



MI FluFocus

Influenza Surveillance and Avian Influenza Update

Bureau of Epidemiology
Bureau of Laboratories



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New updates in this issue:

- **Michigan Surveillance:** Influenza surveillance indicators remain at low levels.
- **National Surveillance:** Seven states report sporadic influenza activity for the first week of October.
- **Avian Influenza:** Germany confirms highly pathogenic H5N1 avian influenza on a poultry farm.

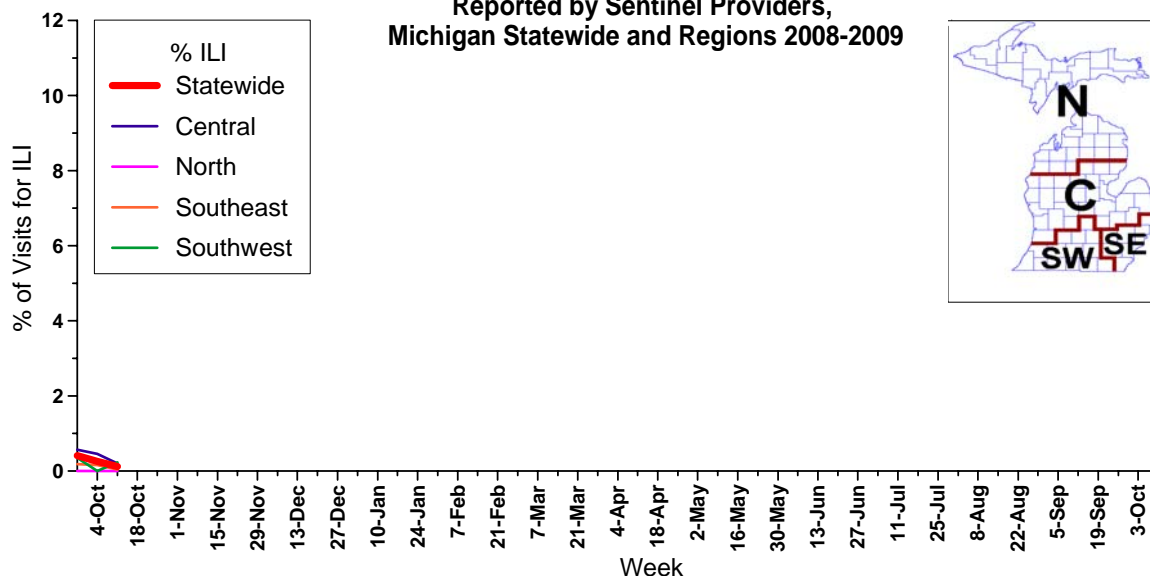
Michigan Disease Surveillance System: The week ending October 11 saw individual influenza reports remain steady near last week's levels, while aggregate levels dropped slightly. Both aggregate and individual reports are consistent with levels seen at this time last year.

Emergency Department Surveillance: Emergency department visits from both respiratory and constitutional complaints remained steady near last week's levels. Respiratory complaints are consistent with numbers seen this time last year, while constitutional complaints are slightly lower. Ten constitutional alerts in the C(5), N(2), SE(1) and SW(2) Influenza Surveillance Regions and five respiratory alerts in the C(3) and SW(2) Influenza Surveillance Regions were generated last week.

Over-the-Counter Product Surveillance: Overall, OTC product sales were steady last week. Only thermometers saw a very slight drop increase over the last week. Indicator levels are comparable to those seen at this time last year, with chest rubs being slightly lower.

Sentinel Provider Surveillance (as of October 16): During the week ending October 11, 2008, the proportion of visits due to influenza-like illness (ILI) remained at a low level, 0.1%; 11 patient visits due to ILI were reported out of 9,344 office visits. This level of ILI activity is consistent with that reported in early fall during prior years' surveillance. Thirty 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 October 16): No new influenza isolates were identified at the MDCH Bureau of Laboratories (BOL) during the past week. For the 2008-2009 influenza season, no influenza isolates have been identified at MDCH BOL.

***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 October 16): No influenza-associated pediatric mortalities have been reported to MDCH for the 2008-2009 influenza season.

