

2014-2015 Influenza Season Week 45 ending November 8, 2014

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

Synopsis: During week 45 (November 2-8, 2014), influenza activity was low in the United States.

- o **Viral Surveillance:** Of 9,138 specimens tested and reported by U.S. World Health Organization (WHO) and National Respiratory and Enteric Virus Surveillance System (NREVSS) collaborating laboratories during week 45, 678 (7.4%) were positive for influenza.
- o **Pneumonia and Influenza Mortality:** The proportion of deaths attributed to pneumonia and influenza (P&I) was below the epidemic threshold.
- o **Influenza-associated Pediatric Deaths:** No influenza-associated pediatric deaths were reported.
- o **Outpatient Illness Surveillance:** The proportion of outpatient visits for influenza-like illness (ILI) was 1.6%, which is below the national baseline of 2.0%. All 10 regions reported ILI below region-specific baseline levels. Puerto Rico experienced moderate ILI activity; two states experienced low ILI activity; New York City and 48 states experienced minimal ILI activity; and the District of Columbia had insufficient data.
- o **Geographic Spread of Influenza:** The geographic spread of influenza in Guam was reported as widespread; three states reported regional activity; Puerto Rico, the U.S. Virgin Islands, and 13 states reported local activity; the District of Columbia and 31 states reported sporadic activity; and three states reported no influenza activity.

National and Regional Summary of Select Surveillance Components

HHS Surveillance Regions*	Data cumulative since September 28, 2014 (week 40)							
	Out-patient ILI†	% positive for flu‡	Number of jurisdictions reporting regional or widespread activity§	2009 H1N1	A (H3)	A (Subtyping not performed)	B	Pediatric Deaths
Nation	Normal	7.4%	4 of 54	23	1,008	1,263	776	1
Region 1	Normal	1.0%	1 of 6	1	16	12	11	0
Region 2	Normal	0.7%	0 of 4	5	67	10	22	0
Region 3	Normal	4.1%	0 of 6	0	53	33	28	0
Region 4	Normal	9.3%	1 of 8	1	175	843	449	1
Region 5	Normal	3.3%	0 of 6	8	84	47	34	0
Region 6	Normal	8.8%	0 of 5	2	149	163	146	0
Region 7	Normal	3.6%	0 of 4	1	49	29	26	0
Region 8	Normal	3.3%	0 of 6	0	42	40	18	0
Region 9	Normal	4.4%	1 of 5	4	111	51	34	0
Region 10	Normal	14.5%	1 of 4	1	262	35	8	0

*<http://www.hhs.gov/iea/regional/>

† Elevated means the % of visits for ILI is at or above the national or region-specific baseline.

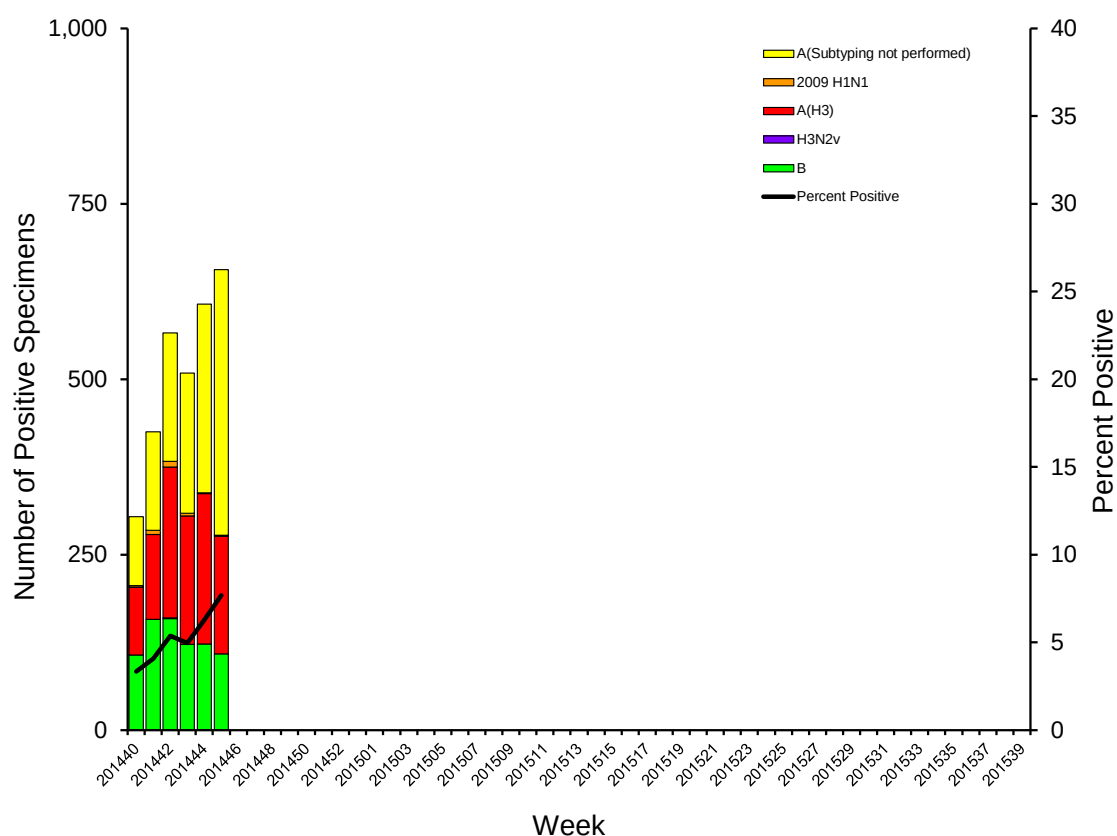
‡ National data are for current week; regional data are for the most recent three weeks.

