



MI Flu Focus

Influenza Surveillance Updates
Bureaus of Epidemiology and Laboratories

Michigan Department
of Community Health



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Current Influenza Activity Levels:

- **Michigan:** Regional influenza activity
- **National:** During December 15-21, influenza activity continued to increase in the U.S.

Updates of Interest:

- **International:** Hong Kong is reporting two human cases of avian influenza H9N2

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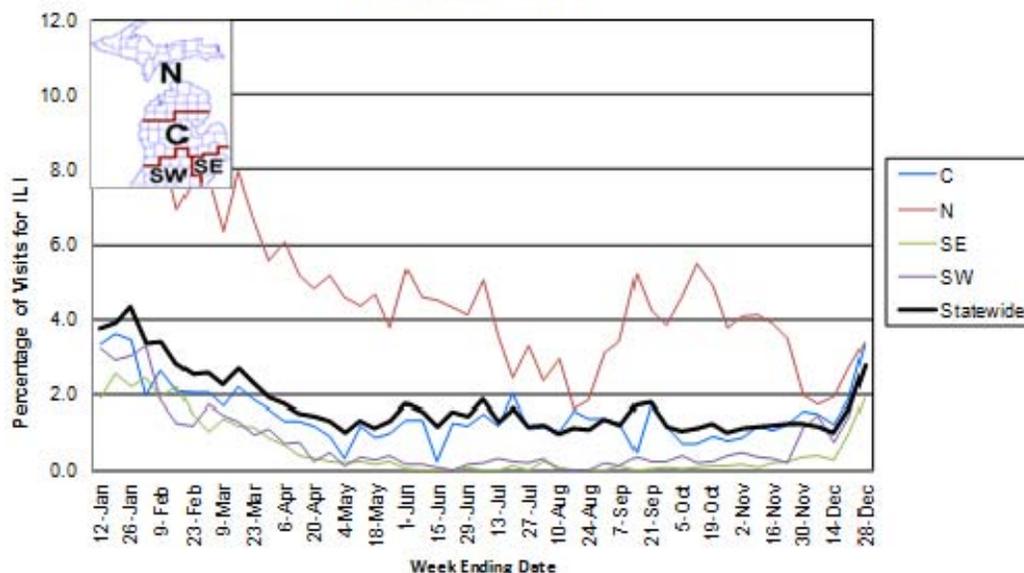
Influenza Surveillance Reports

Michigan Disease Surveillance System (as of January 3): MDSS influenza data for the week ending December 28, 2013 indicated that compared to levels from the previous week, aggregate reports decreased and individual reports moderately increased. The decrease in aggregate reports may be partially explained by the school holiday breaks. Aggregate reports are significantly lower than levels seen during the same time period last year, while individual reports are higher.

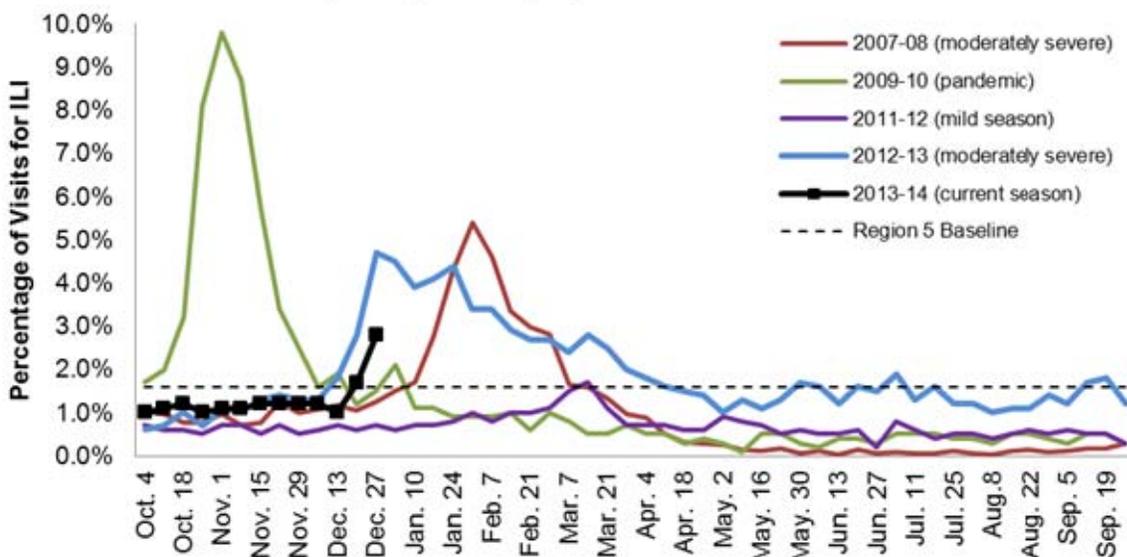
Emergency Department Surveillance (as of January 3): Emergency department visits due to both constitutional and respiratory complaints significantly increased during the week ending December 28, 2013. Emergency department visits from both constitutional and respiratory complaints were similar to levels during the same time period last year. In the past week, there were 19 constitutional alerts in the SE(4), SW(4), C(8) and N(3) Influenza Surveillance Regions and 3 statewide alerts and 16 respiratory alerts in the SE(2), SW(3), C(7) and N(4) Regions and 2 statewide alerts.

