Flu Watch

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

Week Ending January 2, 2016 (MMWR Week 52)

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

In this issue:	

MMWR Week 52 at a Glance:

Influenza Activity Synopsis:

During MMWR week 52 influenza activity in South Carolina overall influenza remained low. South Carolina reported SPORADIC activity.

Laboratory surveillance:

- 112 laboratory-confirmed cases of influenza were reported from 24 counties.
- Of the positive specimens reported this season, 1,019 (58.2%) are influenza A, 644 (36.8%) are influenza B, 78 (4.5%) are influenza A/B, and 10 (0.6%) are influenza unknown subtype.

ILI Activity (South Carolina baseline is 2.05%):

- The percentage of visits to sentinel providers for influenza-like illness (6.00%) was above South Carolina's baseline. ILI percentages represent ILI activity reported by less than half of enrolled sentinel providers. Therefore, ILI percentages may not be representative of actual flu activity.

Hospitalizations:

- 10 laboratory confirmed influenza-associated hospitalizations were reported. Since October 4, 2015, 182 laboratory confirmed influenza associated hospitalizations have been reported.

Deaths:

- One laboratory confirmed influenza-associated death was reported. Since October 4, 2015 nine laboratory confirmed influenza associated deaths have been reported.

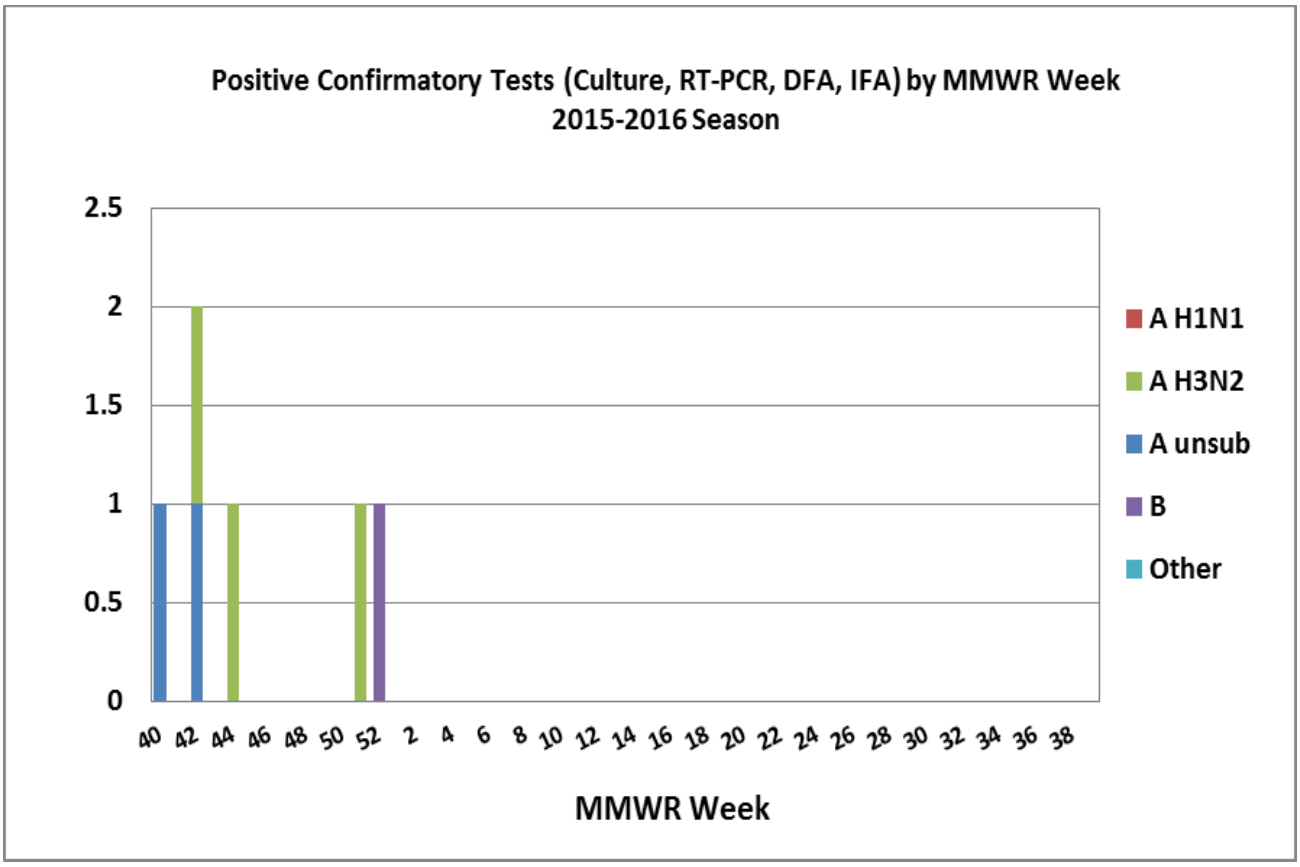
Summary of Laboratory Confirmed Tests, ILI Activity, Influenza Associated Hospitalizations and Deaths Compared to Previous Week and Previous Season						
	Current week	*Previous week*	*Change from previous week*	*Cumulative* (2015-16)	*Cumulative* (2014-15)	*Cumulative change 2015-16 compared to 2014-15*
Number of positive confirmatory tests (culture, RT-PCR, DFA, IFA)	**1**	**0**	▲	**6**	**291**	▼ **97.9%**
Positive rapid antigen tests	**111**	**126**	▼ **11.9%**	**1,746**	**26,148**	▼ **93.3%**
Percent of ILI visits reported by ILINet providers	**6.00%**	**5.56%**	▲ **0.44%**	**--**	**--**	**--**
Number of lab confirmed flu hospitalizations	**10**	**14**	▼ **28.6%**	**182**	**1,166**	▼ **84.4%**
Number of lab confirmed flu deaths	**1**	**0**	▲	**9**	**27**	▼ **66.7%**

