

2011-2012 Influenza Season Week 50 ending December 17, 2011

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

Synopsis: During week 50 (December 11-17, 2011), influenza activity remained low in the United States.

- **U.S. Virologic Surveillance:** Of the 2,993 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, 64 (2.1%) were positive for influenza.
- **Novel influenza A Virus:** Two human infections with novel influenza A virus were reported.
- **Pneumonia and Influenza (P&I) Mortality Surveillance:** The proportion of deaths attributed to P&I was below the epidemic threshold.
- **Influenza-associated Pediatric Mortality:** No influenza-associated pediatric deaths were reported.
- **Outpatient Illness Surveillance:** The proportion of outpatient visits for influenza-like illness (ILI) was 1.4%, which is below the national baseline of 2.4%. All 10 regions reported ILI below region-specific baseline levels. One state experienced moderate ILI activity, New York City experienced low ILI activity, 49 states experienced minimal ILI activity, and the District of Columbia had insufficient data.
- **Geographic Spread of Influenza:** The geographic spread of influenza in two states was reported as local; Guam, Puerto Rico, and 37 states reported sporadic activity, and the District of Columbia, the U.S. Virgin Islands, and 11 states reported no influenza activity.

National and Regional Summary of Select Surveillance Components

HHS Surveillance Regions*	Data for current week			Data cumulative since October 2, 2011 (Week 40)				
	Out-patient ILI†	% of respiratory specimens positive for flu‡	Number of jurisdictions reporting regional or widespread activity§	A (H3)	A (2009 H1N1)	A (Subtyping not performed)	B	Pediatric Deaths
Nation	Normal	2.1%	0 of 54	186	14	193	134	0
Region 1	Normal	0.0%	0 of 6	2	0	0	3	0
Region 2	Normal	0.1%	0 of 4	2	0	3	2	0
Region 3	Normal	0.1%	0 of 6	6	0	3	0	0
Region 4	Normal	3.9%	0 of 8	20	6	121	93	0
Region 5	Normal	3.1%	0 of 6	25	3	1	7	0
Region 6	Normal	0.2%	0 of 5	6	0	11	11	0
Region 7	Normal	1.1%	0 of 4	12	0	7	0	0
Region 8	Normal	4.4%	0 of 6	67	1	23	3	0
Region 9	Normal	2.1%	0 of 5	29	4	20	11	0
Region 10	Normal	1.5%	0 of 4	17	0	4	4	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.

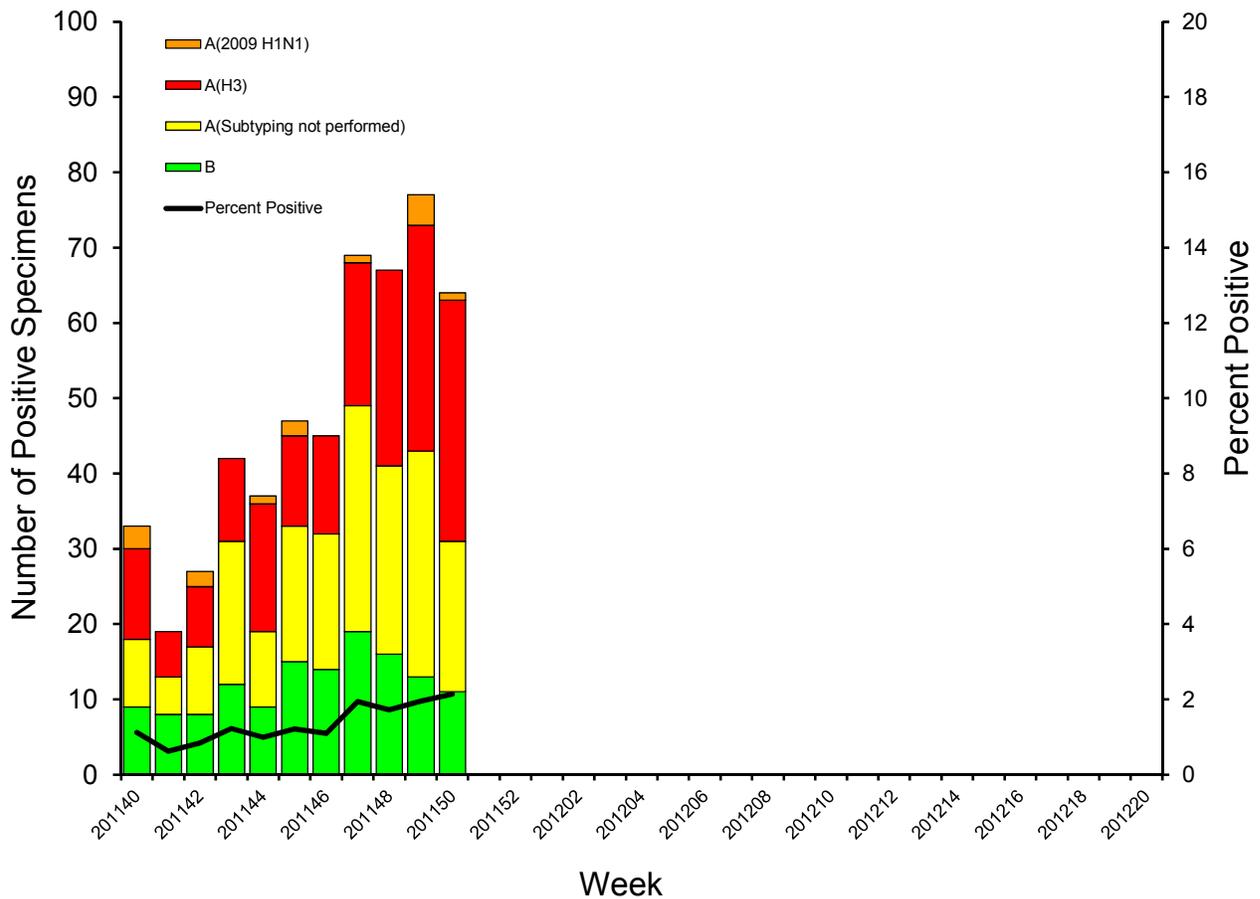
‡ National data are for current week; regional data are for the most recent three weeks.

