



# MI FluFocus

## Influenza Surveillance and Avian Influenza Update

Bureau of Epidemiology  
Bureau of Laboratories



Editor: Susan Vagasky, DVM  
Surveillance and Infectious Disease Epidemiology  
VagaskyS@Michigan.gov

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### New updates in this issue:

- **Michigan Surveillance:** Influenza B/Malaysia/2506/2004-like strain confirmed in association with the two pediatric mortalities reported last week.
- **National Surveillance:** Influenza activity continues to decrease; MMWR on influenza published.
- **Avian Influenza:** Wild birds cleared in the recent spread of H5N1 avian influenza in India.

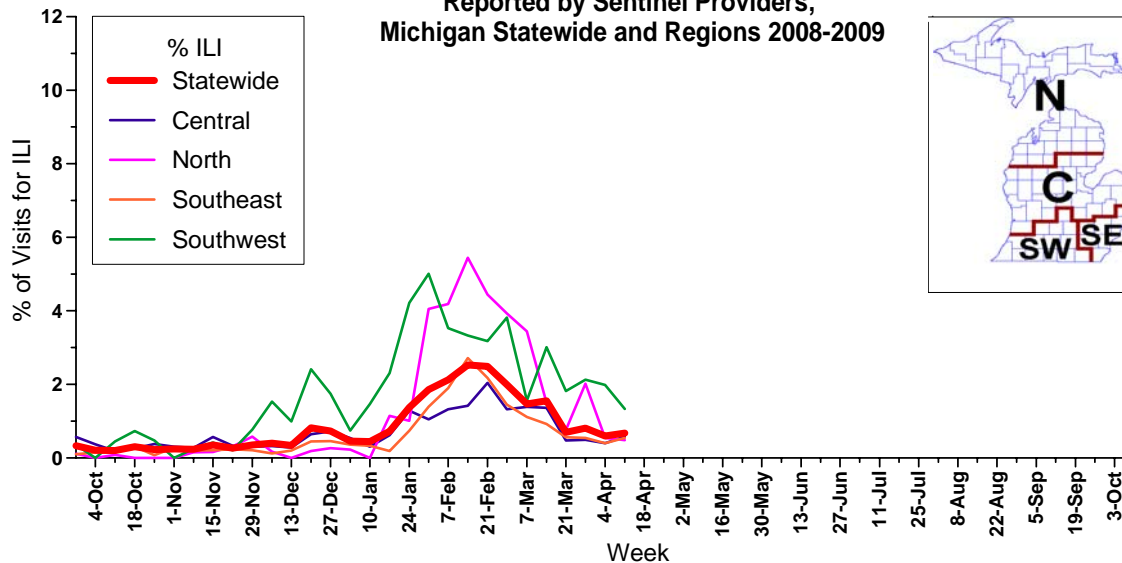
**Michigan Disease Surveillance System:** The week ending April 11 saw both aggregate flu-like numbers and individual case reports decrease from the previous week's numbers. Aggregate numbers are comparable to numbers seen this time last year, while individual influenza numbers are lower.

**Emergency Department Surveillance:** Emergency department visits from constitutional complaints decreased slightly from the previous week, while respiratory complaints leveled off. Visits due to constitutional complaints are comparable to numbers seen at this time last year, while respiratory complaints are lower. Four constitutional alerts in the SW(1), C(2), and N(1) Influenza Surveillance Regions and two respiratory alerts in the C(1) and N(1) Influenza Surveillance Regions were generated last week.

**Over-the-Counter Product Surveillance:** Overall, OTC product sales were steady or down last week. Thermometer sales saw a slight decrease in sales, while the remaining indicators all held near the previous week's levels. Indicator levels are comparable to those seen at this time last year, except for thermometers, which is slightly lower.

**Sentinel Provider Surveillance (as of April 16):** During the week ending April 11, 2009, 0.7% of all office visits reported by Michigan influenza sentinel sites were due to influenza-like illness (ILI); this is a slight increase from the previous week. This represents 35 patient visits due to ILI reported out of 5,188 office visits; 25 sentinel sites provided data for this report. Activity increased in two surveillance regions: Central (0.6%) and Southeast (0.5%). In the North region ILI activity remained the same (0.5%) as the previous week and activity slightly decreased in the Southwest (1.3%) region. 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 Cristi Carlton at 517-335-9104 or [CarltonC2@michigan.gov](mailto:CarltonC2@michigan.gov) for more information.

