



# 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:

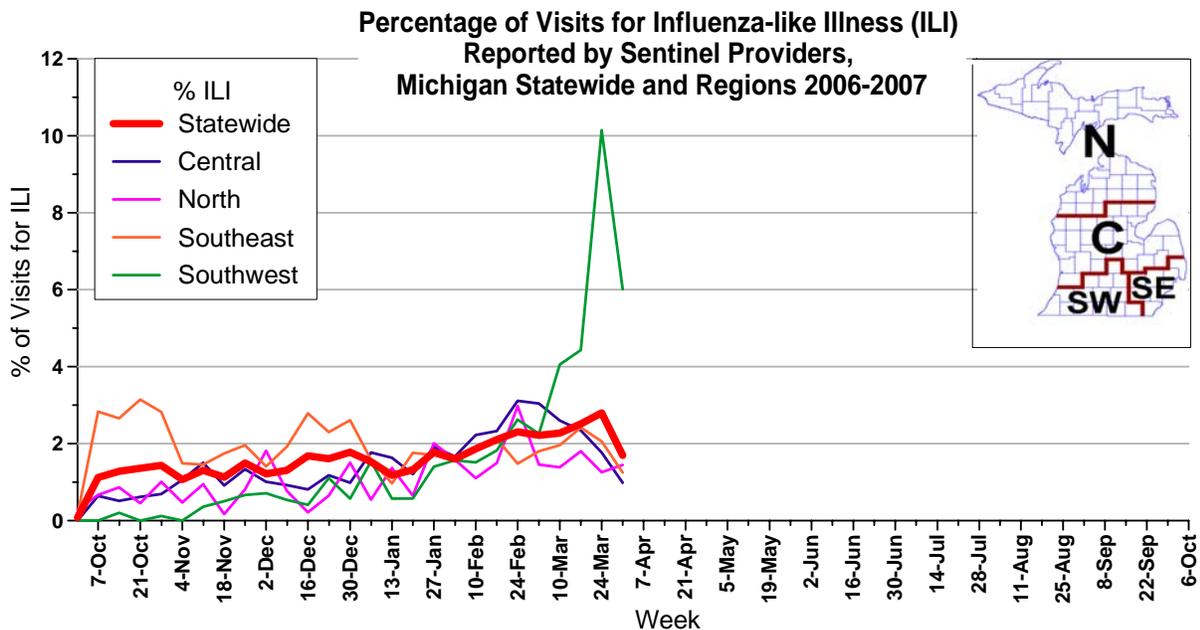
- **Michigan Surveillance:** Sources show mixed activity, but overall activity remains regionally elevated.
- **National Surveillance:** Overall activity declines for 6<sup>th</sup> straight week and is at national baseline.
- **Avian Influenza:** 3 new human cases in Egypt; Low pathogenic H5N2 strain found in US turkeys.

**Michigan Disease Surveillance System:** The last week saw an increase in both aggregate flu-like illness and individual influenza reports. Reporting levels are similar to this time last year; however, current activity levels continue to be elevated while the peak had already passed at this time last year.

**Emergency Department Surveillance:** Emergency department visits due to constitutional complaints increased while respiratory complaints decreased slightly this past week. Constitutional reports are slightly higher than last year, but in general both reported levels are consistent with levels at this time last year. Six constitutional alerts in Regions 1(1), 2N(1), 2S(1), 3(1), and 7(2) and two respiratory alerts in Regions 5(1) and 7(1) were generated last week.

**Over-the-Counter Product Surveillance:** OTC product sales reflect a very slight overall increase in activity. Product sales remained steady or slightly increased (children's electrolytes and children's cold relief liquids). The only exception was thermometer sales, which saw a mid-week jump but decreased overall. The indicators levels are comparable to those seen at this time last year, except for the adult and pediatric cold relief liquid, which are holding about 1-2% below its percentage of total sales for this time last year.

**Sentinel Surveillance (as of April 5, 2007):** During the week ending March 31, 2007, the proportion of visits due to influenza-like illness (ILI) in Michigan decreased to 1.7% of all visits, representing 132 cases of ILI out of 7,791 total patient visits; twenty-eight sentinels provided data for this report. A decrease in the proportion of visits due to ILI was noted in the Southwest region, but activity remains elevated at 6.0%. Activity decreased slightly in both the Central (1.0%) and North (1.4%) regions; activity remained unchanged from last week in the Southeast (1.3%). Note that these rates may change as additional reports are received.