§ 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, Puerto Rico, and the District of Columbia 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 45
No. of specimens tested	9,138
No. of positive specimens (%)	678 (7.4%)
<i>Positive specimens by type/subtype</i>	
Influenza A	567 (83.6%)
2009 H1N1	2 (0.4%)
H3	192 (33.9%)
Subtyping not performed	373 (65.8%)
Influenza B	111 (16.4%)

Influenza Positive Tests Reported to CDC by U.S. WHO/NREVSS Collaborating Laboratories, National Summary, 2014-15



Antigenic Characterization*: CDC has antigenically characterized 19 influenza viruses (one 2009 H1N1 virus, 13 influenza A (H3N2) viruses, and five influenza B viruses) collected by U.S. laboratories since October 1, 2014 by hemagglutination inhibition (HI).

- **2009 H1N1 [1]:** The 2009 H1N1 virus tested was characterized as A/California/7/2009-like, the influenza A (H1N1) component of the 2014-2015 Northern Hemisphere influenza vaccine.
- **Influenza A (H3N2) [13]:** Seven (54%) of the 13 influenza A (H3N2) viruses tested have been characterized as A/Texas/50/2012-like, the influenza A (H3N2) component of the 2014-2015 Northern Hemisphere influenza vaccine. Six (46%) of the 13 viruses tested showed reduced titers with antiserum produced against A/Texas/50/2012. Among viruses that showed reduced titers with antiserum raised against A/Texas/50/2012, the majority were antigenically similar to A/Switzerland/9715293/2013, the H3N2 virus selected for the 2015 Southern Hemisphere influenza vaccine. A/Switzerland/9715293/2013 is related to, but antigenically and genetically distinguishable, from the A/Texas/50/2012 vaccine virus. A/Switzerland-like H3N2 viruses were first detected in the United States in small numbers in March of 2014 and began to circulate in greater numbers over the spring and summer.

Influenza B [5]: Both B/Victoria and B/Yamagata-lineage viruses are currently circulating in the United States. However to date, results of antigenic characterization are available only for B/Victoria lineage viruses.

- **Victoria Lineage [5]:** All five B/Victoria-lineage viruses were characterized as B/Brisbane/60/2008-like, which is included as an influenza B component of the 2014-2015 Northern Hemisphere quadrivalent influenza vaccine.
- **Yamagata Lineage:** No antigenic characterization data are available for influenza B/Yamagata-lineage viruses collected after October 1, 2014.

*CDC conducts [antigenic characterization](#) of influenza viruses year-round to compare how similar currently circulating influenza viruses are to those included in the influenza vaccine, and to monitor for changes in circulating influenza viruses.

Antiviral Resistance: Testing of 2009 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 H1N1 and influenza A (H3N2) clinical samples are tested for mutations of the virus known to confer oseltamivir resistance. 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 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). Therefore, data from adamantane resistance testing are not presented below.