I. Confirmatory testing

Positive confirmatory influenza test results Current MMWR Week (12/27/15 – 1/2/16)*	
	BOL and reference labs
Number of positive confirmatory tests	1
Influenza A unsubtyped	0
Influenza A H1N1	0
Influenza A H3N2	0
Influenza B	1
Other	0
Includes culture, RT-PCR, DFA, and IFA	

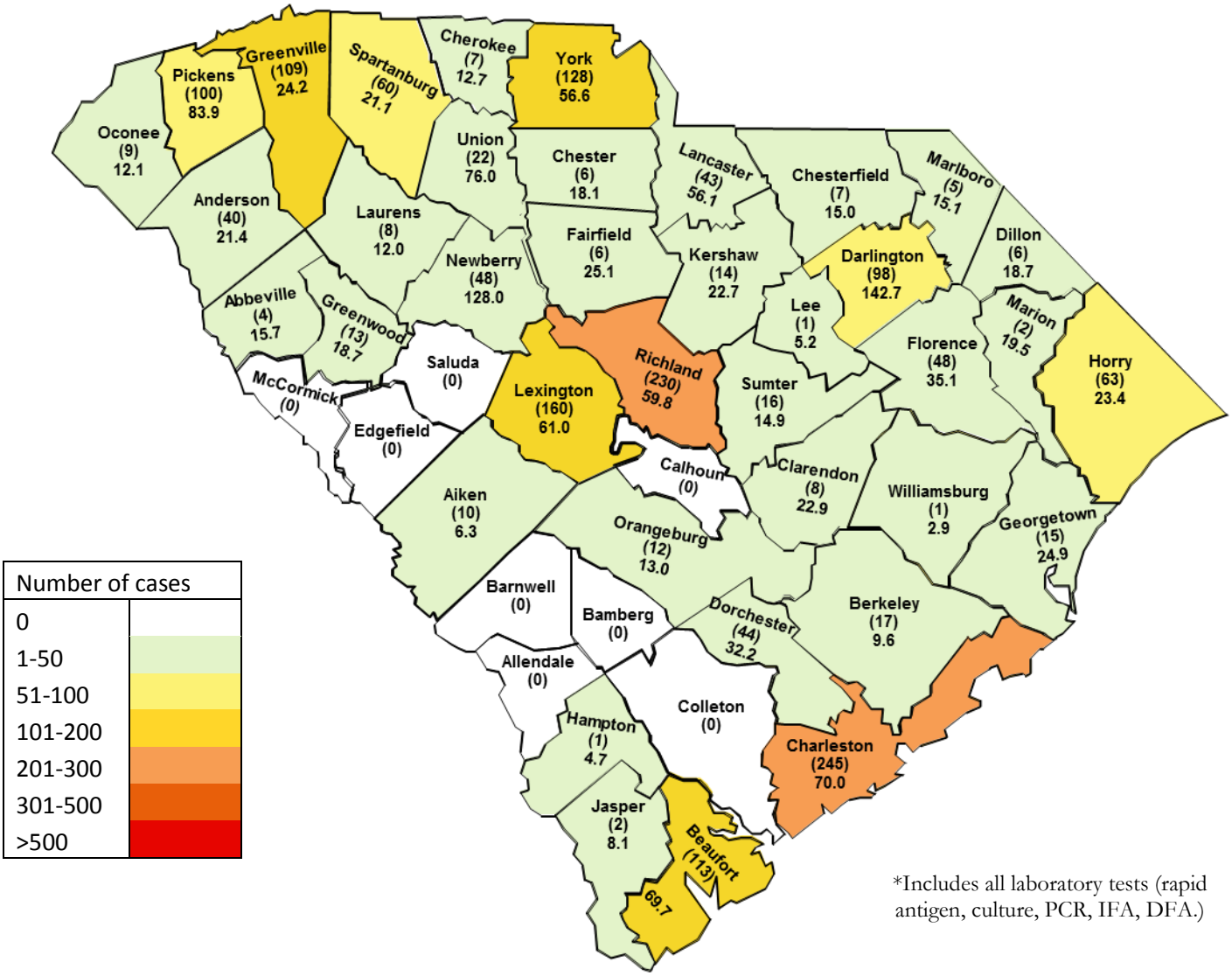
For the current MMWR reporting week, One positive confirmatory test was reported.

Positive confirmatory influenza test results Cumulative (10/4/15 – 1/2/16)*	
	BOL and reference labs
Number of positive confirmatory tests	6
Influenza A unsubtyped	2
Influenza A H1N1	0
Influenza A H3N2	3
Influenza B	1
Other	0
Includes culture, RT-PCR, DFA, and IFA	



*Includes culture, PCR, DFA, IFA

Map of all Laboratory Confirmed Cases (n)* and Population Case Rates/100,000 by County Cumulative 10/4/15 – 1/2/16