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](mailto:potterr1@michigan.gov) for more information.

**Laboratory Surveillance (as of April 5):** For the 2006-2007 influenza season, there have been 140 culture-confirmed cases from the MDCH Lab:

- 69 A:H1N1 (Southeast (22), Southwest (21), Central (16), North (10))
- 23 A:H3N2 (North (11), Southeast (6), Southwest (3), Central (3))
- 2 A subtype pending (Southeast)
- 46 B (Central (17), Southeast (13), Southwest (12), North (4))

All influenza B cultures have been B/Malaysia, except for one B/Shanghai from the Southeast region. Submissions to MDCH BOL are decreasing.

Sentinels labs across the state are reporting a decrease in the number of positive tests, with the exception of one Southeast lab which is reporting its highest number of positive test results this season. Preliminarily, the majority of sentinel labs appeared to have peaked in the weeks ending March 3<sup>rd</sup> or March 10<sup>th</sup>. Low levels of parainfluenza, adenovirus and respiratory syncytial virus are being reported as well.

\*\*\*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 April 5):** For the 2006-2007 season, there are no confirmed reports of influenza-related pediatric mortality in Michigan. MDCH, in conjunction with CDC, is currently investigating a possible pediatric death due to influenza from the Southeast region.

\*\*\*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](http://www.michigan.gov/documents/fluletter_107562_7.pdf) for the complete protocol. It is important to immediately call or fax information to MDCH to ensure that appropriate clinical specimens can be obtained.

**Congregate Settings Outbreaks (as of April 5):** There has been one report of an influenza A outbreak from a Central region extended care facility for the 2006-2007 influenza season. Three facility outbreaks of respiratory illness/suspected influenza, two from the Southwest region and one from the Central region, are currently under investigation.

**National (FDA website, April 2):** FDA's Vaccines and Related Biological Products Advisory Committee (VRBPAC) met in Gaithersburg, Maryland, on February 28, 2007, to select the influenza virus strains for the composition of the influenza vaccine for use in the 2007-2008 U.S. influenza season. During this meeting, the advisory panel reviewed and evaluated the surveillance data related to epidemiology and antigenic characteristics, serological responses to 2006/2007 vaccines, and the availability of candidate strains and reagents.

The panel recommended that vaccines to be used in the 2007-2008 influenza season in the U.S. contain the following:

- \* An A/Solomon Islands/3/2006 (H1N1)-like virus;
- \* An A/Wisconsin/67/2005 (H3N2)-like virus;
- \* A B/Malaysia/2506/2004-like virus

The influenza vaccine composition to be used in the 2007-2008 influenza season in the U.S. is identical to that recommended by the World Health Organization on February 14, 2007.

**National (CDC, March 30):** During week 12 (March 18 – March 24, 2007), influenza activity continued to decrease in the United States. Data from the U.S. World Health Organization (WHO) and National Respiratory and Enteric Virus Surveillance System (NREVSS) collaborating laboratories indicated a decline in activity for the sixth consecutive week; 15.1% of specimens tested positive for influenza this week. ILI data decreased during week 12 and was at the national baseline for the first time since early January.



For influenza activity from individual countries, please visit the full WHO article "Seasonal Influenza Activity in the World, 2007" at <http://www.who.int/csr/disease/influenza/update/en/>.

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MDCH reported **REGIONAL ACTIVITY** to the CDC for this past week ending March 31, 2007.

## **End of Seasonal Report**

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### **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, April 2):** The Egyptian Ministry of Health and Population has announced three new human cases of avian influenza A(H5N1) virus infection. The cases have been confirmed by the Egyptian Central Public Health Laboratory and by the US Naval Medical Research Unit No.3 (NAMRU-3).

The first case, a 4-year-old boy from Qena Governorate, is the brother of [the 6-year-old girl](#) whose infection was reported on March 28<sup>th</sup>. He developed symptoms on March 26<sup>th</sup> and was admitted to hospital on March 29<sup>th</sup>. The second case, a 7-year-old boy from Sohag Governorate, developed symptoms on March 26<sup>th</sup> and was hospitalized on March 29<sup>th</sup>. The third case is a 4-year-old girl from Qalubia Governorate. She developed symptoms on March 29<sup>th</sup> and was admitted to hospital the following day.

All three children are receiving treatment and remain in a stable condition. Investigations into the sources of exposure indicate a history of contact with dead birds in each case. Contacts of the children are under surveillance and all remain healthy. Of the 32 cases confirmed to date in Egypt, 13 have been fatal.