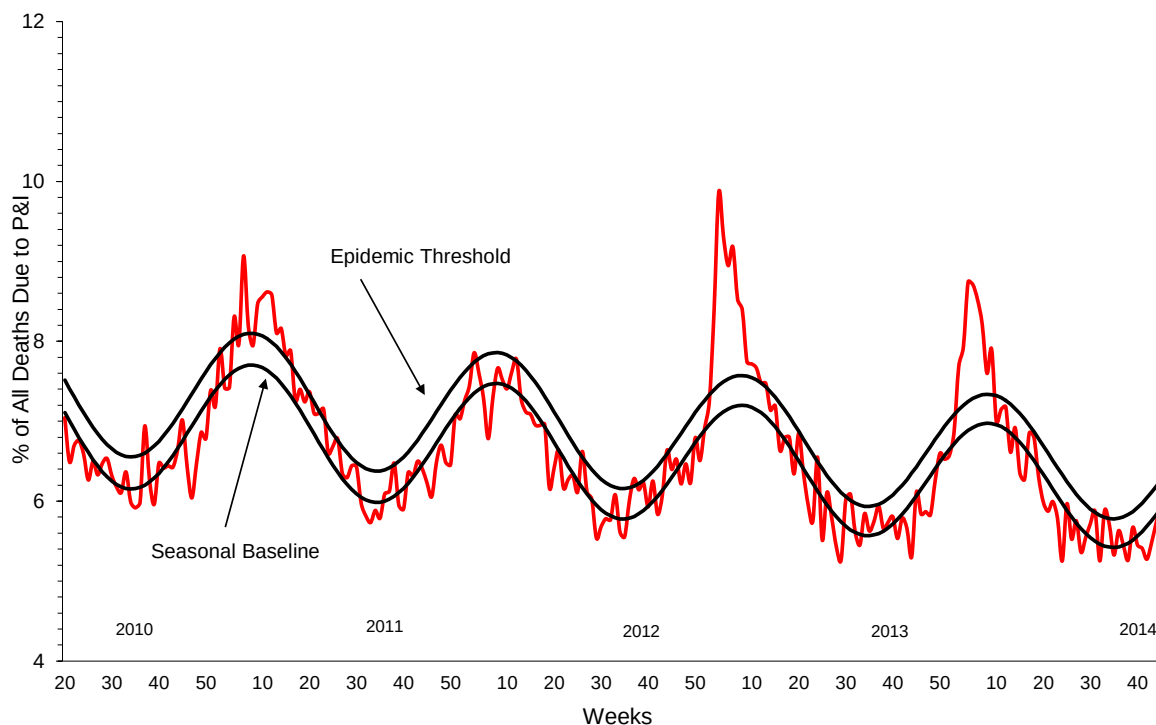
**Neuraminidase Inhibitor Resistance Testing Results
on Samples Collected Since October 1, 2014**

	Oseltamivir		Zanamivir	
	Virus Samples tested (n)	Resistant Viruses, Number (%)	Virus Samples tested (n)	Resistant Viruses, Number (%)
Influenza A (H3N2)	11	0 (0.0)	11	0 (0.0)
Influenza B	5	0 (0.0)	5	0 (0.0)
2009 H1N1	1	0 (0.0)	1	0 (0.0)

In the United States, all recently circulating influenza viruses have been susceptible to the neuraminidase inhibitor antiviral medications, oseltamivir and zanamivir; however, rare sporadic instances of oseltamivir-resistant 2009 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 high risk for serious 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 45, 6.0% of all deaths reported through the 122 Cities Mortality Reporting System were due to P&I. This percentage was below the epidemic threshold of 6.3% for week 45.

