Flu Watch

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

Week Ending January 17, 2015 (MMWR Week 2)
All data are provisional and may change as more reports are received.

MMWR Week 2 at a Glance:

Influenza Activity Synopsis:

During the last MMWR week influenza activity in South Carolina continued to decrease. South Carolina reported WIDESPREAD activity for week 2.

Laboratory surveillance:

- 3,950 laboratory-confirmed cases of influenza were reported from 39 counties. This includes positive rapid tests, cultures, RT-PCRs, DFAs, and IFAs. This compares to 3,306 cases this time last year.
- 42,959 laboratory-confirmed cases have been reported this season, with cases identified in 44 counties. This compares to 27,956 cumulative cases this time last year.
- 39,917 (92.9%) of all laboratory-confirmed cases this season are influenza A, 2,190 (5.1%) are influenza B, 705 (1.6%) are influenza A/B, and 147 (0.34%) are of unknown or other type.

ILI Activity (South Carolina baseline is 2.05%):

- Influenza-like illness activity at sentinel providers was above South Carolina's baseline (6.88%). ILI percentages represent ILI activity reported by sentinel providers; however, due to the number of reporting providers and the definition of ILI, ILI percentages may not be representative of actual flu activity.

Hospitalizations:

- 157 lab confirmed hospitalizations were reported. 2,081 lab confirmed hospitalizations have been reported since 9/28/14.

Deaths:

- 9 lab confirmed deaths were reported. 74 lab confirmed deaths have been reported since 9/28/14.

Summary of ILI Activity, Positive Confirmatory Tests, and Influenza Associated Hospitalizations and Deaths Compared to Previous Week and Season						
	Current week	*Previous week*	*Change from previous week*	*Cumulative* (2014-15)	*Cumulative* (2013-14)	*Cumulative change 2014-15 compared to 2013-14*
Number of positive cultures, RT-PCRs, DFAs, and IFAs	**95**	**66**	▲ **43.9 %**	**605**	**393**	▲ **53.9%**
Number of positive rapid tests	**3,855**	**3,939**	▼ **36.2%**	**42,354**	**27,563**	▲ **53.7%**
Percent of ILI visits reported by ILINet providers	**6.88%**	**9.37%**	▼ **2.49%**	**--**	**--**	**--**
Number of lab confirmed flu hospitalizations	**157**	**233**	▼ **32.6%**	**2,081**	**1,211**	▲ **71.8%**
Number of lab confirmed flu deaths	**9**	**20**	▼ **55.0%**	**74**	**37**	▲ **100%**

I. Confirmatory testing

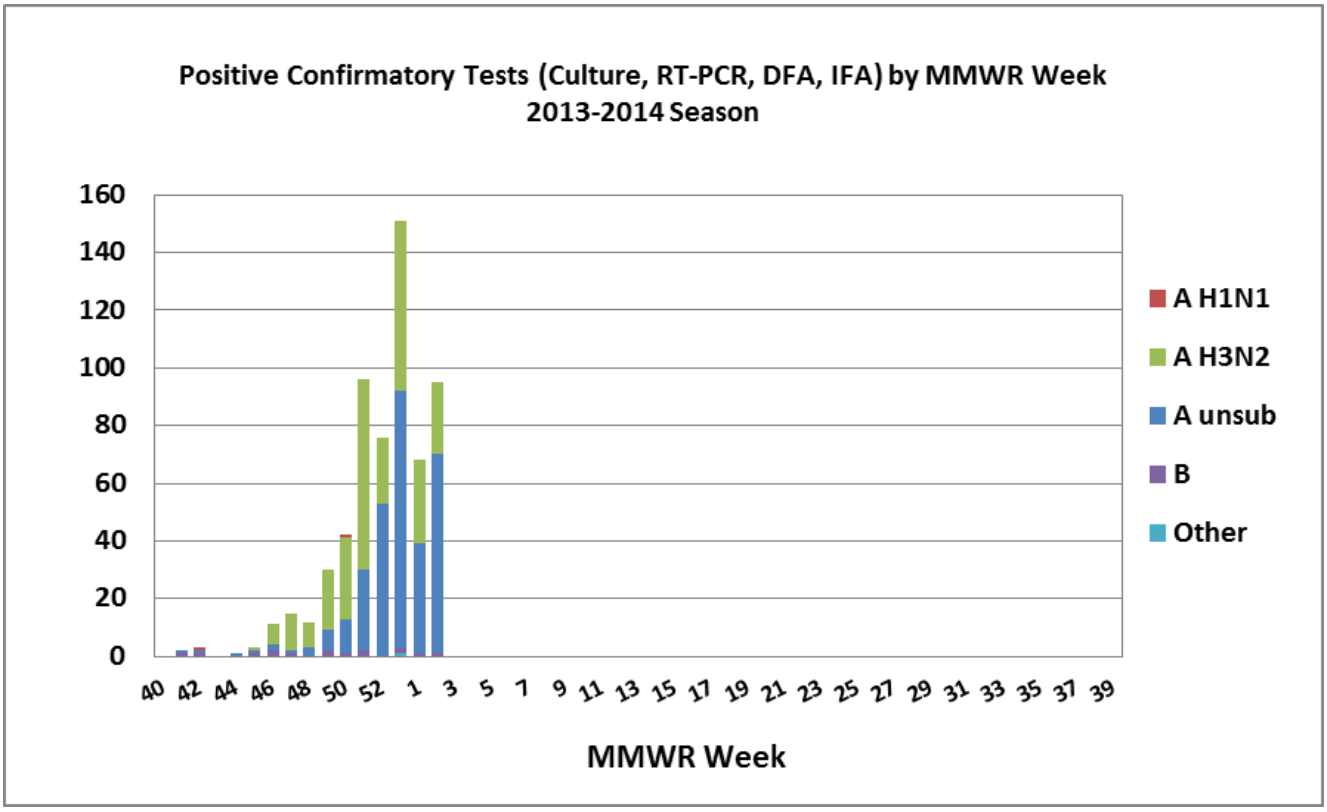
Positive confirmatory influenza test results Current MMWR Week (1/11/15– 1/17/15)	
	BOL and reference labs
Number of positive confirmatory tests	95
Influenza A unsubtyped	69(72.6%)
Influenza A H1N1	
Influenza A H3N2	25(26.3%)
Influenza B	1 (1.1%)
Other	
Includes culture, RT-PCR, DFA, and IFA	

