Flu Watch

South Carolina Department of Health and Environmental Control
Division of Acute Disease Epidemiology

Week Ending March 1, 2014 (MMWR Week 9)

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

In this issue:

Summary	2
I. Confirmatory testing	3
II. Rapid antigen tests	6
III. ILINet	8
IV. Hospitalizations and deaths	10
V. SC influenza surveillance components	12
VI. National surveillance	13
VII. Definitions for influenza surveillance	14

MMWR Week 9 at a Glance:

Influenza Activity Synopsis:

Influenza activity in South Carolina continued to decrease. South Carolina reported Regional activity for week 9.

Laboratory surveillance:

- 367 laboratory-confirmed cases of influenza were reported from 31 counties. 33,133 cases have been reported this season, with laboratory-confirmed cases identified in 45 counties.
- 3 (25.0%) of 12 positive confirmatory tests were reported from the BOL last week and 9 (75.0%) positive confirmatory tests were reported from other labs last week; 9 influenza A (H1N1) viruses and 3 influenza A unsubtyped viruses.
- 29,979 (90.5%) of all laboratory-confirmed cases this season are influenza A, 2,384 (7.2%) are influenza B, 600 (1.8%) are influenza A/B, and 170 (0.51%) are of unknown type.

ILI Activity (South Carolina baseline is 2.05%):

- Influenza-like illness activity at sentinel providers was above South Carolina's baseline (2.42%). ILI percentages represent ILI activity reported by sentinel providers; however, a small number of providers reported data for this week, so ILI percentages may not be representative of actual flu activity.

Hospitalizations:

- 27 lab confirmed hospitalizations were reported. Since 9/29/13, 1696 lab confirmed hospitalizations have been reported.

Deaths:

- 1 lab confirmed death was reported. Since 9/29/13, 70 lab confirmed deaths have been reported.

Summary of ILI Activity, Positive Confirmatory Tests, and Influenza Associated Hospitalizations and Deaths, 2009-10 through 2013-14 Seasons					
Corresponding MMWR week during each season	***2013-14***	***2012-13***	***2011-12***	***2010-11***	***2009-10***
Influenza activity level	**REGIONAL**	**REGIONAL**	**REGIONAL**	**WIDESPREAD**	**REGIONAL**
Positive confirmatory tests (current week)	**12**	**39**	**9**	**68**	**25**
Positive confirmatory tests (cumulative)	**652**	**989**	**42**	**542**	**822**
Total number of patient visits for ILI	**192**	**75**	**37**	**214**	**95**
ILI percentage	**2.42%**	**0.99%**	**0.93%**	**3.31%**	**1.11%**
Hospitalizations	**27**	**12**	**8**	**58**	**9**
Deaths	**1**	**2**	**0**	**4**	**1**

Positive Confirmatory Tests MMWR Week 201409* Compared to Previous Week and Season		
	Cumulative season total through MMWR week 9	**Current MMWR week (9) total**
2012-2013	989	39
2013-2014	652	12
% Change from previous week	+2.03%	-45.5%
% Change 2013-14 compared to 2012-13 season	-34.1%	-69.2%
4 year average (2010-11 to 2013-14)	556	32

*Includes culture, PCR, IFA, DFA

I. Confirmatory testing

*Positive confirmatory influenza test results** *Current MMWR Week (2/23/14 – 3/1/14)*	
	BOL and reference labs
Number of positive confirmatory tests	12
Influenza A unsubtyped	3 25.0%)
Influenza A H1N1	9 (75.0%)
Influenza A H3N2	
Influenza B	
Unk/Other	
Includes culture, RT-PCR, DFA, and IFA	

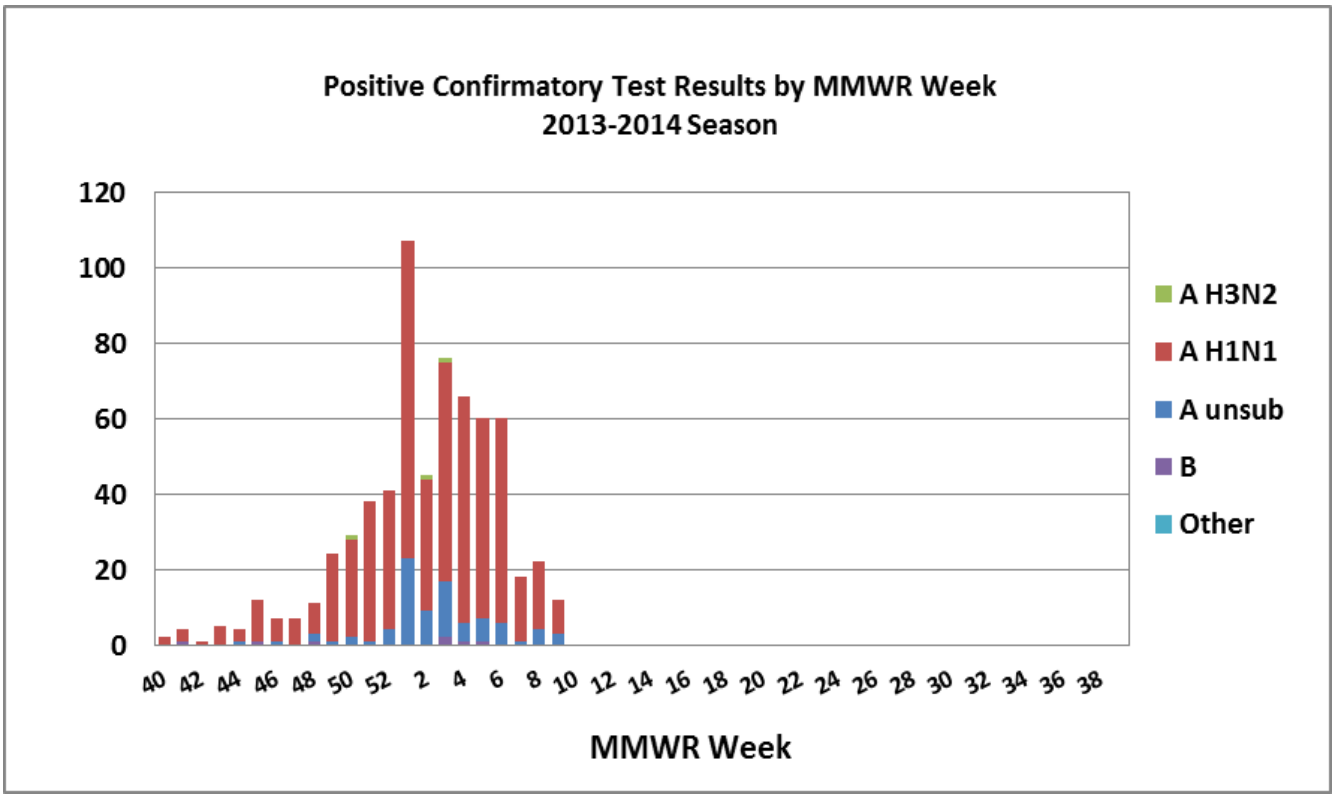
For the current MMWR reporting week, 12 positive confirmatory tests were reported. So far this season 652 positive confirmatory tests have been reported.

