



MI Flu Focus

Influenza Surveillance Updates
Bureaus of Epidemiology and Laboratories



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Current Influenza Activity Levels:

- **Michigan:** Regional activity
- **National:** During March 18-24, influenza activity was elevated in some areas of the U.S., but remained relatively low nationally

Updates of Interest

- **International:** Low path avian influenza A(H10) cases in poultry workers are reported

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****Update: Novel A (H3N2) Guidance****

In December 2011, CDC asked all states to conduct surveillance for suspect human cases of a novel influenza A (H3N2) virus by increasing influenza testing. Subsequently, MDCH issued an interim guidance requesting all healthcare providers to forward all positive influenza specimens to MDCH for further testing. MDCH would like to thank the healthcare providers who contributed to this effort. Since no cases of novel influenza A (H3N2) have been identified in Michigan, or any additional cases identified nationwide, MDCH is revising this guidance. For surveillance purposes, healthcare providers may now submit up to 5 representative specimens per week to MDCH Bureau of Laboratories, with priority on pediatric or severe cases. Please call the MDCH Division of Communicable Disease at 517-335-8165 with any questions.

Influenza Surveillance Reports

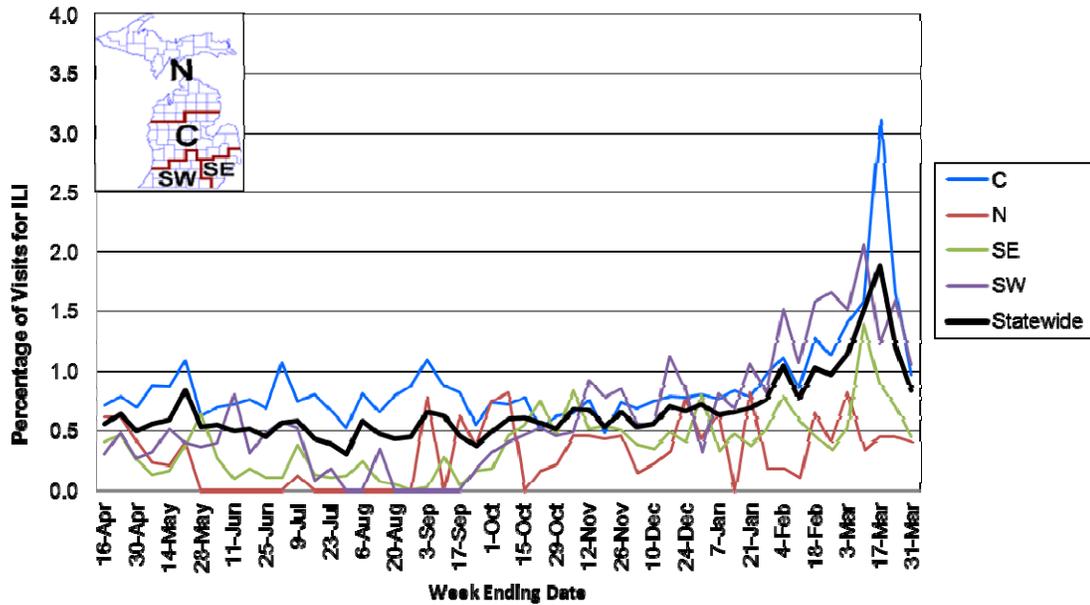
Michigan Disease Surveillance System: MDSS data for the week ending March 31st indicated that individual reports moderately decreased, while aggregate influenza cases slightly decreased. Both individual and aggregate reports are similar to levels seen during the same time last year.

Emergency Department Surveillance: Compared to levels from the week prior, emergency department visits from constitutional complaints significantly decreased, while respiratory complaints moderately decreased. Both constitutional and respiratory complaints are at levels similar to those seen in early February 2012 and are moderately lower than levels reported during the same time period last year. In the past week, there was one constitutional alert in the C Influenza Surveillance Region and three respiratory alerts in the C(2) and N(1) Regions.