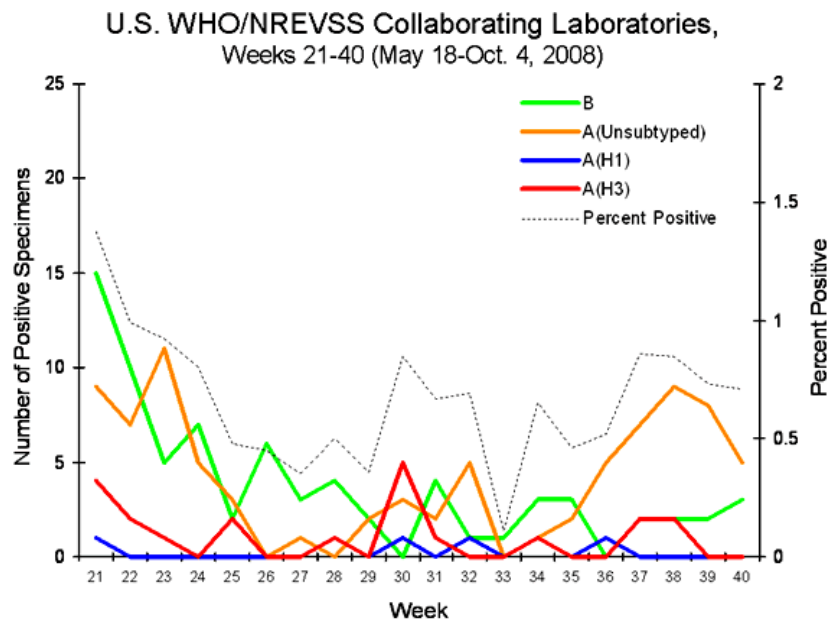
***The CDC has asked all states to collect information on any pediatric death associated with influenza infection. This includes not only any death in a child (<18 years) resulting from a compatible illness confirmed to be influenza by an appropriate diagnostic test, but also any unexplained death with 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 October 16): No congregate setting outbreaks due to influenza have been reported to MDCH for the 2008-2009 influenza season.

National (CDC [edited], October 10): From week 21 through week 39 (weeks ending May 18 – Sept 27), WHO and NREVSS laboratories located in all 50 states and Washington DC tested 25,031 specimens for influenza and 179 (0.7%) were positive. Influenza positive tests were reported from all 9 public health surveillance regions during the summer. Of the positive results, 6 (3.4%) were influenza A (H1) viruses, 21 (11.7%) were influenza A (H3) viruses, 80 (44.7%) were influenza A viruses that were not subtyped, and 72 (40.2%) were influenza B viruses. More than half (63%) of these isolates were tested from mid-May through late July. Of the 40 influenza viruses reported during September (weeks 36-39), 1 (2.5%) was an influenza A (H1) virus, 4 (10.0%) were influenza A (H3) viruses, 29 (72.5%) were influenza A viruses that were not subtyped, and 6 (15.0%) were influenza B viruses.

Since September 30, 2007, WHO and NREVSS laboratories have tested a total of 218,493 specimens for influenza viruses and 39,407 (18.0%) were positive. Among the 39,407 influenza viruses, 28,091 (71.3%) were influenza A viruses and 11,316 (28.7%) were influenza B viruses. Eight thousand two hundred seventy-two (29.4%) of the 28,091 influenza A viruses have been subtyped: 2,173 (26.3%) were influenza A (H1) viruses and 6,099 (73.7%) were influenza A (H3) viruses.

During week 40, WHO and NREVSS labs reported 1,123 specimens tested for influenza viruses, 8 of which were positive: 5 influenza A viruses that were not subtyped (Mountain, Pacific, South Atlantic and West South Central regions) and 3 influenza B virus (Mountain and South Atlantic regions).



