



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:** Influenza activity remains at sporadic levels.
- **National Surveillance:** 37 states are at local or sporadic levels of influenza activity.
- **Avian Influenza:** China and Indonesia report new human cases of H5N1 avian influenza.

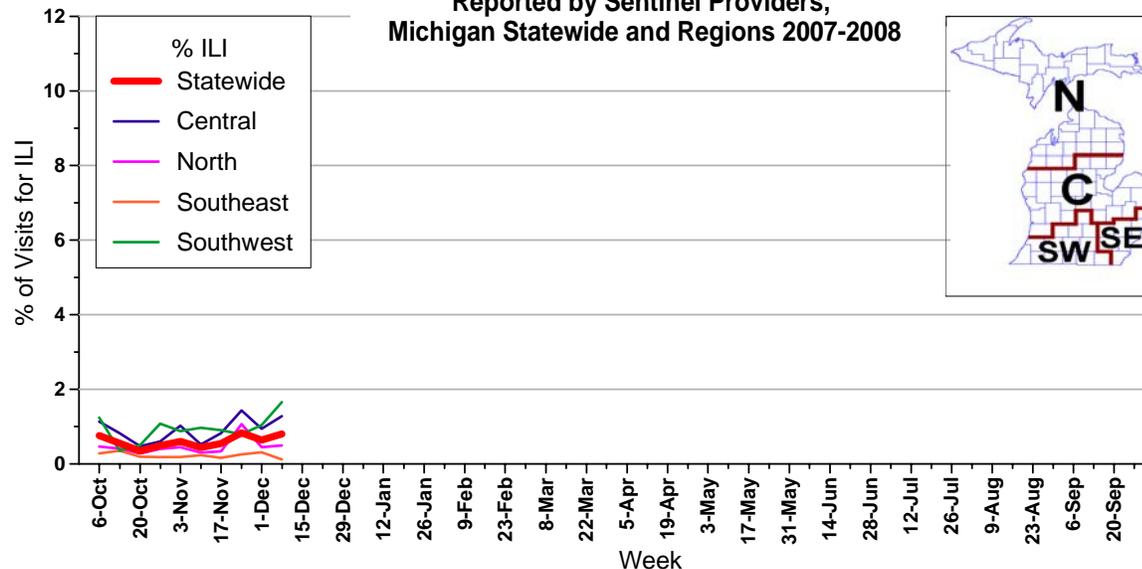
Michigan Disease Surveillance System: The week ending December 8 saw aggregate flu-like illness reports hold steady near last week's levels, while individual influenza reports slight increased. Both aggregate and individual reports are consistent with levels seen at this time last year.

Emergency Department Surveillance: Emergency department visits due to both constitutional and respiratory complaints decreased slightly this past week. Both constitutional and respiratory complaints are consistent with numbers seen this time last year. Five constitutional alerts in the C(2) and SW(3) Influenza Surveillance Regions and three respiratory alerts in the C(1), N(1) and SW(1) Influenza Surveillance Regions were generated last week.

Over-the-Counter Product Surveillance: OTC product sales activity remained fairly steady this week, with very slight increases seen in electrolytes and cough/cold sales. The indicators levels are comparable to those seen at this time last year, except for chest rubs, which are slightly higher.

Sentinel Surveillance (as of December 13): During the week ending December 8, 2007, the proportion of visits due to influenza-like illness (ILI) in Michigan increased slightly from last week to 0.8% of all visits. This represents 42 cases of ILI out of 5238 total patient visits; twenty-three sentinels provided data for this report. The proportion of visits due to ILI increased to 1.3% in the Central region and increased to 1.7% in the Southwest. The North and Southeast regions remained unchanged at low levels, 0.5% and 0.1%, respectively. 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 2007-2008



As part of pandemic influenza preparedness, CDC and MDCH highly encourage and recommend 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 13): The MDCH Bureau of Laboratories has culture confirmed its first case of influenza for the 2007-2008 influenza season. This case of influenza B was from a 9 year old child in Marquette County; the child was not hospitalized. This virus was strain typed as B/Shanghai, which is not a component of the 2007-2008 influenza vaccine. Parainfluenza viruses and adenovirus have also been identified from MDCH BOL this season.

Sentinel laboratories across the state are reporting either zero or low positive numbers of influenza tests. Low levels of parainfluenza viruses were reported from the Southeast and Southwest regions.