For the current MMWR reporting week, 95 positive confirmatory tests were reported. So far this season 605 positive confirmatory tests have been reported.

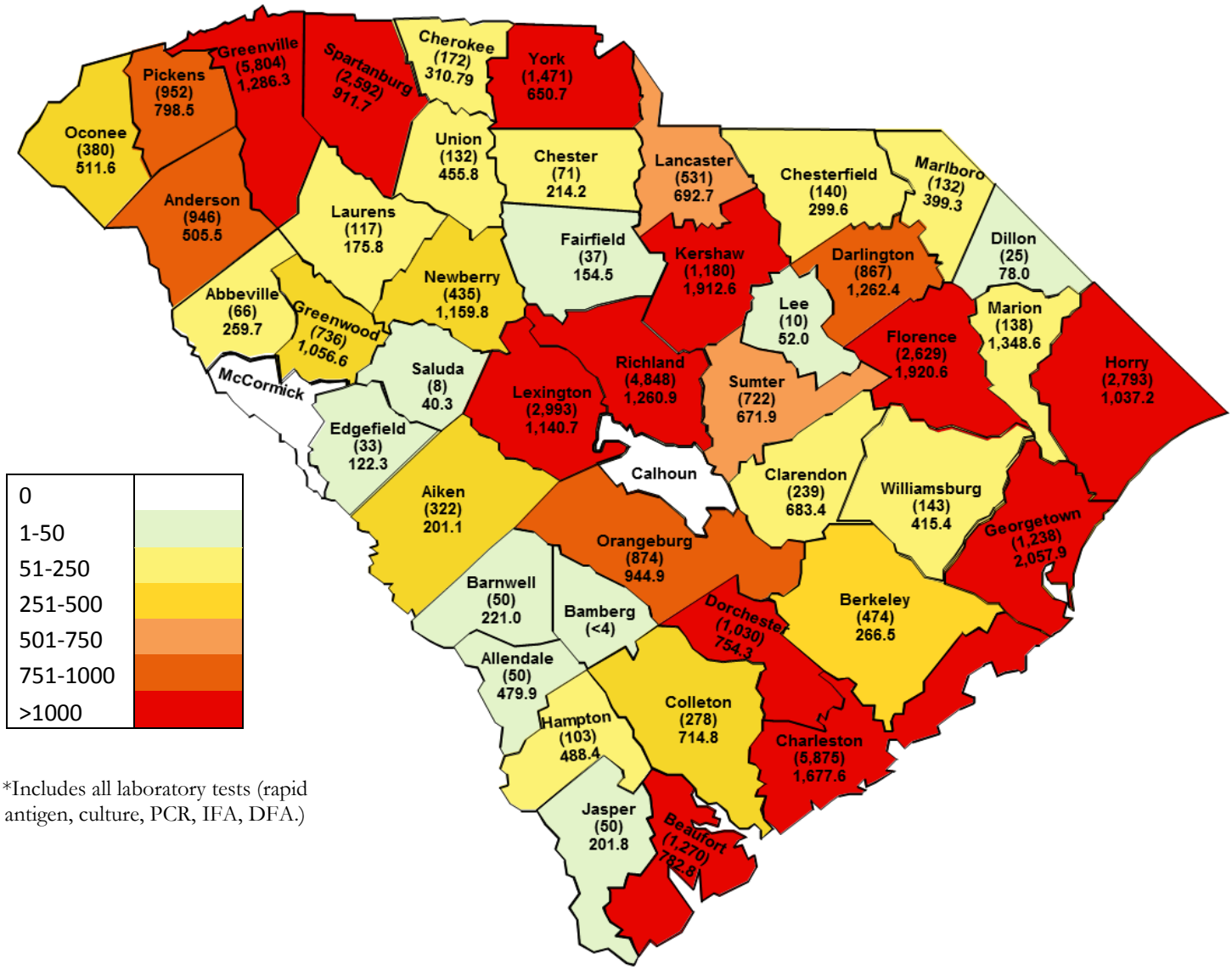
Positive confirmatory influenza test results Cumulative (09/28/14 – 1/17/15)*	
	BOL and reference labs
Number of positive confirmatory tests	605
Influenza A unsubtyped	306 (50.6%)
Influenza A H1N1	2 (0.33%)
Influenza A H3N2	281 (46.4%)
Influenza B	15 (2.5%)
Unk/Other	1 (0.17%)
Includes culture, RT-PCR, DFA, and IFA	

Positive Confirmatory Tests (Culture, RT-PCR, DFA, IFA)
by County
Current Week 1/11/15 – 1/17/15