§ 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 report to CDC the number of respiratory specimens tested for influenza and the number positive by influenza type and subtype. The results of tests performed during the current week are summarized in the table below.

	Week 50
No. of specimens tested	2,993
No. of positive specimens (%)	64 (2.1%)
Positive specimens by type/subtype	
Influenza A	53 (82.8%)
A (2009 H1N1)	1 (1.9%)
A (subtyping not performed)	20 (37.7%)
A (H3)	32 (60.4%)
Influenza B	11 (17.2%)

Influenza Positive Tests Reported to CDC by U.S. WHO/NREVSS Collaborating Laboratories, National Summary, 2011-12 Season



Novel Influenza A Viruses: Two human infections with novel influenza A viruses were detected in two states (West Virginia and Wisconsin). One patient was infected with an influenza A (H1N1) variant virus with genes from human, swine, and avian lineages (A(H1N1)v) and reported close contact with pigs prior to illness onset. The other patient was infected with an influenza A (H3N2) variant virus with genes from human, swine, and avian lineages (A(H3N2)v) and did not have contact with pigs prior to illness onset, but did have contact with another confirmed case of A(H3N2)v. Both patients have recovered from their illnesses. Additional information on the Wisconsin case can be found in the CDC [Have You Heard](#) posting and additional information on the West Virginia case can be found in [the related MMWR article](#).

CDC is required to report all cases of human infection with novel influenza viruses to the [World Health Organization \(WHO\)](#) as part of the [International Health Regulations \(IHR\)](#). Domestically, CDC reports these cases in this report and on its website. Early identification and investigation of human infections with novel influenza A viruses is critical to evaluate the extent of the outbreak and possible human-to-human transmission. Additional information on human infections with novel influenza viruses can be found at [Information on Variant Influenza A Viruses](#).

Antigenic Characterization: CDC has antigenically characterized 63 influenza viruses [nine 2009 influenza A (H1N1), 43 influenza A (H3N2) viruses, and 11 influenza B viruses] collected by U.S. laboratories since October 1, 2011.

2009 Influenza A (H1N1) [9]

- All nine viruses were characterized as A/California/7/2009-like, the influenza A (H1N1) component of the 2011-12 influenza vaccine for the Northern Hemisphere.

Influenza A (H3N2) [43]

- Forty-two of the 43 viruses were characterized as A/Perth/16/2009-like, the influenza A (H3N2) component of the 2011-12 influenza vaccine for the Northern Hemisphere.
- One virus tested showed reduced titers with antiserum produced against A/Perth/16/2009.

Influenza B (B/Victoria/02/87 and B/Yamagata/16/88 lineages) [11]:

- **Victoria Lineage [7]:** Seven of the 11 influenza B viruses tested belong to the B/Victoria lineage of viruses and were characterized as B/Brisbane/60/2008-like, the recommended influenza B component for the 2011-12 Northern Hemisphere influenza vaccine.
- **Yamagata Lineage [4]:** Four of the 11 influenza B viruses tested belong to the B/Yamagata lineage of viruses.

It is too early in the influenza season to determine how well the seasonal influenza vaccine strains and circulating strains will match.

Antiviral Resistance: Testing of 2009 influenza A (H1N1), influenza A (H3N2), and influenza B virus isolates for resistance to neuraminidase inhibitors (oseltamivir and zanamivir) is performed at CDC using a functional assay. Additional 2009 influenza A (H1N1) clinical samples are tested for a single mutation in the neuraminidase of the virus known to confer oseltamivir resistance (H275Y). The data summarized below combine the results of both testing methods. These samples are routinely obtained for surveillance purposes rather than for diagnostic testing of patients suspected to be infected with an antiviral resistant virus.