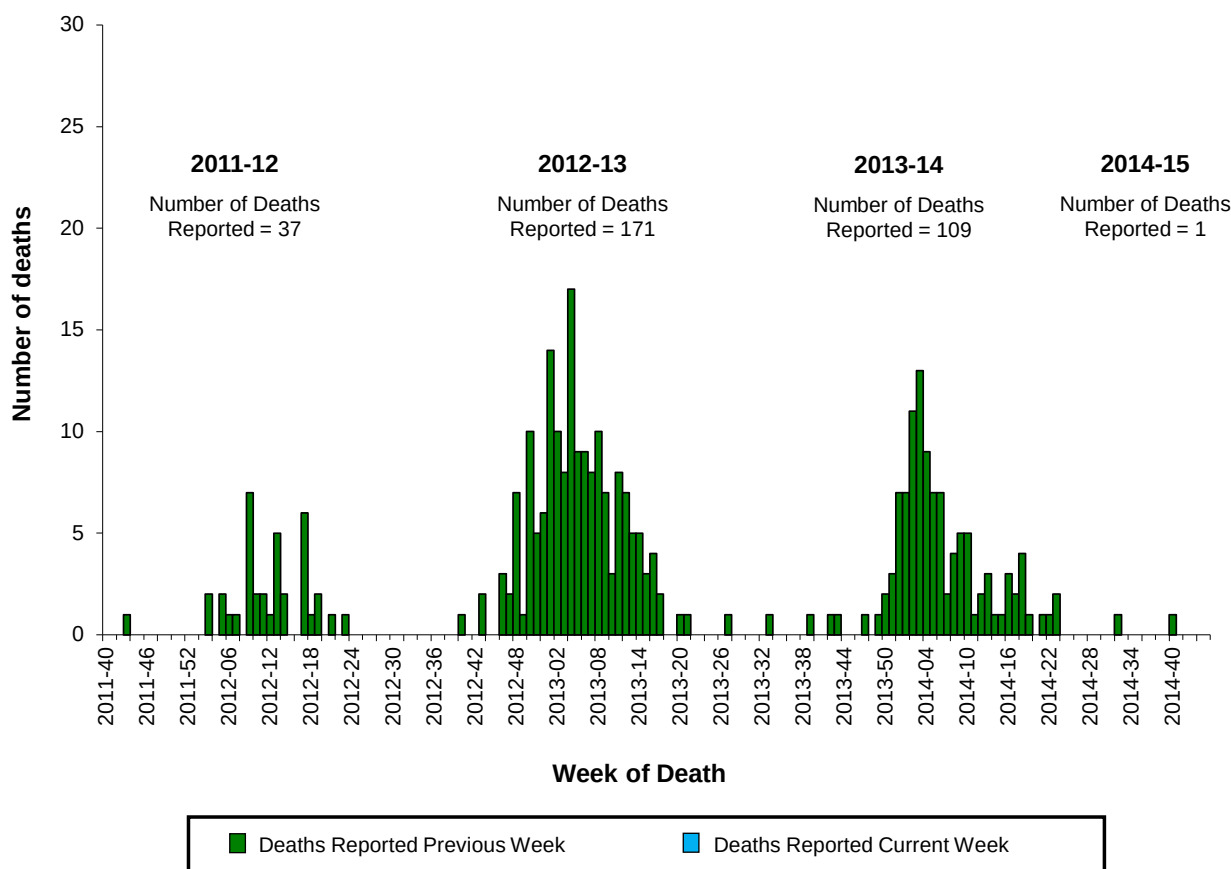
Pneumonia and Influenza Mortality for 122 U.S. Cities Week ending November 8, 2014



For the 2014-2015 influenza season, CDC/Influenza Division and the National Center for Health Statistics (NCHS) are collaborating on a pilot project to use NCHS mortality surveillance data for the rapid assessment of pneumonia and influenza (P&I) mortality. To view the data, please click [here](#).

Influenza-Associated Pediatric Mortality: No influenza-associated pediatric deaths were reported to CDC during week 45. To date, one influenza-associated pediatric death has been reported for the 2014-2015 season.

