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Seasonal Influenza (Flu)

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2010-2011 Influenza Season Week 49 ending December 11, 2010

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

Synopsis:

During week 49 (December 5-11, 2010), influenza activity in the United States increased.

- Of the 3,295 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, 363 (11.0%) were positive for influenza.
- One human infection with a novel influenza A virus was reported.
- The proportion of deaths attributed to pneumonia and influenza (P&I) was below the epidemic threshold.
- One influenza-associated pediatric death was reported and was associated with Influenza A (H3) virus infection.
- The proportion of outpatient visits for influenza-like illness (ILI) was 1.8%, which is below the national baseline of 2.5%. All 10 regions reported ILI below region-specific baseline levels; two states (Alabama and Georgia) experienced high ILI activity, New York City and three states experienced low ILI activity, 45 states experienced minimal ILI activity, and the District of Columbia had insufficient data.
- The geographic spread of influenza in Puerto Rico and four states (Georgia, Kentucky, Mississippi, and Nevada) was reported as regional, 20 states reported local activity; the District of Columbia, the U.S. Virgin Islands, and 21 states reported sporadic activity, and Guam and five states reported no influenza activity.

National and Regional Summary of Select Surveillance Components

HHS Surveillance Regions*	Data for current week			Data cumulative since October 3, 2010 (Week 40)				
	Out-patient ILI†	% positive for flu‡	Number of jurisdictions reporting regional or widespread activity§	A (H3)	2009 A (H1N1)	A(Subtyping not performed)	B	Pediatric Deaths
Nation	Normal	11.0%	5 of 54	679	126	793	1,209	2
Region 1	Normal	7.2%	0 of 6	41	4	2	1	0
Region 2	Normal	5.4%	1 of 4	35	1	61	3	1
Region 3	Normal	5.8%	0 of 6	63	25	7	7	0
Region 4	Normal	19.5%	3 of 8	179	40	525	1,034	0
Region 5	Normal	9.2%	0 of 6	76	4	3	6	0
Region 6	Normal	5.8%	0 of 5	49	5	91	59	1
Region 7	Normal	2.5%	0 of 4	4	3	14	7	0
Region 8	Normal	8.6%	0 of 6	153	17	62	11	0
Region 9	Normal	4.8%	1 of 5	57	26	22	77	0
Region 10	Normal	4.1%	0 of 4	22	1	6	4	0

*HHS regions (Region 1 CT, ME, MA, NH, RI, VT; Region 2: NJ, NY, Puerto Rico, US 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 U.S. Virgin Islands

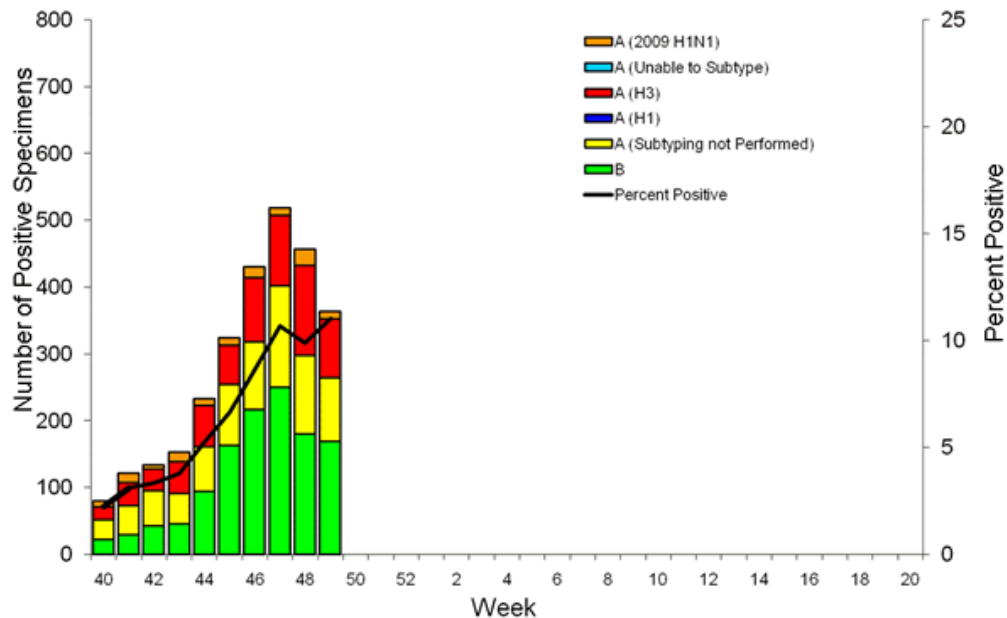
U.S. Virologic Surveillance:

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 type and subtype. The results of tests performed during the current week are summarized in the table below.