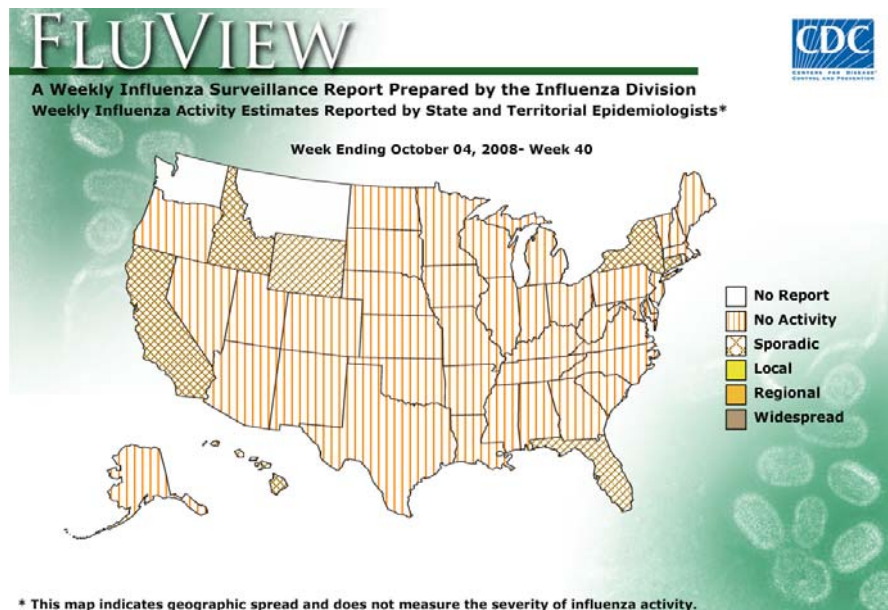
A small number of isolates were available for antigenic characterization during the summer. CDC antigenically characterized six isolates collected from May 18 – September 27, including four influenza A (H1N1), one influenza A (H3N2), and one influenza B viruses. All six viruses are antigenically similar to the components selected for the 2008-09 influenza vaccine (A/Brisbane/59/2007-like (H1N1), A/Brisbane/10/2007-like (H3N2), and B/Florida/04/2006-like).

Neuraminidase Inhibitor Antiviral Drugs: CDC performed antiviral resistance testing on 10 influenza A and B viruses collected since May 18. Two of the six influenza A (H1N1) viruses tested were found to be resistant to oseltamivir. No oseltamivir resistance has been detected in influenza A (H3N2) or influenza B viruses, and all tested viruses retain their sensitivity to zanamivir.

Adamantane Antiviral Drugs: Six influenza A viruses collected since May 18 have been tested for adamantane resistance. The one influenza A (H3N2) virus tested and one of the five influenza A (H1N1) viruses tested were resistant to the adamantanes. The adamantanes are not effective against influenza B viruses.

Based on the level of oseltamivir resistance observed in only one influenza subtype, H1N1, and the persisting high levels of resistance to the adamantanes in H3N2 viruses, CDC continues to recommend the use of oseltamivir and zanamivir for the treatment or prevention of influenza. Use of amantadine or rimantadine is not recommended.

During week 40, 0.8% of patient visits reported through the US Outpatient Influenza-like Illness Surveillance Network (ILINet), formally known as the US Influenza Sentinel Provider Surveillance Network, were due to influenza-like illness (ILI). This percentage is less than the national baseline of 2.4%. On a regional level, the percentage of visits for ILI ranged from 0.3% to 1.6%. All nine regions reported percentages of visits for ILI below their respective region-specific baselines.



International (WHO, October 10): During the weeks 39-40, overall influenza activity in the southern hemisphere continued to decline. Activity was low in the rest of the world.

China, Hong Kong Special Administrative Region. A decline in the activity of influenza A(H3) and A(H1) viruses was observed, with influenza A(H3) predominating. Both B/Yamagata and B/Victoria lineage viruses were detected.

New Zealand. Influenza activity declined from widespread to local, with influenza B viruses circulating.

Between weeks 39 to 40, sporadic influenza activity was detected in Cameroon (B), Canada (A, B), Chile (A), Poland (A), South Africa (B), and the United States of America (A,B).

Costa Rica, Denmark, France, Germany, the Islamic Republic of Iran, Latvia, Luxembourg, Mexico, Mongolia, Norway, Poland, Portugal, Slovenia, Switzerland, the United Kingdom of Great Britain and Northern Ireland and Uruguay reported no influenza activity.

MDCH reported **NO INFLUENZA ACTIVITY** to the CDC for the week ending October 11, 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 (Reuters via the Guardian [edited], October 10): German authorities said on Friday [10 Oct 2008] that the lethal strain of bird flu has been confirmed on a farm in the east of the country. Germany's eastern state government of Saxony said the H5N1 bird flu strain had been confirmed in a duck at a poultry farm near Dresden.

"Tests have confirmed that this involves the highly contagious version of the H5N1 virus epidemic," said Ralph Schreiber, spokesman for Saxony's social welfare ministry.

The flu strain was detected during a routine examination at the farm, which held some 1400 birds. All birds at the farm have been slaughtered as a precaution, the state said.

A 3-km (2-mile) radius quarantine zone has been established around the farm and a 10-km [6.2-mile] radius observation zone also was established in which all poultry must be locked up in buildings.