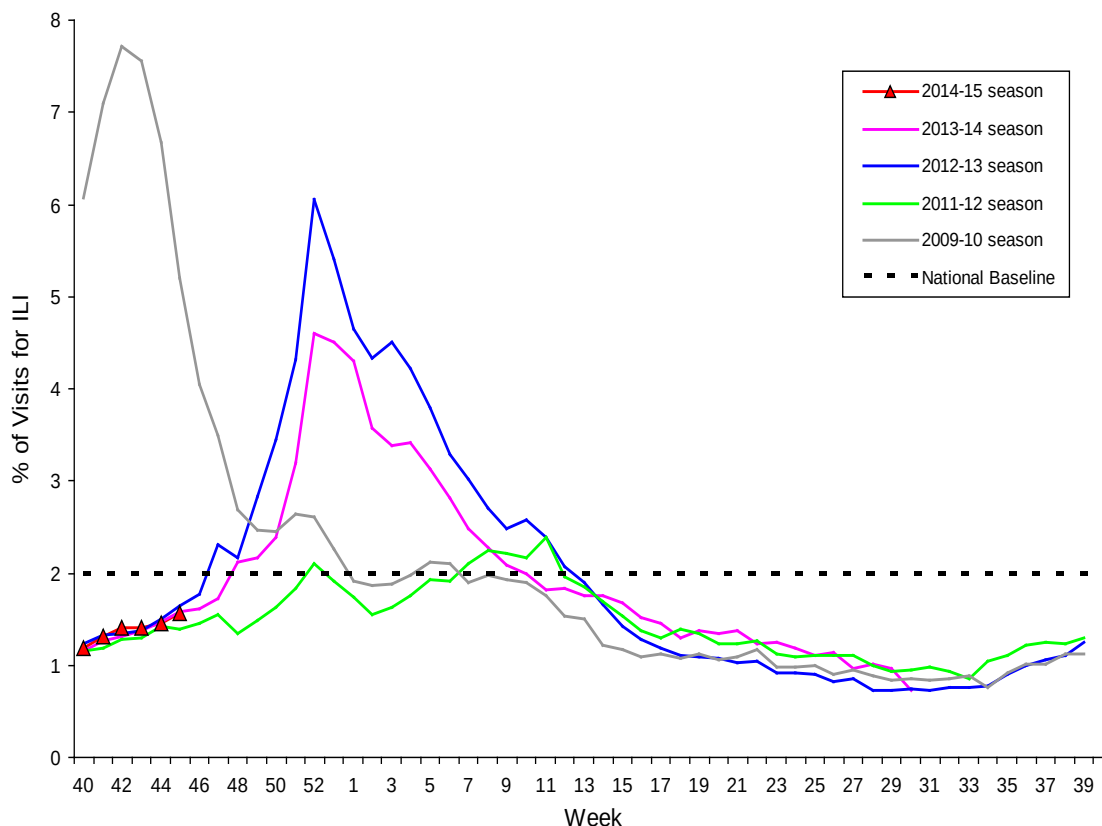
Number of Influenza-Associated Pediatric Deaths by Week of Death: 2011-2012 season to present