Sentinel Provider Surveillance (as of January 3): During the week ending December 28, 2013, the proportion of visits due to influenza-like illness (ILI) increased to 2.8% overall; this is above the regional baseline (1.6%). A total of 156 patient visits due to ILI were reported out of 5,623 office visits. Data were provided by 28 sentinel sites from the following regions: Central (9), North (3), Southeast (12), and Southwest (4). ILI activity increased in all four regions: C (3.3%), N (3.4%), SE (1.9%), and SW (2.7%). Please note: These rates may change as additional reports are received.

Percentage of Visits for Influenza-like Illness (ILI)
Reported by Sentinel Providers, Statewide and Regions
2013-14 Flu Season



Percentage of Visits for Influenza-like Illness (ILI) Reported by the US Outpatient Influenza-like Illness Surveillance Network (ILINet): Michigan, Select Seasons



As part of pandemic influenza surveillance, CDC and MDCH highly encourage year-round participation from all sentinel providers. New practices are encouraged to join the sentinel surveillance program today! Contact Stefanie DeVita at 517-335-3385 or DeVitaS1@michigan.gov for more information.

Hospital Surveillance (as of December 28): The CDC Influenza Hospitalization Surveillance Project provides population-based rates of severe influenza illness through active surveillance and chart review of lab-confirmed cases, starting on October 1, 2013, for Clinton, Eaton, Genesee, and Ingham counties. 13 new cases (5 pediatric, 8 adult) were identified during the past week. One pediatric case reported during a prior week was incorrectly classified and removed from prior counts. As of December 28th, there have been 36 influenza hospitalizations (17 pediatric, 19 adult) within the catchment area.

The MDCH Influenza Sentinel Hospital Network monitors influenza hospitalizations reported voluntarily by hospitals statewide. 11 hospitals (SE,SW,C) reported for the week ending December 28, 2013. Results are listed in the table below. Additional reports for prior weeks have been added to the season totals.

| Age Group | Hospitalizations Reported During Current Week | Total Hospitalizations 2013-14 Season |
|--------------|---|---------------------------------------|
| 0-4 years | 6 (1SE,5C) | 18 (2SE,16C) |
| 5-17 years | 2 (2C) | 8 (1SE,7C) |
| 18-49 years | 17 (8SE,6C,3N) | 37 (22SE,11C,4N) |
| 50-64 years | 18 (12SE,1SW,4C,1N) | 33 (22SE,1SW,7C,3N) |
| ≥65 years | 15 (7SE,5C,3N) | 25 (18SE,5C,4N) |
| Total | 58 (28SE,1SW,22C,7N) | 121 (63SE,1SW,46C,11N) |

Laboratory Surveillance (as of December 28): During December 22-28, 20 influenza 2009 A/H1N1pdm (1SE,6SW,4C,9N) results were reported by MDCH Bureau of Laboratories. For the 2013-14 season (starting Sept. 29, 2013), MDCH has identified 142 positive influenza results:

- Influenza 2009 A/H1N1pdm: 131 (47SE,31SW,32C,21N)
- Influenza A and B (LAIV recovery): 1 (1SE)
- Influenza A/H3: 6 (6SE)
- Adenovirus: 1 (1SE)
- Influenza A unsubtypeable: 1 (1SE)
- Parainfluenza: 2 (1SE,1SW)
- Influenza B: 3 (1SE,1SW,1C)

12 sentinel labs (SE,SW,C,N) reported for the week ending December 28, 2013. 12 labs (SE,SW,C,N) reported increasing influenza A activity, with several SE sites at high levels. 4 labs (SE,SW,C) reported sporadic influenza B activity. 10 labs (SE,SW,C,N) had low or increasing RSV activity. 3 labs (SE,SW,C) had sporadic parainfluenza activity. 3 labs (SE,SW,C) had sporadic adenovirus activity. 3 labs (SE,SW) reported sporadic hMPV activity. Testing volumes at most sites increased to moderate to high levels.