*Positive confirmatory influenza test results** *Cumulative (09/29/13 – 3/1/14)*	
	BOL and reference labs
Number of positive confirmatory tests	652
Influenza A unsubtyped	84 (12.9%)
Influenza A H1N1	557 (85.4%)
Influenza A H3N2	3 (0.46%)
Influenza B	7 (1.1%)
Other	1 (0.15%)
Includes culture, RT-PCR, DFA, and IFA	

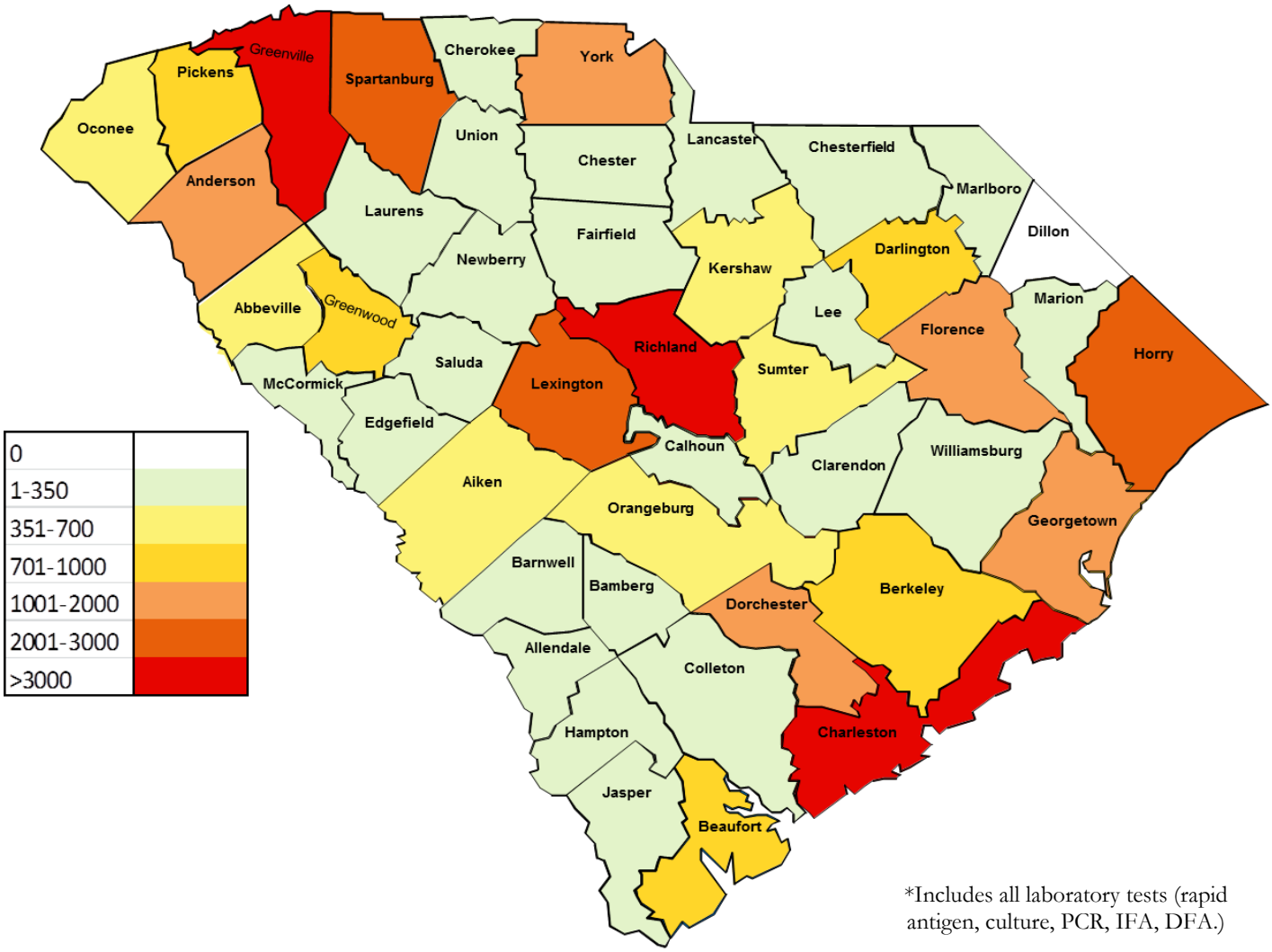
Positive Confirmatory Tests by County*
Current Week 2/23/14 – 3/1/14