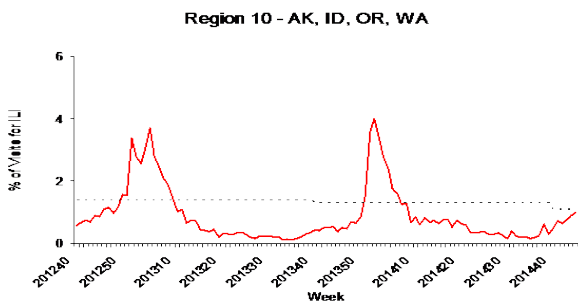
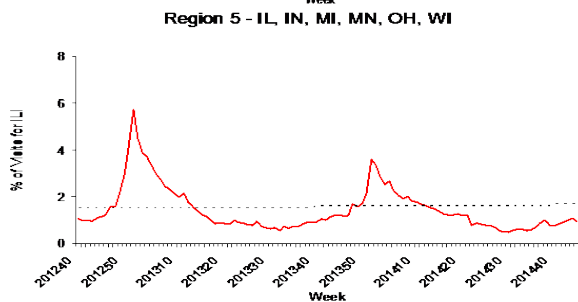
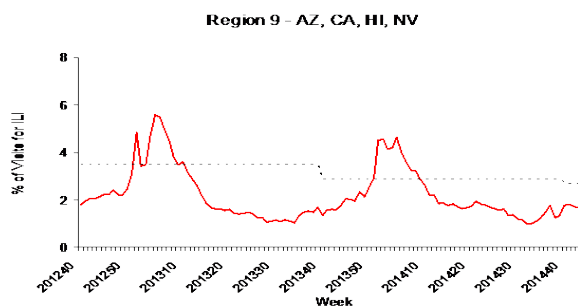
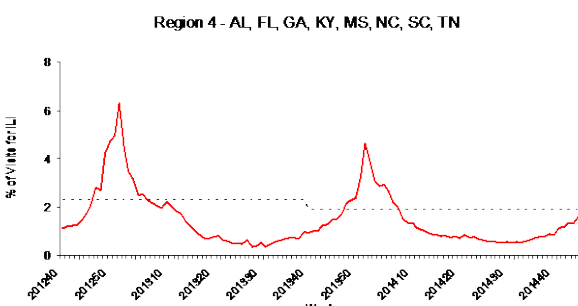
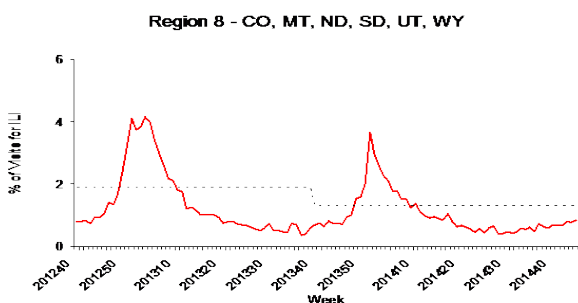
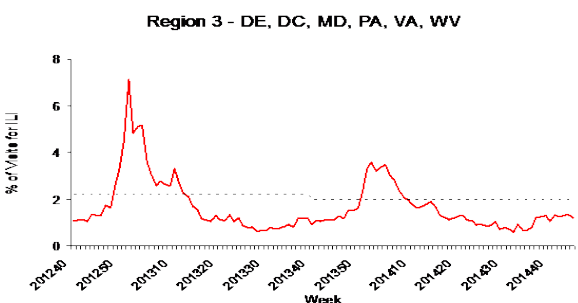
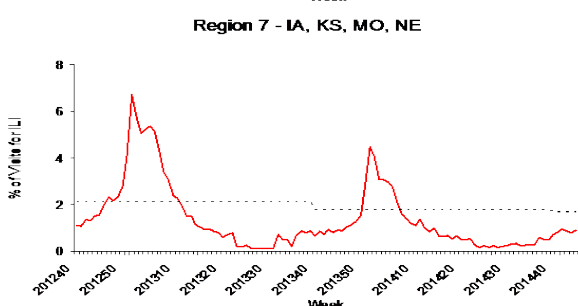
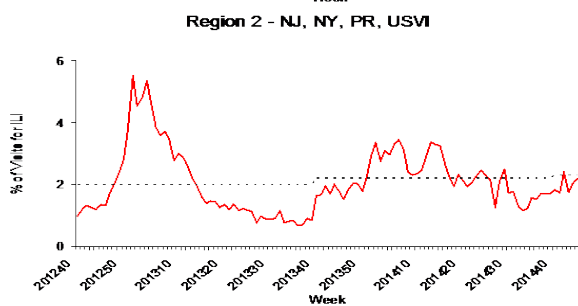
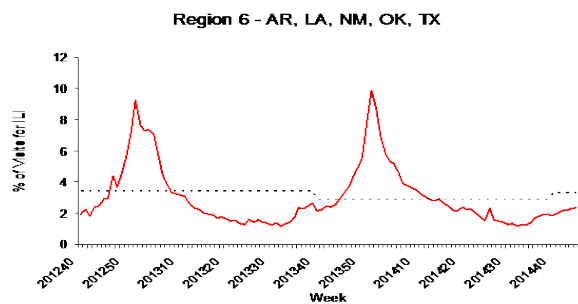
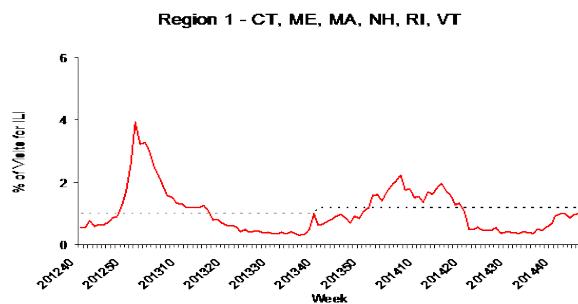
Influenza-Associated Hospitalizations: The Influenza Hospitalization Surveillance Network (FluSurv-NET) conducts all age population-based surveillance for laboratory-confirmed influenza-related hospitalizations in select counties in the Emerging Infections Program (EIP) states and Influenza Hospitalization 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> and <http://gis.cdc.gov/grasp/fluview/FluHospChars.html>.

Outpatient Illness Surveillance: Nationwide during week 45, 1.6% 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 2.0%. (*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, 2014-2015 and Selected Previous Seasons



On a regional level, the percentage of outpatient visits for ILI ranged from 0.8% to 2.3% during week 45. All 10 regions reported a proportion of outpatient visits for ILI below their region-specific baseline levels.