Michigan Influenza Antigenic Characterization (as of January 3): For the 2013-14 season, no influenza specimens have been characterized at MDCH BOL.

Michigan Influenza Antiviral Resistance Data (as of January 3): For the 2013-14 season, 23 2009 A/H1N1pdm (12SE,2SW,5C,4N) and 4 A/H3 (4SE) influenza specimens have been tested at the MDCH BOL for antiviral resistance. None of the influenza specimens tested have been resistant.

CDC has made recommendations regarding the use of antivirals for treatment and prophylaxis of influenza, which are available at <http://www.cdc.gov/flu/professionals/antivirals/index.htm>.

Influenza-associated Pediatric Mortality (as of January 3): No new pediatric influenza-associated deaths were reported to MDCH during the previous week. One pediatric influenza-associated influenza mortality (1C) has been reported to MDCH for the 2013-14 season.

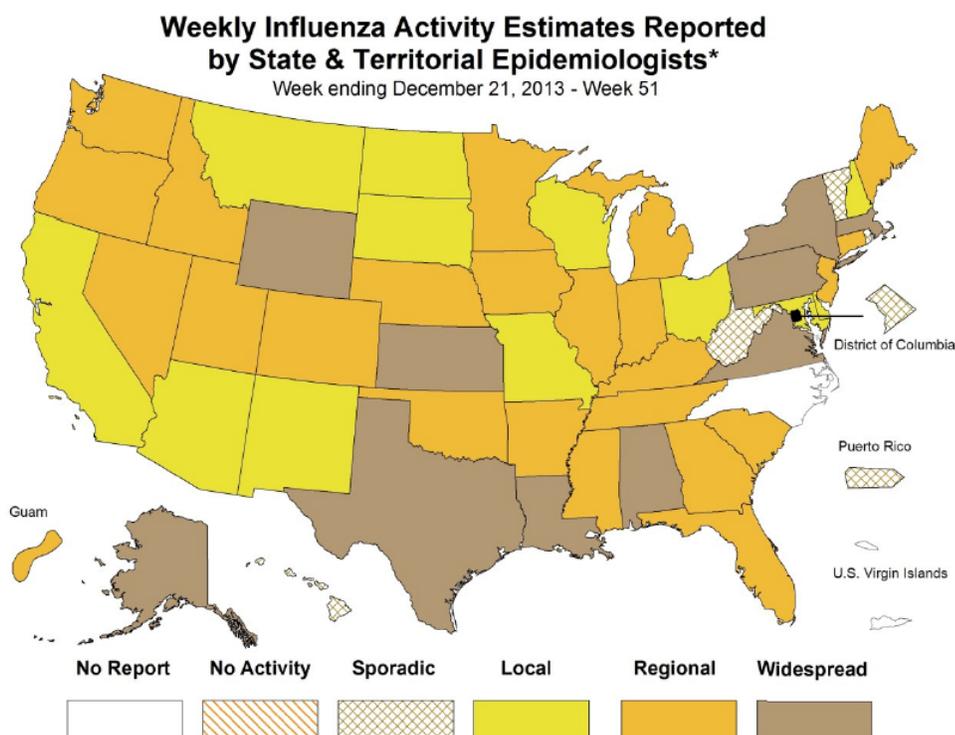
CDC requires reporting of flu-associated pediatric deaths (<18 yrs), including pediatric deaths due to an influenza-like illness with lab confirmation of influenza or any unexplained pediatric death with evidence of an infectious process. Contact MDCH immediately for proper specimen collection. The MDCH protocol is at www.michigan.gov/documents/mdch/ME_pediatric_influenza_guidance_v2_214270_7.pdf.