**International, Human (Reuters, April 3):** Egyptian health authorities excluded the possibility of human to human transmission in the case of a brother and sister with bird flu, the World Health Organization (WHO) said on Tuesday. A four-year-old boy, from Qena province around 670 km (400 miles) south of Cairo, was among three human cases announced by the health ministry at the weekend. His six-year-old sister was one of two children diagnosed with the virus late last week.

"We have heard from the Ministry of Health that human to human transmission has been ruled out," WHO spokesman Greg Hartl told Reuters. Both of the children had been exposed to poultry infected with the H5N1 virus, the most common way in which bird flu has been spreading. In all, five Egyptian children have been reported as being in hospital in stable condition. "Egypt has an extremely good record of child survival of H5N1," Hartl added.

The highly pathogenic H5N1 virus is not easily transmissible between people, although there has been evidence of several clusters involving human to human transmission over the past three years, according to the WHO. Experts fear that the virus will mutate or combine with the highly contagious seasonal influenza virus and spark a deadly pandemic which could circle the globe and kill millions.

**International, Poultry (Reuters India, March 30):** Bird flu has spread to 5 more farms in central and northern districts, Bangladesh said on Friday [March 30]. "The avian flu has now spread to 16 farms in 5 districts so far. But no humans have been confirmed infected," an official of the fisheries and livestock ministry said.

Bangladesh has culled about 60,000 birds since confirming the outbreak of the H5N1 flu virus simultaneously on 6 farms near the capital, Dhaka, on 22 March 2007. All the culled birds belonged to the 16 affected farms. So far, 30 workers in the 5 newly affected farms were being monitored after they were given health checks. Earlier, 100 poultry workers were released after no H5N1 infection was detected by a local laboratory, which tested their blood and other samples days after the initial outbreak was detected.

Movement of chickens has been banned outside a 10 sq km (3.9 sq miles) area around the affected farms, officials said. Livestock officials said after the outbreak of the virus they had inspected about 10 000 farms containing nearly 1.1 million birds.

**International, Poultry (Thanh Nien Daily, March 31):** Ca Mau province, Vietnam's southernmost, has reported an outbreak of bird flu, the first since declaring it was free of the disease before the Lunar New Year in mid-February [2007]. More than 100 ducks had died of the disease in Khanh Binh Dong commune in Tran Van Thoi district Friday [March 30], deputy head of the provincial administration, Pham Thanh Tuoi, said. The ducks had not been vaccinated, he added. All poultry in the infected area have been killed, and the administration has asked authorities to step up surveillance to prevent the disease from recurring.

**International, Poultry (Reuters Alertnet, April 1):** Kuwait confirmed on Sunday [April 1] 5 more cases in chickens of the deadly H5N1 strain of bird flu, bringing to 101 the total number of infected birds in the Gulf Arab country this year. The new cases were chickens from a 4th farm in the southern region of Wafra, where most of the bird flu infections have been found, said Health Ministry official Ahmed al-Shatti. He said no human infections were found after more than 500 people who had been in contact with the birds had been tested.

Kuwaiti authorities have culled some 1.5 million birds, out of which 1.1 million were at 3 farms in Wafra near the Saudi border, representing almost 60 percent of the country's egg hens. The measures are hitting Kuwait's egg production, since the culled 1.1 million layers account for 88 percent of local egg needs, according to the agricultural and fish resources authority. Kuwait has 16 broiler and layer farms.

The government has pledged to compensate farmers and bird owners for the culling, with local daily al-Seyassah saying 15 million dinars (USD 51.81 million) will be paid in total. The country has closed down the zoo and poultry shops in residential areas and banned the import of live birds.

**National, Low Pathogenic H5N2, Poultry (USDA, April 1):** On Saturday, March 31, 2007, our National Veterinary Services Laboratories confirmed that test results for samples collected the day before from turkeys at a farm in West Virginia are indicative of exposure to an H5N2 avian influenza virus. We can say for certain that this is not the highly pathogenic H5N1 virus that has spread through birds in Asia, Europe and Africa. Every indication is that the virus is consistent with low pathogenic strains of avian influenza, or LPAI, which are commonly found in birds and typically cause only minor sickness or no noticeable symptoms. LPAI viruses pose no risk to human health.