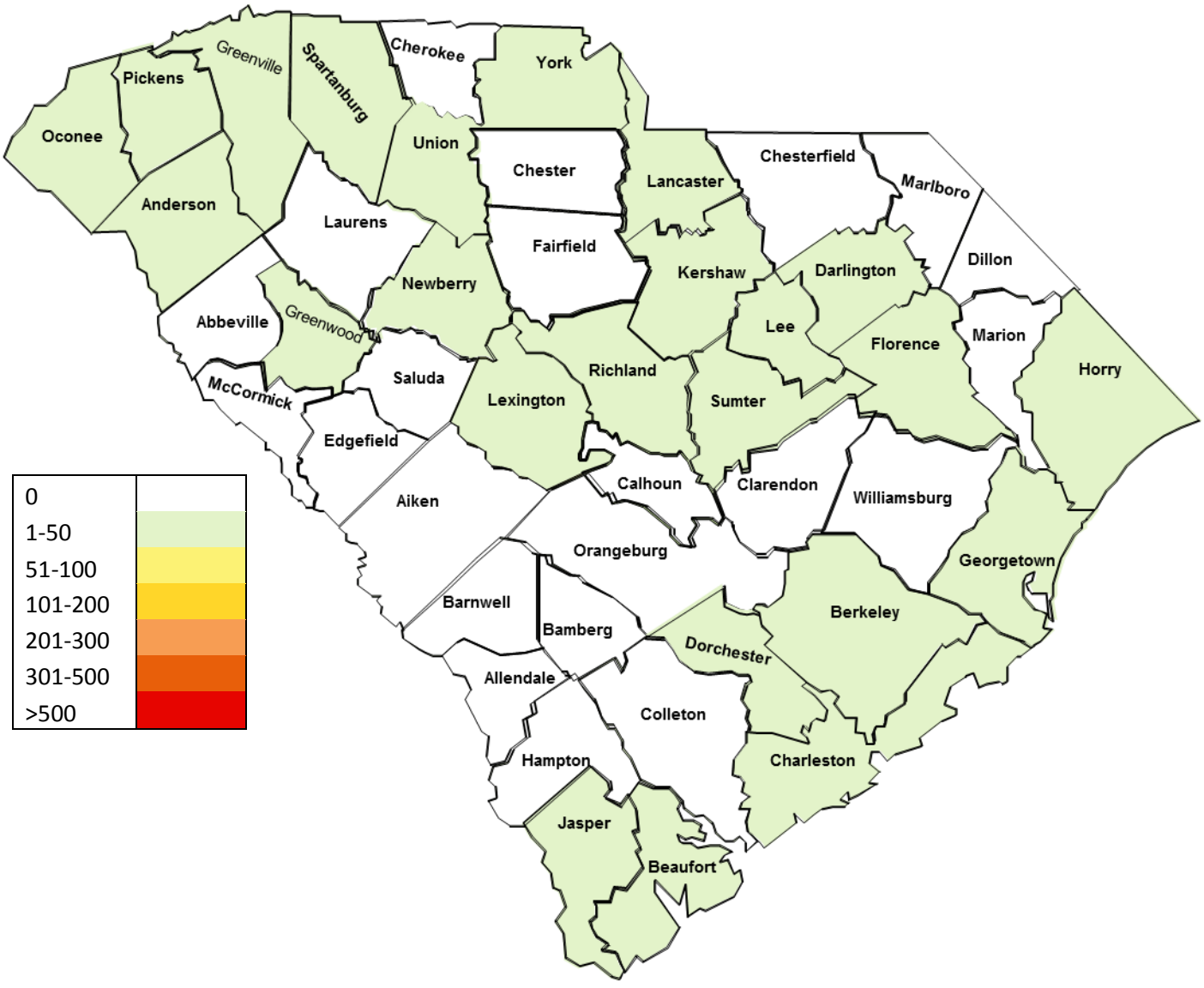


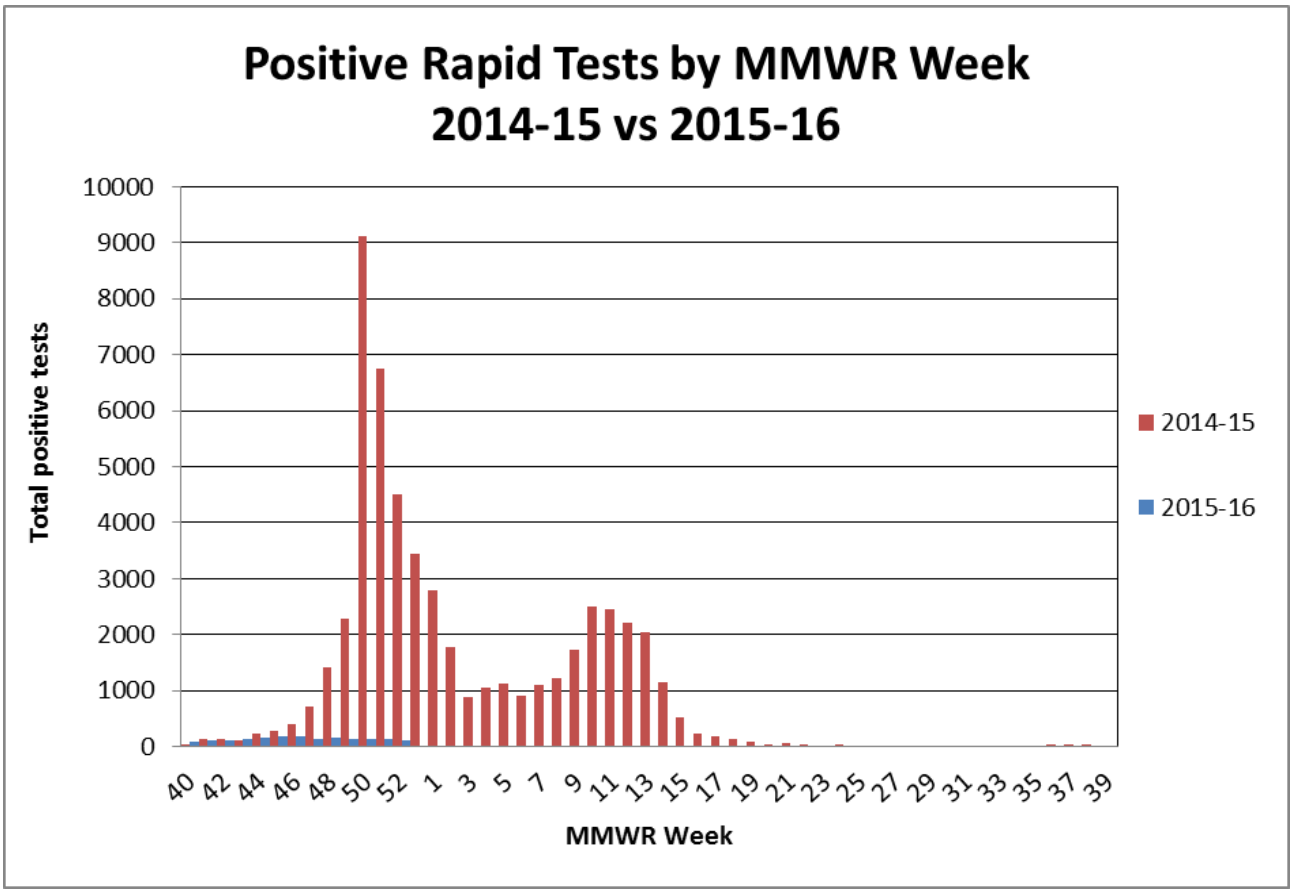
*Includes all laboratory tests (rapid antigen, culture, PCR, IFA, DFA.)