Influenza Congregate Settings Outbreaks (as of January 3): Two new respiratory outbreaks in long-term care facilities (1SW,1C) were reported during the previous week; testing for influenza was negative in one and positive for influenza A in the other. 3 respiratory outbreaks (1SW,2C) have been reported during the 2013-14 season:

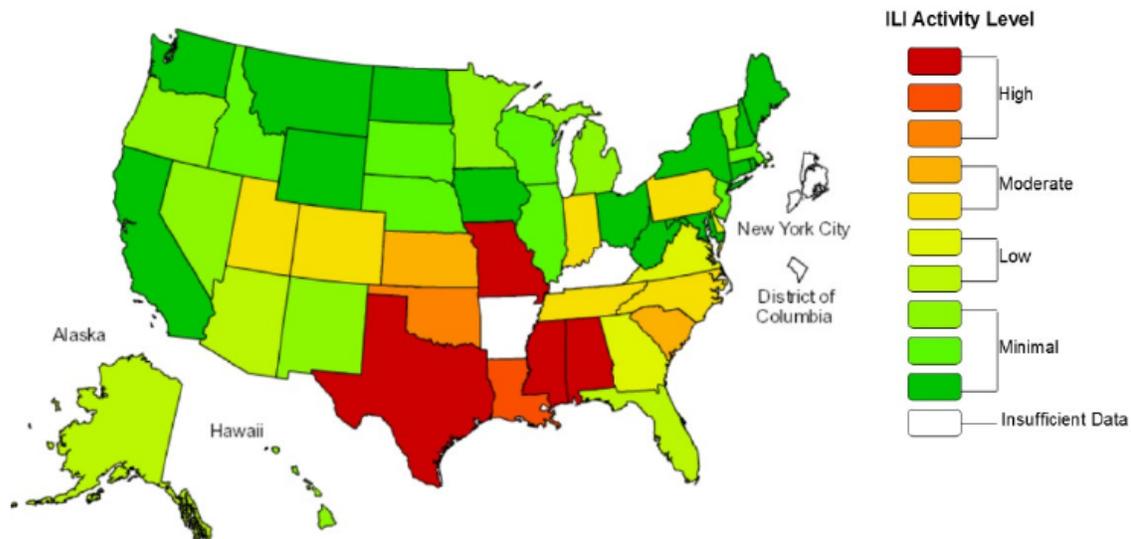
- Influenza A positive: 1 (1SW)
- Negative/no testing: 2 (2C)

National (CDC [edited], December 27): During week 51 (December 15-21, 2013), influenza activity continued to increase in the United States. Of 6,813 specimens tested and reported by U.S. World Health Organization (WHO) and National Respiratory and Enteric Virus Surveillance System (NREVSS) collaborating laboratories during week 51, 1,639 (24.1%) were positive for influenza. The proportion of deaths attributed to pneumonia and influenza was below the epidemic threshold. One influenza associated pediatric death that occurred during the 2012-2013 season was reported. A cumulative rate for the season of 4.3 laboratory confirmed influenza-associated hospitalizations per 100,000 population was reported. The proportion of outpatient visits for influenza-like illness (ILI) was 3.0%, above the national baseline of 2.0%. Eight regions reported ILI at or above region-specific baseline levels. Six states experienced high ILI activity; eight states experienced moderate ILI activity; six states experienced low ILI activity; 28 states experienced minimal ILI activity, and the District of Columbia, New York City, and two states had insufficient data. The geographic spread of influenza in 10 states was reported as widespread; Guam and 23 states reported regional influenza activity; 12 states reported local influenza activity; the District of Columbia, Puerto Rico, and four states reported sporadic influenza activity, and the U.S. Virgin Islands and one state did not report.

Complete weekly FluView reports are available online at: <http://www.cdc.gov/flu/weekly/>.



**Influenza-Like Illness (ILI) Activity Level Indicator Determined by Data Reported to ILINet
2013-14 Influenza Season Week 51 ending Dec 21, 2013**



This map uses the proportion of outpatient visits to healthcare providers for influenza-like illness to measure the ILI activity level within a state. Therefore, outbreaks occurring in a single city could cause the state to display high activity levels. Data collected in ILINet may disproportionately represent certain populations within a state, and therefore, may not accurately depict the full picture of influenza activity for the whole state. Data displayed on this map are based on data collected in ILINet, whereas the State and Territorial flu activity map are based on reports from state and territorial epidemiologists.