High levels of resistance to the adamantanes (amantadine and rimantadine) persist among 2009 influenza A (H1N1) and A (H3N2) viruses (the adamantanes are not effective against influenza B viruses). As a result of the sustained high levels of resistance, data from adamantane resistance testing are not presented in the table below.

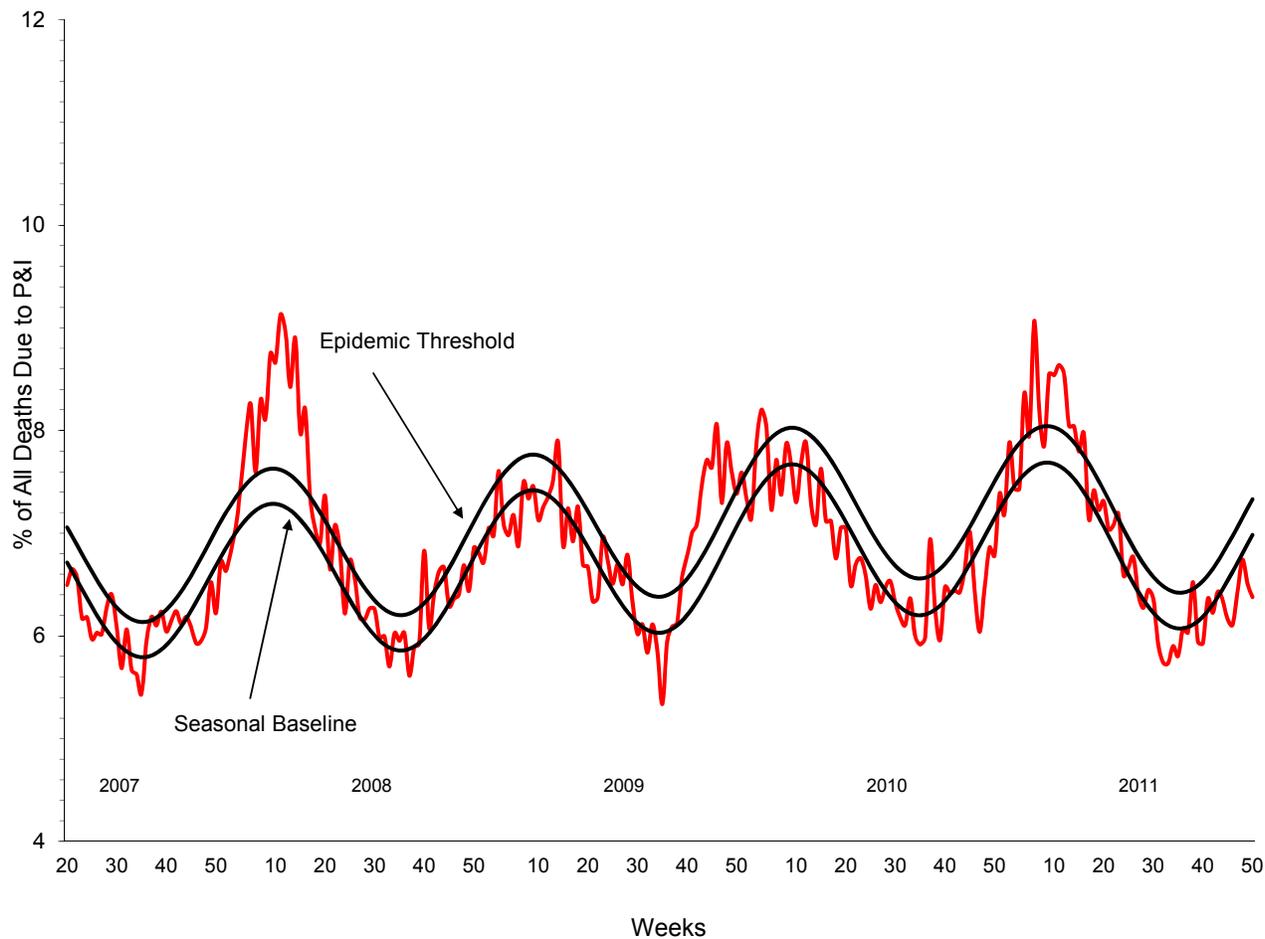
**Neuraminidase Inhibitor Resistance Testing Results
on Samples Collected Since October 1, 2011.**

	Oseltamivir		Zanamivir	
	Virus Samples tested (n)	Resistant Viruses, Number (%)	Virus Samples tested (n)	Resistant Viruses, Number (%)
Influenza A (H3N2)	65	0 (0.0)	65	0 (0.0)
Influenza B	11	0 (0.0)	11	0 (0.0)
Influenza A (2009 H1N1)	9	0 (0.0)	9	0 (0.0)

All viruses tested for the 2011-2012 season since October 1, 2011 have been susceptible to the neuraminidase inhibitor antiviral medications oseltamivir and zanamivir as were the majority of viruses tested last season; however, rare sporadic cases of oseltamivir resistant 2009 influenza A (H1N1) and A (H3N2) viruses have been detected worldwide. Antiviral treatment with oseltamivir or zanamivir is recommended as early as possible 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 on recommendations for treatment and chemoprophylaxis of influenza virus infection with antiviral agents is available at <http://www.cdc.gov/flu/antivirals/index.htm>.

