FLUVIEW
A Weekly Influenza Surveillance Report Prepared by the Influenza Division

2012-2013 Influenza Season
Week 40 ending October 6, 2012

All data are preliminary and may change as more reports are received.

Background: The Centers for Disease Control and Prevention's (CDC) Influenza Division collects and analyzes influenza surveillance data year-round and produces a weekly report on U.S. influenza activity during the influenza season which begins at week 40 each year. The U.S. influenza surveillance system provides information in five categories collected from eight data sources. This is the first report of the 2012-2013 influenza season, which began on September 30, 2012, and also summarizes influenza activity during the summer weeks of the 2011-12 season.

The five categories of influenza surveillance are:

- **Viral Surveillance**: U.S. World Health Organization (WHO) collaborating laboratories, the National Respiratory and Enteric Virus Surveillance System (NREVSS), and human infection with novel influenza A virus case reporting;
- **Mortality**: 122 Cities Mortality Reporting System and influenza-associated pediatric deaths;
- **Hospitalizations**: Influenza Hospitalization Network (FluSurv-NET) including the Emerging Infections Program (EIP),
- **Outpatient Illness Surveillance**: U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet);
- **Summary of geographic spread of influenza**: state and territorial epidemiologists' reports.

An overview of surveillance methods is available at: http://www.cdc.gov/flu/weekly/overview.htm

Synopsis: During week 40 (September 30-October 6, 2012), influenza activity was low in the United States.

- **Viral Surveillance**: Of 2,870 specimens tested and reported by U.S. World Health Organization (WHO) and National Respiratory and Enteric Virus Surveillance System (NREVSS) collaborating laboratories during week 40, 75 (2.6%) were positive for influenza.
- **Pneumonia and Influenza Mortality**: The proportion of deaths attributed to pneumonia and influenza (P&I) was below the epidemic threshold.
- **Influenza-associated Pediatric Deaths**: No influenza-associated pediatric deaths were reported.
- **Outpatient Illness Surveillance**: The proportion of outpatient visits for influenza-like illness (ILI) was 1.2%, which is below the national baseline of 2.2%. All 10 regions reported ILI below region-specific baseline levels. Forty-seven states and New York City experienced minimal ILI activity and the District of Columbia and three states had insufficient data.
- **Geographic Spread of Influenza**: The geographic spread of influenza in one state (Wyoming) was reported as local; the District of Columbia and 29 states reported sporadic activity; Guam and 18 states reported no influenza activity, and Puerto Rico, the U.S. Virgin Islands, and two states did not report.