County	Positive Tests	County	Positive Tests	County	Positive Tests
Abbeville	0	Dillon	0	Marion	0
Aiken	41	Dorchester	0	Marlboro	0
Allendale	0	Edgefield	7	McCormick	0
Anderson	0	Fairfield	0	Newberry	0
Bamberg	0	Florence	0	Oconee	0
Barnwell	<4	Georgetown	0	Orangeburg	0
Beaufort	12	Greenville	<4	Pickens	<4
Berkeley	<4	Greenwood	0	Richland	8
Calhoun	0	Hampton	<4	Saluda	0
Charleston	5	Horry	4	Spartanburg	0
Cherokee	0	Jasper	0	Sumter	<4
Chester	<4	Kershaw	<1	Union	0
Chesterfield	0	Lancaster	0	Williamsburg	<4
Clarendon	0	Laurens	0	York	0
Colleton	0	Lee	0	Unknown	0
Darlington	<4	Lexington	<4		0



Map of all Laboratory Confirmed Cases (n)* and Population Case Rates/100,000 by County Cumulative 09/28/14 – 1/17/15

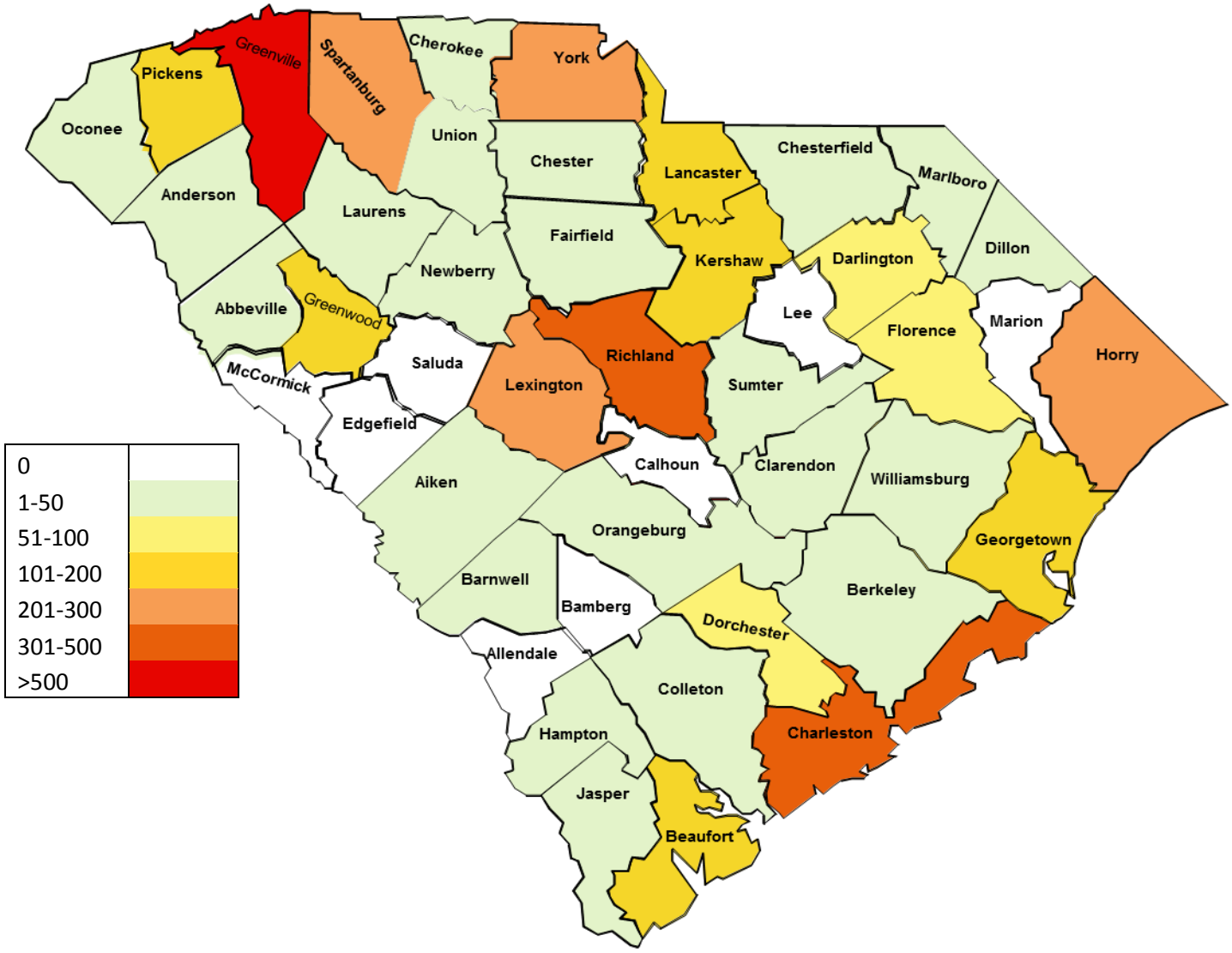


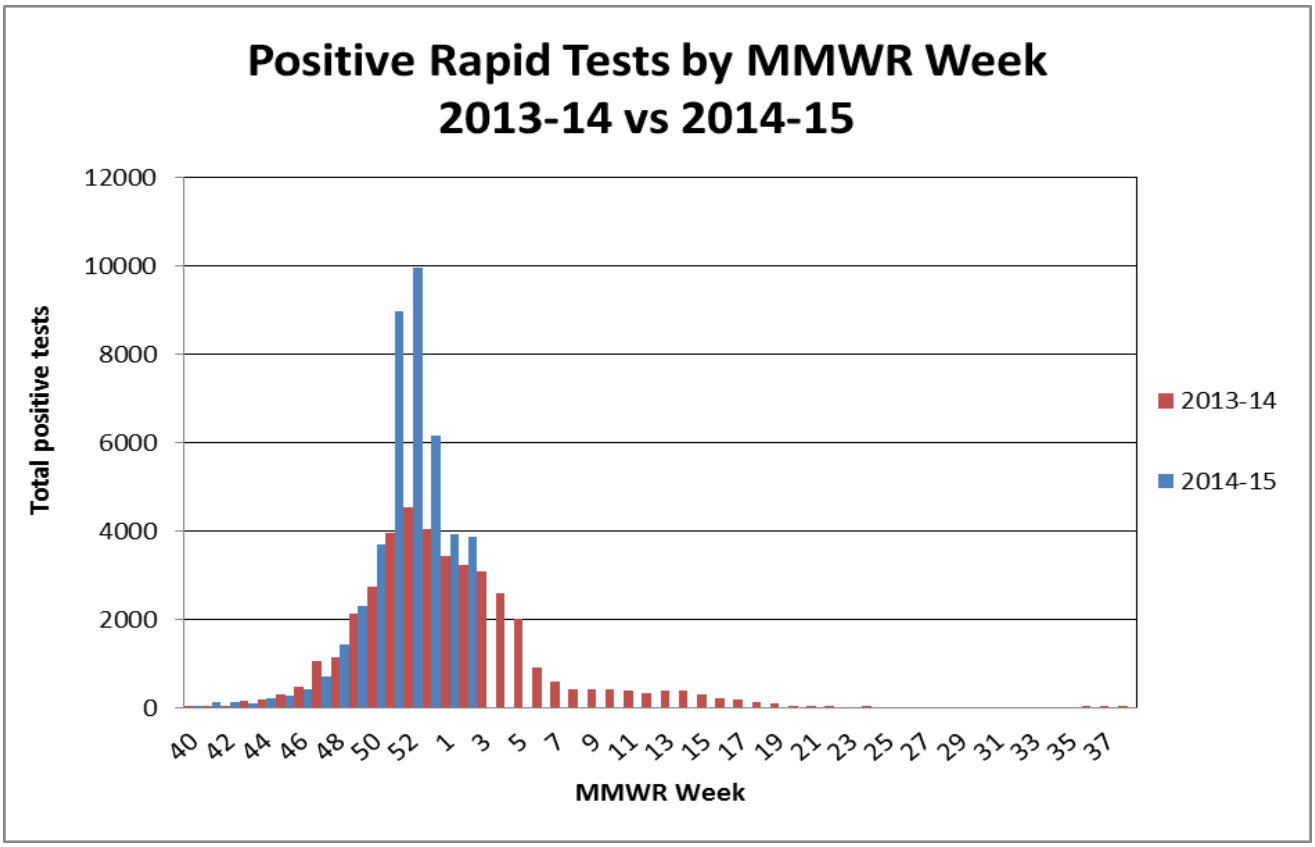
*Includes all laboratory tests (rapid antigen, culture, PCR, IFA, DFA.)