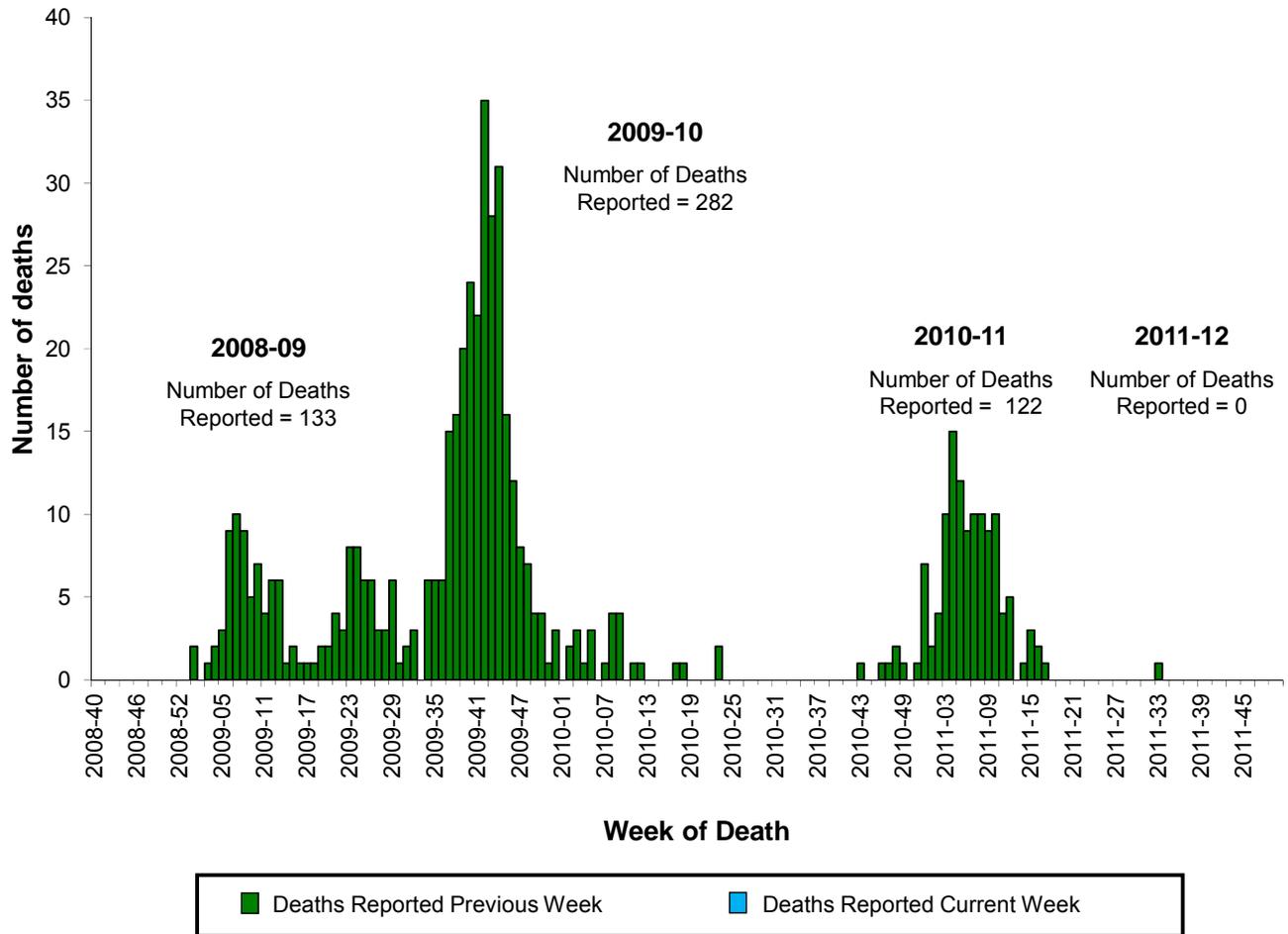
Pneumonia and Influenza (P&I) Mortality Surveillance: During week 50, 6.4% of all deaths reported through the 122-Cities Mortality Reporting System were due to P&I. This percentage was below the epidemic threshold of 7.3% for week 50.

Pneumonia and Influenza Mortality for 122 U.S. Cities Week ending 12/17/2011



Influenza-Associated Pediatric Mortality: No influenza-associated pediatric deaths were reported to CDC during week 50 and no influenza-associated pediatric deaths have been reported to CDC so far for the 2011-12 season.