	Week 49
No. of specimens tested	3,295
No. of positive specimens (%)	363 (11.0%)
Positive specimens by type/subtype	
Influenza A	194 (53.4%)
A (2009 H1N1)	11 (5.7%)
A (subtyping not performed)	95 (49.0%)
A (H3)	88 (45.4%)
Influenza B	169 (46.4%)

The District of Columbia and 48 states from all 10 surveillance regions have reported laboratory-confirmed influenza this season. Region 4 in the Southeastern United States has accounted for 1,778 (63.3%) of all 2,807 reported influenza viruses this season, including 1,034 (85.5%) of the 1,209 influenza B viruses.

Influenza Positive Tests Reported to CDC by U.S. WHO/NREVSS Collaborating Laboratories, National Summary, 2010-11



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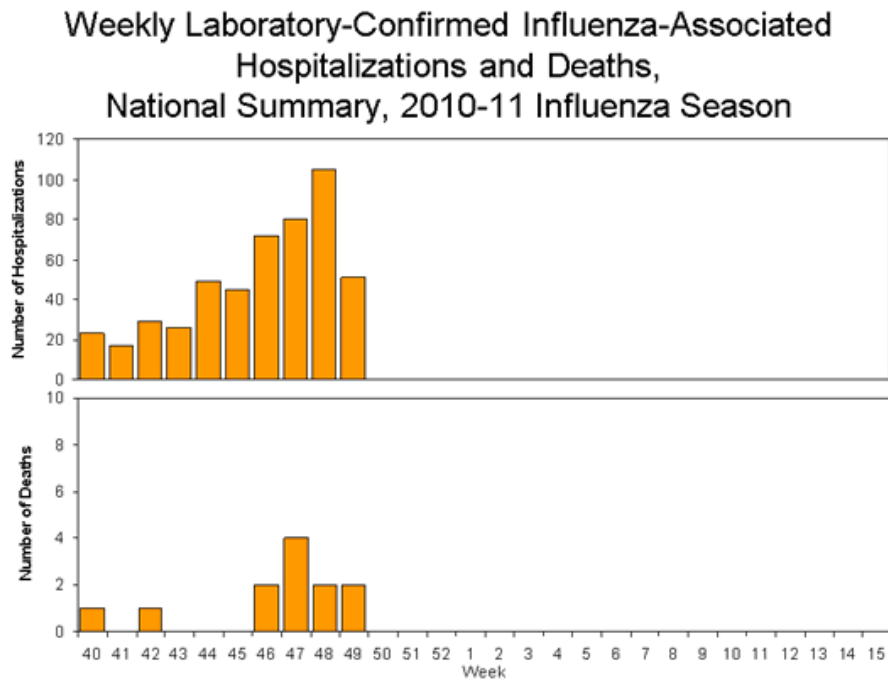
Novel Influenza A Virus:

One case of human infection with a novel influenza A virus was reported by the Minnesota Department of Health. The patient became ill with a swine origin influenza A (H3N2) virus infection in November. Five other human illnesses from swine origin influenza A (H3N2) viruses have been previously identified in 2009 and 2010. The case reported contact with pigs in the week preceding symptom onset. The patient required hospitalization, but has since recovered.

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. Surveillance for human infections with novel influenza A viruses continues year round. For additional information on this case and swine influenza, see http://www.cdc.gov/flu/swineflu/soiv_cases.htm.

Aggregate Hospitalization and Death Reporting Activity (AHDRA):

This system tracks weekly counts of laboratory-confirmed influenza-associated hospitalizations and deaths and was implemented on August 30, 2009, during the 2009 pandemic, and ended on April 4, 2010. AHDRA surveillance during the 2010-11 season is being continued on a voluntary basis and 19 jurisdictions reported during week 49. From October 3-December 11, 2010, 497 laboratory-confirmed influenza associated hospitalizations and 12 laboratory-confirmed influenza associated deaths were reported to CDC.



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Antigenic Characterization:

CDC has antigenically characterized 89 influenza viruses [13 2009 influenza A (H1N1) viruses, 26 influenza A (H3N2) viruses, and 50 influenza B viruses] collected by U.S. laboratories since October 1, 2010.