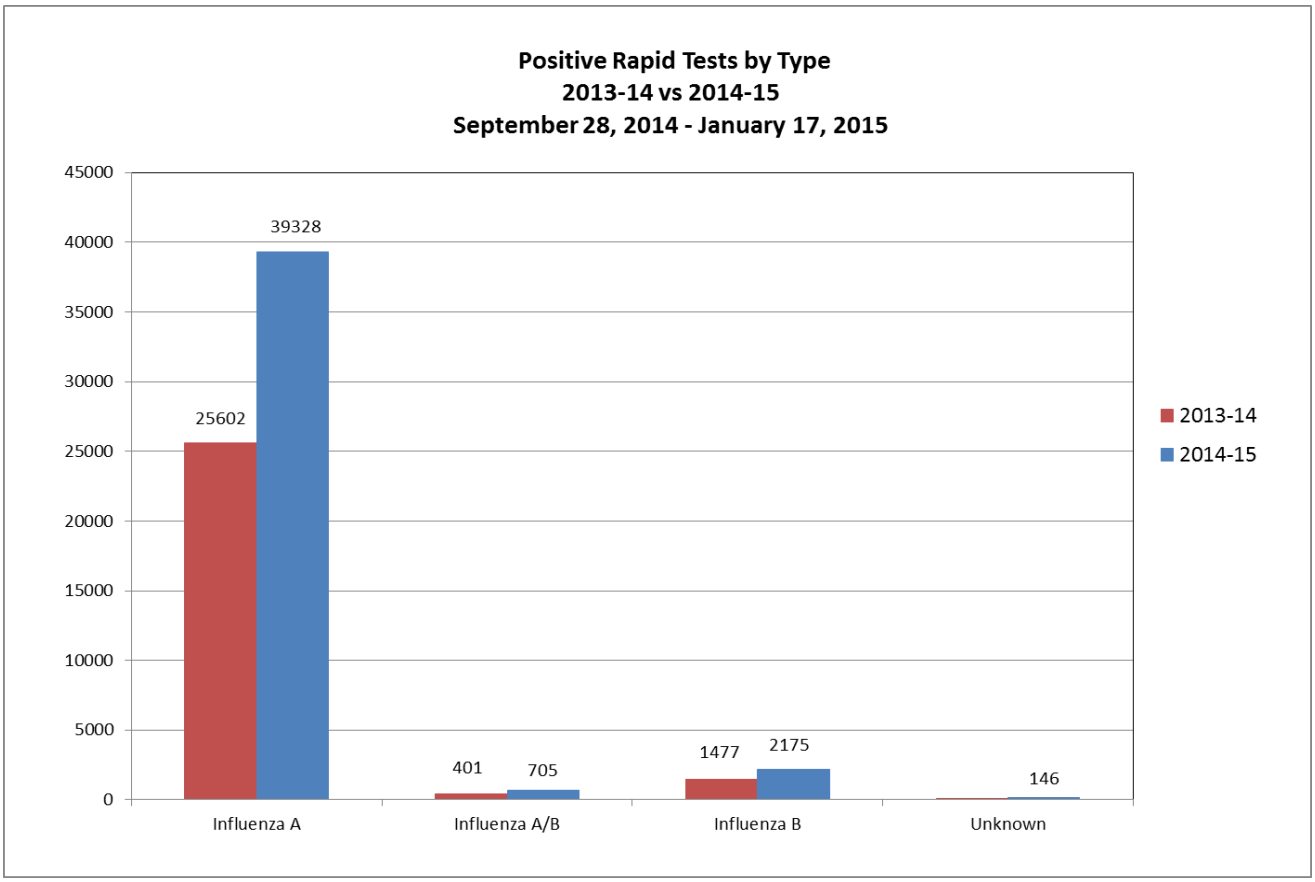
II. Positive Rapid Antigen Tests

For the current MMWR reporting week, 3,855 positive rapid antigen tests were reported. Of these, 3,564 were influenza A, 40 were influenza A/B, 224 were influenza B, and 27 were unknown type. This compares to 3,228 this time last year. 42,354 positive rapid tests have been reported since 9/28/14.

Map of Positive Rapid Influenza Tests by County
(Current Week 1/11/15 - 1/17/15)

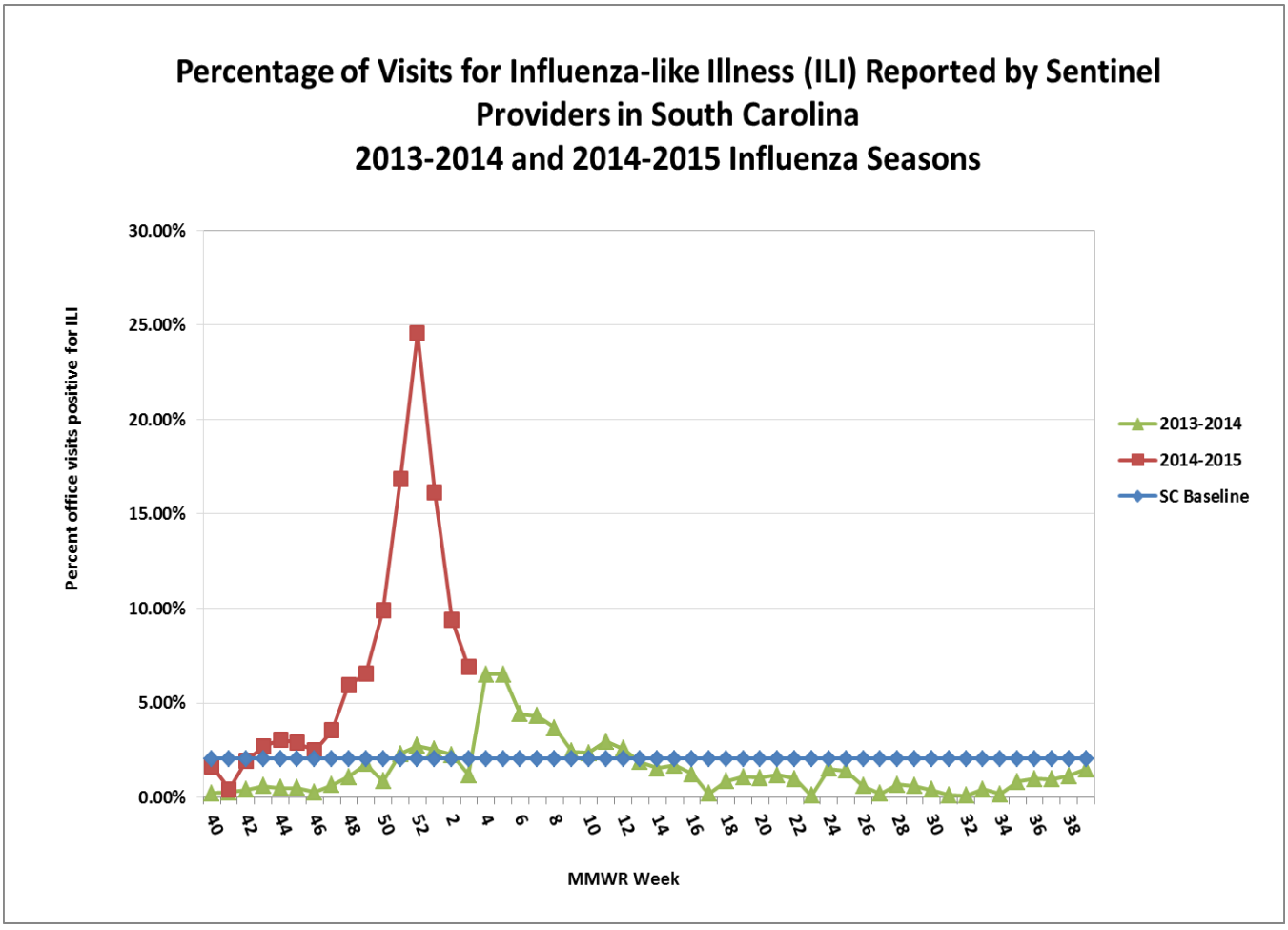



Positive Rapid Tests by MMWR Week
2013-14 vs 2014-15
Total positive tests
12000
10000
8000
6000
4000
2000
0
40 42 44 46 48 50 52 1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31 33 35 37
MMWR Week
2013-14
2014-15