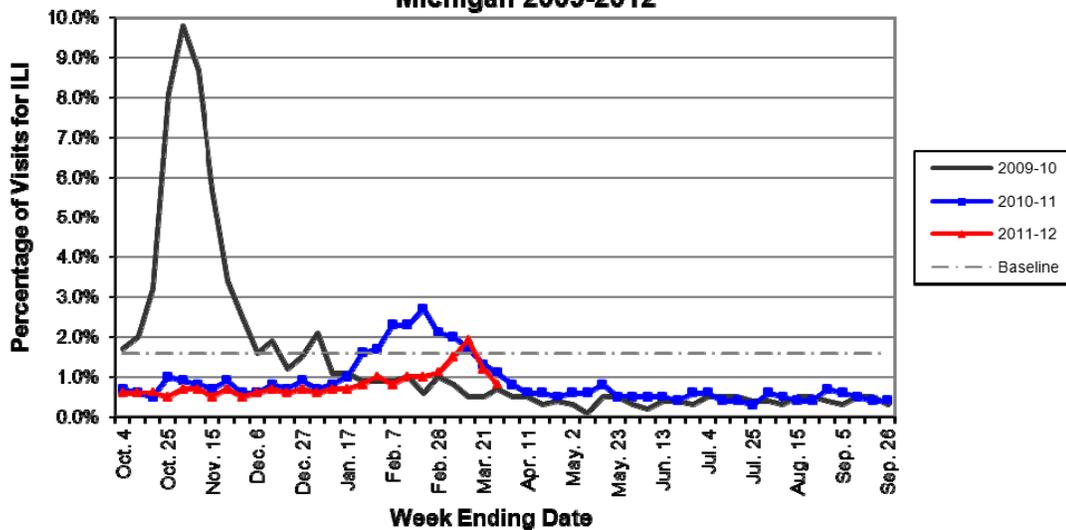
Sentinel Provider Surveillance (as of April 5): During the week ending March 31, 2012, the proportion of visits due to influenza-like illness (ILI) decreased to 0.8% overall; this is below the regional baseline of (1.6%). A total of 72 patient visits due to ILI were reported out of 8,565 office visits. Thirty sentinel sites provided data for this report. Activity remained the same in one surveillance region: North (0.4%); activity decreased in the remaining three surveillance regions: Central (1.0%), Southwest (1.1%) and Southeast (0.4%). Please note these rates may change as additional reports are received.

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 Cristi Carlton at 517-335-9104 or CarltonC2@michigan.gov for more information.

**Percentage of Visits for Influenza-like Illness (ILI)
Reported by Sentinel Providers, Statewide and Regions
2010-2011 and 2011-12 Flu Seasons**



**Percentage of Visits for Influenza-like Illness (ILI) Reported by the
US Outpatient Influenza-like Illness Surveillance Network (ILINet):
Michigan 2009-2012**



Hospital Surveillance (as of March 31): The Influenza Hospitalization Surveillance Project provides population-based rates of severe influenza illness in Clinton, Eaton and Ingham counties. 5 lab-confirmed influenza hospitalizations were reported during the week ending March 31, 2012. For the 2011-12 season, 22 influenza hospitalizations (8 adult, 14 pediatric) have been reported in the catchment area.

The MDCH Influenza Sentinel Hospital Network monitors influenza hospitalizations reported voluntarily by hospitals statewide. 8 hospitals (SE, SW, C, N) reported for the week ending March 31, 2012. Results are listed in the table below. Total hospitalizations were adjusted to reflect amended reports from past weeks.

Age Group	Hospitalizations Reported During Current Week	Total Hospitalizations 2011-12 Season
0-4 years	2	18
5-17 years	0	14
18-49 years	1	24
50-64 years	0	19
≥65 years	0	24
Total	3	99

Laboratory Surveillance (as of March 31): During March 25-31, 73 influenza A/H3 (53SE, 10SW, 8C, 2N) and 4 influenza B (2SE, 1SW, 1C) results were reported by MDCH BOL. For the 2011-12 season (starting October 2, 2011), MDCH has identified 951 influenza results:

- Influenza A(H3): 901 (511SE, 66SW, 280C, 44N)
- Influenza A(H1N1)pdm09: 23 (15SE, 1SW, 5C, 2N)
- Influenza B: 27 (13SE, 8SW, 4C, 2N)
- Parainfluenza: 2 (1SE, 1C)
- Adenovirus: 2 (2SE)
- RSV: 4 (1SW, 1C, 2N)

12 sentinel labs (SE, SW, C, N) reported for the week ending March 31, 2012. 9 labs (SE, SW, C, N) reported decreasing influenza A activity. 6 labs (SE, SW, N) had low influenza B positives. 7 labs (SE, SW, C) reported RSV activity, most of which decreased. 2 labs (SE, SW) saw continued hMPV activity. Most testing volumes continue to decrease.

Michigan Influenza Antigenic Characterization (as of April 5): For the 2011-12 season, 22 Michigan influenza B specimens have been characterized at MDCH BOL. 6 specimens have been characterized as B/Brisbane/60/2008-like, matching the B component of the 2011-12 influenza vaccine. 16 influenza B specimens were B/Wisconsin/01/2010-like, which is not included in the 2011-12 vaccine.