2009 Influenza A (H1N1) [13]

- All 13 were characterized as A/California/7/2009-like, the influenza A (H1N1) component of the 2010-11 influenza vaccine for the Northern Hemisphere.

Influenza A (H3N2) [26]

- All 26 were characterized as A/Perth/16/2009-like, the influenza A (H3N2) component of the 2010-11 influenza vaccine for the Northern Hemisphere.

Influenza B [50]

- All 50 viruses belong to the B/Victoria lineage of viruses and was characterized as B/Brisbane/60/2008-like, the recommended influenza B component for the 2010-11 Northern Hemisphere influenza vaccine.

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 known mutation in the neuraminidase protein of the virus that confers oseltamivir resistance (H275Y). The data summarized below combine the results of both test methods and includes samples that were tested as part of routine surveillance purposes; it does not include diagnostic testing specifically done because of clinical suspicion of antiviral resistance.

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) circulating globally. As a result of the

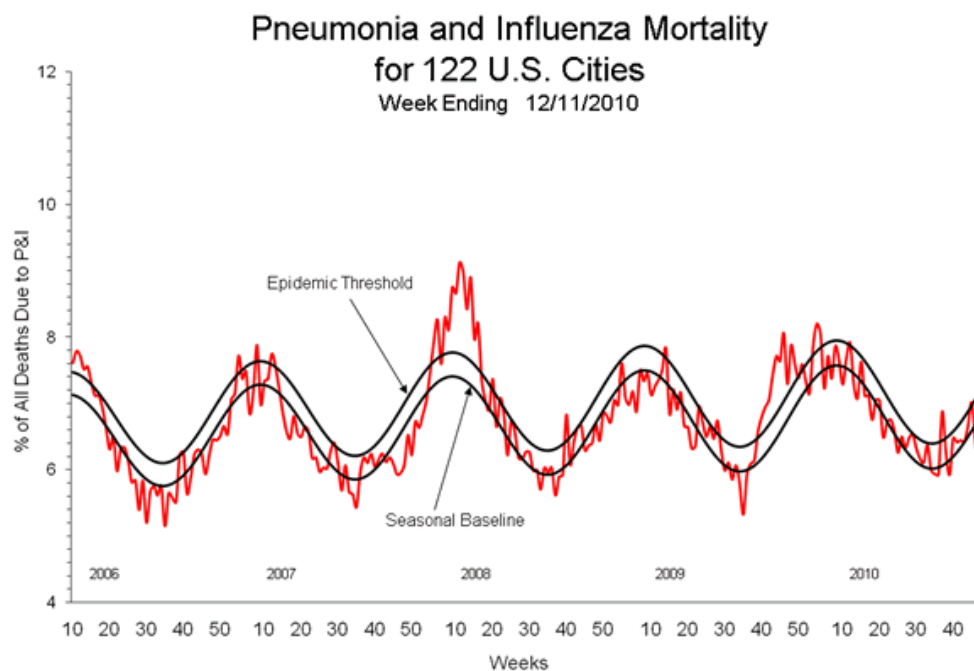
sustained high levels of resistance, data from adamantane resistance testing are not presented weekly in the table below.

	Samples tested (n)	Resistant Viruses, Number (%)	
		Oseltamivir	Zanamivir
Seasonal Influenza A (H1N1)	0	0 (0.0)	0 (0.0)
Influenza A (H3N2)	33	0 (0.0)	0 (0.0)
Influenza B	54	0 (0.0)	0 (0.0)
2009 Influenza A (H1N1)	17	0 (0.0)	0 (0.0)

To prevent the spread of antiviral resistant virus strains, CDC reminds clinicians and the public of the need to continue hand and cough hygiene measures for the duration of any symptoms of influenza, even while taking antiviral medications. Additional information on antiviral recommendations for treatment and chemoprophylaxis of influenza virus infection is available at <http://www.cdc.gov/flu/antivirals/index.htm>.

Pneumonia and Influenza (P&I) Mortality Surveillance

During week 49, 6.9% of all deaths reported through the 122-Cities Mortality Reporting System were due to P&I.; This percentage was below the epidemic threshold of 7.3% for week 49.