County	Positive Tests	County	Positive Tests	County	Positive Tests
Abbeville		Dillon		Marion	
Aiken	2	Dorchester	1	Marlboro	
Allendale		Edgefield		McCormick	
Anderson	2	Fairfield		Newberry	
Bamberg		Florence		Oconee	
Barnwell		Georgetown		Orangeburg	
Beaufort	2	Greenville		Pickens	
Berkeley		Greenwood		Richland	1
Calhoun		Hampton		Saluda	
Charleston	1	Horry	1	Spartanburg	1
Cherokee		Jasper		Sumter	
Chester		Kershaw		Union	
Chesterfield		Lancaster	1	Williamsburg	
Clarendon		Laurens		York	
Colleton		Lee		Unknown	
Darlington		Lexington			

*Includes culture, PCR, DFA, IFA



Map of all Laboratory Confirmed Cases* by County
Cumulative 09/29/13 – 3/1/14

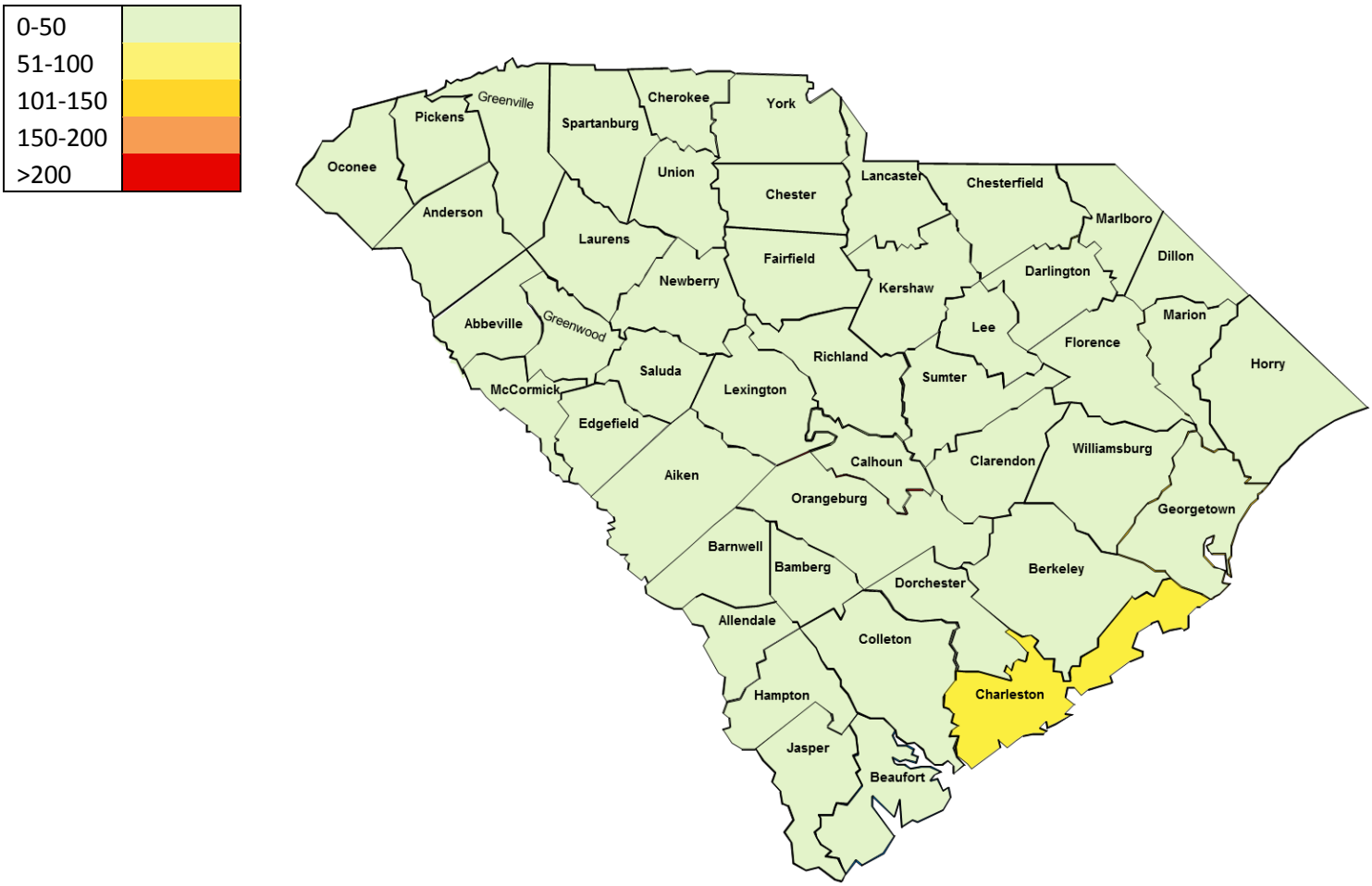


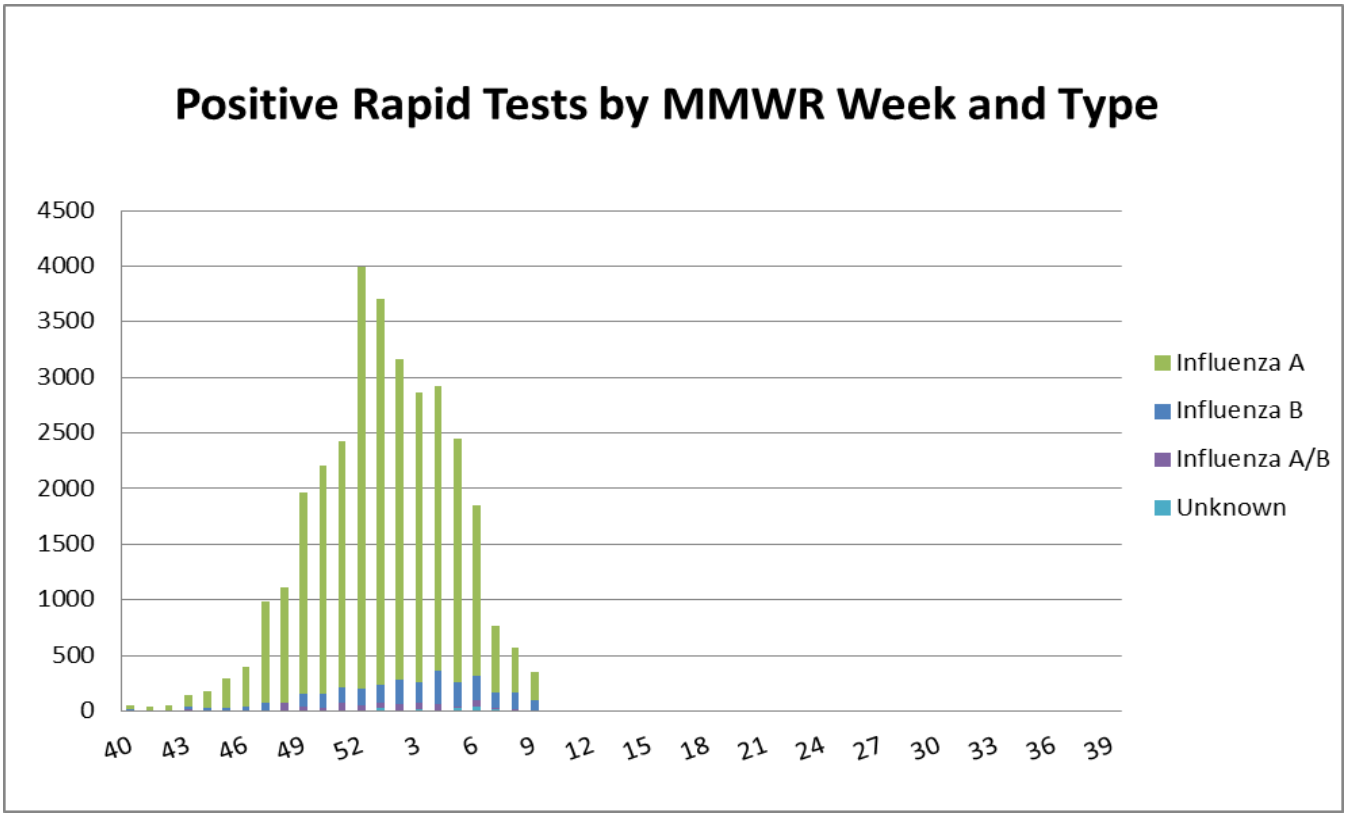
*Includes all laboratory tests (rapid antigen, culture, PCR, IFA, DFA.)

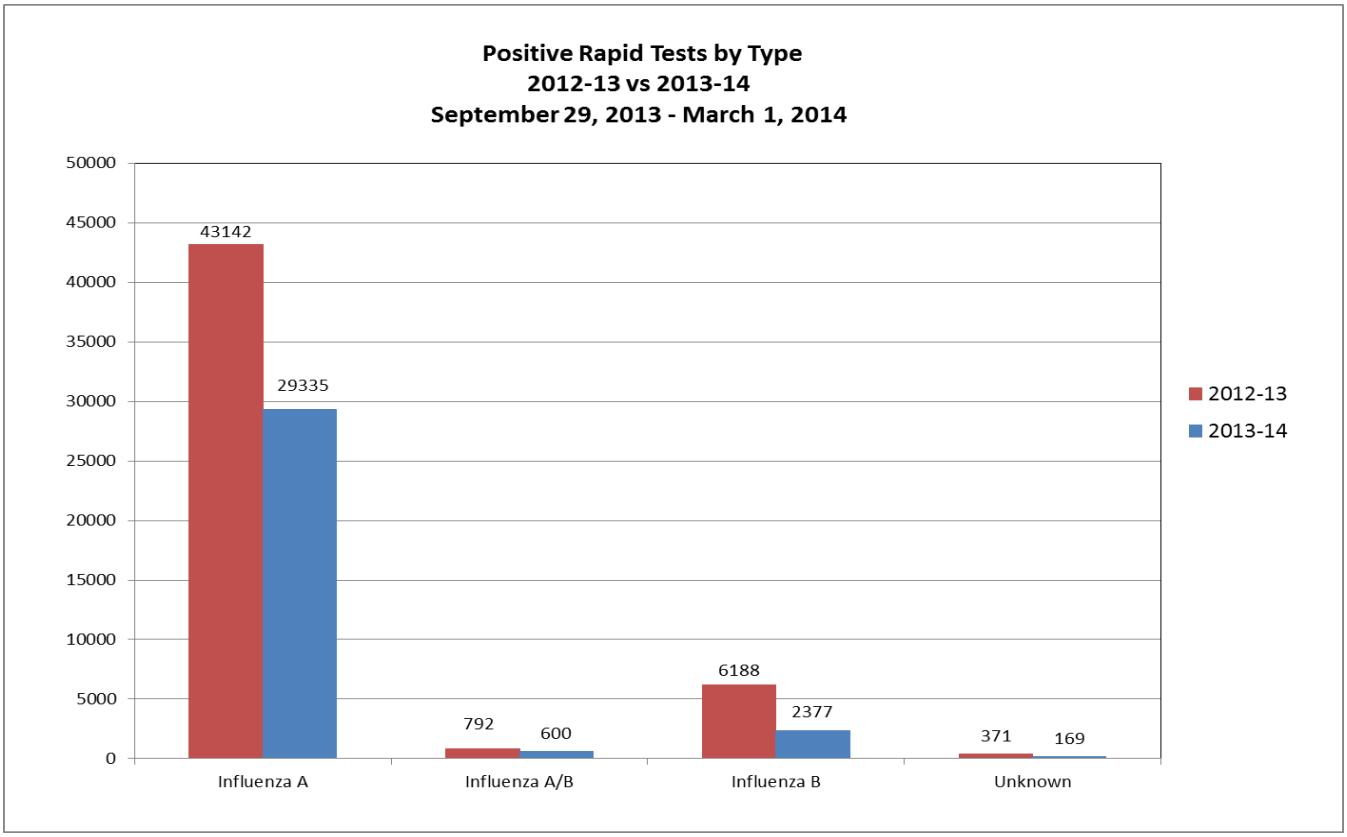
II. Positive Rapid Antigen Tests

For the current MMWR reporting week, 355 positive rapid antigen tests were reported. Of these, 255 were influenza A, 4 were influenza A/B, 92 were influenza B, and 4 were unknown. This compares to 1098 this time last year.