International (WHO [edited], December 20): In North America the influenza season has started. The predominant subtype of influenza viruses detected was A(H1N1)pdm09. For the rest of the northern hemisphere as well as in the southern hemisphere influenza activity remained low. In countries of tropical areas variable influenza activity was reported. Based on FluNet reporting (as of 19 December 2013), during weeks 48 to 49 (24 November to 7 December 2013), National Influenza Centres (NICs) and other national influenza laboratories from 89 countries, areas or territories reported influenza surveillance data. The WHO GISRS laboratories tested more than 42360 specimens. 3304 were positive for influenza viruses, of which 2816 (85.3%) were typed as seasonal influenza A and 487 (14.7%) as influenza B. Of the sub-typed A viruses, 1166 (66.4%) were A(H1N1)pdm09 and 591 (33.6%) were A(H3N2). Of the characterized B viruses, 39 (70.9%) belonged to the B-Yamagata lineage and 16 (29.1%) to the B-Victoria lineage.

The full report is online at www.who.int/influenza/surveillance_monitoring/updates/latest_update_GIP_surveillance/en/index.html.

MDCH reported REGIONAL INFLUENZA ACTIVITY to CDC for the week ending December 28, 2013

For additional flu vaccination and education information, the MDCH *FluBytes* newsletter is available at http://www.michigan.gov/mdch/0,1607,7-132-2940_2955_22779_40563-125027--,00.html.

Novel Influenza Activity and Other News

WHO Pandemic Phase: Post-pandemic – Influenza disease activity has returned to levels normally seen for seasonal influenza.

International, Human (Hong Kong governmental press release [edited], December 30): The Centre for Health Protection (CHP) of the Department of Health (DH) is today (December 30) investigating a confirmed human case of influenza A(H9N2) affecting a man aged 86.

The patient is a Hong Kong resident living in Huangbeiling, Luohu, Shenzhen. He has underlying illnesses and has developed chills and cough with sputum since December 28. Upon entry at Lo Wu Border Control Point (BCP) on the same day, he was transferred by ambulance direct to the Accident and Emergency Department of North District Hospital (NDH), where he presented with low fever. He was then admitted to the isolation ward. He was transferred to Princess Margaret Hospital today for further management.

His clinical diagnosis was chest infection. He has been in stable condition all along and is currently afebrile.

His sputum specimen tested positive for the influenza A(H9N2) virus upon testing by the CHP's Public Health Laboratory Services Branch.

"The epidemiological investigations, enhanced disease surveillance, port health measures and health education against avian influenza are all ongoing," a spokesman for the DH remarked.

Investigations by the CHP revealed that the patient had no recent poultry contact, consumption of undercooked poultry, or contact with patients. His home contact in Shenzhen has remained asymptomatic.

Over 50 health-care workers of NDH and the ambulance service have been put under medical surveillance.

"The H9N2 virus is of avian origin and has been isolated mainly from poultry. Rare and sporadic human cases have been reported and are generally mild respiratory tract infections. The public should avoid contact with poultry and other birds, including chickens, ducks and sparrows," the spokesman explained.

Influenza A(H9) is a local statutorily notifiable infectious disease. Two local cases were reported in 1999. One local case was respectively filed each in 2003 and 2007. An imported case was recorded in 2008 while an imported case and one with the source of infection unclassified were filed in 2009. All are mild infections and the patients have recovered. No deaths have been recorded so far.

Locally, enhanced surveillance over suspected cases in public and private hospitals is under way.

As the patient was staying in Shenzhen for the whole incubation period, the CHP will inform the health authority of Guangdong of the case for necessary investigation and follow-up action.

The complete press release is available online at http://www.chp.gov.hk/en/view_content/32802.html.

International, Human (Hong Kong governmental press release, January 2): Mainland authorities today notified the Centre for Health Protection of a case of avian influenza A (H9N2), affecting a seven-year-old boy in Hunan. He fell ill on November 19 and has recovered after receiving treatment at a local hospital. He had been in contact with poultry. The Centre for Health Protection will liaise with Mainland health authorities on the case.

The press release is available online at http://www.news.gov.hk/en/categories/health/html/2014/01/20140102_215944.shtml.

International, MERS-CoV (WHO [edited], December 27): On 20 December 2013, WHO has been informed of four additional laboratory-confirmed cases of Middle East Respiratory Syndrome coronavirus (MERS-CoV) in Saudi Arabia.