National and Regional Summary of Select Surveillance Components

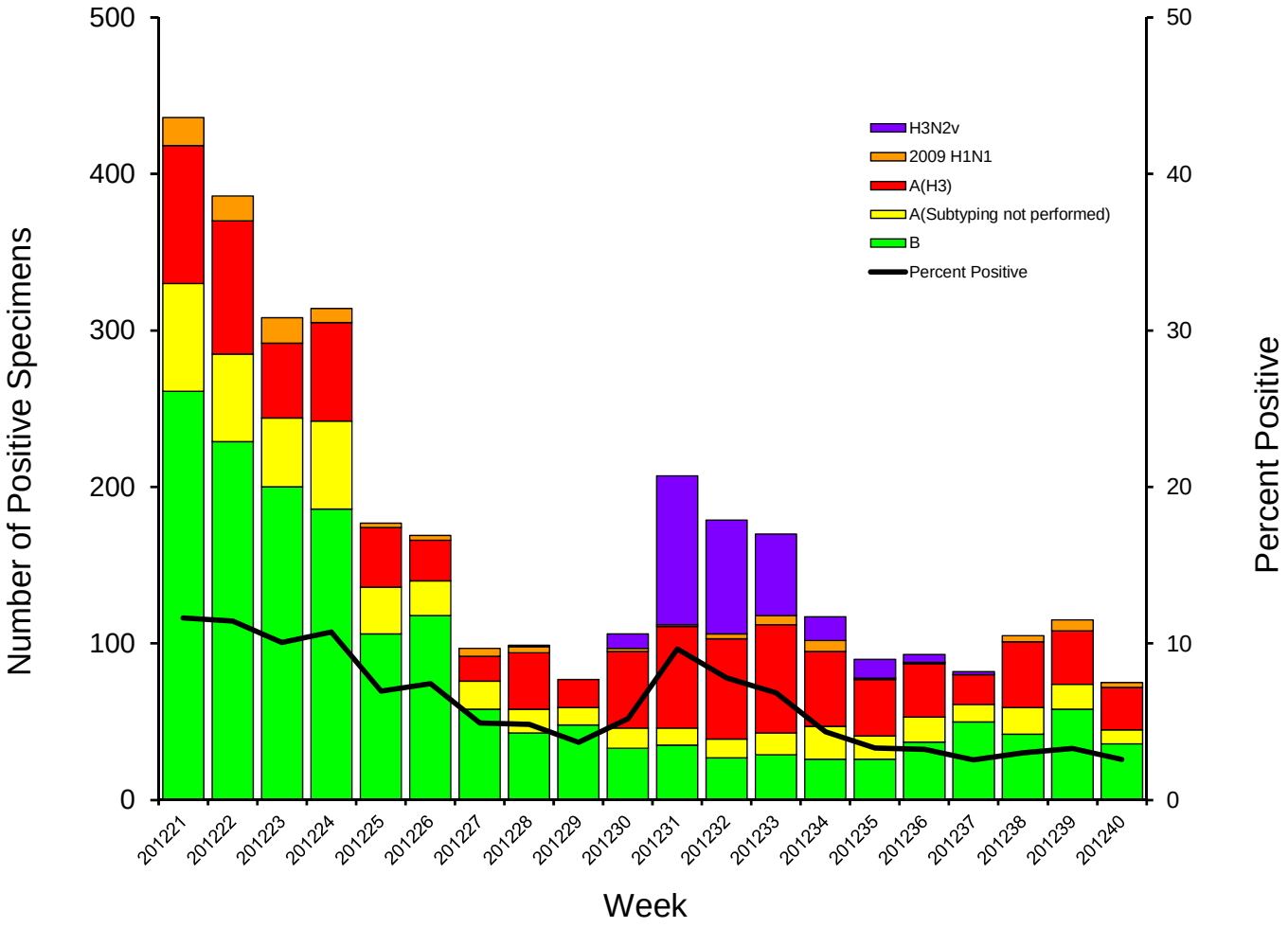
	Data for week 40 (September 30-October 6, 2012)							
HHS Surveillance Regions*	**Out-patient ILI†**	**% positive for flu‡**	**Number of jurisdictions reporting regional or widespread activity§**	**2009 H1N1**	**A (H3)**	**A (Subtyping not perfor-med)**	**B**	**Pediatric Deaths**
Nation	Normal	2.6%	0 of 54	3	27	9	36	0
Region 1	Normal	0.4%	0 of 6	0	0	0	0	0
Region 2	Normal	0.8%	0 of 4	1	0	0	1	0
Region 3	Normal	0.9%	0 of 6	0	1	0	0	0
Region 4	Normal	6.3%	0 of 8	2	3	4	17	0
Region 5	Normal	3.7%	0 of 6	0	2	0	7	0
Region 6	Normal	1.7%	0 of 5	0	3	1	7	0
Region 7	Normal	1.4%	0 of 4	0	3	0	2	0
Region 8	Normal	1.7%	0 of 6	0	7	0	1	0
Region 9	Normal	4.0%	0 of 5	0	1	3	0	0
Region 10	Normal	4.3%	0 of 4	0	7	1	1	0

*****HHS regions (Region 1 CT, ME, MA, NH, RI, VT; Region 2: NJ, NY, Puerto Rico, U.S. Virgin Islands; Region 3: DE, DC, MD, PA, VA, WV; Region 4: AL, FL, GA, KY, MS, NC, SC, TN; Region 5: IL, IN, MI, MN, OH, WI; Region 6: AR, LA, NM, OK, TX; Region 7: IA, KS, MO, NE; Region 8: CO, MT, ND, SD, UT, WY; Region 9: AZ, CA, Guam, HI, NV; and Region 10: AK, ID, OR, WA).
† Elevated means the % of visits for ILI is at or above the national or region-specific baseline.
‡ National data are for current week; regional data are for the most recent three weeks.
§ Includes all 50 states, the District of Columbia, Guam, Puerto Rico, and the U.S. Virgin Islands.

U.S. Virologic Surveillance: WHO and NREVSS collaborating laboratories located in all 50 states and Washington D.C. report to CDC the number of respiratory specimens tested for influenza and the number positive by influenza virus type and influenza A virus subtype. The results of tests performed during the current week are summarized in the table below.

	Week 40
No. of specimens tested	2,870
No. of positive specimens (%)	75 (2.6%)
Positive specimens by type/subtype	
Influenza A	39 (52.0%)
2009 H1N1	3 (7.7%)
Subtyping not performed	9 (23.1%)
H3	27 (69.2%)
Influenza B	36 (48.0%)

Influenza Positive Tests Reported to CDC by U.S. WHO/NREVSS Collaborating Laboratories, National Summary, May 20 – October 6, 2012



Novel Influenza A Virus: No novel influenza A virus infections were reported to CDC during week 40, however, from July 12 through October 11, 2012, a total of 306 infections with influenza A (H3N2) variant (H3N2v) viruses were reported from 10 states. More information is available at http://www.cdc.gov/flu/swineflu/h3n2v-case-count.htm.

In addition, as a result of enhanced surveillance activities for H3N2v, one infection with an influenza A (H1N1) variant (H1N1v) virus and three infections with influenza A (H1N2) variant (H1N2v) viruses have been detected since July 2012, bringing the total number of variant influenza virus infections detected since July to 310.