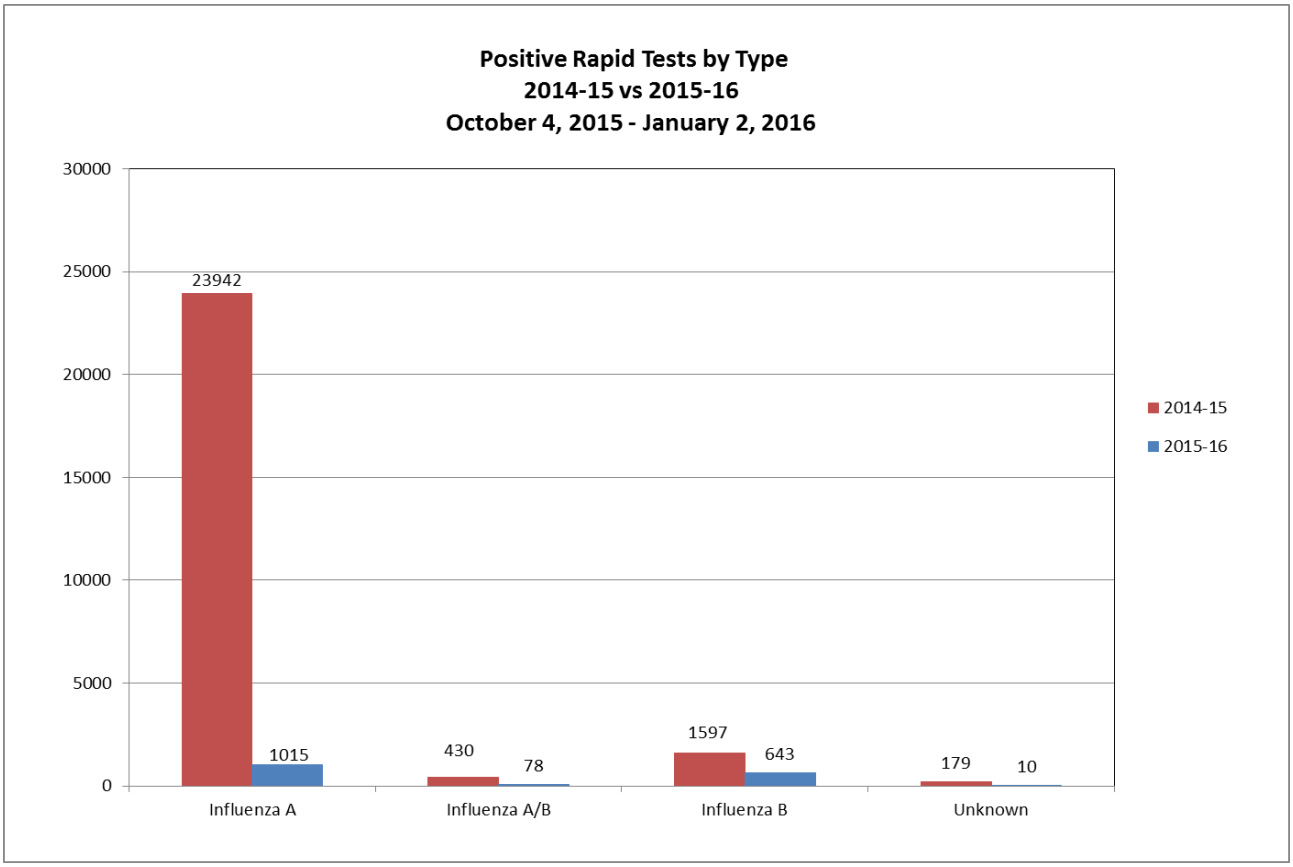
II. Positive Rapid Antigen Tests

During the most recent MMWR week, 111 positive rapid antigen tests were reported. Of these, 63 were influenza A, 40 were influenza B, and 8 were influenza A/B. This compares to 4,503 during this same week last year.