Bird flu was last detected in farm birds in Germany in December 2007. A spokeswoman for Germany's federal Agriculture Ministry stressed state authorities were responsible for combating bird flu. Officials were currently assessing the risk level. Relevant international organisations including the European Union plus neighbouring countries had been informed of the case, she said.

The virus has infected 387 people worldwide in 15 countries, killing 245 of them, according to the World Health Organization's 10 Aug 2008 tally. Indonesia has the highest toll of any nation. Although bird flu remains an animal disease, experts fear that the virus might mutate into a form easily passed from human to human.

International, Vaccines (Associated Press, October 12): When Indonesia's health minister stopped sending bird flu viruses to a research laboratory in the United States for fear Washington could use them to make biological weapons, Defense Secretary Robert Gates laughed and called it "the nuttiest thing" he'd ever heard.

Yet deep inside an 86-page supplement to United States export regulations is a single sentence that bars U.S. exports of vaccines for avian bird flu and dozens of other viruses to five countries designated "state sponsors of terrorism."

The reason: fear that they will be used for biological warfare.

Under this little-known policy, North Korea (at least until Saturday, when it was removed from the list), Iran, Cuba, Syria and Sudan may not get the vaccines unless they apply for special export licenses, which would be given or refused according to the discretion of the United States. Three of those nations - Iran, Cuba and Sudan - also are subject to a ban on all human pandemic influenza vaccines as part of a general U.S. embargo.

The regulations, which cover vaccines for everything from Dengue fever to the Ebola virus, have raised concern within the medical and scientific communities. Although they were quietly put in place more than a decade ago, they could now be more relevant because of recent concerns about bird flu. Officials from the U.S. Department of Health and Human Services and the Centers for Disease Control and Prevention

said they were not even aware of the policies until contacted by the Associated Press last month and privately expressed alarm.

They make "no scientific sense," said Peter Palese, chairman of the microbiology department at Mount Sinai School of Medicine in New York. He said the bird flu vaccine, for example, can be used to contain outbreaks in poultry before they mutate to a form spread more easily between people.

"The more vaccines out there, the better," he said. "It's a matter of protecting ourselves, really, so the bird flu virus doesn't take hold in these countries and spread."

U.S. Commerce Assistant Secretary Christopher Wall declined to elaborate on the precise threat posed by vaccines for chickens infected with avian influenza, except to say there are "valid security concerns" that they "do not fall into the wrong hands."

"Legitimate public health and scientific research is not adversely affected by these controls," he said.

But some experts say the idea of using vaccines for bioweapons is far-fetched, and that in a health emergency, it is unclear how quickly authorities could cut through the current red tape to get the vaccines distributed.

Under normal circumstances it would take at least six weeks to approve export licenses for any vaccine on the list, said Thomas Monath, who formerly headed a CIA advisory group on ways to counter biological attacks. All such decisions would follow negotiations at a "very high level" of government.

Kumanan Wilson, whose research at the University of Toronto focuses on policymaking in areas of health protection, said it would be ironic if the bird flu virus morphed into a more dangerous form in one of the listed countries. "That would pose a much graver threat to the public than the theoretical risk that the vaccine could be used for biological warfare," he said.

The danger of biological warfare use depends on the specific virus or bacteria. But most experts agree that bird flu vaccines cannot be genetically altered to create weapons because they contain an inactivated virus that cannot be resuscitated.

It's also unlikely they would be used to create a resistant strain of the virus as part of efforts to wreak havoc within global poultry stocks. If enemy states wanted to do that, they could make their own vaccines or turn to a less hostile country like China, said Ian Ramshaw, an expert on vaccine immunology and biosecurity at the Australian National University in Canberra.

"I can think of no scientific reason how a terrorist organization could use such a vaccine for malicious intent," he said. "I personally think it's a rather silly attitude and the U.S. is probably going overboard as it has in the past with many of its bioterrorism initiatives."

Michigan Wild Bird Surveillance (USDA, as of October 16): For the 2008 testing season, 830 Michigan samples have been taken so far, comprised of 316 live birds, 339 hunter-killed birds, 25 morbidity or mortality samples and 150 environmental samples.

H5N1 subtype H5N1 has not been recovered from any Michigan samples tested to date, or from the 39,646 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.