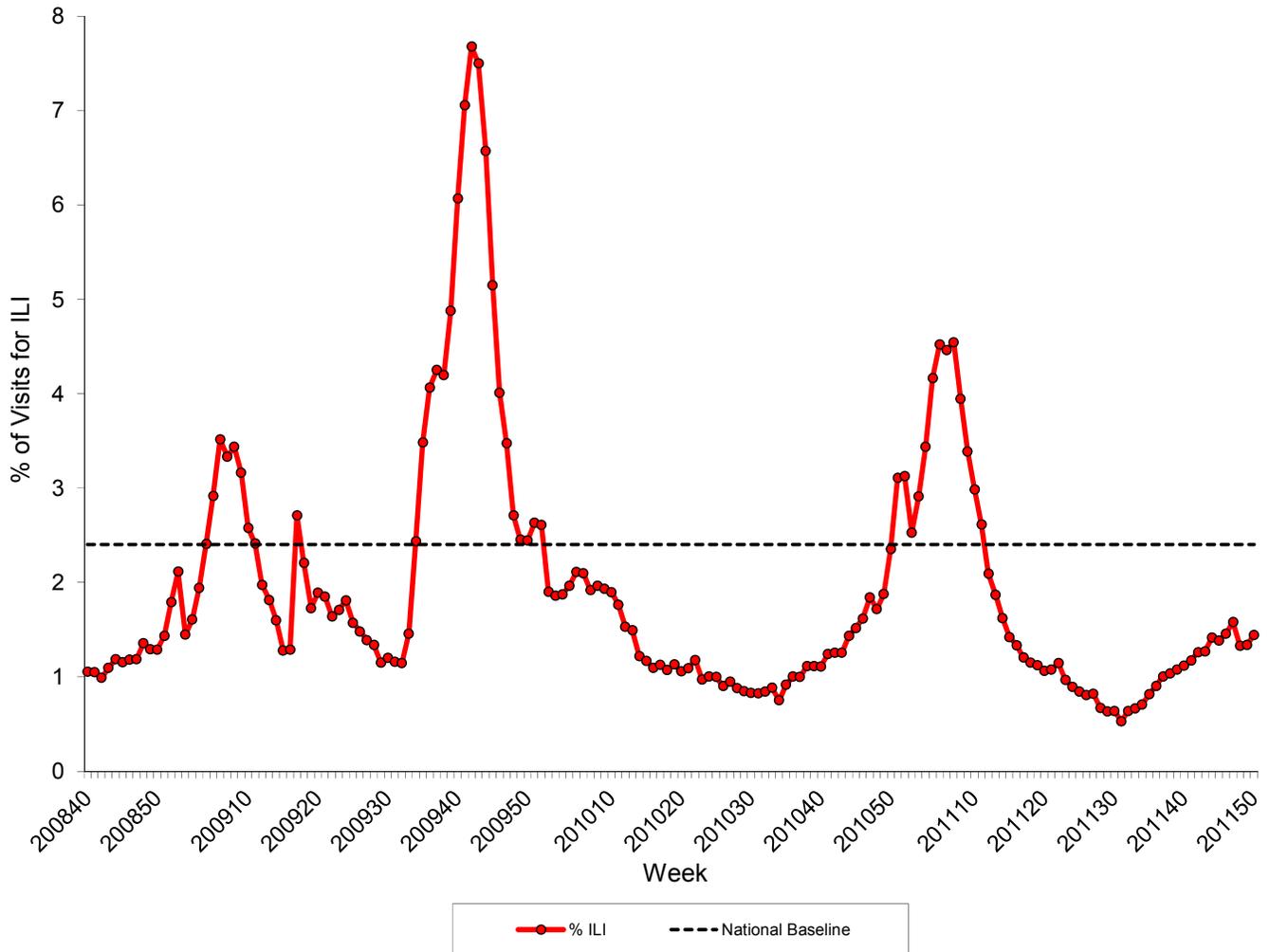
Number of Influenza-Associated Pediatric Deaths by Week of Death: 2008-09 season to present