Map of Positive Rapid Influenza Tests by County
(12/27/15 - 1/2/16)

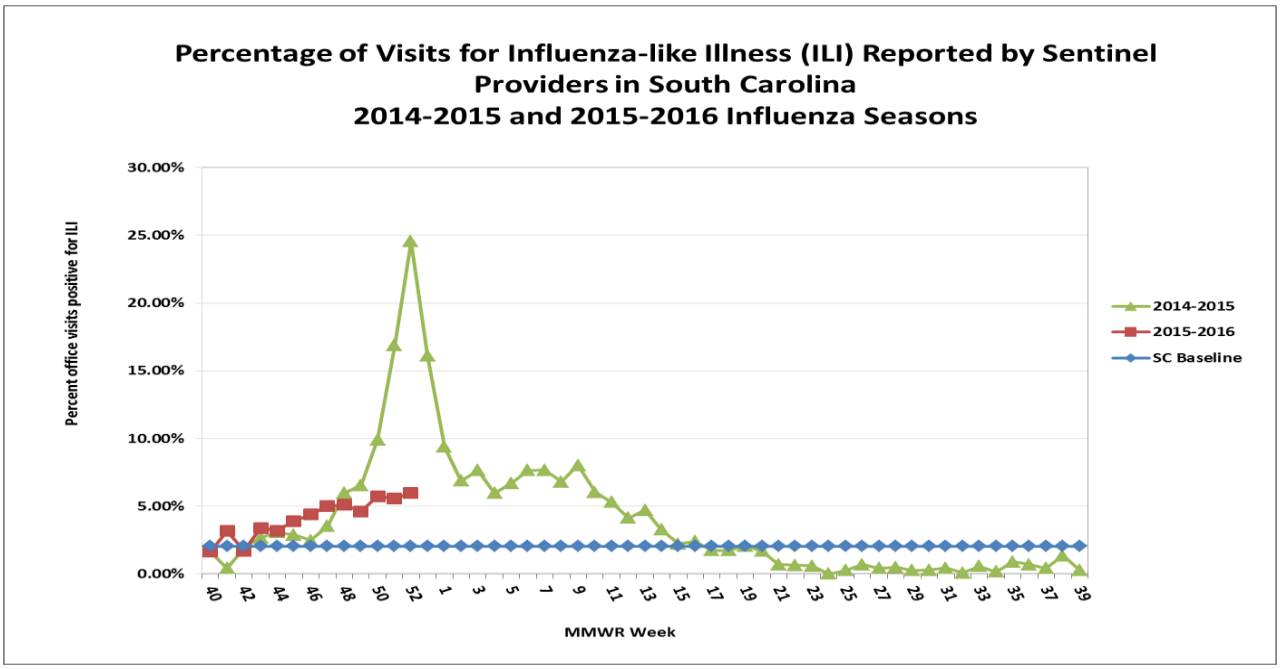



Positive Rapid Tests by MMWR Week
2014-15 vs 2015-16
Total positive tests
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
40 42 44 46 48 50 52 1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31 33 35 37 39
MMWR Week
2014-15
2015-16