The vast majority of variant virus infections reported during this time occurred after swine exposure. Though instances of likely limited human-to-human transmission with H3N2v have been identified, at this time no ongoing human-to-human transmission of variant influenza viruses has been identified. Additional information on influenza in swine, variant influenza infection in humans, and strategies to interact safely with swine can be found at http://www.cdc.gov/flu/swineflu/h3n2v-outbreak.htm.

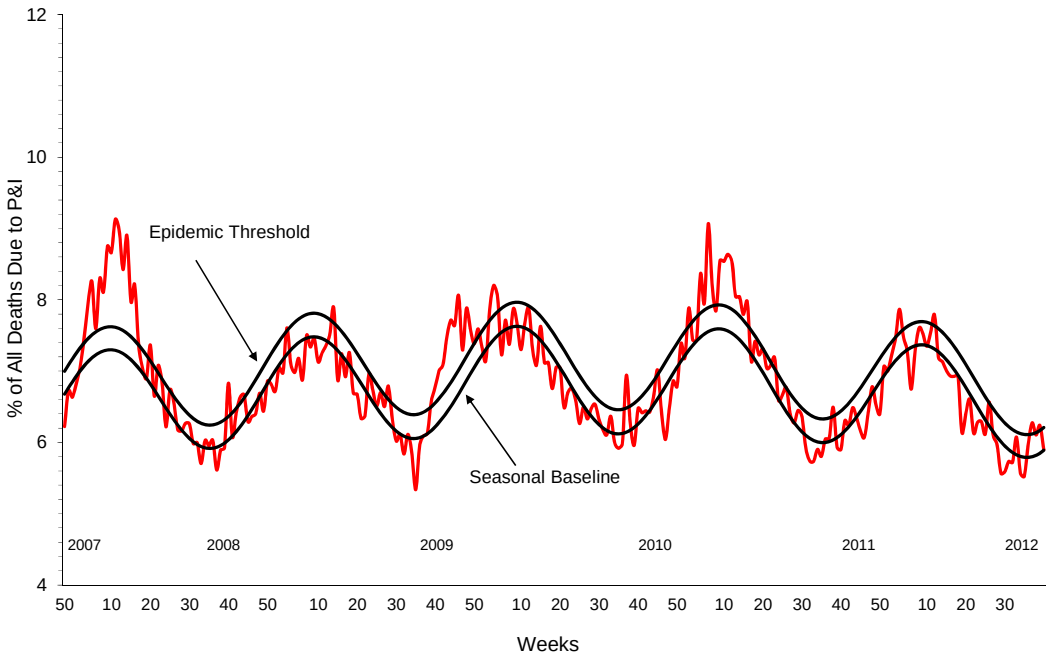
Antigenic Characterization: No antigenic characterization data is available for specimens collected after October 1, 2012. However, the vast majority of influenza A virus isolates from specimens collected between May and September 2012 were closely related antigenically to the influenza A components of the 2012-2013 influenza vaccine (92% of 2009 influenza A (H1N1) virus isolates and 100% of influenza A (H3N2) virus isolates). Forty-two percent of influenza B virus isolates were related antigenically to the influenza B component of the 2012-2013 influenza vaccine.

Antiviral Resistance: No antiviral resistance data is available for specimens collected after October 1, 2012. Of specimens collected between May and September 2012 and tested for susceptibility to the neuraminidase inhibitors (oseltamivir and zanamivir), only one virus, a 2009 H1N1 virus, was found to be resistant to oseltamivir. This virus was sensitive to zanamivir.

High levels of resistance to the adamantanes (amantadine and rimantadine) persist among 2009 H1N1 and A (H3N2) viruses (the adamantanes do not have activity against influenza B viruses). Antiviral treatment as early as possible with oseltamivir or zanamivir is recommended for patients with confirmed or suspected influenza who have severe, complicated, or progressive illness; who require hospitalization; or who are at greater risk for influenza-related complications. Additional information treatment and chemoprophylaxis of influenza virus infection with antiviral agents is available at http://www.cdc.gov/flu/antivirals/index.htm.