Positive Rapid Tests by Type
2013-14 vs 2014-15
September 28, 2014 - January 17, 2015
45000
40000
35000
30000
25000
20000
15000
10000
5000
0
25602
39328
401
705
1477
2175
146
Influenza A
Influenza A/B
Influenza B
Unknown
2013-14
2014-15

III. ILINet Influenza-Like Illness Surveillance

During the most recent MMWR week, 6.88%* of patient visits to SC ILINet providers were due to ILI. This is above the state baseline **(2.05%)**. This ILI percentage compares to 1.18% this time last year. Reports were received from providers in 12 counties, representing all 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. * ILI percentage is dependent upon the number of reporting providers and can be greatly influenced by a single provider with high numbers of ILI.

Influenza-Like Illness Reported by Sentinel Providers
January 11, 2015 – January 17, 2015

County	ILI %	County	ILI %
Abbeville	---	Greenwood	1.23%
Aiken	2.79%	Hampton	NR
Allendale	---	Horry	NR
Anderson	1.99%	Jasper	NR
Bamberg	---	Kershaw	NR
Barnwell	---	Lancaster	---
Beaufort	NR	Laurens	NR
Berkeley	NR	Lee	---
Calhoun	---	Lexington	NR
Charleston	19.59%	Marion	---
Cherokee	---	Marlboro	---
Chester	---	McCormick	NR
Chesterfield	---	Newberry	---
Clarendon	---	Oconee	---
Colleton	---	Orangeburg	---
Darlington	---	Pickens	0%
Dillon	NR	Richland	0.86%
Dorchester	NR	Saluda	2.50%
Edgefield	---	Spartanburg	0%
Fairfield	---	Sumter	NR
Florence	1.23%	Union	---
Georgetown	2.04%	Williamsburg	---
Greenville	2.24%	York	5.85%

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

IV. Influenza hospitalizations and deaths

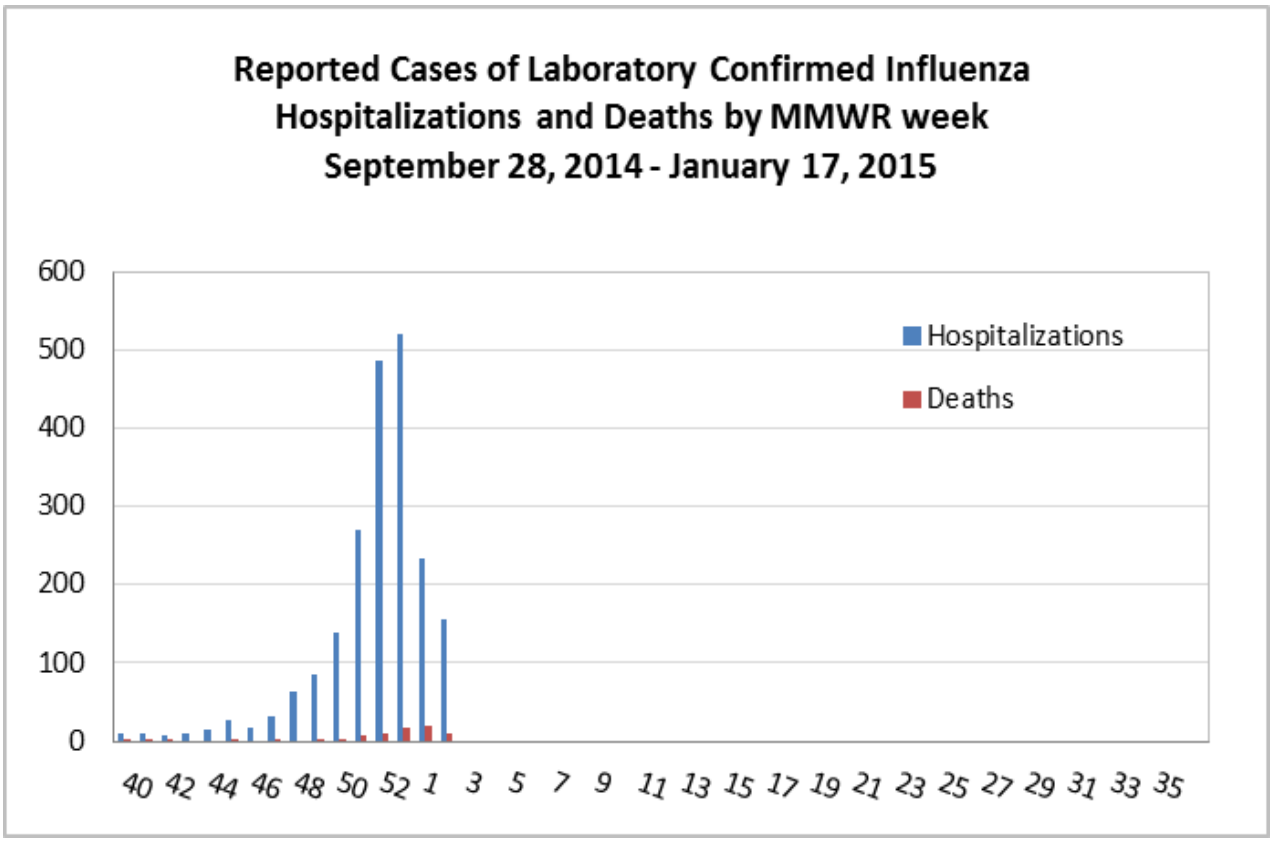
For the current MMWR reporting week, 157 lab confirmed influenza hospitalizations were reported by 61 hospitals. 9 lab confirmed influenza deaths were reported.* So far this season, 2,081 lab confirmed hospitalizations and 74 lab confirmed deaths have been reported.