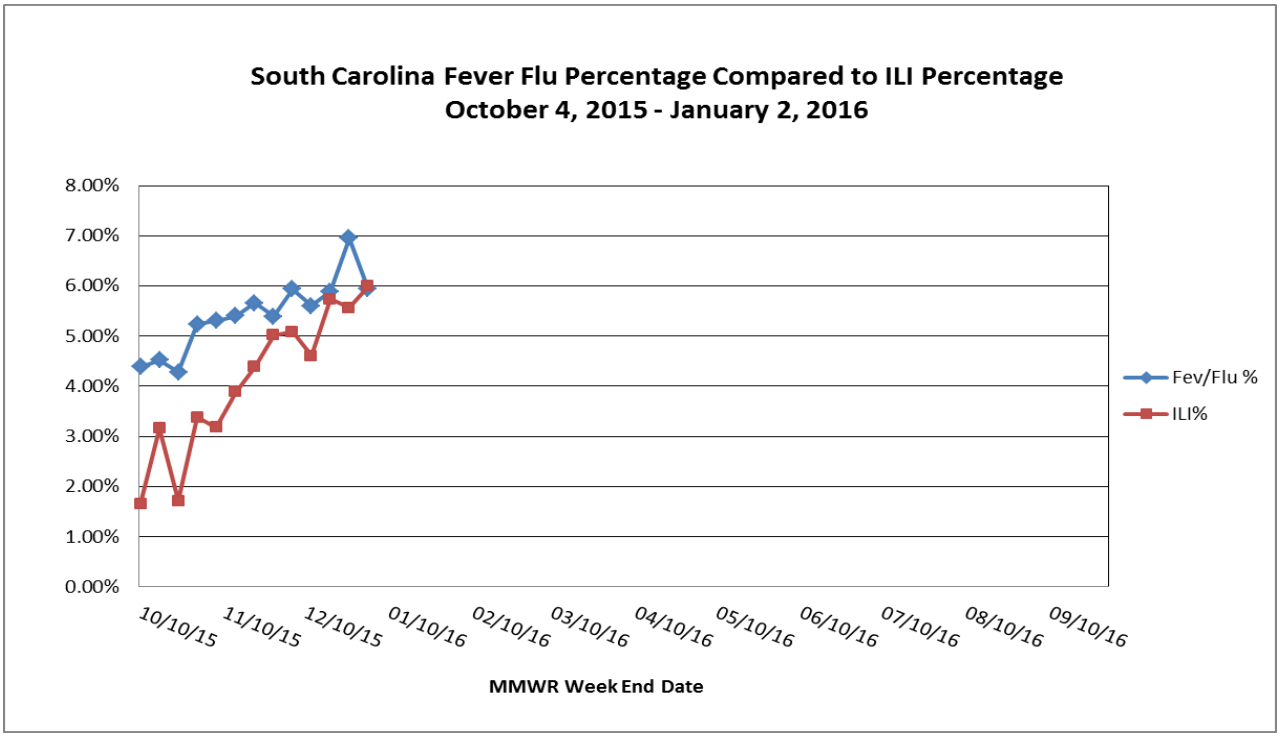

Positive Rapid Tests by Type
2014-15 vs 2015-16
October 4, 2015 - January 2, 2016
30000
25000
20000
15000
10000
5000
0
23942
1015
430
78
1597
643
179
10
Influenza A
Influenza A/B
Influenza B
Unknown
2014-15
2015-16

III. ILINet Influenza-Like Illness Surveillance

During the most recent MMWR week, 6.00%* of patient visits to SC ILINet providers were due to ILI. This is above the state baseline **(2.05%)**. This ILI percentage compares to 24.54% this time last year. Reports were received from providers in 5 counties, representing all of the 4 regions. The statewide percentage of ER visits with fever-flu syndrome was 5.94%.



ILI percentage is dependent upon the number of reporting providers and can be greatly influenced by a single provider with high numbers of ILI.



The SC fever flu percentage only includes data from hospitals emergency departments and urgent care centers participating in SC syndromic surveillance.

Influenza-Like Illness Reported by Sentinel Providers
December 27, 2015 – January 2, 2016

County	ILI %	County	ILI %
Abbeville	---	Greenwood	NR
Aiken	NR	Hampton	NR
Allendale	---	Horry	--
Anderson	NR	Jasper	--
Bamberg	---	Kershaw	--
Barnwell	---	Lancaster	---
Beaufort	NR	Laurens	NR
Berkeley	8.70%	Lee	---
Calhoun	---	Lexington	NR
Charleston	7.22%	Marion	---
Cherokee	---	Marlboro	---
Chester	---	McCormick	NR
Chesterfield	---	Newberry	---
Clarendon	---	Oconee	---
Colleton	---	Orangeburg	---
Darlington	---	Pickens	NR
Dillon	__	Richland	NR
Dorchester	NR	Saluda	0%
Edgefield	---	Spartanburg	NR
Fairfield	---	Sumter	NR
Florence	0.93%	Union	---
Georgetown	NR	Williamsburg	---
Greenville	NR	York	0%

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

IV. Influenza-associated hospitalizations and deaths

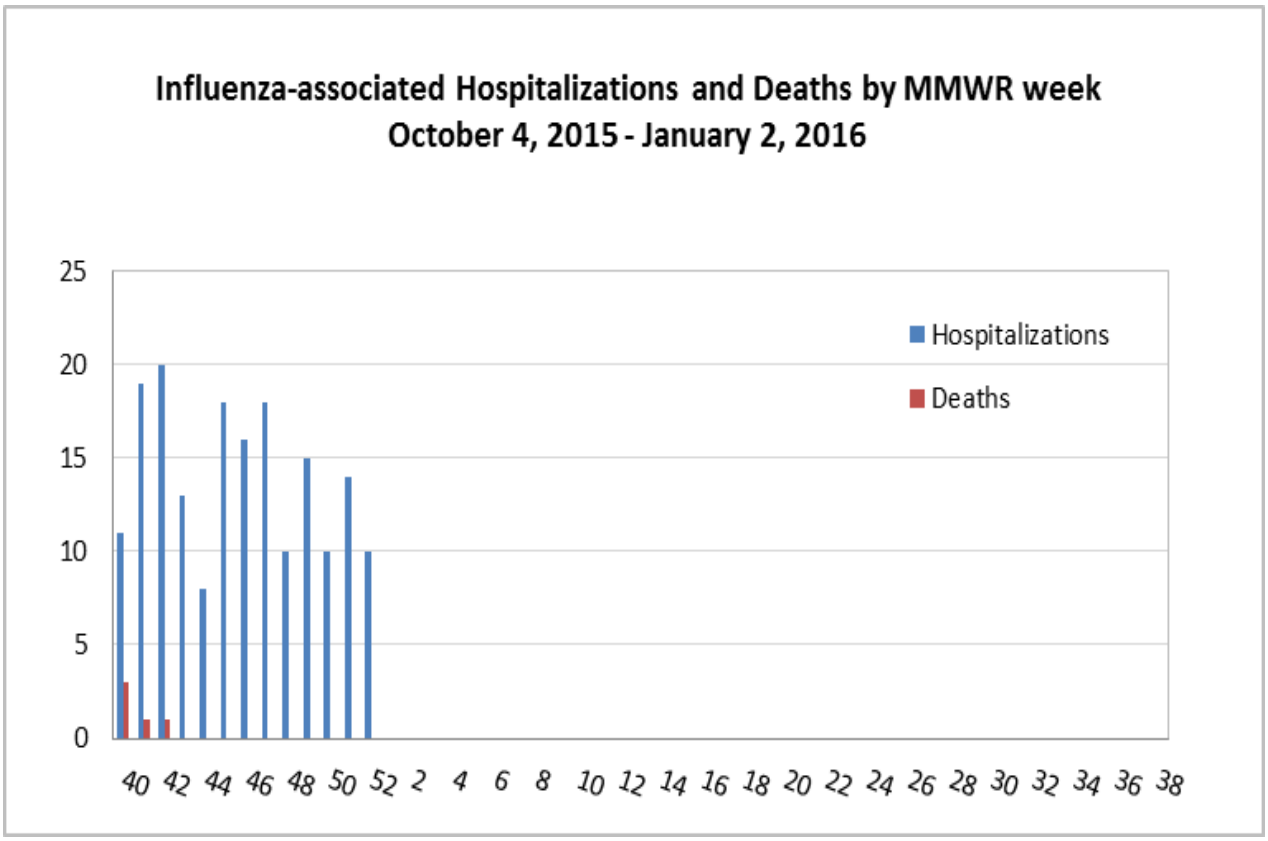
For the current MMWR reporting week, 10 laboratory confirmed influenza-associated hospitalizations were reported by 54 hospitals. One laboratory confirmed influenza-associated death was reported. Since October 4, 2015 182 laboratory confirmed influenza-associated hospitalizations and 9 laboratory confirmed influenza-associated deaths have been reported. **Laboratory confirmation for hospitalizations and deaths includes culture, PCR, DFA, IFA, and rapid antigen detection test.**