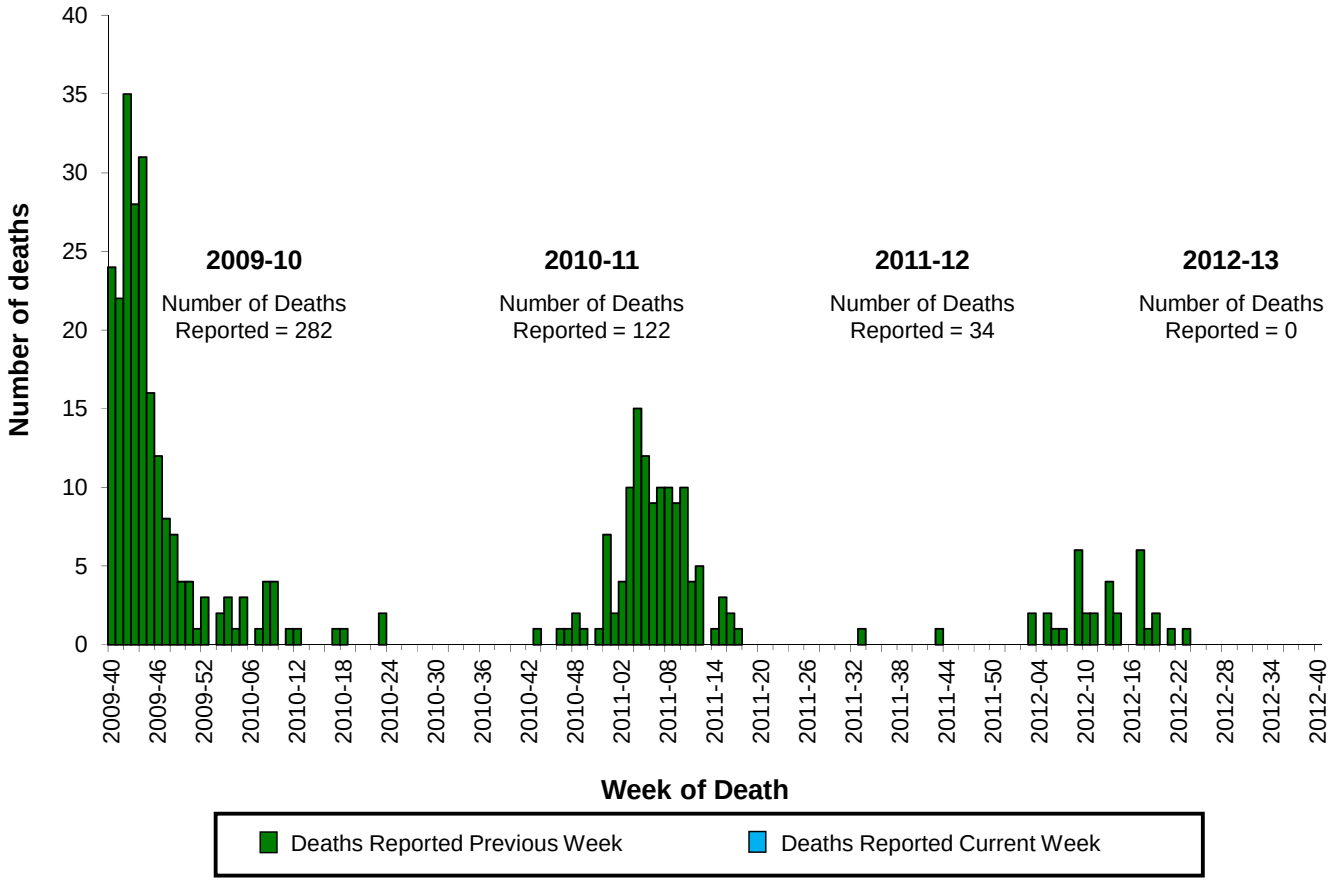
Pneumonia and Influenza (P&I) Mortality Surveillance: During week 40, 5.9% of all deaths reported through the 122 Cities Mortality Reporting System were due to P&I. This percentage was below the epidemic threshold of 6.2% for week 40.

Pneumonia and Influenza Mortality for 122 U.S. Cities
Week ending October 6, 2012



Influenza-Associated Pediatric Mortality: No influenza-associated pediatric deaths were reported to CDC during week 40. However, two deaths occurred during the summer weeks of the 2011-12 season. One death was associated with an influenza B virus and one was associated with a 2009 H1N1 virus.