Michigan Influenza Antiviral Resistance Data (as of April 5): For the 2011-12 season, 12 Michigan influenza A(H1N1)pdm09 specimens and 62 influenza A(H3) specimens have been tested for antiviral resistance at MDCH Bureau of Laboratories; all have tested negative for oseltamivir resistance.

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 April 5): No pediatric influenza-associated influenza mortalities have been reported to MDCH for the 2011-12 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 April 5): One new respiratory outbreak was reported from a C Region long-term care facility. 20 respiratory outbreaks (5SE, 2SW, 13C) have been reported to MDCH during the 2011-12 season; testing results are listed below.

- Influenza A/H3: 9 (3SE, 6C)
- Influenza A: 1 (C)
- Human metapneumovirus: 1 (SW)
- Negative or not tested: 9 (1SE, 1SW, 7C)

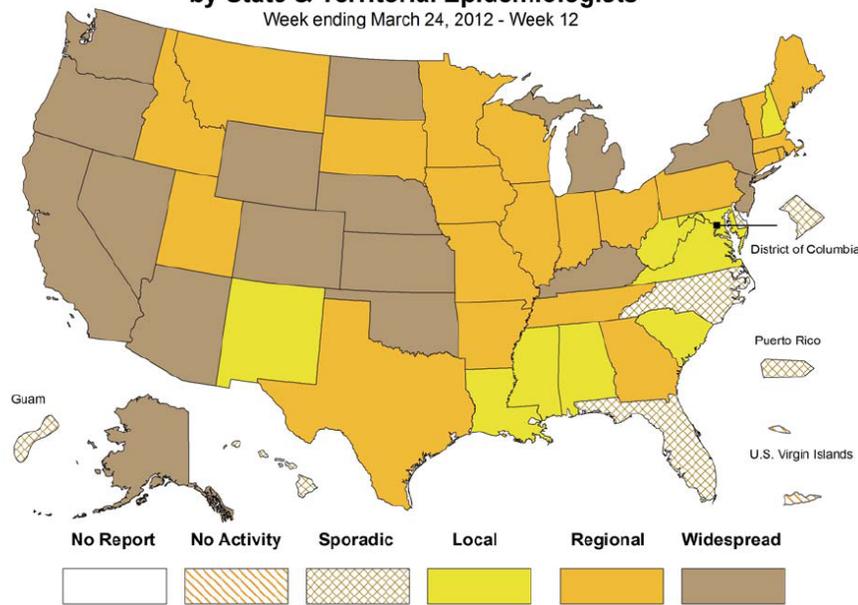
National (CDC [edited], March 30): During week 12 (March 18-24, 2012), influenza activity was elevated in some areas of the United States, but remained relatively low nationally. Of the 4,624 specimens tested by U.S. World Health Organization and National Respiratory and Enteric Virus Surveillance System collaborating laboratories and reported to CDC/Influenza Division, 908 (19.6%) were positive for influenza. The proportion of deaths attributed to P&I was below the epidemic threshold. Four influenza-associated pediatric deaths were reported and were associated with 1 2009 H1N1 and 3 influenza A viruses for which the subtype was not determined. The proportion of outpatient visits for influenza-like illness (ILI) was 2.0%, which is below the national baseline of 2.4%. Regions 5 and 10 reported ILI above region-specific baseline levels. Three states experienced moderate ILI activity; 6 states experienced low ILI activity; New York City and 41 states experienced minimal ILI activity, and the District of Columbia had insufficient data to calculate ILI activity. Sixteen states reported widespread geographic activity; 21 states reported regional influenza activity; 9 states reported local activity; the District of Columbia, Guam, Puerto Rico, and 4 states reported sporadic activity, and the U.S. Virgin Islands reported no influenza activity.