— % ILI

..... Baseline*

NOTE: Scales differ between regions

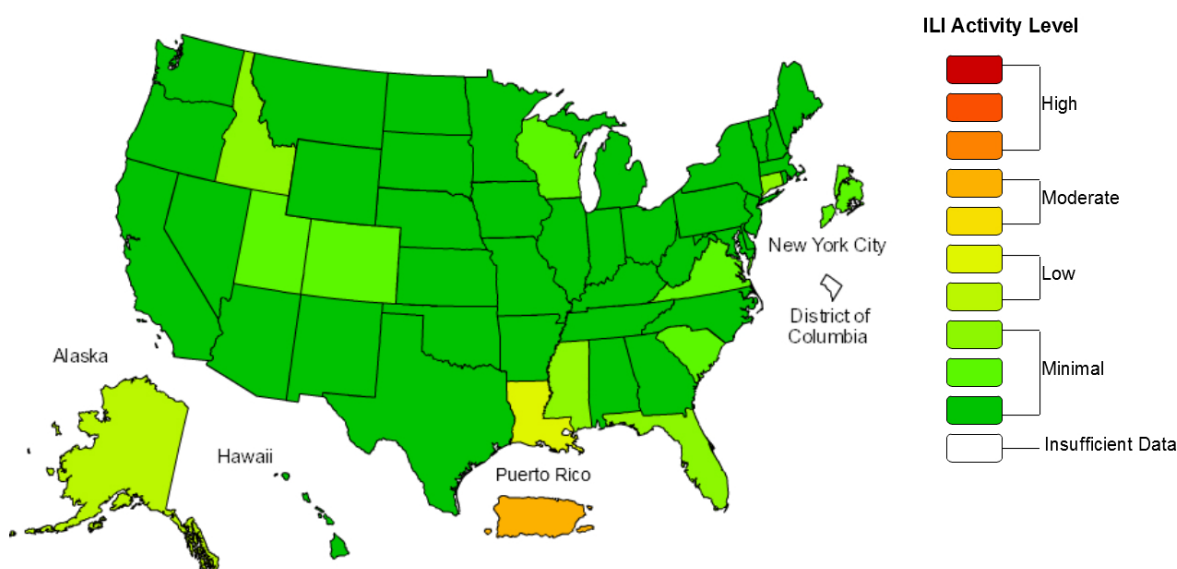
*Use of the regional baselines for state data is not appropriate.

ILINet 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 weeks with little or no influenza virus circulation. Activity levels range from minimal, which would correspond to ILI activity from outpatient clinics being below, or only slightly above, the average, to high, which would correspond to ILI activity from outpatient clinics being much higher than average.

During week 45, the following ILI activity levels were experienced:

- Puerto Rico experienced moderate ILI activity.
- Two states (Alaska and Louisiana) experienced low ILI activity.
- New York City and 48 states (Alabama, 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) experienced minimal ILI activity.
- 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
2014-15 Influenza Season Week 45 ending Nov 08, 2014



*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.