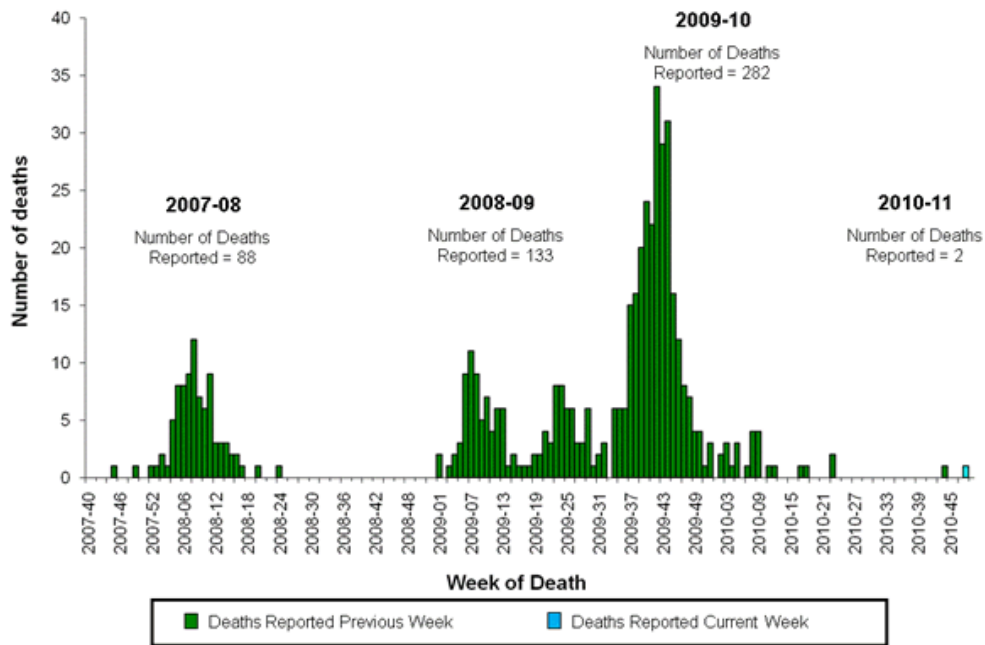
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Influenza-Associated Pediatric Mortality

One influenza-associated pediatric death was reported to CDC during week 49 (New York). This death was associated with an influenza A (H3) virus infection. The death reported this week occurred between November 28, 2010 and December 4, 2010.

Two influenza-associated pediatric deaths occurring during the 2010-2011 season have been reported; one death was associated with influenza A (H3) virus infection and one was associated with an influenza A virus for which the subtype was not determined.

Number of Influenza-Associated Pediatric Deaths by Week of Death: 2007-08 season to present



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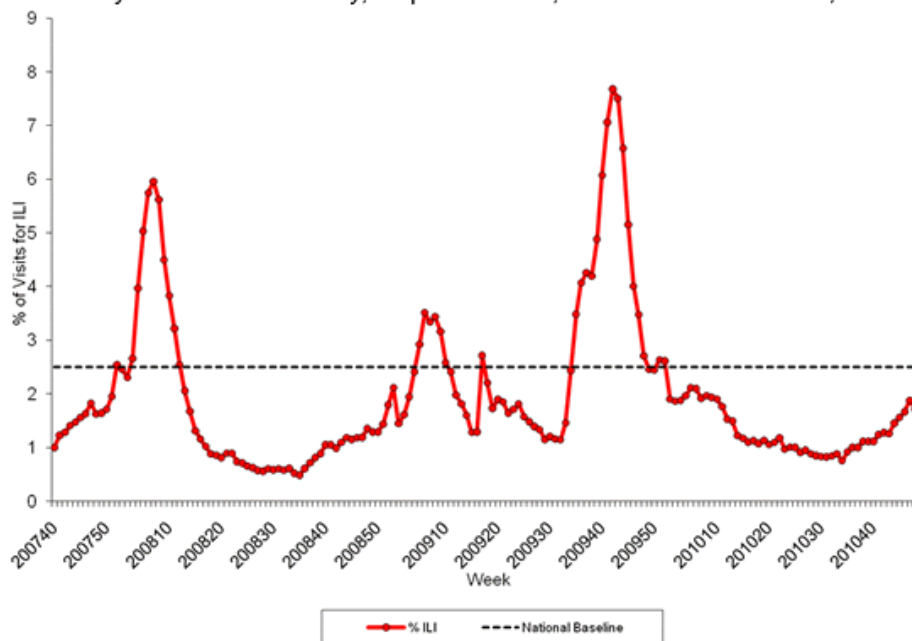
Influenza-Associated Hospitalizations

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

Outpatient Illness Surveillance:

Nationwide during week 49, 1.8% 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 2.5%.