Map of Positive Rapid Influenza Tests by County
(2/23/14 - 3/1/14)

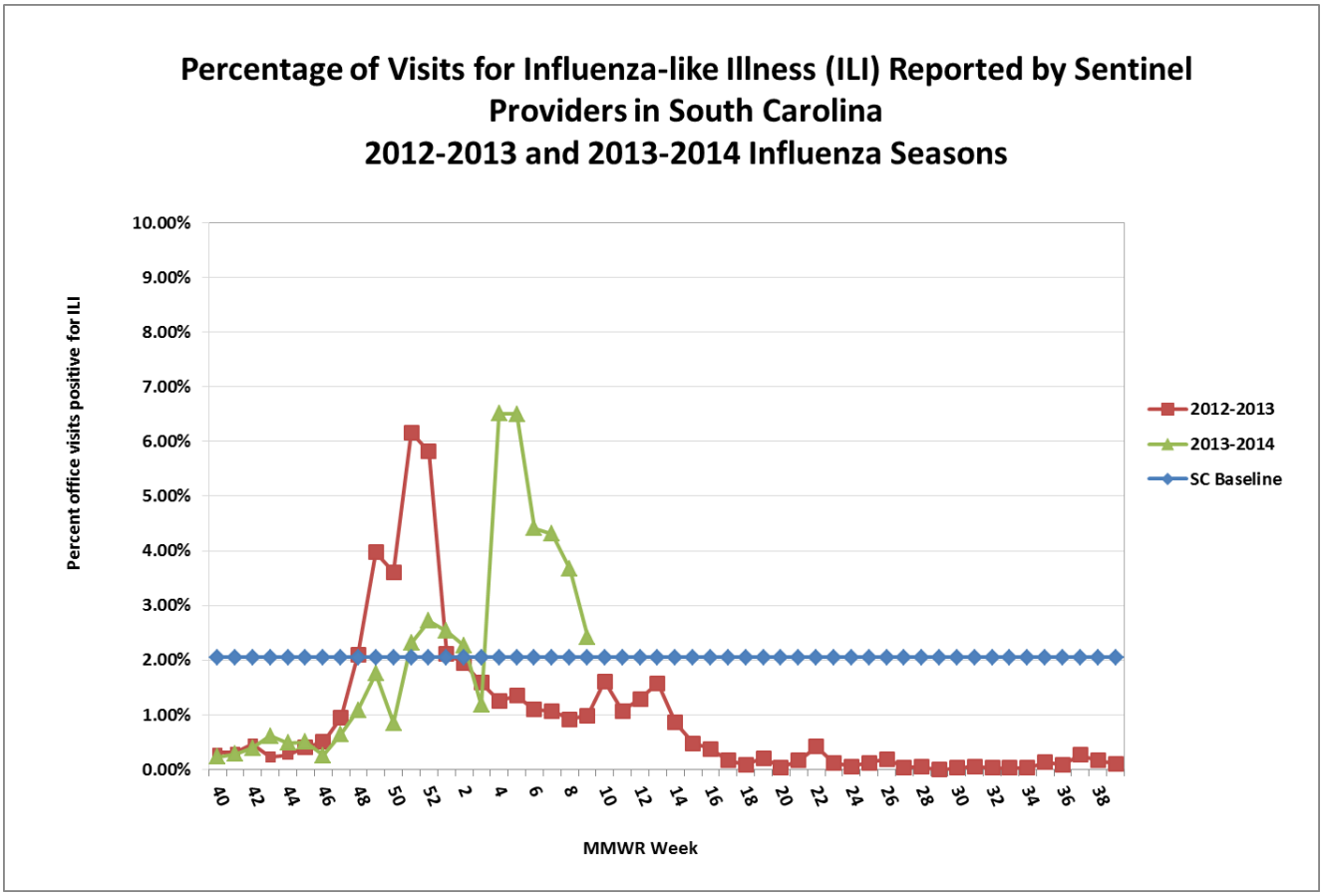



Positive Rapid Tests by MMWR Week and Type
4500
4000
3500
3000
2500
2000
1500
1000
500
0
40
43
46
49
52
3
6
9
12
15
18
21
24
27
30
33
36
39
Influenza A
Influenza B
Influenza A/B
Unknown


Positive Rapid Tests by Type
2012-13 vs 2013-14
September 29, 2013 - March 1, 2014
50000
45000
40000
35000
30000
25000
20000
15000
10000
5000
0
43142
29335
792
600
6188
2377
371
169
Influenza A
Influenza A/B
Influenza B
Unknown
2012-13
2013-14

III. ILINet Influenza-Like Illness Surveillance

During the most recent MMWR week, 2.42 % of patient visits to SC ILINet providers were due to ILI. This is above the state baseline **(2.05%)**. This ILI percentage compares to 0.99% this time last year. Reports were received from providers in 11 counties, representing all 4 of the 4 regions.



*The SC baseline is the mean percentage of patient visits for ILI during non-influenza weeks (weeks when percent of positive lab tests was below 20%) for the previous three seasons plus two standard deviations.