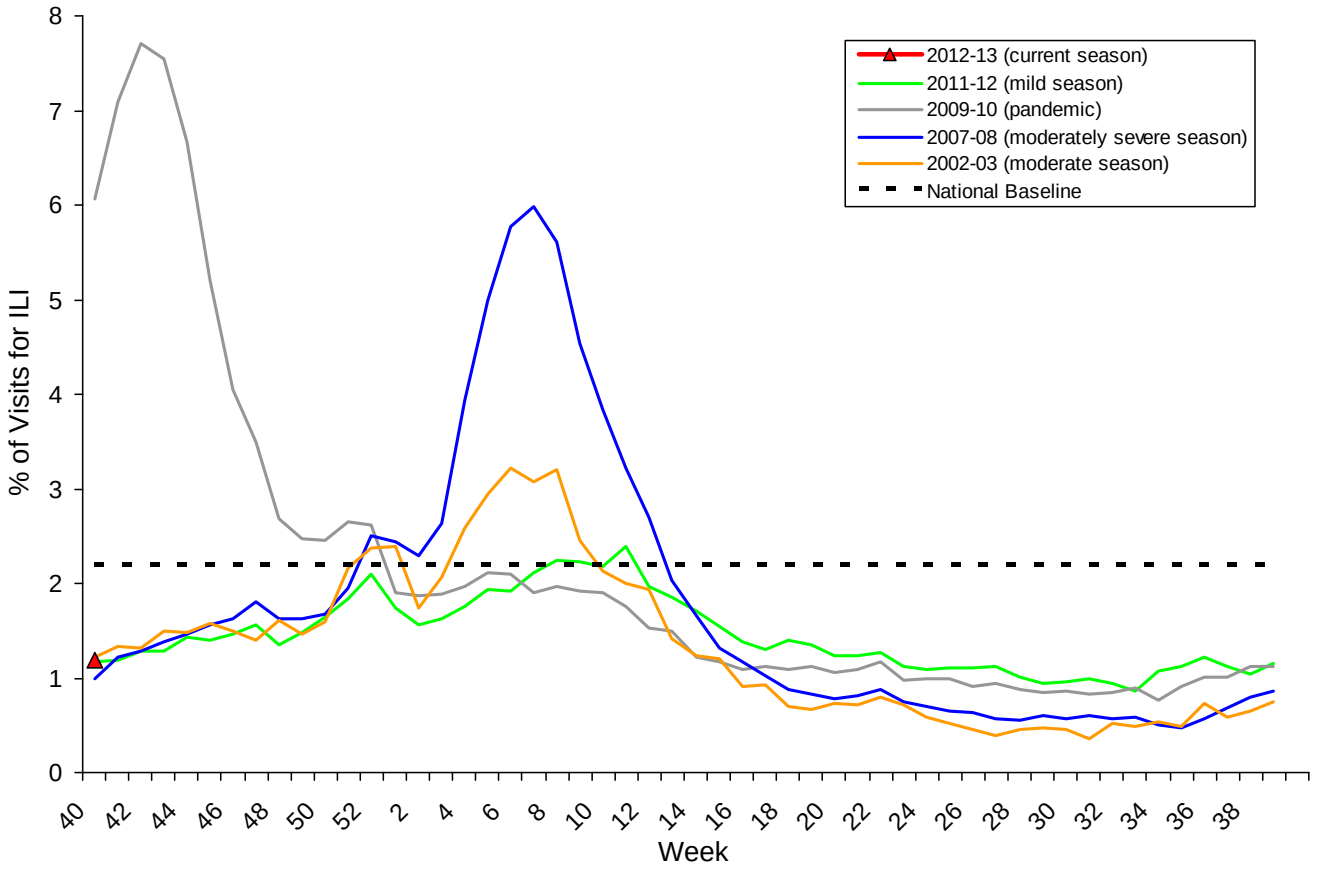
Number of Influenza-Associated Pediatric Deaths by Week of Death: 2009-10 season to present



Influenza-Associated Hospitalizations: Influenza-Associated Hospitalizations: The Influenza Hospitalization Surveillance Network (FluSurv-NET) conducts all age population-based surveillance for laboratory-confirmed influenza-related hospitalizations in select counties in the Emerging Infections Program (EIP) states and Influenza Hospitalization Surveillance Project (IHSP) states. FluSurv-NET estimated hospitalization rates will be updated weekly starting later this season. Additional FluSurv-NET data can be found at: http://gis.cdc.gov/GRASP/Fluview/FluHospRates.html

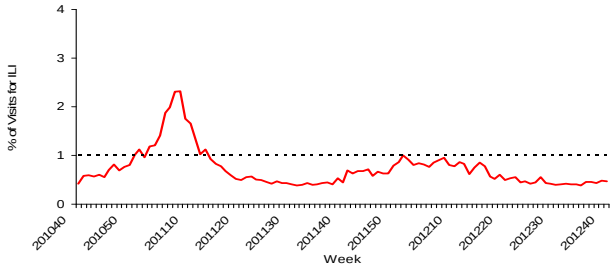
Outpatient Illness Surveillance: Nationwide during week 40, 1.2% of patient visits reported through the U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet) were due to influenza-like illness (ILI). This percentage is below the national baseline of 2.2%. *(ILI is defined as fever (temperature of 100°F [37.8°C] or greater) and cough and/or sore throat.)*

Percentage of Visits for Influenza-like Illness (ILI) Reported by the U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Weekly National Summary, 2012-13 and Selected Previous Seasons

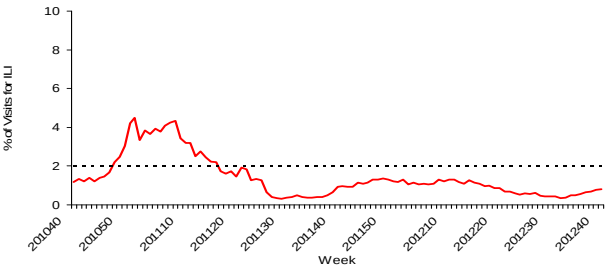


On a regional level, the percentage of outpatient visits for ILI ranged from 0.5% to 2.3% during week 40. All 10 regions reported a proportion of outpatient visits for ILI below their region-specific baseline levels.