The samples were collected by an industry group as part of routine, pre-slaughter surveillance. The turkeys showed no signs of illness and there was no mortality. NVSL plans to run sequencing and pathogenicity tests to further identify the virus.

This evening, West Virginia officials will depopulate the turkey flock from which the positive samples were taken, which includes approximately 25,000 birds. While LPAI poses no risk to human health, USDA's policy is to eradicate all H5 and H7 subtypes because of their potential to mutate into highly pathogenic avian influenza, which has a high mortality rate among birds. Additionally, all poultry operations within a six mile radius of the affected farm will be closely monitored.

International animal health standards now require countries to report all H5 and H7 detections. USDA will notify the World Organization for Animal Health, or OIE, of the H5N2 detection in West Virginia. This detection should not significantly impact U.S. exports of poultry and poultry products. International standards call for a regionalized approach to trade restrictions and USDA's Foreign Agricultural Service will work closely with trading partners to ensure any trade restrictions are based on science and lifted at the appropriate time.

Because the affected poultry producer participates in the expanded National Poultry Improvement Plan (NPIP), USDA will provide 100 percent indemnity for all specified costs associated with depopulating this flock. USDA published an interim rule on September 26, 2006, expanding the voluntary cooperative federal, state and industry program to provide indemnity for eradication of H5 and H7 LPAI outbreaks. We will also provide support in the depopulation process.

**Michigan Wild Bird Surveillance (USDA, March 30):** According to the National HPAI Early Detection Data System website, available at <http://wildlifedisease.nbi.gov/ai/>, Michigan has results for a total of 1856 samples submitted for testing as of March 30<sup>th</sup>. 232 of these were live-captured birds, 634 were hunter-killed, 174 were sentinel animals, 609 were dead birds that were submitted for testing, and 207 were environmental samples. HPAI subtype H5N1 has not been recovered from any Michigan samples tested to date, or from the 115,548 birds or environmental samples tested nationwide.

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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**Erratum:** The following article from the March 29, 2007 edition mentions that wild birds in Myanmar died of smallpox. Before its eradication, smallpox was exclusively a human disease with no known animal or environmental reservoir. This report of bird deaths due to smallpox is an error in translation.

**International, Poultry (Xinhua News Agency, March 27):** The Myanmar livestock authorities have confirmed that five townships in Yangon have been hit by H5N1 outbreak, according to a statement of the Livestock Breeding and Veterinary Department (LBVD) released today. The five townships are Mayangon, Hlaingtharya, North Okkalapa, Mingaladon and Hmawby.

Poultry, quails and pheasants of the affected farms together with those from possibly affected farms and from farms that are contiguous with the affected farms were culled and necessary preventive measures are being taken, the statement said. Although H5N1 strain of bird flu was found at some poultry farms in the five townships, the dead bodies of some chickens and geese from several other townships in Yangon and Bago divisions were not found to be infected with bird flu, it said. Of the 324 crows, pigeons and sparrows, doves, which died during the period since the end of February, only six crows were suspicious of being infected with the avian influenza. The others died of heat stroke, chronic bronchitis and small pox.