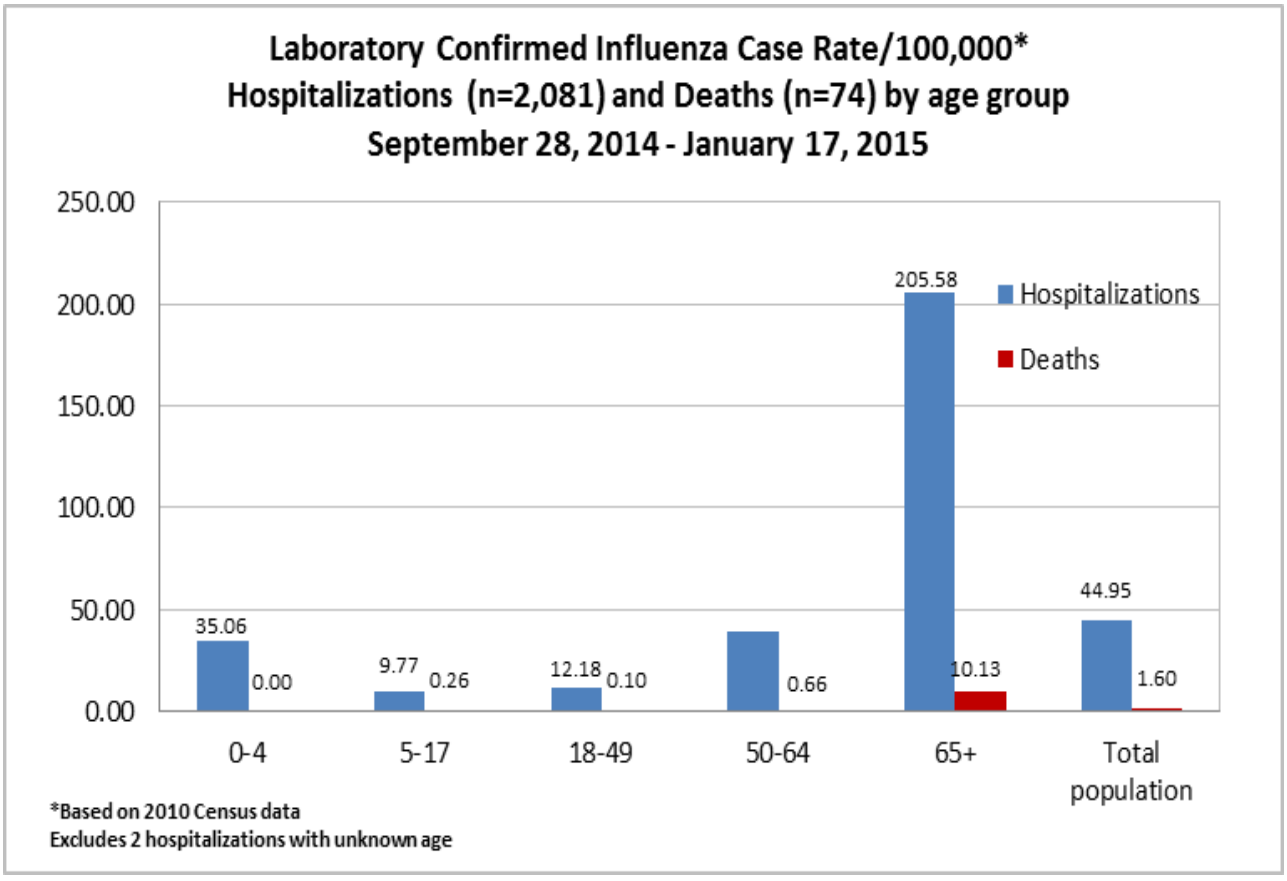
Current MMWR Week (1/11/15-1/17/15)							
	0-4	**5-17**	**18-49**	**50-64**	**65+**	**Unk**	**Total**
Hospitalizations	6	2	11	23	115		157
Deaths		1		1	7		9

Cumulative (9/28/14 -1/17/15)							
	0-4	**5-17**	**18-49**	**50-64**	**65+**	**Unk**	**Total**
Hospitalizations	106	76	244	354	1,299	2	2,081
Deaths		2	2	6	64		74

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

Laboratory Confirmed Influenza Deaths by County	
County	**Total Deaths**
Abbeville	<4
Aiken	4
Anderson	4
Beaufort	5
Charleston	<4
Cherokee	<4
Darlington	4
Dorchester	<4
Florence	5
Greenville	8
Greenwood	<4
Horry	<4
Jasper	<4
Lancaster	<4
Laurens	<4
Lee	<4
Lexington	5
Newberry	<4
Pickens	<4
Richland	6
Spartanburg	12