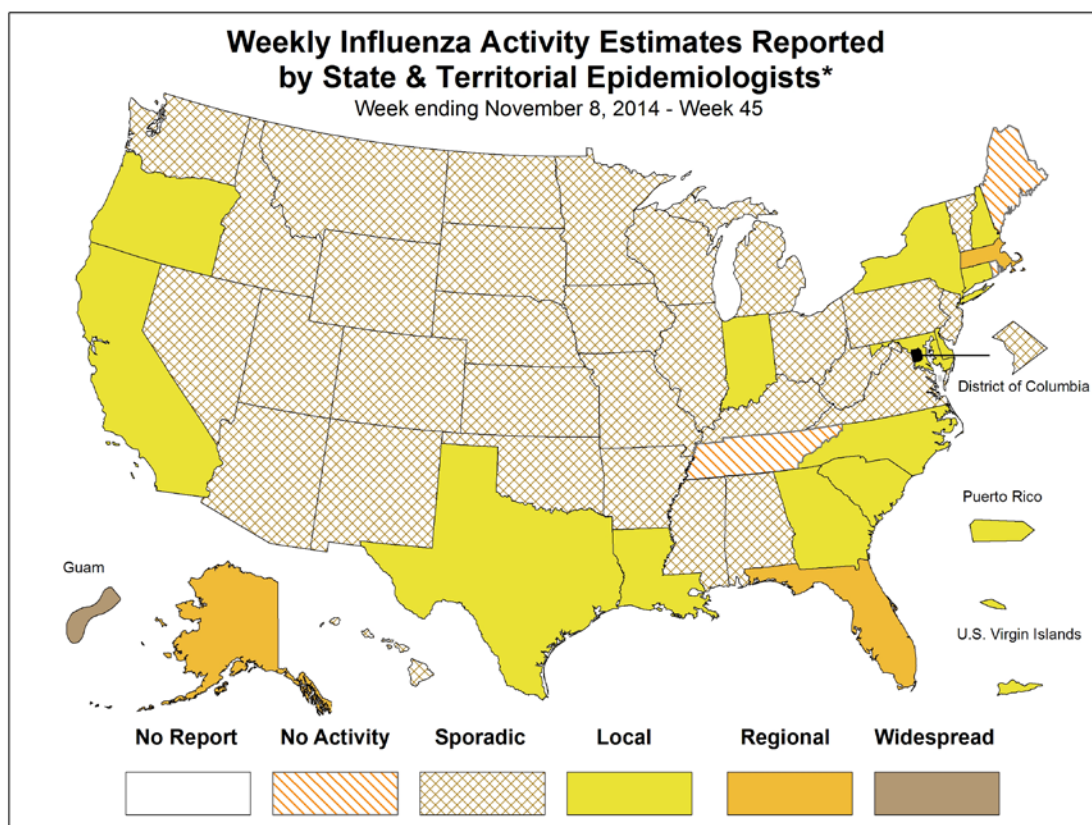
Data collected in ILINet may disproportionately represent certain populations within a state, and therefore, may not accurately depict the full picture of influenza activity for the whole state.

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 severity of influenza activity.

During week 45, the following influenza activity was reported:

- Widespread influenza activity was reported by Guam.
- Regional influenza activity was reported by three states (Alaska, Florida, and Massachusetts).
- Local influenza activity was reported by Puerto Rico, the U.S. Virgin Islands, and 13 states (California, Connecticut, Delaware, Georgia, Indiana, Louisiana, Maryland, New Hampshire, New York, North Carolina, Oregon, South Carolina, and Texas).
- Sporadic influenza activity was reported by the District of Columbia and 31 states (Alabama, Arizona, Arkansas, Colorado, Hawaii, Illinois, Indiana, Iowa, Kansas, Kentucky, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, Nevada, New Jersey, New Mexico, North Dakota, Ohio, Oklahoma, Pennsylvania, South Dakota, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, and Wyoming).
- No influenza activity was reported by three states (Maine, Rhode Island, and Tennessee).



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

Additional National and International Influenza Surveillance Information

FluView Interactive: FluView includes enhanced web-based interactive applications that can provide dynamic visuals of the influenza data collected and analyzed by CDC. These FluView Interactive applications allow people to create customized, visual interpretations of influenza data, as well as make comparisons across flu seasons, regions, age groups and a variety of other demographics. To access these tools, visit www.cdc.gov/flu/weekly/fluviewinteractive.htm.

U.S. State and local influenza surveillance: Click on a jurisdiction below to access the latest local influenza information.

Alabama	Alaska	Arizona	Arkansas	California
Colorado	Connecticut	Delaware	District of Columbia	Florida
Georgia	Hawaii	Idaho	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	South Dakota	Tennessee	Texas	Utah
Vermont	Virginia	Washington	West Virginia	Wisconsin
Wyoming	New York City	Virgin Islands		

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 United States and worldwide, see <http://www.google.org/flutrends/>.

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

WHO Collaborating Centers for Influenza located in [Australia](#), [China](#), [Japan](#), the [United Kingdom](#), and the [United States](#) (CDC in Atlanta, Georgia).

Europe: WHO/Europe at <http://www.euroflu.org/index.php> and 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/>.

Public Health England: The most up-to-date influenza information from the United Kingdom is available at <https://www.gov.uk/government/statistics/weekly-national-flu-reports>.

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An overview of influenza surveillance, including a description of the NCHS mortality surveillance data, is available at: <http://www.cdc.gov/flu/weekly/overview.htm>

Report prepared: November 14, 2014.