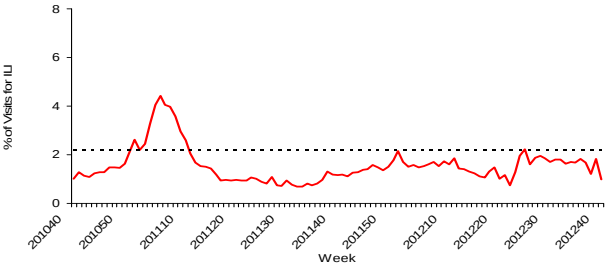
Region 1 - CT, ME, MA, NH, RI, VT



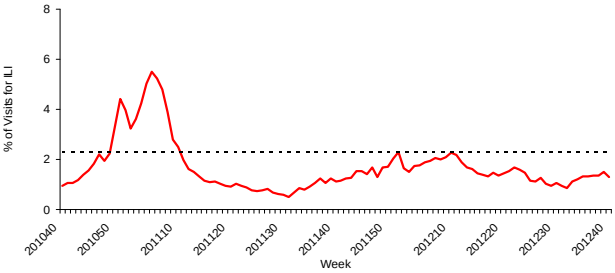
Region 2 - NJ, NY, USVI



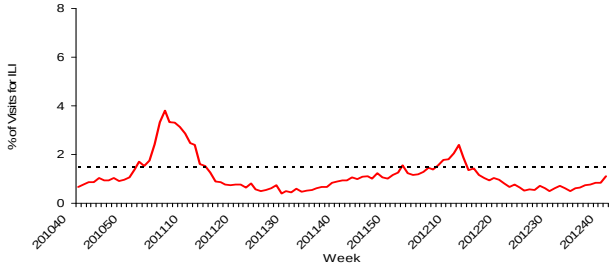
Region 3 - DE, DC, MD, PA, VA, WV



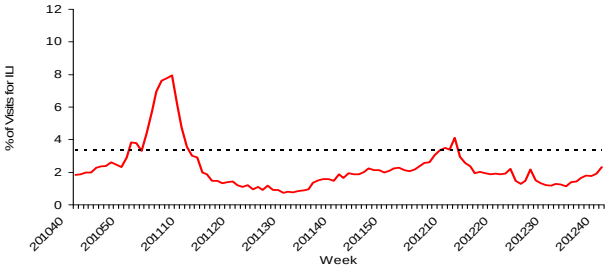
Region 4 - AL, FL, GA, KY, MS, NC, SC, TN