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, 2007 – December 11, 2010



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On a regional level, the percentage of outpatient visits for ILI ranged from 0.4% to 3.2% during week 49. All 10 regions reported a proportion of outpatient visits for ILI below their region-specific baseline levels.

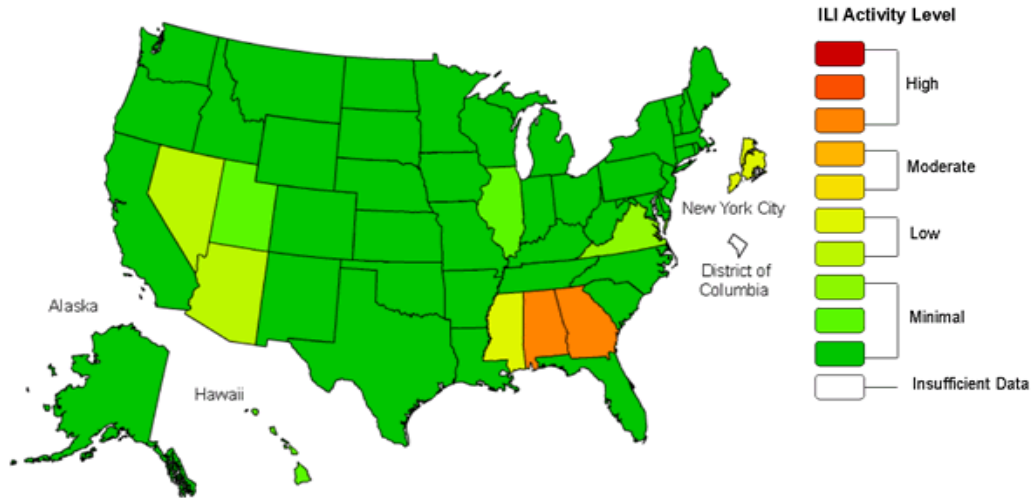
ILINet State Activity Indicator Map:

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 from outpatient clinics being below the average, to high, which would correspond to ILI activity from outpatient clinics being much higher than the 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 clear picture of influenza activity in the United States.

During week 49, the following ILI activity levels were experienced:

- Two states (Alabama and Georgia) experienced high ILI activity.
- New York City and three states (Arizona, Mississippi and Nevada) experienced low ILI activity
- Minimal ILI activity was experienced by 45 states (Alaska, Arkansas, California, Colorado, Connecticut, Delaware, Florida, Hawaii, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Montana, Nebraska, 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).
- The District of Columbia had insufficient data to calculate an ILI activity level

**Influenza-Like Illness (ILI) Activity Level Indicator Determined by Data Reported to ILINet
2010-11 Influenza Season Week 49 ending Dec 11, 2010**



[Click on map to launch interactive tool](#)

*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 are 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 by CDC and 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 49, the following influenza activity was reported:

- Regional influenza activity was reported by Puerto Rico and four states (Georgia, Kentucky, Mississippi, and Nevada).
- Local influenza activity was reported by 20 states (Alabama, Arizona, Connecticut, Florida, Hawaii, Illinois, Iowa, Louisiana, Maryland, Massachusetts, Minnesota, New Jersey, New York, Oklahoma, Pennsylvania, South Carolina, Tennessee, Texas, Utah, and Virginia).
- Sporadic influenza activity was reported by the District of Columbia, the U.S. Virgin Islands and 21 states (Alaska, Arkansas, California, Colorado, Idaho, Indiana, Kansas, Michigan, Missouri, Montana, New Hampshire, New Mexico, North Carolina, North Dakota, Ohio, Rhode Island, South Dakota, Washington, West Virginia, Wisconsin, and Wyoming).
- No influenza activity was reported by Guam and five states (Delaware, Maine, Nebraska, Oregon, and Vermont).

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Additional National and International Influenza Surveillance Information

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 |

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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://isdsdistribute.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 U.S. 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/Activities/Surveillance/EISN/Pages/home.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 at <http://gamapserver.who.int/GlobalAtlas/home.asp>

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

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Page last reviewed: Dec 17, 2010

Page last updated: Dec 17, 2010

Content source: [Centers for Disease Control and Prevention](#)

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