**Laboratory Surveillance (as of April 16):** During the past week, 2 new influenza A isolates and 8 new influenza B isolates were identified at the MDCH Bureau of Laboratories (BOL). For the 2008-2009 influenza season, MDCH BOL has identified 282 influenza isolates (followed by Influenza Surveillance Regions of origin):

- 161 A/H1N1 (55SE, 35SW, 23C, 48N)
- 3 A/H3N2 (1SE, 1C, 1N)
- 116 B (25SE, 44SW, 13C, 34N)
  - 9 B/Florida/4/2006-like (4SE, 1SW, 1C, 3N)
  - 106 B/Malaysia/2506/2004-like (21SE, 42SW, 12C, 31N)
  - 1 untypable (SW)

For the week ending April 11, 14 sentinel labs reported. 6 labs (SE, SW, C, N) reported low or sporadic levels of influenza A positives. 9 labs (SE, SW, C, N) reported low or sporadic levels of influenza A positives. 4 labs reported no influenza activity for the previous week. For RSV activity, one lab (SE) had elevated activity, with all other labs indicating decreasing or no RSV activity.

\*\*\*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.

**Michigan Antigenic Characterization (as of April 16):** At this time, 24 influenza A/H1N1 isolates have been antigenically characterized by the CDC; results indicate all isolates are A/Brisbane/59/2007-like, which matches the influenza A/H1N1 component of this season's Northern Hemisphere vaccine. One influenza A/H3N2 has been characterized as A/Brisbane/10/2007-like, which matches the A/H3N2 component of this season's vaccine.

At this time, 3 influenza B isolates have been antigenically characterized by the CDC. One influenza B isolate has been characterized as B/Florida/4/2006-like, which matches the influenza B component of this season's vaccine. Two influenza B isolates have been characterized as B/Brisbane/60/2008-like, which does not match this season's vaccine, but is a recommended component of the 2009-2010 vaccine.

**Michigan Antiviral Resistance Data (as of April 16):** 24 influenza A/H1N1 viruses from the MDCH Bureau of Laboratories have been tested for antiviral resistance at CDC for the 2008-2009 season. All 24 viruses were resistant to oseltamivir (Tamiflu®) and sensitive to zanamivir, amantadine and rimantadine. These viruses were collected in the SE(11), SW(12) and N(1) Influenza Surveillance Regions. One influenza A/H3N2, collected in the C Region, has been tested for antiviral resistance; that virus was resistant to the adamantanes (amantadine and rimantadine) and sensitive to oseltamivir and zanamivir. Two influenza B isolates, collected in the SW Region, have been tested for antiviral resistance; these viruses were sensitive to oseltamivir and zanamivir (the adamantanes are not effective against B viruses).

Antiviral resistance testing often takes several weeks to complete, and thus cannot be used to guide treatment of individual patients. However, CDC has made interim recommendations regarding the use of antiviral medications for the treatment of influenza and for prophylaxis. This guidance is available at <http://www2a.cdc.gov/HAN/ArchiveSys/ViewMsgV.asp?AlertNum=00279>.

**Influenza-Associated Pediatric Mortality (as of April 16):** Viral isolates from the two Michigan pediatric mortality investigations reported on last week have both been confirmed at the MDCH Bureau of Laboratories as influenza B/Malaysia/2506/2004-like. This strain is not in the 2008-2009 influenza vaccine but will be included in the 2009-2010 vaccine. Three influenza-associated pediatric mortalities (1 influenza A (SW), 2 influenza B (SE)) 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](http://www.michigan.gov/documents/mdch/ME_pediatric_influenza_guidance_v2_214270_7.pdf).

**Congregate Settings Outbreaks (as of April 16):** Three congregate setting outbreaks (1C, 2N) due to influenza (1 influenza A, 1 influenza B, 1 unsubtype) have been reported to MDCH for the 2008-09 influenza season.

**National (CDC, April 17):** A new MMWR article regarding the 2008-2009 influenza season to date is now available. "Update: Influenza Activity --- United States, September 28, 2008--April 4, 2009, and Composition of the 2009--10 Influenza Vaccine" can be found online at [http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5814a4.htm?s\\_cid=mm5814a4\\_e](http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5814a4.htm?s_cid=mm5814a4_e).