Influenza-Like Illness Reported by Sentinel Providers
February 23, 2014 – March 1, 2014

County	ILI %	County	ILI %
Abbeville	---	Greenwood	NR
Aiken	0%	Hampton	NR
Allendale	---	Horry	NR
Anderson	0%	Jasper	NR
Bamberg	---	Kershaw	NR
Barnwell	---	Lancaster	---
Beaufort	NR	Laurens	NR
Berkeley	NR	Lee	---
Calhoun	---	Lexington	NR
Charleston	8.50%	Marion	---
Cherokee	---	Marlboro	---
Chester	---	McCormick	0%
Chesterfield	---	Newberry	---
Clarendon	---	Oconee	---
Colleton	---	Orangeburg	---
Darlington	---	Pickens	0%
Dillon	NR	Richland	0.22%
Dorchester	NR	Saluda	0%
Edgefield	---	Spartanburg	0%
Fairfield	---	Sumter	NR
Florence	0.11%	Union	---
Georgetown	NR	Williamsburg	---
Greenville	0.28%	York	1.53%

NR: No reports received
---: No enrolled providers

IV. Influenza hospitalizations and deaths

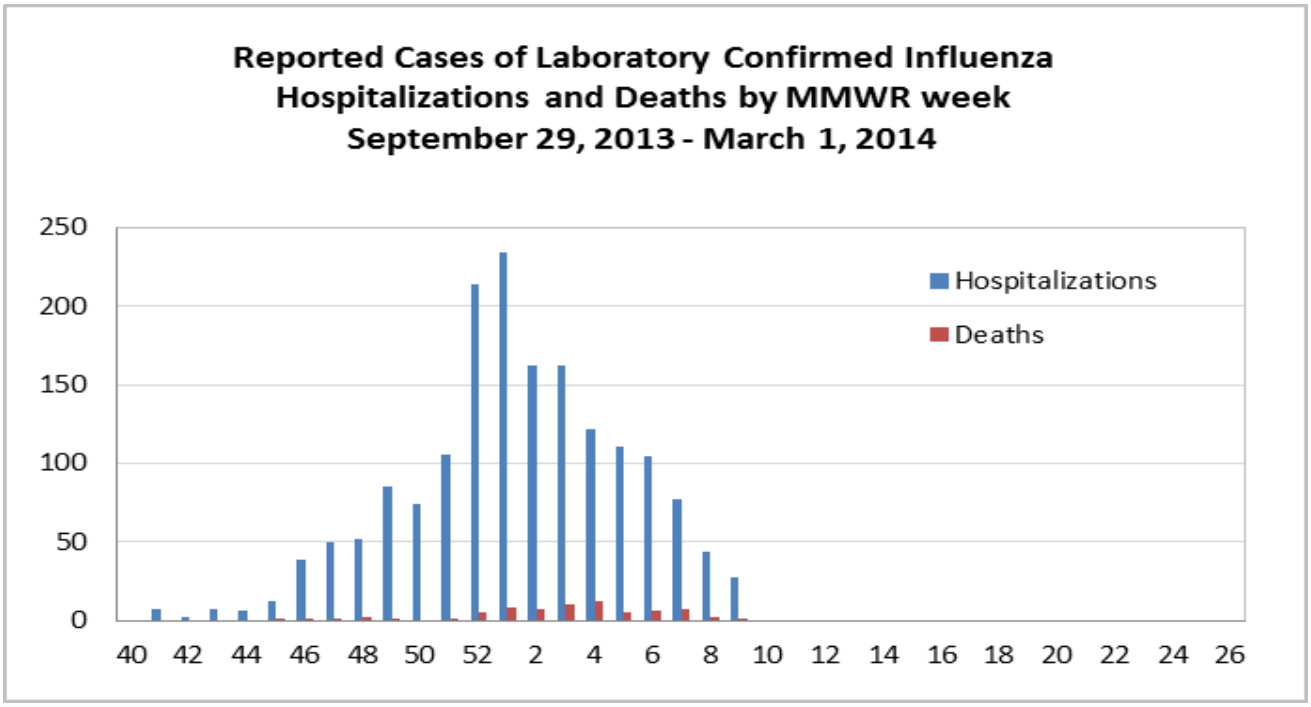
For the current MMWR reporting week, 27 lab confirmed influenza hospitalizations were reported by 51 hospitals. One lab confirmed influenza death was reported. 1696 lab confirmed influenza hospitalizations and 70 lab confirmed influenza deaths have been reported since 9/29/13. *

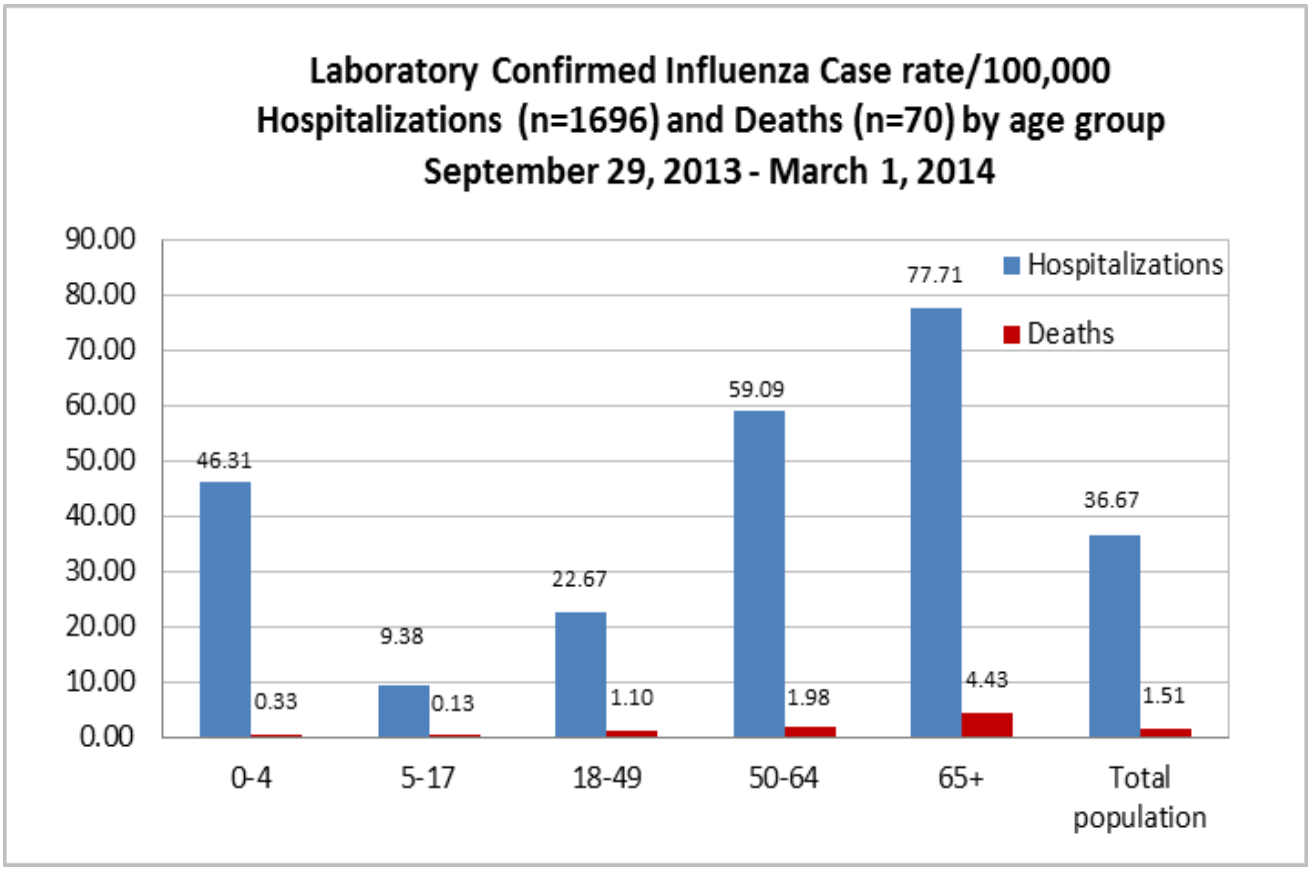
Current MMWR Week (2/23/14 -3/1/14)							
	0-4	**5-17**	**18-49**	**50-64**	**65+**	**Unk**	**Total**
Hospitalizations	3	1	8	8	7		27
Deaths					1		1