***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.

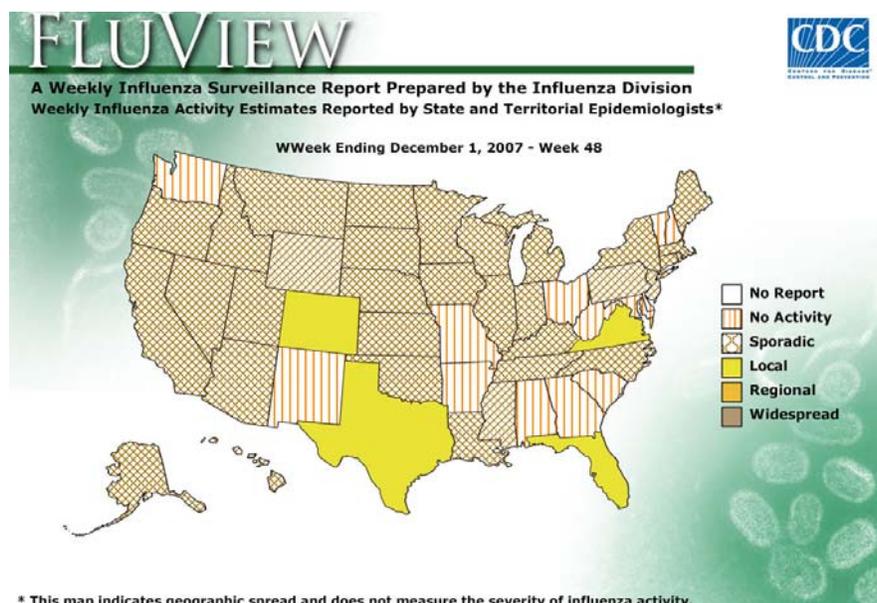
Influenza-Associated Pediatric Mortality (as of December 13): For the 2007-2008 season, there are no confirmed reports of influenza-related pediatric mortality in Michigan.

***Reminder: The CDC has asked all states to continue to collect information on any pediatric death associated with influenza infection. This includes not only any death in a child less than 18 years of age resulting from a clinically compatible illness confirmed to be influenza by an appropriate laboratory or rapid diagnostic test, but also unexplained death with evidence of an infectious process in a child. Refer to http://www.michigan.gov/documents/fluletter_107562_7.pdf for the complete protocol. It is important to immediately call MDCH to ensure that appropriate clinical specimens can be obtained.

Congregate Settings Outbreaks (as of December 13): There have been no reports for the 2007-2008 influenza season.

National (CDC [edited], December 7): During week 48 (November 25-December 1, 2007), a low level of influenza activity was reported in the United States. During week 48, WHO and NREVSS laboratories reported 2,504 specimens tested for influenza viruses, 85 (3.4%) of which were positive, including 30 influenza A (H1) viruses, two influenza A (H3) viruses, 45 influenza A viruses that were not subtyped, and eight influenza B viruses. The proportion of deaths attributed to pneumonia and influenza was below the epidemic threshold. The proportion of outpatient visits for influenza-like illness (ILI) and acute respiratory illness (ARI) was below national and region-specific baseline levels. Four states reported local influenza activity; 33 states and the District of Columbia reported sporadic influenza activity; and 13 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 (Weekly Epidemiological Record, November 28): During weeks 46–47, the level of overall influenza activity in the world remained low. Only sporadic activity was observed in some countries of the northern hemisphere: Belgium, the Islamic Republic of Iran, Norway and Switzerland detected influenza A for the first time in the 2007–2008 winter season.

Japan. Regional outbreak was reported with influenza A (H1N1) detected.

United States of America. A slight increase in the level of influenza activity was observed in weeks 46 and 47, with 3 states reporting localized activity. Of all samples tested, 2.8 % were positive for influenza, predominantly influenza A.

During weeks 46-47, sporadic influenza activity was detected in Belgium (B), Bulgaria (H1), Canada (A, B), China (B predominant, H3), Hong Kong Special Administrative Region of China (A, B), Denmark (B), France (A), Islamic Republic of Iran (H1, B), Japan (H1), Republic of Korea (H1), Madagascar (H1), Mexico (A), Norway (A, B), Poland (A, B), Russian Federation (B predominant, H1, H3), Sri Lanka (A), Switzerland (A, B) and United Kingdom (H1). Croatia, Italy, Latvia, Luxembourg, Mongolia, Panama, Portugal, Romania, Slovenia, Spain, Tunisia, Ukraine reported no influenza activity.

MDCH reported **SPORADIC ACTIVITY** to the CDC for the week ending December 8, 2007.

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, December 9): The Ministry of Health in China has reported a new case of human infection with the H5N1 avian influenza virus in Jiangsu Province. The case was confirmed by the national laboratory on 6 December.