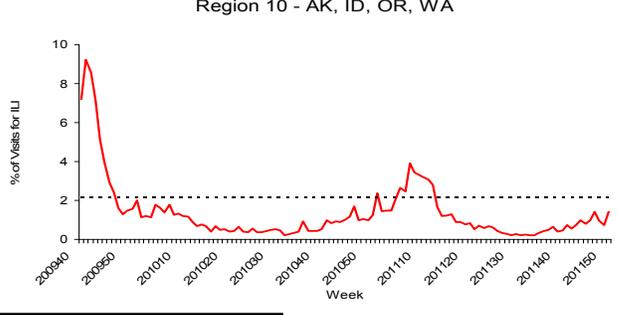
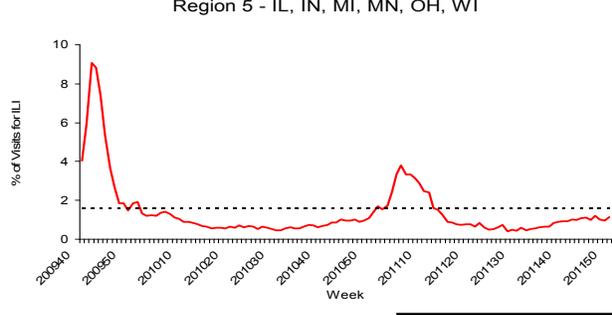
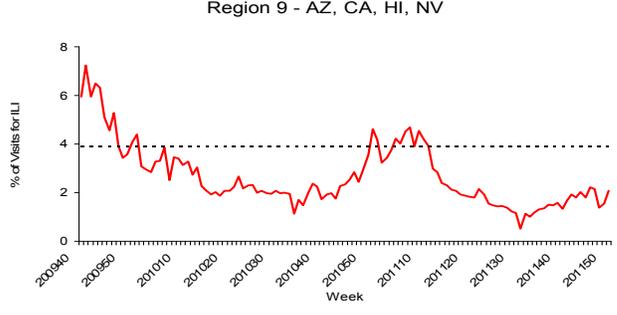
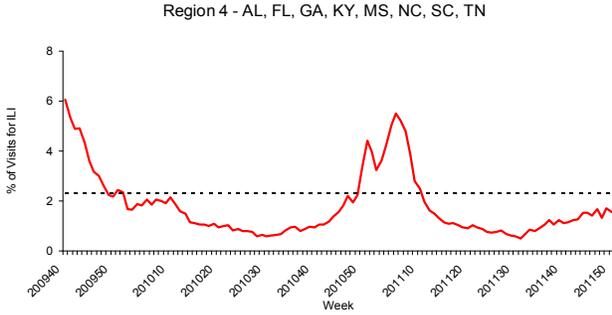
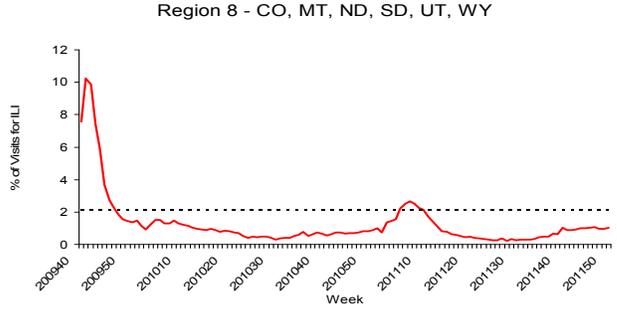
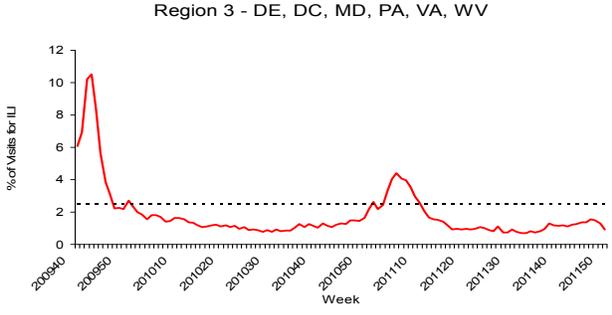
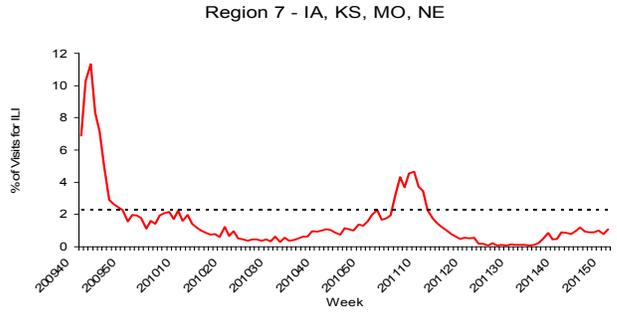
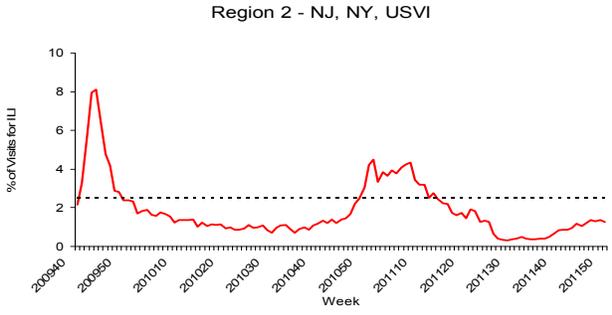
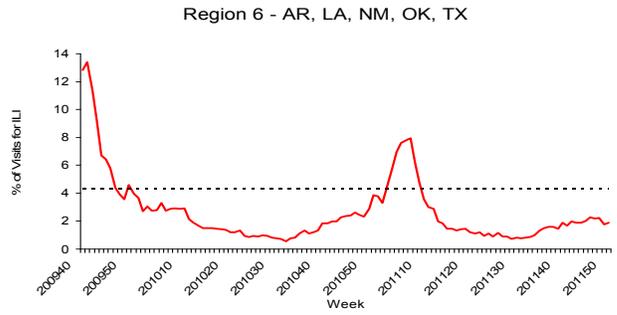
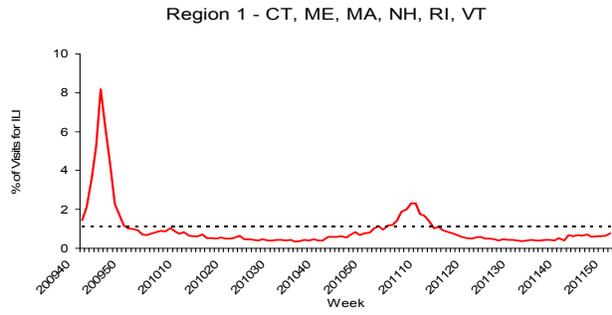
Influenza-Associated Hospitalizations: The Influenza Hospitalization Network (FluSurv-NET) conducts population-based surveillance for laboratory-confirmed influenza related hospitalizations in children (persons younger than 18 years) and adults. The network covers more than 80 counties in the 10 Emerging Infections Program (EIP) states (CA, CO, CT, GA, MD, MN, NM, NY, OR, and TN) and four additional states (MI, OH, RI and UT). FluSurv-NET estimated hospitalization rates will be updated weekly starting later this season.