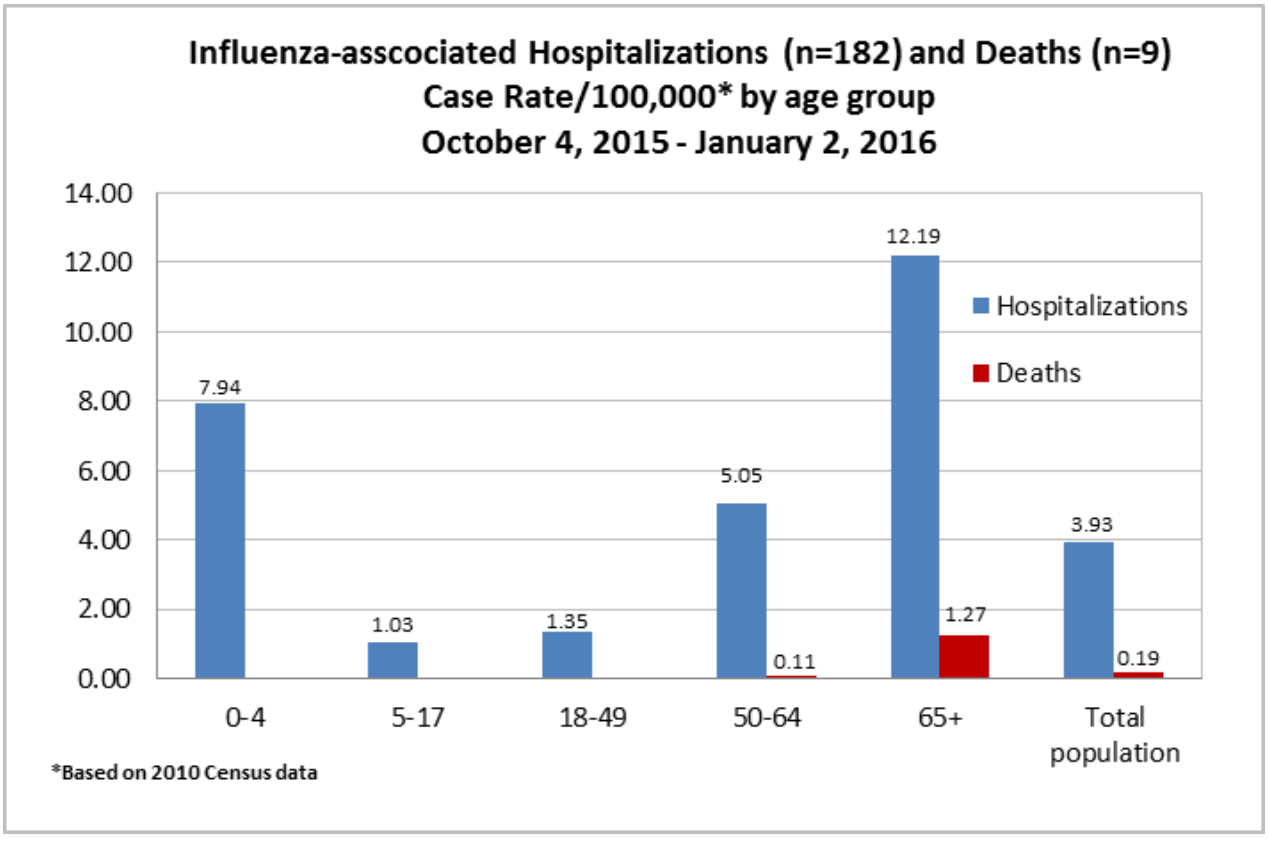
Current MMWR Week (12/27/15 - 1/2/16)							
	0-4	**5-17**	**18-49**	**50-64**	**65+**	**Unknown**	**Total**
Hospitalizations	1	0	2	2	5		10
Deaths							0

Cumulative (10/4/15 -1/2/16)							
	0-4	**5-17**	**18-49**	**50-64**	**65+**	**Unknown**	**Total**
Hospitalizations	24	8	27	46	77		182
Deaths	0	0	0	1	8		9

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

Influenza associated deaths by Region	
Region	**Total**
Lowcountry	<5
Midlands	<5
Pee Dee	<5
Upstate	<5


Influenza-associated Hospitalizations and Deaths by MMWR week
October 4, 2015 - January 2, 2016
25
20
15
10
5
0
Hospitalizations
Deaths
40 42 44 46 48 50 52 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38