The 52-year old male is the father of the 24-year old man who died from H5N1 infection on 2 December 2007. He is one of the close contacts placed under medical observation by national authorities. He developed symptoms on 3 December and was sent immediately to hospital for treatment. Of the 27 cases confirmed to date in China, 17 have been fatal.

International, Human (WHO, December 12): The Ministry of Health of Indonesia has announced a new case of human infection of H5N1 avian influenza. A 28-year-old female from Tangerang City, Banten Province developed symptoms on 1 December, was hospitalized on 7 December and died in an AI referral hospital on 10 December. The case worked as a road side seller of decorative plants. Poultry and poultry cages were located in the vicinity of her business. Investigations are ongoing into the source of her infection. Of the 114 cases confirmed to date in Indonesia, 92 have been fatal.

International, Human (WHO, December 13): The Ministry of Health of Indonesia has announced a new case of human infection of H5N1 avian influenza. A 47-year-old male from Tangerang City, Banten Province developed symptoms on 2 December and was hospitalized on 9 December. The source of his exposure is currently under investigation. Of the 115 cases confirmed to date in Indonesia, 92 have been fatal.

International, Poultry (Arabian Business [edited], December 5): Saudi Arabia killed close to 60,000 birds on Tuesday [3 Dec 2007] in the latest discovery of the deadly disease in the kingdom, bringing the total number birds culled to around 4 million. The discovery at another table-egg farm in the Al-Kharj

region south of the capital Riyadh is the 15th in the area, as fears continue to grow that the disease may spread to other parts of the kingdom.

The ministry last week said that farms surrounding the port city of Jeddah, the gateway for pilgrims to Mecca and Medina, are still safe from the bird flu. Concerns over the spread of the H5N1 strain have grown steadily in recent weeks as Saudi Arabia prepares for the Hajj, with around 3 million of pilgrims expected to gather in the holy cities of Mecca and Median.

As a precaution, the Agriculture Ministry on Tuesday [3 Dec 2007] banned the shipment of live birds from the Riyadh area to Mecca for the next month. All cases of bird flu in the kingdom so far have come from the Riyadh province.

International, Wild Birds (CIDRAP [edited], December 11): Scientists say they have found 3 distinct variants of H5N1 avian influenza virus in wild birds in Germany, 2 of which might have been brought in by wild birds migrating from Russia. Researchers from the Friedrich Loeffler Institute in Insel Riems, Germany, analyzed 27 H5N1 isolates collected mostly from wild birds in widely scattered locations in Germany in 2006 and this year [2007]. Writing in the journal *Veterinary Microbiology*, they say the findings suggest that the virus was brought into the country on 3 separate occasions – 2 of them in early 2006 and the 3rd in 2007. The strains that appeared in early 2006 are closely related to viruses found in southern and central Russia, suggesting that wild birds on their winter migration from Russia might have brought the strains to Germany, says the report by E. Starick and colleagues.

In Germany in 2006, the report says, the highly pathogenic H5N1 virus was found in 343 dead wild birds, a black swan in a zoo, 3 stray cats, and a stone marten and on one turkey farm. In June and July of this year [2007] the virus was found in 96 wild birds in scattered areas of southeastern Germany and in one backyard goose. More recently, the disease killed ducks on a farm in Bavaria in late August (an outbreak not covered by this study). The researchers collected 27 H5N1 viruses from 17 species of wild birds, the turkey farm, one stray cat, and the stone marten, the report says.

Previous study of the H5N1 viruses found in Germany indicated they all belonged to the strain that killed many wild waterfowl at Qinghai Lake in northern China in April 2005, called clade 2.2, the authors say. The new analysis of the 27 isolates showed that they fell into 3 groups that formed geographic and temporal clusters.

The viruses collected in 2006 formed 2 groups: one from northern Germany, designated subclade 2.2.2, and one from southern Germany, called subclade 2.2.1. The isolates gathered in 2007 formed a 3rd type, which the authors called subclade 2.2.3, no examples of which were found in 2006. Some members of both of the 2006 subclades were found in central Germany, and both types were involved in the poultry farm outbreak, the report says. In addition, one isolate of the "northern" type (subclade 2.2.2) was found in southern Germany, and one of the "southern" type was identified in northern Germany.

"Our data suggest the simultaneous introduction in early 2006 of 2 closely related but distinct H5N1 variants into the wild bird population of Germany," the report states. "The source of these viruses and the exact time of introduction could not be identified."

But because the 2 subclades are closely related to H5N1 variants from southern and central Russia, the authors add, "an introduction, possibly via wild birds on winter escape from these regions, early in 2006 appears to be a highly likely scenario." The separate subclade found in Germany in 2007 appears to represent a "new incursion," whose sources and routes of introduction remain unknown, the report adds.