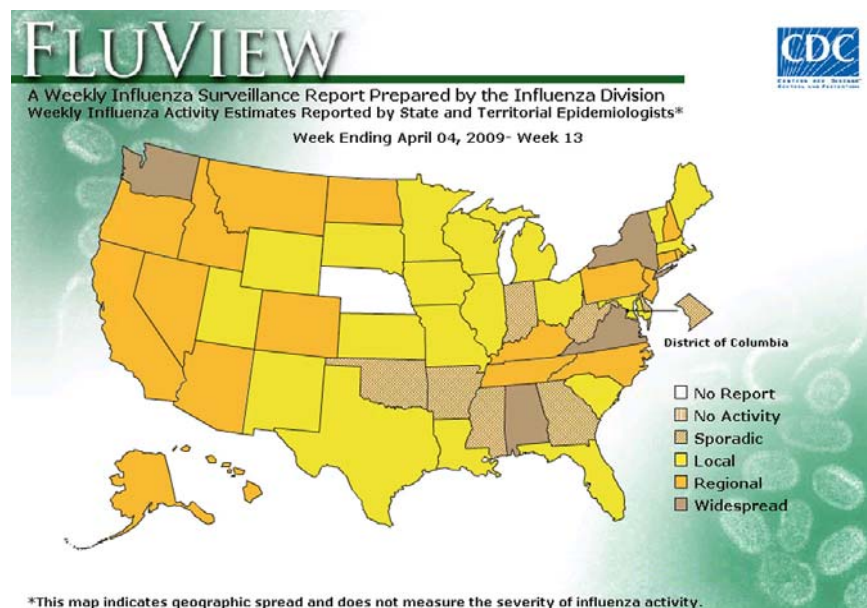
**National (CDC [edited], April 10):** During week 13 (March 29-April 4, 2009), influenza activity continued to decrease in the United States. Three hundred forty-eight (12.3%) specimens tested by U.S. World Health Organization (WHO) and National Respiratory and Enteric Virus Surveillance System (NREVSS) collaborating laboratories and reported to CDC/Influenza Division were positive for influenza. The proportion of deaths attributed to pneumonia and influenza (P&I) was below the epidemic threshold. Two influenza-associated pediatric deaths were reported. The proportion of outpatient visits for influenza-like illness (ILI) was below the national baseline. One of nine surveillance regions reported ILI above their region-specific baseline (Mountain). Four states reported widespread influenza activity, 18 states reported regional activity; 20 states reported local influenza activity; the District of Columbia and seven states reported sporadic influenza activity; and one state did not report.

Since October 1, 2008, 699 influenza A (H1N1), 103 influenza A (H3N2), and 274 influenza B viruses have been tested for resistance to the neuraminidase inhibitors (oseltamivir and zanamivir). Six hundred eighty-three influenza A (H1N1) and 100 influenza A (H3N2) viruses have been tested for resistance to the adamantanes (amantadine and rimantadine). The results of antiviral resistance testing performed on these viruses are summarized in the table below.

	Isolates tested (n)	Resistant Viruses, Number (%)		Isolates tested (n)	Resistant Viruses, Number (%)
		Oseltamivir	Zanamivir		
<b>Influenza A (H1N1)</b>	699	694 (99.3%)	0 (0)	683	3 (0.4%)
<b>Influenza A (H3N2)</b>	103	0 (0)	0 (0)	100	100 (100%)
<b>Influenza B</b>	274	0 (0)	0 (0)	N/A*	N/A*

\*The adamantanes (amantadine and rimantadine) are not effective against influenza B viruses.

To access the entire CDC weekly surveillance report throughout the influenza season, visit <http://www.cdc.gov/flu/weekly/fluactivity.htm>



**International (WHO [edited], April 3):** During the weeks 11-12, the level of influenza activity globally decreased in many parts of the world. Influenza activity has declined in most parts of Europe and is below baseline levels in many countries. High influenza activity was reported by the Russian Federation. While influenza A(H3) has continued to be the predominant circulating virus in Europe this season, influenza B virus detections were dominant in over 50% of the countries during weeks 11 -12. In the United States of America, influenza activity continued to decrease nationally while the overall activity in Canada remained similar to previous weeks. Influenza activity declined in China Hong Kong Special Administrative Region.