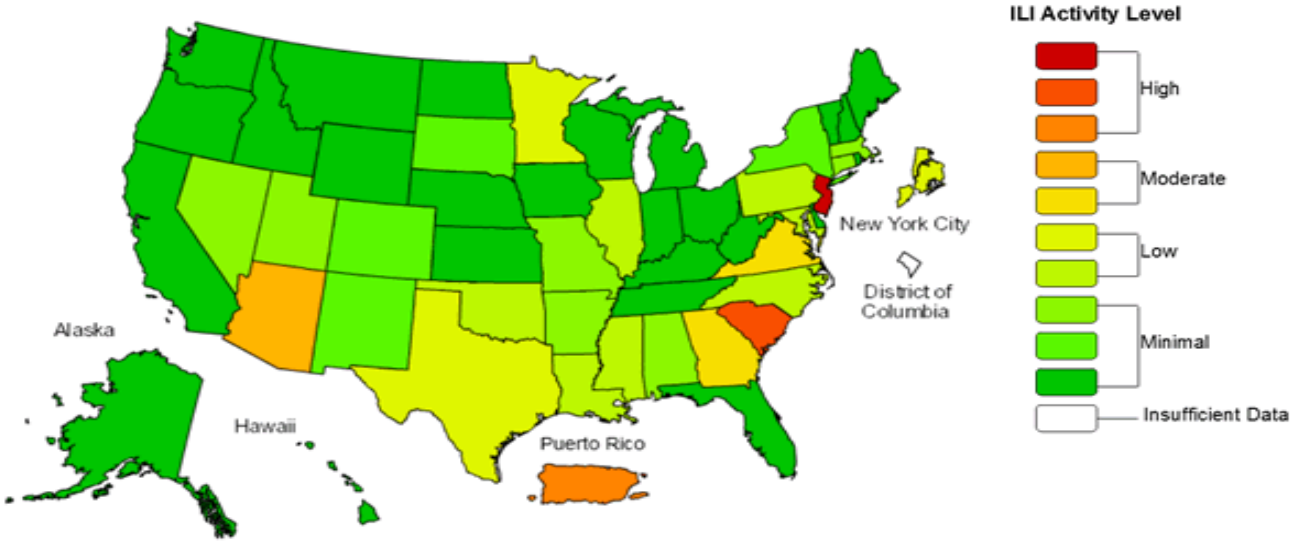

Influenza-asscociated Hospitalizations (n=182) and Deaths (n=9)
Case Rate/100,000* by age group
October 4, 2015 - January 2, 2016
14.00
12.00
10.00
8.00
6.00
4.00
2.00
0.00
Hospitalizations
Deaths
7.94
1.03
1.35
5.05
0.11
12.19
1.27
3.93
0.19
0-4
5-17
18-49
50-64
65+
Total population
*Based on 2010 Census data

V. National surveillance (12/20/15 – 12/26/15)

During week 51 (December 20-26, 2015), influenza activity increased slightly in the United States.

- **Viral Surveillance:** The most frequently identified influenza virus type reported by public health laboratories during week 51 was influenza A, with influenza A (H1N1)pdm09 viruses predominating. The percentage of respiratory specimens testing positive for influenza in clinical laboratories was low.
- **Pneumonia and Influenza Mortality:** The proportion of deaths attributed to pneumonia and influenza (P&I) was below their system-specific epidemic threshold in both the NCHS Mortality Surveillance System and the 122 Cities Mortality Reporting System.
- **Influenza-associated Pediatric Deaths:** No influenza-associated pediatric deaths were reported.
- **Outpatient Illness Surveillance:** The proportion of outpatient visits for influenza-like illness (ILI) was 2.6%, which is above the national baseline of 2.1%. Six of 10 regions reported ILI at or above region-specific baseline levels. Puerto Rico and two states experienced high ILI activity; three states experienced moderate ILI activity; New York City and nine states experienced low ILI activity; 36 states experienced minimal ILI activity; and the District of Columbia had insufficient data.
- **Geographic Spread of Influenza:** The geographic spread of influenza in Guam and one state was reported as widespread; five states reported regional activity; 12 states reported local activity; 29 states reported sporadic activity; the District of Columbia and three states reported no influenza activity; and Puerto Rico and the U.S. Virgin Islands did not report.

Influenza-Like Illness (ILI) Activity Level Indicator Determined by Data Reported to ILINet
2015-16 Influenza Season Week 51 ending Dec 26, 2015



VI. 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 must 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 must be sent to the regional health department by fax or email before noon on Monday for the preceding week.

Influenza deaths
All laboratory confirmed influenza deaths (adult and pediatric) must 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 must 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 ≥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) (Syndromic surveillance)

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.

For additional information about SC-DARTS, contact the Syndromic Surveillance epidemiologist at **cartere@dhec.sc.gov.**

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 RT-PCR

Fever-flu syndrome: Includes chief complaints with any of the following ICD codes or terms: flu, fev, high temp, temp10, feel hot, night sweat, FEB, shiver, FUO, chill, 780.6, 487, viral INF, pain all over, ILI, and body ache. Weekly fever flu count is the sum of all records, statewide, that were categorized into the fever flu syndrome. The state denominator is a broader modification of the respiratory syndrome that includes records that have fever flu chief complains and general respiratory illness complaints, which include: cough, coughing, URI, pneumonia, croup, bronchitis, and cold. The fever flu percentage equals (weekly fever flu count/weekly state denominator)*100.

Influenza-associated death: A death in which laboratory confirmation (see definition below) for influenza was reported, or for which an autopsy report consistent with influenza was provided, regardless of primary cause of death.

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

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 2015-16 influenza season began on October 4, 2015 and will end on October 1, 2016.

Laboratory-confirmation: Influenza positive resulting from one of the following methods:

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