**Neuraminidase Inhibitor Resistance Testing Results
on Samples Collected Since October 1, 2011.**

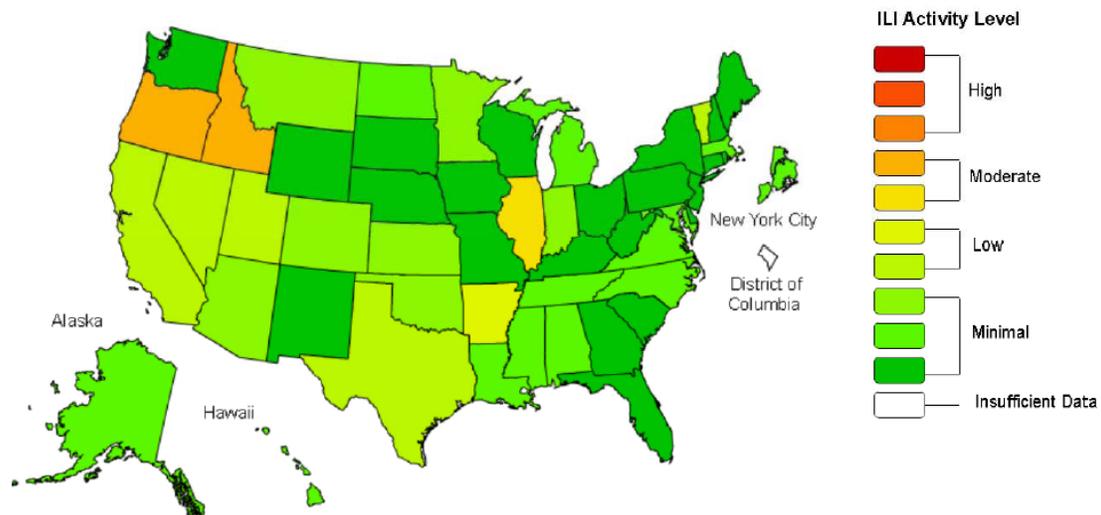
	Oseltamivir		Zanamivir	
	Virus Samples Tested (n)	Resistant Viruses, Number (%)	Virus Samples Tested (n)	Resistant Viruses, Number (%)
Influenza A (H3N2)	638	0 (0.0)	637	0 (0.0)
Influenza B	135	0 (0.0)	135	0 (0.0)
2009 H1N1	299	4 (1.3)	202	0 (0.0)

**Weekly Influenza Activity Estimates Reported
by State & Territorial Epidemiologists***

Week ending March 24, 2012 - Week 12



**Influenza-Like Illness (ILI) Activity Level Indicator Determined by Data Reported to ILINet
2011-12 Influenza Season Week 12 ending Mar 24, 2012**



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.

The entire weekly report is available online at <http://www.cdc.gov/flu/weekly/fluactivity.htm>.

International (WHO [edited], March 30): This influenza season started late, but seems to be reaching the peak or is decreasing in most countries of the northern hemisphere temperate regions. Severe acute respiratory infections was mainly observed in the age group above 65 years. The most commonly detected virus type or subtype throughout most of the temperate areas of northern hemisphere temperate zone has been influenza A(H3N2), although the proportion of influenza B detection is increasing. In Mexico influenza A(H1N1)pdm09 is the predominant subtype circulating; China and the surrounding countries which are still reporting a predominance of influenza type B virus. Increasing genetic and antigenic diversity has been noted in H3N2 viruses in the later part of the influenza season. No significant change in antiviral resistance has been reported so far this season.

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

MDCH reported **REGIONAL ACTIVITY** to the CDC for the week ending March 31, 2012.

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. It is expected that the pandemic virus will behave as a seasonal influenza A virus. It is important to maintain surveillance and update pandemic preparedness/response plans accordingly.

International, Human (Emerging Infectious Diseases abstract, April 5): In March 2010, an outbreak of low pathogenicity avian influenza A(H10N7) occurred on a chicken farm in Australia. After processing clinically normal birds from the farm, 7 abattoir workers reported conjunctivitis and minor upper respiratory tract symptoms. Influenza virus A subtype H10 infection was detected in 2 workers.

The entire article is online at http://wwwnc.cdc.gov/eid/ahead-of-print/article/18/5/11-1852_article.htm.

International, Human (WHO, April 2): The Ministry of Health and Population of Egypt has notified WHO of two new cases of human infection with avian influenza A (H5N1) virus.

The first case is a 2 year-old female from Demiatta Governorate. She developed symptoms on 19 March 2012 and was admitted to a hospital on 20 March 2012 where she received oseltamivir. She is still under treatment and in good medical condition. The case was laboratory confirmed by the Central Public Health Laboratories (NIC) on 22 of March 2012.

Epidemiological investigations into the source of infection indicate that the case had exposure to dead backyard poultry.

The second case is a 15 year-old female from Giza Governorate. She developed symptoms on 25 March 2012 and was admitted to a hospital in critical condition on 29 March 2012. She received oseltamivir on admission. She died on 31 March 2012. The case was laboratory confirmed by the Central Public Health Laboratories (NIC) on 31 March 2012.

Epidemiological investigations into the source of infection is ongoing.

Of the 166 cases confirmed to date in Egypt, 59 have been fatal.