Two cases are female health workers from Riyadh who have not reported any symptoms.

The third case is a 53 year-old male from Riyadh with underlying chronic diseases. He was hospitalized on November 26 and is currently receiving treatment in an intensive care unit. He had no exposure to animals and no travel history outside Riyadh region. He had contact with a confirmed case.

The fourth case is a 73 year-old male from Riyadh with underlying chronic diseases who died on December 18, three days after being hospitalized. He had exposure to animals but no travel history.

Globally, from September 2012 to date, WHO has been informed of a total of 170 laboratory-confirmed cases of infection with MERS-CoV, including 72 deaths.

The full report is available online at http://www.who.int/csr/don/2013_12_27/en/index.html.

International, MERS-CoV (WHO [edited], January 3): On 31 December 2013, WHO has been informed of an additional laboratory-confirmed case of Middle East Respiratory Syndrome coronavirus (MERS-CoV) in United Arab Emirates.

The case is a 33 year-old male healthcare worker in Dubai who was in contact with the confirmed MERS-CoV case reported to WHO on 20 December. He developed symptoms on 27 December, and was hospitalized on 28 December with bilateral pneumonia, acute renal failure and thrombocytopenia. The patient has underlying history of bronchial asthma and chronic kidney disease. The case was laboratory confirmed for MERS-CoV on 29 December 2013. The patient is in critical but stable condition.

Globally, from September 2012 to date, WHO has been informed of a total of 177 laboratory-confirmed cases of infection with MERS-CoV, including 74 deaths.

The full report is available online at http://www.who.int/csr/don/2014_01_03/en/index.html.

International, Poultry (OIE [edited], January 3): Highly pathogenic avian influenza H5N1; China Outbreak 1: Yijue Village, Libo, Qiannan, GUIZHOU; Date of start of the outbreak: 27/12/2013
Epidemiological unit: Farm; Susceptible: 31567; Cases: 9300; Deaths: 8500; Destroyed: 23067
Affected population: All the cases are chickens and 18,250 chickens, 4,569 ducks and 248 geese have been destroyed.

International Poultry and Wild Bird Surveillance (OIE): Reports of avian influenza activity, including summary graphs of avian influenza H5N1 outbreaks in poultry, can be found at the following website: http://www.oie.int/download/AVIAN%20INFLUENZA/A_AI-Asia.htm.

For questions or to be added to the distribution list, please contact Susan Peters at peterss1@michigan.gov

MDCH Contributors

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Table. H5N1 Influenza in Humans – As of October 8, 2013. http://www.who.int/influenza/human_animal_interface/EN_GIP_20131008_CumulativeNumberH5N1cases.pdf. Downloaded 10/8/2013. Cumulative lab-confirmed cases reported to WHO. Total cases include deaths.

| Country | 2003-2009 | | 2010 | | 2011 | | 2012 | | 2013 | | Total | |
|------------|-----------|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|
| | Cases | Deaths | Cases | Deaths | Cases | Deaths | Cases | Deaths | Cases | Deaths | Cases | Deaths |
| Azerbaijan | 8 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 5 |
| Bangladesh | 1 | 0 | 0 | 0 | 2 | 0 | 3 | 0 | 1 | 1 | 7 | 1 |
| Cambodia | 9 | 7 | 1 | 1 | 8 | 8 | 3 | 3 | 20 | 11 | 41 | 30 |
| China | 38 | 25 | 2 | 1 | 1 | 1 | 2 | 1 | 2 | 2 | 45 | 30 |
| Djibouti | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Egypt | 90 | 27 | 29 | 13 | 39 | 15 | 11 | 5 | 4 | 3 | 173 | 63 |
| Indonesia | 162 | 134 | 9 | 7 | 12 | 10 | 9 | 9 | 2 | 2 | 194 | 162 |
| Iraq | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 2 |
| Lao PDR | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 |
| Myanmar | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Nigeria | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| Pakistan | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 |
| Thailand | 25 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 17 |
| Turkey | 12 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 4 |
| Vietnam | 112 | 57 | 7 | 2 | 0 | 0 | 4 | 2 | 2 | 1 | 125 | 62 |
| Total | 468 | 282 | 48 | 24 | 62 | 34 | 32 | 20 | 31 | 20 | 641 | 380 |