International, Poultry (Interfax.com, December 12): A comprehensive analysis of the pathological material of poultry that died at the Gulyay-Borisovskaya battery farm in the Zernograd district, Rostov region, has detected bird flu virus H5N1, Krasnodar Territory Chief Veterinary Vladimir Shevkoplyas said.

"The All Russian Animal Health Protection Institute conducted this analysis detecting bird flu virus H5N1. We sympathize with our colleagues in the Rostov region, we ourselves have lived under tense conditions since 2006, when the 1st serous outbreak of the virus happened at Tbilisskaya battery farm," Shevkoplyas said at a territorial commission on prevention of bird flu and hog cholera.

Deputy Krasnodar Territory Governor Nikolai Dyachenko demanded that every necessary measure be taken to secure the Krylovsky district, Krasnodar Territory which borders the Zernograd district, Rostov region, as well as neighboring Kushchevsky, Novopokrovsky and Beloglinsky districts.

According to earlier reports, 450,000 hens are slated to be destroyed in the Zernograd district, Rostov region because of the die-off of birds that began last week. Expertise revealed A type flu among the dead poultry.

International, Wild Birds (Gulfnews.com [edited], December 11): Last week tests were carried out at the Central Veterinary Research Laboratory in Dubai on a[n imported] wild saker falcon (*Falco cherrug*) from Saudi Arabia, reported Wildlife Middle East News. The Highly Pathogenic Avian Influenza H5N1 was diagnosed in the falcon and it died shortly after being admitted to a falcon hospital in Riyadh. No post-mortem examinations or diagnostic tests were carried out to establish the cause of death. The falcon showed non-specific signs, including low appetite, regurgitation and passing of green-coloured liquids. According to the report the diagnosis included high white cell count.

Samples have been sent to the Friedrich-Loeffler Institute in Germany for further virus identification studies. The falcon was part of a large group of wild-caught sakers imported into the kingdom from Central Asia. According to reports, a large proportion of these falcons died showing similar symptoms.

Bird flu was initially detected at a poultry farm in Saudi Arabia and 50,000 birds were culled, the Agriculture Ministry announced on 14 Nov 2007. Tests were carried out after 1500 birds died in a farm in Al Kharj region, 150km [93.2 miles] south of Riyadh.

No human case has been found and an investigation was taking place to determine the origin of the illness. In April [2007], Kuwait culled 1.7 million birds after the strain was found but there were no reports of human cases.

International, Wild Birds (Polskieradio [edited], December 12): The number of bird flu cases in Poland has risen to 5. Vets pronounced 3 wild birds in the village of Krzykaly, north-east Poland, to be infected with the H5N1 virus.

As was announced by Ludwik Bartoszewicz, chief vet of the Warminsko-Mazurskie province, at a press conference yesterday [11 Dec 2007] evening, 3 birds from the bird recovery centre in Krzykaly died of bird flu. The presence of the virus was confirmed in detailed medical examinations in the National Veterinary Institute in Pulawy, eastern Poland.

There are more birds left in the recovery centre, among them 2 cranes, a white stork and mute swan. As these are all protected species the decision whether to cull them will have to be consulted with the Minister of the Environment.

A 10-km [6.2-mile] exclusion zone has been set out around the last bird flu focus. There are several chicken farms in the area with around 45,000 birds on them.

Michigan Wild Bird Surveillance (USDA, as of December 13): For the 2007 testing season, 1655 Michigan samples have been taken so far, comprised of 100 live bird samples, 1120 hunter-killed birds, 160 morbidity/mortality samples, and 275 environmental samples.

H5N1 subtype H5N1 has not been recovered from any Michigan samples tested to date, or from the 63,522 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 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 11, 2007)

(Source: http://www.oie.int/downld/AVIAN%20INFLUENZA/A_AI-Asia.htm Downloaded 12/12/2007)