International, Equine (OIE [edited], April 2): Equine influenza virus Serotype(s) Pending; Uruguay
Date of Start of Event: 10/03/2012; Date of report: 02/04/2012
Summary description: Unexpected and sudden increase in incidence in thoroughbred racehorses
Epidemiology: Up to the date of the report, the susceptible horse population is in the neighbourhood of Maroñas (Montevideo), includes around 2,500 animals and shows an incidence of 40%.
Measures applied: Any movement of horses out of the country towards any destination is temporarily cancelled. Horses in transit towards other countries could leave if they have the health certificate required by the country of destination. Competitions are temporarily cancelled in all the racetracks of the country as well as the transit of thoroughbred racehorses intended for competitions.
Source of the outbreak(s) or origin of infection: Legal movement of animals

International, Poultry (OIE [edited], March 31): Highly pathogenic avian influenza H5N1; China
Outbreak: HongTa District, YuXi City, YUNNAN
Date of start of the outbreak: 27/03/2012; Outbreak status: Continuing; Epidemiological unit: Farm
Species: Birds; Susceptible: 35018; Cases: 2; Deaths: 0; Destroyed: 35018

International, Poultry (OIE [edited], April 3): Low pathogenic avian influenza H5N2; Chinese Taipei
Outbreak: San-Chong District, T'AI-PEI
Date of start of the outbreak: 06/03/2012; Outbreak status: Continuing
Species: Birds; Susceptible: 5; Cases: 1; Deaths: 0; Destroyed: 0; Slaughtered: 5
Affected population: Native chicken in a poultry market

International, Poultry (OIE [edited], April 3): Highly pathogenic avian influenza H5N2; Chinese Taipei
 Outbreak: Yen-Pu Township, P'ING-TUNG

Date of start of the outbreak: 15/03/2012; Outbreak status: Continuing
 Species: Birds; Susceptible: 7747; Cases: 99; Deaths: 99; Destroyed: 7648
 Affected population: Native chicken at an abattoir

International, Poultry (OIE [edited], April 3): Low pathogenic avian influenza H5N2; Ireland
 Date of Start of Event: 17/03/2012; Date of report: 03/04/2012; Province: CORK; Location: Clonakilty
 Species: Birds; Susceptible: 153; Cases: 8; Deaths: 3; Destroyed: 150
 Affected Population: The outbreak occurred in wild caught adult pheasants imported on 10 March 2012 and penned prior to release.

Epidemiological comments: Wild birds present in locality. Pheasants reared in open pens. Laboratory evidence indicates infection subsequent to import. Birds were negative for N1 by real-time PCR on 29 March 2012, positive for H5 on 29 March 2012 and positive for N2 on 3 April 2012.
 Source of the outbreak(s) or origin of infection: Contact with wild species

Michigan Wild Bird Surveillance (USDA, as of April 5): For the 2011 season (April 1, 2011-March 31, 2012), highly pathogenic avian influenza H5N1 has not been recovered from 7 Michigan samples or 408 samples tested nationwide. For more information, visit <http://www.nwhc.usgs.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>.

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

Contributors

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MDCH Bureau of Laboratories – A. Muvombwe, PhD; V. Vavricka, MS

Table. H5N1 Influenza in Humans – As of April 2, 2012. http://www.who.int/influenza/human_animal_interface/EN_GIP_20120402CumulativeNumberH5N1cases.pdf. Downloaded 4/3/2012. Cumulative lab-confirmed cases reported to WHO. Total cases includes deaths.

Country	2003-2005		2006		2007		2008		2009		2010		2011		2012		Total	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
Azerbaijan	0	0	8	5	0	0	0	0	0	0	0	0	0	0	0	0	8	5
Bangladesh	0	0	0	0	0	0	1	0	0	0	0	0	2	0	3	0	6	0
Cambodia	4	4	2	2	1	1	1	0	1	0	1	1	8	8	1	1	19	17
China	9	6	13	8	5	3	4	4	7	4	2	1	1	1	1	1	42	28
Djibouti	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Egypt	0	0	18	10	25	9	8	4	39	4	29	13	39	15	8	4	166	59
Indonesia	20	13	55	45	42	37	24	20	21	19	9	7	12	10	5	5	188	156
Iraq	0	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	3	2
Lao PDR	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	2	2
Myanmar	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0
Nigeria	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	1
Pakistan	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	3	1
Thailand	22	14	3	3	0	0	0	0	0	0	0	0	0	0	0	0	25	17
Turkey	0	0	12	4	0	0	0	0	0	0	0	0	0	0	0	0	12	4
Vietnam	93	42	0	0	8	5	6	5	5	5	7	2	0	0	4	2	123	61
Total	148	79	115	79	88	59	44	33	73	32	48	24	62	34	22	13	600	353