is different from the H5N1 variant, which has killed more than 200 people since it surfaced in 2003 [Ed. Note: OIE report states the virus is low pathogenic H5N2].

The Belgian Federal Food Agency, which supervises the safety of the food chain, has ordered emergency measures to be taken in the 2 farms and surrounding areas. Some 5000 animals had to be slaughtered as a precautionary measure and all poultry within a radius of one km of the farms must be kept indoors. Transport of poultry is forbidden for 21 days.

International, Poultry (Reuters [edited], December 28): Bird flu has resurfaced in poultry in northern Viet Nam after many months without any cases, killing ducks and chickens at 2 farms, a state-run newspaper reported on Sunday [28 Dec 2008].

Animal health officials confirmed on Saturday [27 Dec 2008] the H5N1 virus had killed several birds among a flock of more than 100 ducks in Thai Nguyen city, 80 km (50 miles) north of Hanoi, the Ho Chi Minh City Communist Youth League-run Tuoi Tre newspaper said.

Officials had also detected the virus in dead chickens at a farm in the same city, and nearly 4200 chickens had been slaughtered to prevent the virus from spreading, the report said without giving a time frame.

Deputy Health Minister Trinh Quan Huan said this week that there was a very high risk of bird flu returning during the winter and spring [2008-2009] in northern Viet Nam. The H5N1 strain seems to thrive best in low temperatures.

Five Vietnamese have died of bird flu so far this year [2008] out of 6 reported H5N1 infections, and all were found in northern Viet Nam during the 1st quarter of the year.

The H5N1 strain has killed 247 people globally among the 391 confirmed cases of infection since 2003, according to the World Health Organization.

Viet Nam has 106 infections, the 2nd highest number of cases among 15 countries with known human cases after Indonesia.

Michigan Wild Bird Surveillance (USDA, as of December 30): For the 2008 testing season, 2166 Michigan samples have been taken so far, comprised of 327 live birds, 1282 hunter-killed birds, 32 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 73,882 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.nh.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.

Contributors

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Table 1. H5N1 Influenza in Poultry (Outbreaks up to December 25, 2008)

(Source: http://www.oie.int/downld/AVIAN%20INFLUENZA/A_AI-Asia.htm Downloaded 12/29/08)

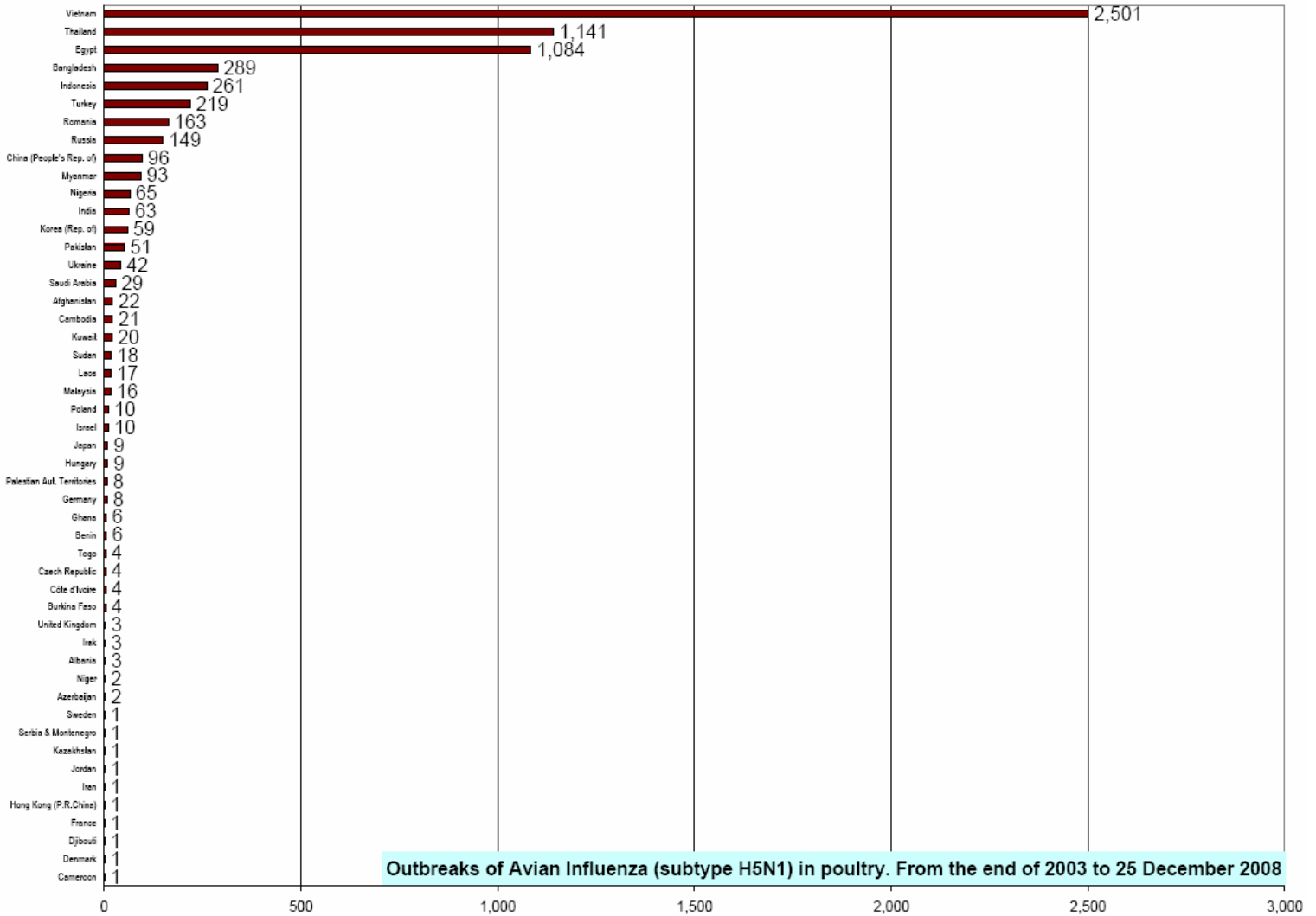


Table 2. H5N1 Influenza in Humans (Cases up to December 16, 2008)

(http://www.who.int/csr/disease/avian_influenza/country/cases_table_2008_12_16/en/index.html Downloaded 12/16/2008)

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

| Country | 2003 | | 2004 | | 2005 | | 2006 | | 2007 | | 2008 | | Total | |
|--------------|----------|----------|-----------|-----------|-----------|-----------|------------|-----------|-----------|-----------|-----------|-----------|------------|------------|
| | cases | deaths | cases | deaths | cases | deaths | cases | deaths | cases | deaths | cases | deaths | cases | deaths |
| Azerbaijan | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 5 | 0 | 0 | 0 | 0 | 8 | 5 |
| Bangladesh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 |
| Cambodia | 0 | 0 | 0 | 0 | 4 | 4 | 2 | 2 | 1 | 1 | 1 | 0 | 8 | 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 | 8 | 4 | 51 | 23 |
| Indonesia | 0 | 0 | 0 | 0 | 20 | 13 | 55 | 45 | 42 | 37 | 22 | 18 | 139 | 113 |
| Iraq | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 2 | 0 | 0 | 0 | 0 | 3 | 2 |
| Lao PDR | 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 | 3 | 1 | 0 | 0 | 3 | 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 | 88 | 59 | 40 | 30 | 391 | 247 |