Outpatient Illness Surveillance: Nationwide during week 50, 1.4% 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 2.4%. (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, September 30, 2008 – December 17, 2011



On a regional level, the percentage of outpatient visits for ILI ranged from 0.8% to 2.1% during week 50. All 10 regions reported a proportion of outpatient visits for ILI below their region-specific baseline levels.



— % ILI Baseline*

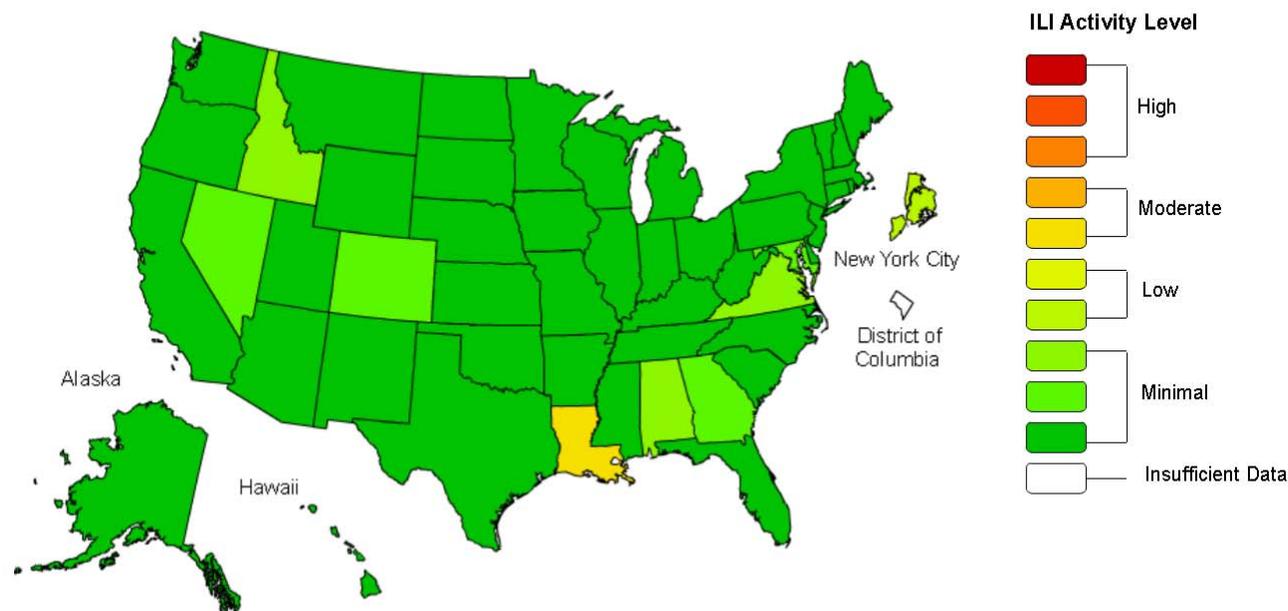
NOTE: Scales differ between regions
 *Use of the regional baselines for state data is not appropriate.

ILINet State 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 being below the average, to intense, which would correspond to ILI activity being much higher than average. Because the clinical definition of ILI is very general, not all ILI is caused by influenza; however, when combined with laboratory data, the information on ILI activity provides a clearer picture of influenza activity in the United States.

During week 50, the following ILI activity levels were experienced:

- One state experienced moderate ILI activity (Louisiana).
- New York City experienced low ILI activity.
- Forty-nine states experienced minimal ILI activity (Alabama, Alaska, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, Florida, Georgia, Hawaii, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, 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, South Dakota, 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.

**Influenza-Like Illness (ILI) Activity Level Indicator Determined by Data Reported to ILINet
2011-12 Influenza Season Week 50 ending Dec 17, 2011**



*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 disproportionately represent certain populations within a state, and therefore, may not accurately depict the full picture of influenza activity for the whole state.