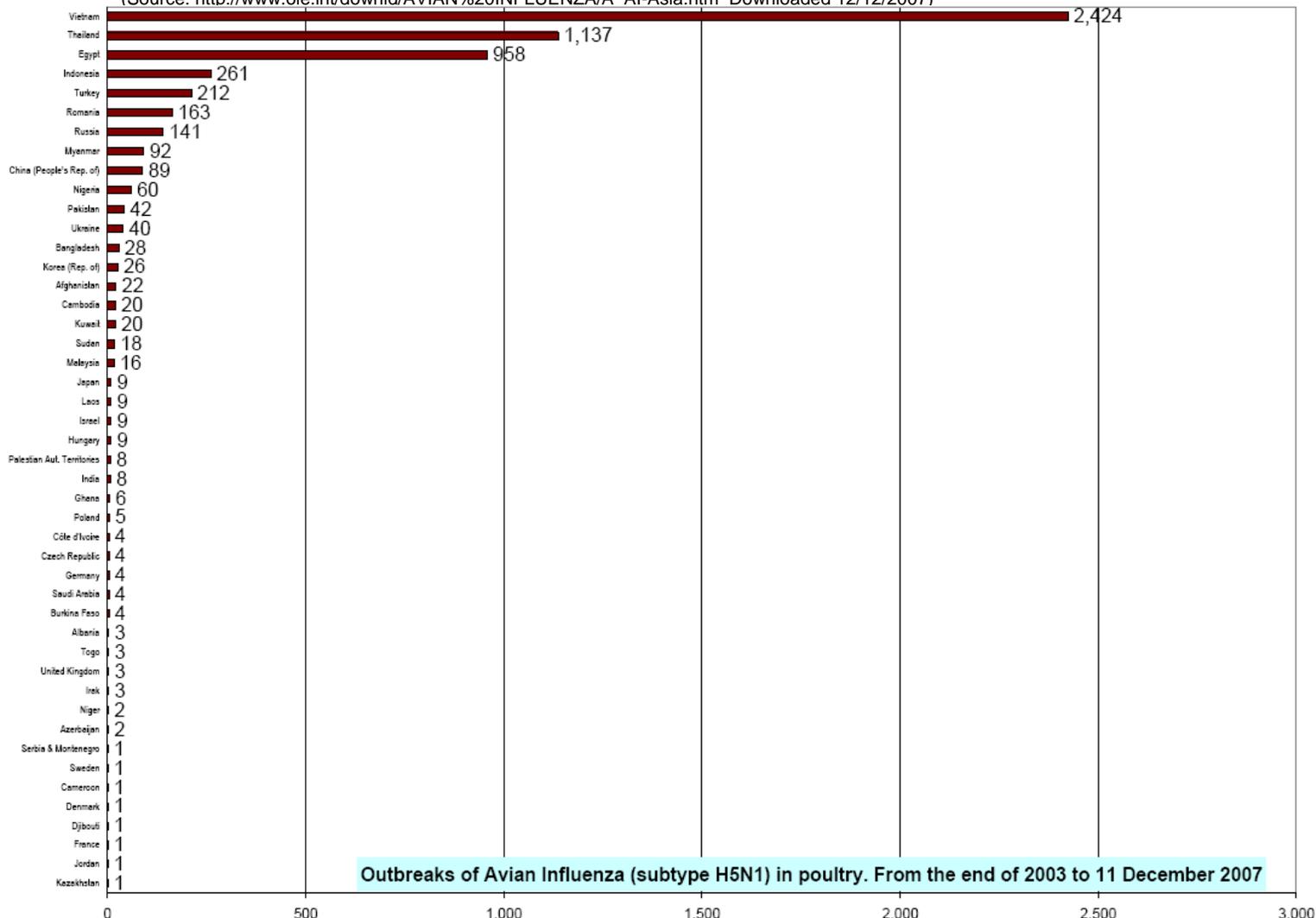


Table 2. H5N1 Influenza in Humans (Cases up to December 13, 2007)

(http://www.who.int/entity/csr/disease/avian_influenza/country/cases_table_2007_12_13/en/index.html Downloaded 12/13/2007)

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

Country	2003		2004		2005		2006		2007		Total	
	cases	deaths										
Azerbaijan	0	0	0	0	0	0	8	5	0	0	8	5
Cambodia	0	0	0	0	4	4	2	2	1	1	7	7
China	1	1	0	0	8	5	13	8	5	3	27	17
Djibouti	0	0	0	0	0	0	1	0	0	0	1	0
Egypt	0	0	0	0	0	0	18	10	20	5	38	15
Indonesia	0	0	0	0	20	13	55	45	40	34	115	92
Iraq	0	0	0	0	0	0	3	2	0	0	3	2
Lao PDR	0	0	0	0	0	0	0	0	2	2	2	2
Nigeria	0	0	0	0	0	0	0	0	1	1	1	1
Thailand	0	0	17	12	5	2	3	3	0	0	25	17
Turkey	0	0	0	0	0	0	12	4	0	0	12	4
Viet Nam	3	3	29	20	61	19	0	0	7	4	100	46
Total	4	4	46	32	98	43	115	79	76	50	339	208