Sporadic influenza activity was observed in Belgium (B), Bulgaria (A), China (H1,H3,B), Czech Republic (A,B), Denmark (H3,B), France (B), Georgia (B), Germany (H1,H3,B), Israel (A,B), Kazakhstan (A,B), Lithuania (A,B), Luxembourg (B), Mongolia (H1), Norway (H3), Poland (H3,B), Serbia (B), Spain (B), Sweden (A,B), Switzerland (A,B), Tunisia (H1,H3) and United Kingdom of Great Britain and Northern Ireland (H1,H3,B).

Argentina, Cameroon and Malta reported no activity.

To access the entire report, visit <http://www.who.int/csr/disease/influenza/update/en/>

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MDCH reported **LOCAL INFLUENZA ACTIVITY** to the CDC for the week ending April 11, 2009.

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](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**

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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, Wild Birds (Xinhua News Agency, April 14):** International researchers have recently ruled out the spreading of avian influenza or bird flu virus [in India] by migratory birds through a review of migratory bird movement, reported local daily Mail Today Tuesday.

All samples studies for virus strain H5N1 on migrant birds so far were found to be negative, said the report.

The researchers monitored in real time the movement of migratory birds from India in a northward direction using satellite tracking technology. They ruled out the possibility of involvement of migratory birds in avian influenza spreading in India, said the report.

The satellite monitoring gave valuable data about the movement of migratory birds in the region and has enabled scientists to determine whether the locations of these birds and outbreaks of bird flu are related along the birds' migratory pathways, according to the report.

The project began last December when scientists captured, sampled and marked 70 water birds with "satellite tags" at Chilika Lagoon in India, where over 8,900,000 migratory and resident water birds used to live as their temporary or permanent residence, said the report.

**Michigan Wild Bird Surveillance (USDA, as of April 16):** For the 2008 testing season, 2105 Michigan samples have been taken so far, comprised of 327 live birds, 1218 hunter-killed birds, 35 morbidity or mortality samples and 525 environmental samples.

H5N1 subtype HPAI has not been recovered from any Michigan samples tested to date, or from the 78,210 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 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](mailto:VagaskyS@Michigan.gov) with any questions regarding this newsletter or to be added to the weekly electronic mailing list.**