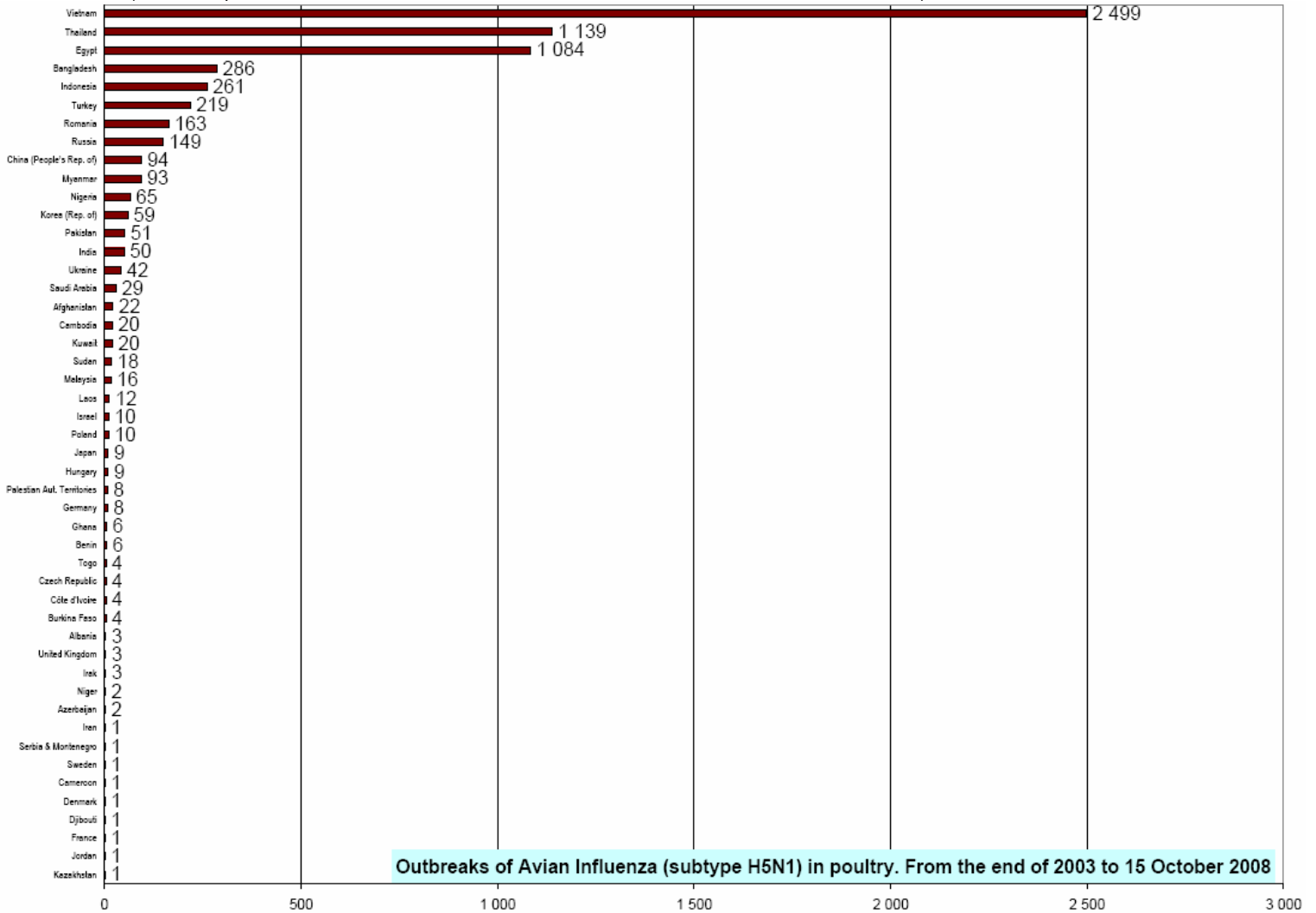
Contributors

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Table 1. H5N1 Influenza in Poultry (Outbreaks up to October 15, 2008)

(Source: http://www.oie.int/downld/AVIAN%20INFLUENZA/A_AI-Asia.htm Downloaded 10/16/08)



Outbreaks of Avian Influenza (subtype H5N1) in poultry. From the end of 2003 to 15 October 2008

Table 2. H5N1 Influenza in Humans (Cases up to September 10, 2008)

(http://www.who.int/csr/disease/avian_influenza/country/cases_table_2008_09_10/en/index.html Downloaded 9/10/2008)

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 | 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 | 7 | 3 | 50 | 22 |
| Indonesia | 0 | 0 | 0 | 0 | 20 | 13 | 55 | 45 | 42 | 37 | 20 | 17 | 137 | 112 |
| 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 | 36 | 28 | 387 | 245 |