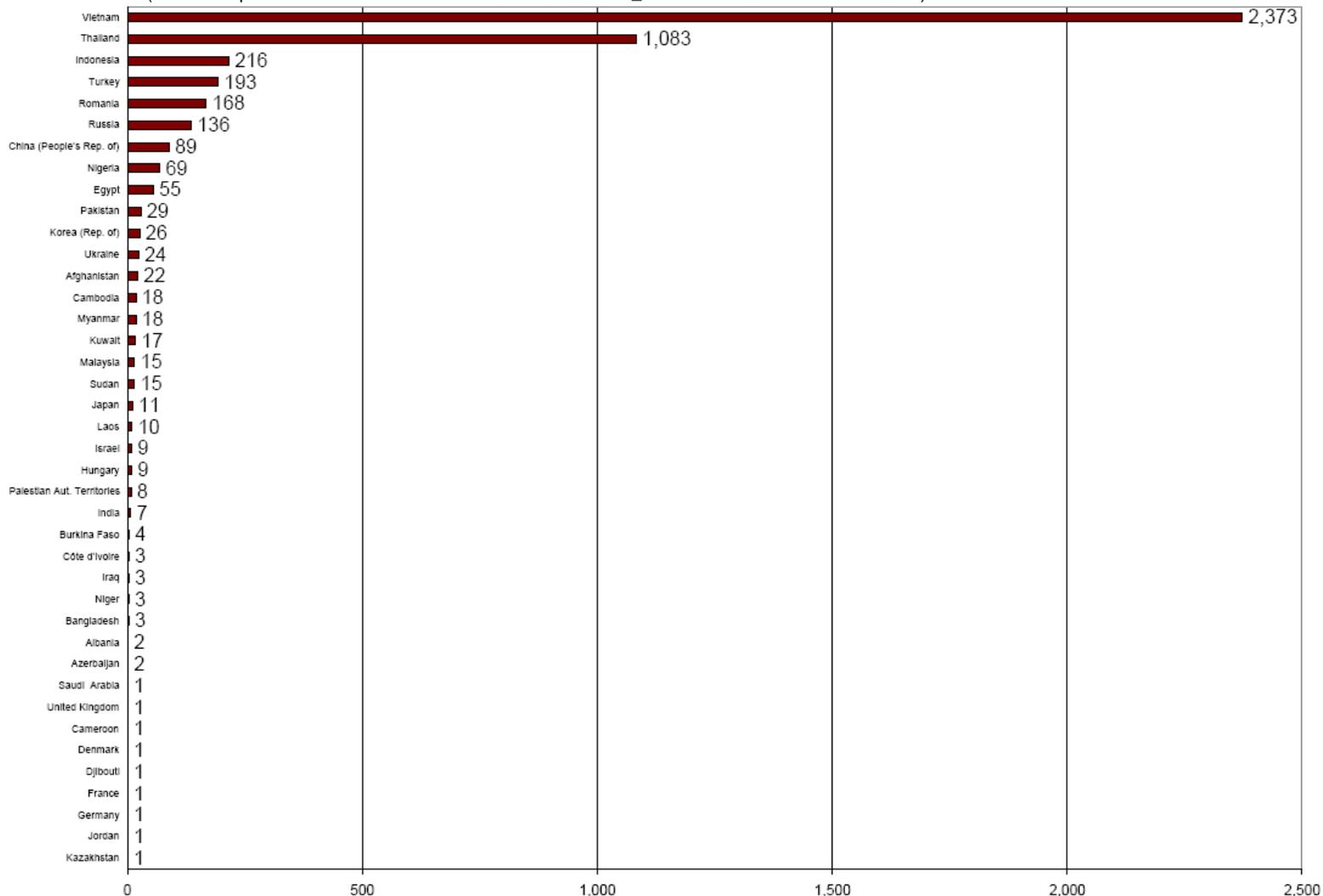
The authorities have warned breeders and those engaged in poultry marketing to use new farm equipment instead of the old ones and to ensure that crows do not enter poultry farms.

Suspicious avian influenza was first detected on February 27 by Myanmar in a small private poultry farm in northwestern Yangon's suburban township of Mayangon. In the outbreak, 1,863 fowls died of the virus with 37,883 culled, according to earlier statement of the LBVD.

Meanwhile, two townships, Mayangon and the Hlaingtharya, have been further confirmed of the bird flu outbreak by experts of the United Nations Food and Agriculture Organization (FAO) and the UNAID. The FAO agreed on March 10 to provide immediate technical assistance to strengthen emergency preparedness for highly pathogenic avian influenza. The assistance also includes equipment worth of US\$600,000 donated by the USAID to be used in preventive measures against the disease.

**Table 1. H5N1 Influenza in Poultry (Outbreaks up to April 4, 2007)**

(Source: [http://www.oie.int/downld/AVIAN%20INFLUENZA/A\\_AI-Asia.htm](http://www.oie.int/downld/AVIAN%20INFLUENZA/A_AI-Asia.htm) Downloaded 4/4/2007)



**Table 2. H5N1 Influenza in Humans (Cases up to April 2, 2007)**

([http://www.who.int/entity/csr/disease/avian\\_influenza/country/cases\\_table\\_2007\\_04\\_02/en/index.html](http://www.who.int/entity/csr/disease/avian_influenza/country/cases_table_2007_04_02/en/index.html) Downloaded 4/2/2007)

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	0	0	6	6
China	1	1	0	0	8	5	13	8	1	0	24	15
Djibouti	0	0	0	0	0	0	1	0	0	0	1	0
Egypt	0	0	0	0	0	0	18	10	8	3	32	13
Indonesia	0	0	0	0	20	13	55	45	6	5	81	63
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	0	0	93	42
Total	4	4	46	32	98	43	115	79	18	11	288	170