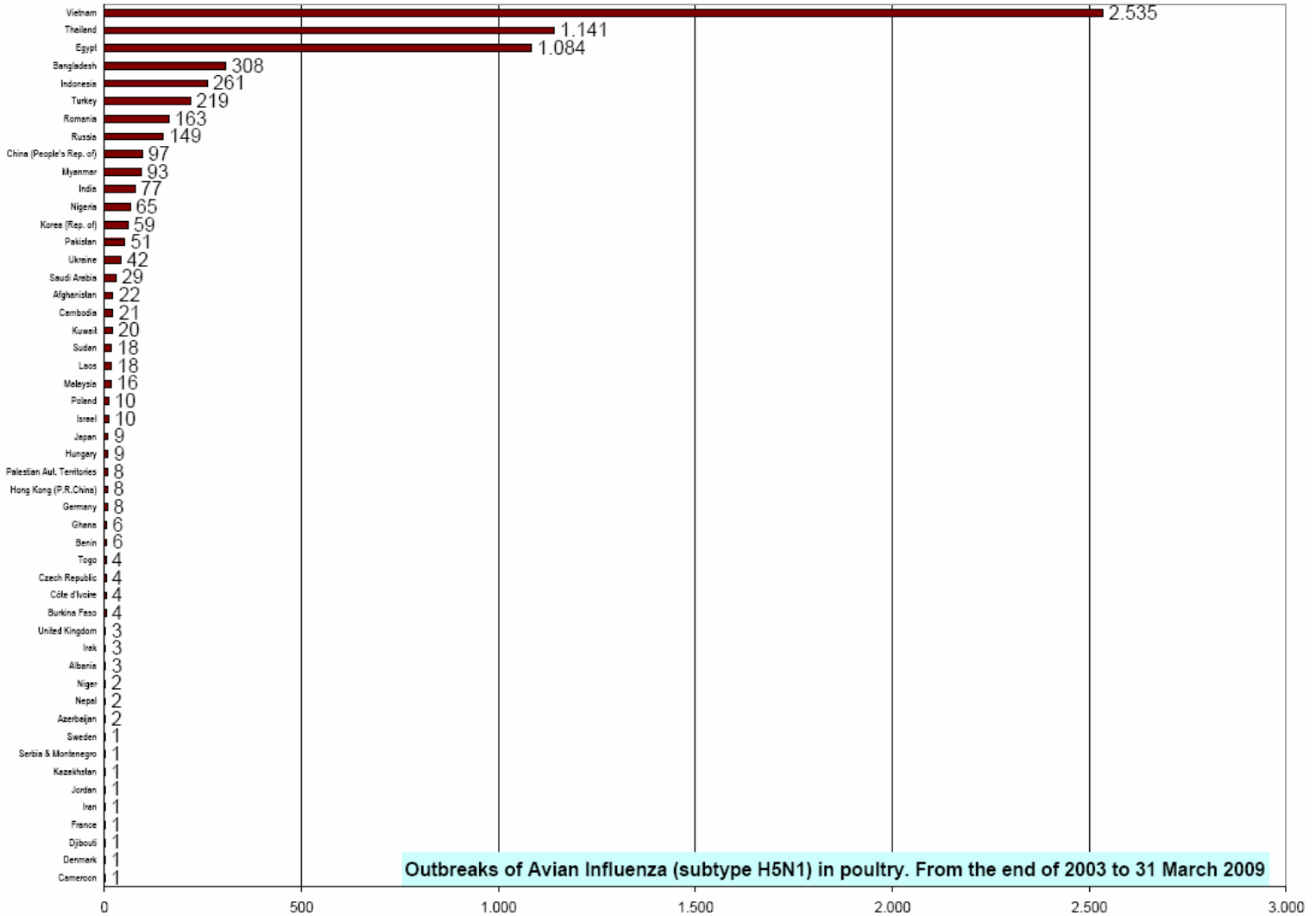
**Contributors**

**MDCH Bureau of Epidemiology - Sally Bidol, MPH; Cristi Carlton, MPH; Edward Hartwick, MS**

**MDCH Bureau of Laboratories – Patricia Clark, MPH**

**Table 1. H5N1 Influenza in Poultry (Outbreaks up to March 31, 2009)**

(Source: [http://www.oie.int/download/AVIAN%20INFLUENZA/A\\_Al-Asia.htm](http://www.oie.int/download/AVIAN%20INFLUENZA/A_Al-Asia.htm) Downloaded 4/1/09)



**Table 2. H5N1 Influenza in Humans (Cases up to April 8, 2009)**

([http://www.who.int/csr/disease/avian\\_influenza/country/cases\\_table\\_2009\\_04\\_08/en/index.html](http://www.who.int/csr/disease/avian_influenza/country/cases_table_2009_04_08/en/index.html) Downloaded 4/8/2009)

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

Country	2003		2004		2005		2006		2007		2008		2009		Total	
	cases	deaths	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	0	0	8	5
Bangladesh	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0
Cambodia	0	0	0	0	4	4	2	2	1	1	1	0	0	0	8	7
China	1	1	0	0	8	5	13	8	5	3	4	4	7	4	38	25
Djibouti	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
Egypt	0	0	0	0	0	0	18	10	25	9	8	4	12	0	63	23
Indonesia	0	0	0	0	20	13	55	45	42	37	24	20	0	0	141	115
Iraq	0	0	0	0	0	0	3	2	0	0	0	0	0	0	3	2
Lao People's Democratic Republic	0	0	0	0	0	0	0	0	2	2	0	0	0	0	2	2
Myanmar	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0
Nigeria	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	1
Pakistan	0	0	0	0	0	0	0	0	3	1	0	0	0	0	3	1
Thailand	0	0	17	12	5	2	3	3	0	0	0	0	0	0	25	17
Turkey	0	0	0	0	0	0	12	4	0	0	0	0	0	0	12	4
Viet Nam	3	3	29	20	61	19	0	0	8	5	6	5	3	3	110	55
Total	4	4	46	32	98	43	115	79	88	59	44	33	22	7	417	257