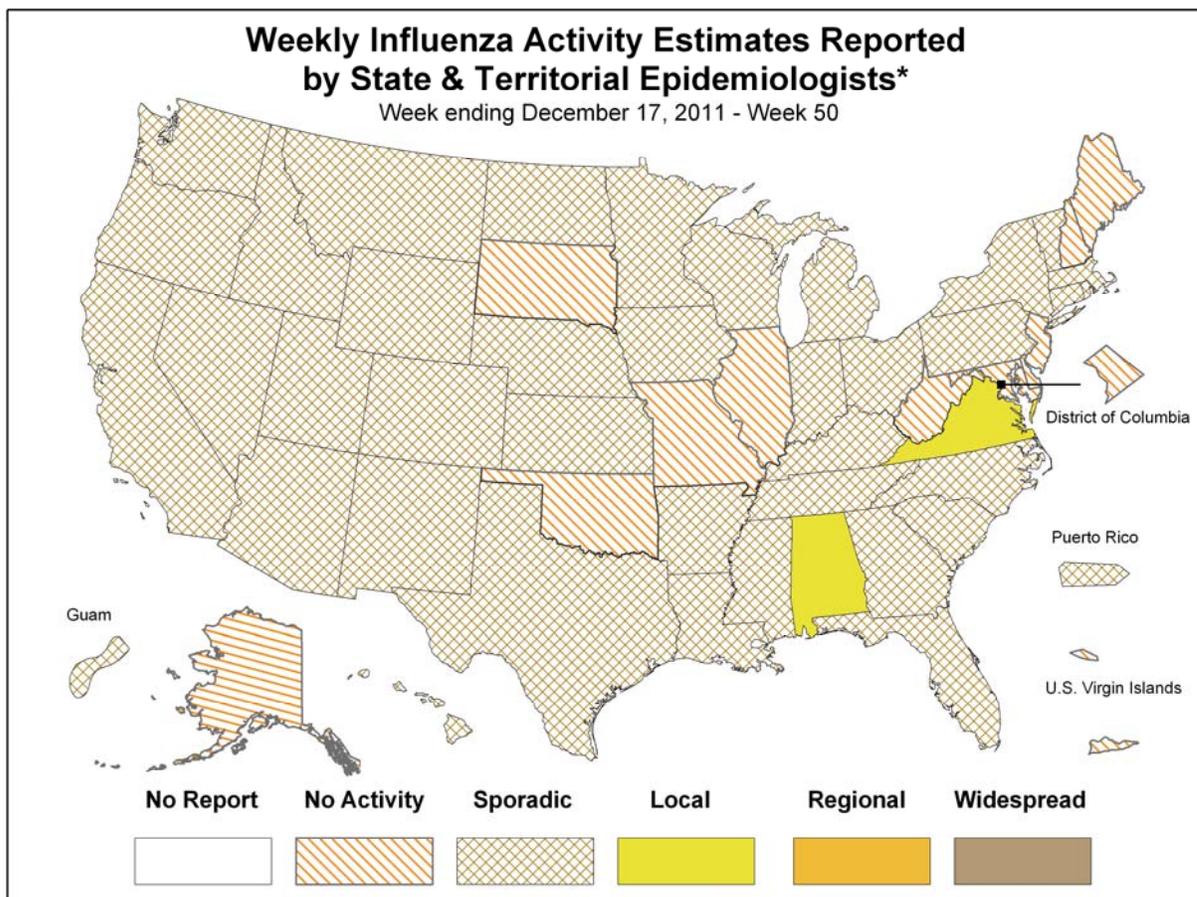
Data displayed in this map are based on data collected in ILINet, whereas the State and Territorial flu activity map is based on reports from state and territorial epidemiologists. The data presented in this map is preliminary and may change as more data is received.

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 intensity of influenza activity.

During week 50, the following influenza activity was reported:

- Local influenza activity was reported by two states (Alabama and Virginia).
- Sporadic influenza activity was reported by Guam, Puerto Rico, and 37 states (Arizona, Arkansas, California, Colorado, Connecticut, Florida, Georgia, Hawaii, Idaho, Indiana, Iowa, Kansas, Kentucky, Louisiana, Massachusetts, Michigan, Minnesota, Mississippi, Montana, Nebraska, Nevada, New Mexico, New York, North Carolina, North Dakota, Ohio, Oregon, Pennsylvania, Rhode Island, South Carolina, Tennessee, Texas, Utah, Vermont, Washington, Wisconsin, and Wyoming).
- No influenza activity was reported by the District of Columbia, the U.S. Virgin Islands, and 11 states (Alaska, Delaware, Illinois, Maine, Maryland, Missouri, New Hampshire, New Jersey, Oklahoma, South Dakota, and West Virginia).



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

A description of surveillance methods is available at: <http://www.cdc.gov/flu/weekly/overview.htm>
Report prepared: December 23, 2011.

Additional National and International Influenza Surveillance Information

Distribute Project: Additional information on the Distribute syndromic surveillance project, developed and piloted by the International Society for Disease Surveillance (ISDS), now working in collaboration with CDC to enhance and support Emergency Department (ED) surveillance, is available at <http://isdistribute.org/>.

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](#).