Cumulative (9/29/13 -3/1/14)							
	0-4	**5-17**	**18-49**	**50-64**	**65+**	**Unk**	**Total**
Hospitalizations	140	73	454	538	491		1696
Deaths	1	1	22	18	28		70

*** Lab confirmation for hospitalizations and deaths includes culture, PCR, DFA, IFA, and rapid test.**

Influenza Deaths by SC Public Health Region	
Region	**Total Deaths**
Lowcountry	16
Midlands	17
Pee Dee	10
Upstate	27
Total	70


Reported Cases of Laboratory Confirmed Influenza
Hospitalizations and Deaths by MMWR week
September 29, 2013 - March 1, 2014
250
200
150
100
50
0
40 42 44 46 48 50 52 2 4 6 8 10 12 14 16 18 20 22 24 26
Hospitalizations
Deaths


Laboratory Confirmed Influenza Case rate/100,000
Hospitalizations (n=1696) and Deaths (n=70) by age group
September 29, 2013 - March 1, 2014
90.00
80.00
70.00
60.00
50.00
40.00
30.00
20.00
10.00
0.00
Hospitalizations
Deaths
46.31
0.33
9.38
0.13
22.67
1.10
59.09
1.98
77.71
4.43
36.67
1.51
0-4
5-17
18-49
50-64
65+
Total population

V. South Carolina Influenza Surveillance Components

South Carolina influenza surveillance consists of mandatory and voluntary reporting systems for year-round influenza surveillance. These networks provide information on influenza virus strain and subtype and influenza disease burden.

Mandatory Reporting

Positive confirmatory test reporting
Positive influenza culture, PCR, DFA, and IFA results from commercial laboratories should be reported to DHEC within 3 days electronically via CHESS or using a DHEC 1129 card.

Positive rapid antigen test reporting
Summary numbers of positive rapid influenza tests and influenza type identified should be sent to the regional health department by fax or email before noon on Monday for the preceding week.

Influenza deaths
All lab confirmed influenza deaths in adults should be reported to DHEC within 24 hours. These include results from viral culture, PCR, rapid flu tests, DFA, IFA or autopsy results consistent with influenza.

Influenza hospitalizations
DHEC requires weekly submission of laboratory confirmed influenza hospitalizations. Hospitals should report these to their regional health department by noon on Monday for the preceding week.

For additional information about ILINet or to become an ILINet provider, contact the Acute Disease Epidemiology influenza surveillance coordinator at **springcb@dhec.sc.gov**.

Voluntary Networks

Influenza-Like Illness (ILINet) Sentinel Providers Network
ILINet focuses on the number of patients presenting with influenza-like symptoms in the absence of another known cause. ILI is defined as fever (temperature $\geq$100°F) plus a cough and/or a sore throat in the absence of another known cause. Providers submit weekly reports to the CDC of the total number of patients seen in a week and the subset number of those patients with ILI symptoms by age group.

South Carolina Disease Alerting, Reporting & Tracking System (SC-DARTS)