Reported Cases of Laboratory Confirmed Influenza
Hospitalizations and Deaths by MMWR week
September 28, 2014 - January 17, 2015
600
500
400
300
200
100
0
Hospitalizations
Deaths
40 42 44 46 48 50 52 1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31 33 35


Laboratory Confirmed Influenza Case Rate/100,000*
Hospitalizations (n=2,081) and Deaths (n=74) by age group
September 28, 2014 - January 17, 2015
250.00
200.00
150.00
100.00
50.00
0.00
Hospitalizations
Deaths
35.06
0.00
9.77
0.26
12.18
0.10
0.66
205.58
10.13
44.95
1.60
0-4
5-17
18-49
50-64
65+
Total population
*Based on 2010 Census data
Excludes 2 hospitalizations with unknown age

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 (pediatric and adult) lab confirmed influenza deaths should be reported to DHEC within 24 hours. These include deaths confirmed by culture, PCR, rapid test, 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)

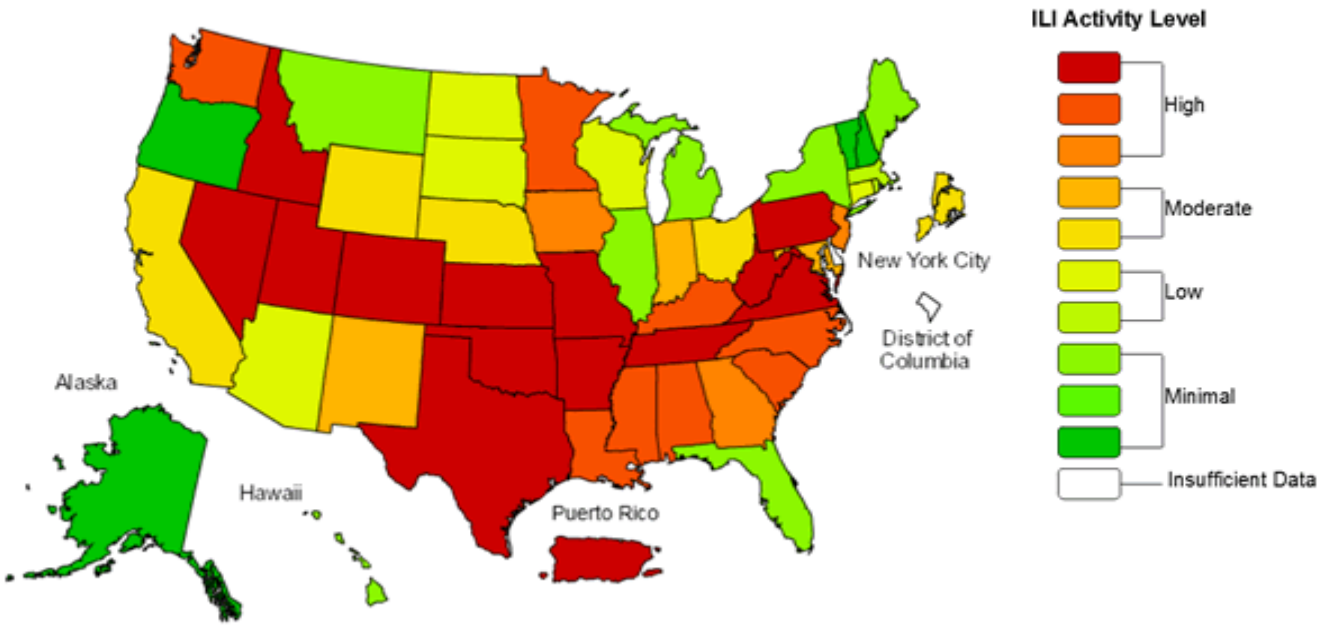
SC-DARTS is a collaborative network of syndromic surveillance systems within South Carolina. Currently our network contains the following data sources: SC Hospital Emergency Department (ED) chief-complaint data, Poison Control Center call data, Over-the-Counter (OTC) pharmaceutical sales surveillance, 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 1(1/4– 1/10)

During week 1 (January 4-10, 2015), influenza activity remained elevated in the United States.

- **Viral Surveillance:** Of 26,204 specimens tested and reported by U.S. World Health Organization (WHO) and National Respiratory and Enteric Virus Surveillance System (NREVSS) collaborating laboratories during week 1, 5,284 (20.2%) 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:** Nineteen influenza-associated pediatric deaths were reported.
- **Influenza-associated Hospitalizations:** A cumulative rate for the season of 29.9 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 4.4%, above the national baseline of 2.0%. All 10 regions reported ILI at or above region-specific baseline levels. Puerto Rico and 24 states experienced high ILI activity; New York City and seven states experienced moderate ILI activity; seven states experienced low ILI activity; 11 states experienced minimal ILI activity; and the District of Columbia and one state had insufficient data.
- **Geographic Spread of Influenza:** The geographic spread of influenza in Guam and 46 states was reported as widespread; Puerto Rico, the U.S. Virgin Islands, and three states reported regional activity; and the District of Columbia and one state reported local activity.

Influenza-Like Illness (ILI) Activity Level Indicator Determined by Data Reported to ILINet
2014-15 Influenza Season Week 1 ending Jan 10, 2015



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

Note: For activity level classification purposes only, the state is divided into 8 reporting regions.

Confirmatory testing: Influenza testing which is considered to be confirmatory, such as a viral culture, RT-PCR, DFA, IFA

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 2014-15 influenza season began on September 28, 2014 and will end on October 3, 2015.

Laboratory-confirmation: Positive influenza test resulting from one of the following laboratory tests:

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