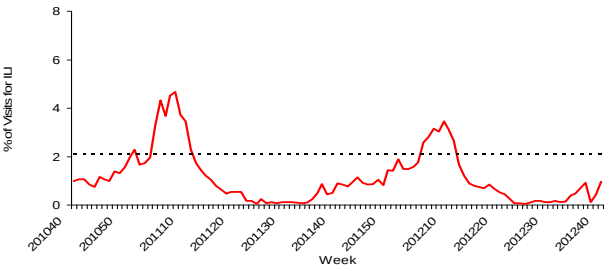
Region 5 - IL, IN, MI, MN, OH, WI



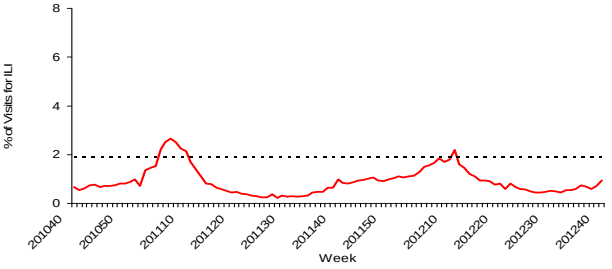
Region 6 - AR, LA, NM, OK, TX



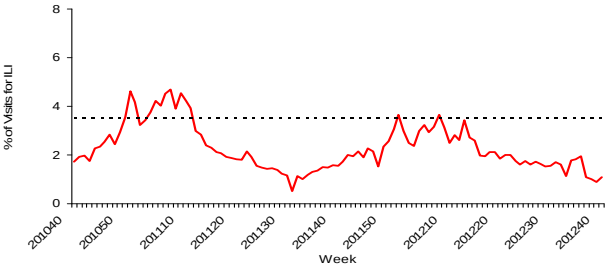
Region 7 - IA, KS, MO, NE



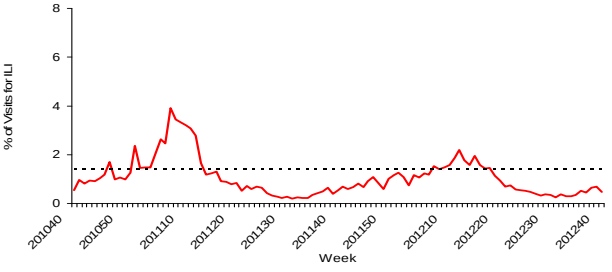
Region 8 - CO, MT, ND, SD, UT, WY



Region 9 - AZ, CA, HI, NV



Region 10 - AK, ID, OR, WA



NOTE: Scales differ between regions

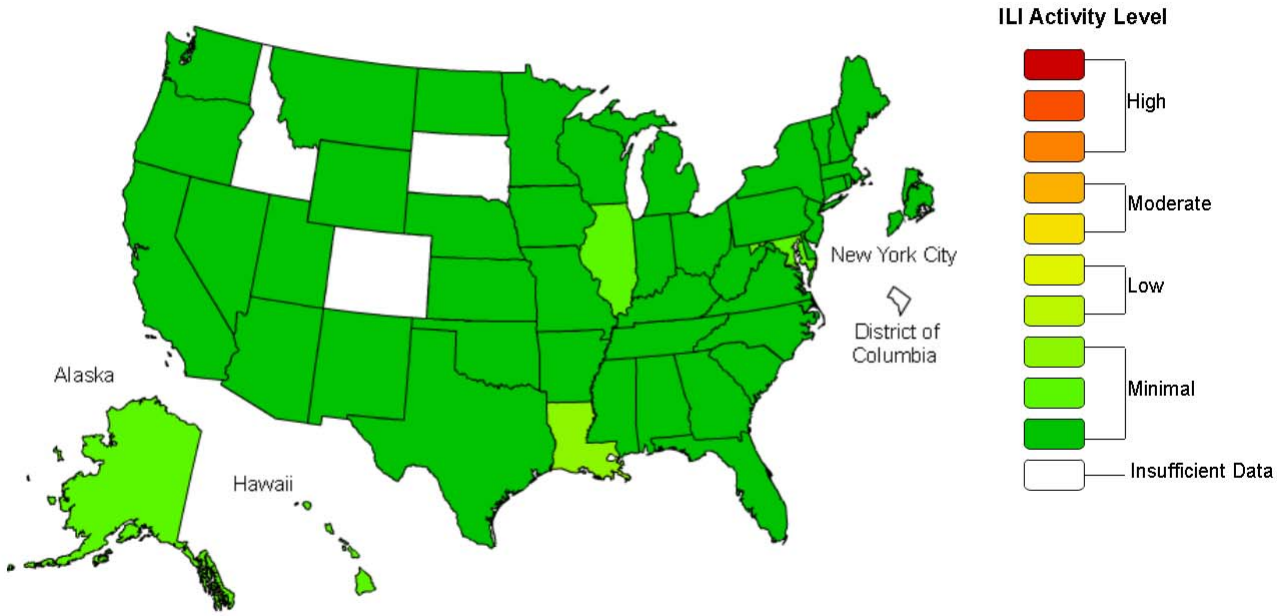
*Use of the regional baselines for state data is not appropriate.

ILINet Activity Indicator Map: Data collected in ILINet are used to produce a measure of ILI activity* by state. Activity levels are based on the percent of outpatient visits in a state due to ILI and are compared to the average percent of ILI visits that occur during spring and fall weeks with little or no influenza virus circulation. Activity levels range from minimal, which would correspond to ILI activity from outpatient clinics being below the average, to intense, which would correspond to ILI activity from outpatient clinics being much higher than average.

During week 40, the following ILI activity levels were experienced:

- Forty-seven states and New York City experienced minimal ILI activity (Alabama, Alaska, Arizona, Arkansas, California, Connecticut, Delaware, Florida, Georgia, Hawaii, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, and Wyoming).
- Data were insufficient to calculate an ILI activity level from the District of Columbia and three states (Colorado, Idaho, and South Dakota).

Influenza-Like Illness (ILI) Activity Level Indicator Determined by Data Reported to ILINet
2012-13 Influenza Season Week 40 ending Oct 06, 2012