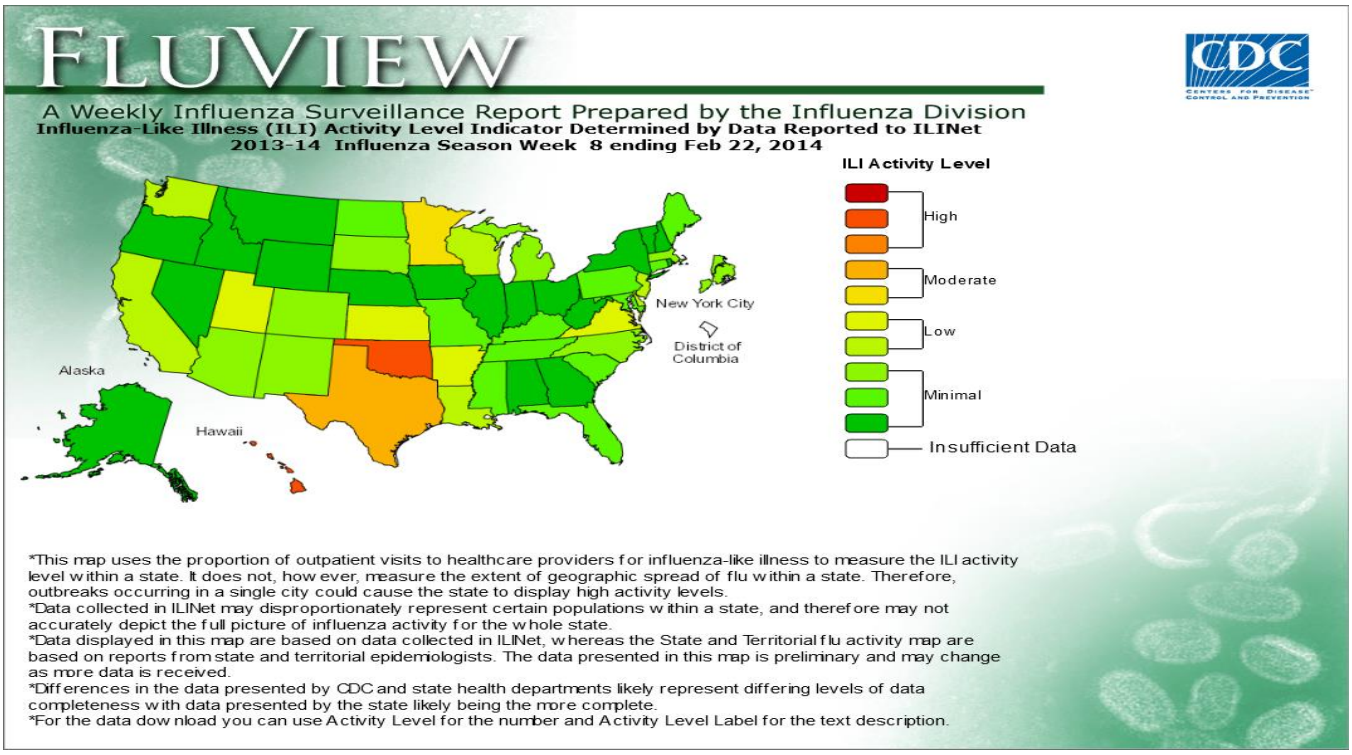
SC-DARTS is a collaborative network of syndromic surveillance systems within South Carolina. Currently our network contains the following data sources: SC Hospital Emergency Department (ED) chief-complaint data, Poison Control Center call data, Over-the-Counter (OTC) pharmaceutical sales surveillance, and CDC's BioSense Biosurveillance system. The hospital ED syndromic surveillance system classifies ED chief complaint data into appropriate syndrome categories (ex: Respiratory, GI, Fever, etc.). These syndrome categories are then analyzed using the cumulative sum (CUSUM) methodology to detect any significant increases. Syndromic reports are distributed back to the hospital on a daily basis.

VI. National Surveillance MMWR Week 8 (2/23- 3/1)

During week 8 (February 16-22, 2014), influenza activity decreased, but remained elevated in the United States.

- **Viral Surveillance:** Of 6,813 specimens tested and reported during week 8 by U.S. World Health Organization (WHO) and National Respiratory and Enteric Virus Surveillance System (NREVSS) collaborating laboratories, 738 (10.8%) were positive for influenza.
- **Pneumonia and Influenza Mortality:** The proportion of deaths attributed to pneumonia and influenza (P&I) was above the epidemic threshold.
- **Influenza-Associated Pediatric Deaths:** Nine influenza-associated pediatric deaths were reported.
- **Influenza-associated Hospitalizations:** A season-cumulative rate of 27.4 laboratory-confirmed influenza-associated hospitalizations per 100,000 population was reported.
- **Outpatient Illness Surveillance:** The proportion of outpatient visits for influenza-like illness (ILI) was 2.3%, above the national baseline of 2.0%. Eight of 10 regions reported ILI above region-specific baseline levels. Two states experienced high ILI activity; two states experienced moderate ILI activity; 10 states experienced low ILI activity; 36 states and New York City experienced minimal ILI activity, and the District of Columbia had insufficient data.
- **Geographic Spread of Influenza:** The geographic spread of influenza in 10 states was reported as widespread; 22 states reported regional influenza activity; the District of Columbia, Guam and 14 states reported local influenza activity; Puerto Rico and four states reported sporadic influenza activity, and the U.S. Virgin Islands reported no influenza activity.

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



VII. Definitions for Influenza Surveillance

Activity level: Indicator of the geographic spread of influenza activity which is reported to CDC each week.

- ***No activity:*** No increase in ILI activity and no laboratory-confirmed influenza cases.
- ***Sporadic:*** No increase in ILI activity and isolated laboratory-confirmed influenza cases
- ***Local:*** Increased ILI or 2 or more institutional outbreaks in one region and laboratory-confirmed influenza cases within the past 3 weeks in the region with increased ILI or outbreaks
- ***Regional:*** Increased ILI or institutional outbreaks in 2-3 regions and laboratory-confirmed influenza cases within the past 3 weeks in the regions with increased ILI or institutional outbreaks
- ***Widespread:*** Increased ILI and/or institutional outbreaks in at least 4 regions and laboratory confirmed influenza in the state within the past 3 weeks

Confirmatory testing: Influenza testing which is considered to be confirmatory, such as a viral culture or PCR

Influenza-like illness (ILI): Fever (temperature of 100°F [37.8°C] or greater) and cough and/or sore throat

MMWR week: Term for influenza surveillance week. Each week begins on Sunday and ends on Monday. The influenza season begins with MMWR week 40 and ends with MMWR week 39. The 2013-14 influenza season began on September 29, 2013 and will end on September 27, 2014.

Laboratory-confirmation: Positive influenza resulting from one of the following methods:

- DFA
- IFA
- Rapid influenza antigen test
- RT-PCR
- Viral culture