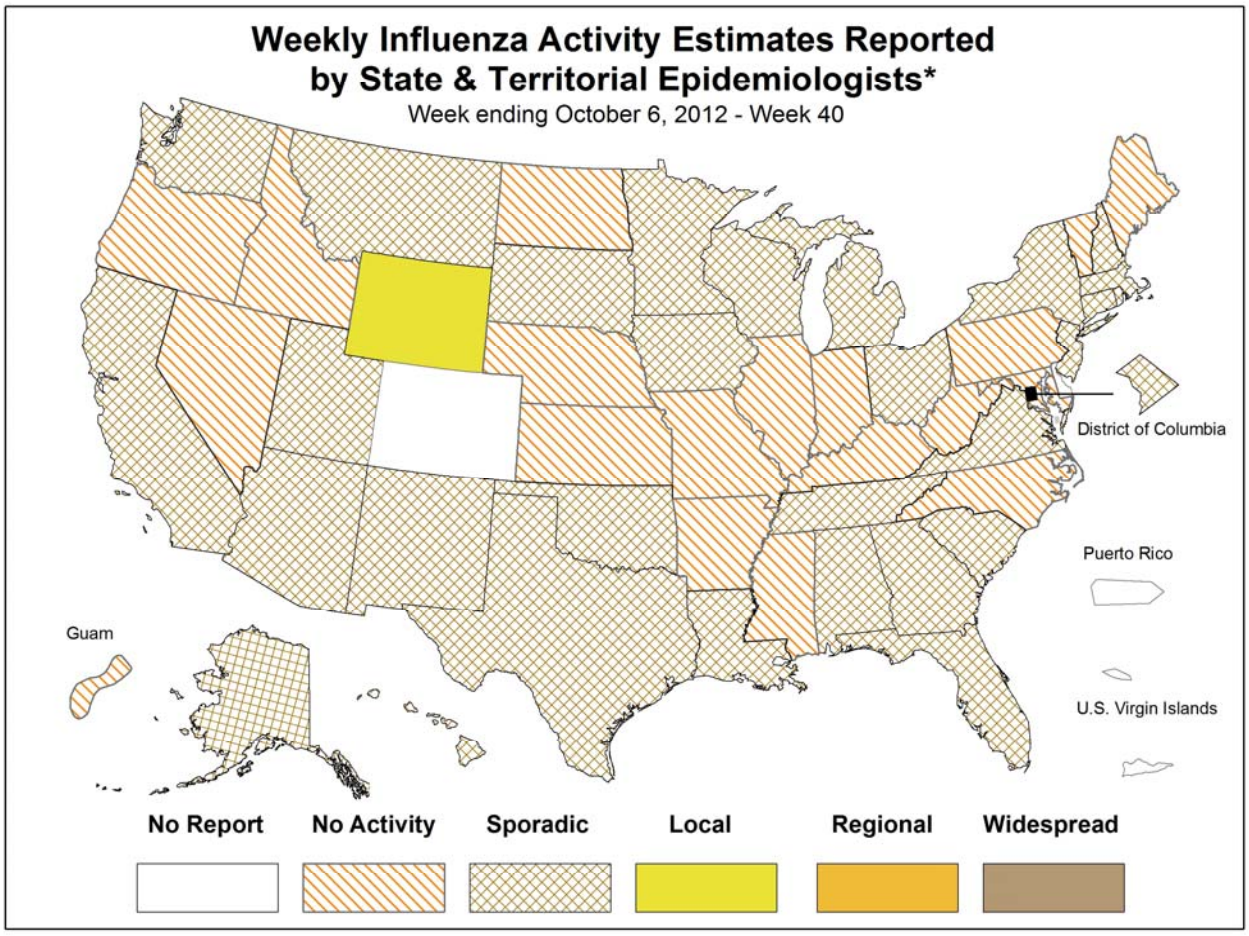


*This map uses the proportion of outpatient visits to health care providers for influenza-like illness to measure the ILI activity level within a state. It does not, however, measure the extent of geographic spread of flu within a state. Therefore, outbreaks occurring in a single city could cause the state to display high activity levels.
Data collected in ILINet may disproportionally represent certain populations within a state, and therefore, may not accurately depict the full picture of influenza activity for the whole state.
Data displayed in this map are based on data collected in ILINet, whereas the State and Territorial flu activity map is based on reports from state and territorial epidemiologists. The data presented in this map is preliminary and may change as more data is received. Differences in the data presented here by CDC and independently by some state health departments likely represent differing levels of data completeness with data presented by the state likely being the more complete.

Geographic Spread of Influenza as Assessed by State and Territorial Epidemiologists: The influenza activity reported by state and territorial epidemiologists indicates geographic spread of influenza viruses, but does not measure the severity of influenza activity.

During week 40, the following influenza activity was reported:

- Local influenza activity was reported by one state (Wyoming).
- Sporadic influenza activity was reported by the District of Columbia, and 29 states (Alabama, Alaska, Arizona, California, Connecticut, Florida, Georgia, Hawaii, Iowa, Louisiana, Massachusetts, Michigan, Minnesota, Montana, New Hampshire, New Jersey, New Mexico, New York, Ohio, Oklahoma, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Virginia, Washington, and Wisconsin).
- No influenza activity was reported by Guam and 18 states (Arkansas, Idaho, Illinois, Indiana, Kansas, Kentucky, Maine, Maryland, Mississippi, Missouri, Nebraska, Nevada, North Carolina, North Dakota, Oregon, Pennsylvania, Vermont, and West Virginia).
- Puerto Rico, the U.S. Virgin Islands, and two states (Colorado and Delaware) did not report.



* This map indicates geographic spread & does not measure the severity of influenza activity

Additional National and International Influenza Surveillance Information

Google Flu Trends: Google Flu Trends uses aggregated Google search data in a model created in collaboration with CDC to estimate influenza activity in the United States. For more information and activity estimates from the U.S. and worldwide, see http://www.google.org/flutrends/.

Europe: For the most recent influenza surveillance information from Europe, please see WHO/Europe at http://www.euroflu.org/index.php and visit the European Centre for Disease Prevention and Control at http://ecdc.europa.eu/en/publications/surveillance_reports/influenza/Pages/weekly_influenza_surveillance_overview.aspx.

Public Health Agency of Canada: The most up to date influenza information from Canada is available at http://www.phac-aspc.gc.ca/fluwatch/.

World Health Organization FluNet: Additional influenza surveillance information from participating WHO member nations is available through FluNet and the Global Epidemiology Reports.

A description of surveillance methods is available at: http://www.cdc.gov/flu/weekly/overview.htm

Report prepared: October 12, 2012.