Flu Watch

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

Week Ending May 21, 2016 (MMWR Week 20)

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

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MMWR Week 20 at a Glance:

Influenza Activity Synopsis:

During MMWR week 20 influenza activity in South Carolina decreased. South Carolina reported **LOCAL** activity.

Laboratory surveillance:

- 256 laboratory-confirmed cases of influenza were reported from 28 counties.
- Of the positive specimens reported this season, 22,083 (66.9%) are influenza A, 10,313 (31.2%) are influenza B, 481 (1.5%) are influenza A/B, and 142 (0.4%) are influenza unknown subtype.

ILI Activity (South Carolina baseline is 2.05%):

- The percentage of visits to sentinel providers for influenza-like illness (5.41%) 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:

- 13 laboratory confirmed influenza-associated hospitalizations were reported. Since October 4, 2015, 1,826 laboratory confirmed influenza associated hospitalizations have been reported.

Deaths:

- No laboratory confirmed influenza-associated deaths were reported last week. A death from week 10 was reported. Since October 4, 2015 thirty-eight (39) laboratory confirmed influenza associated deaths have been reported.

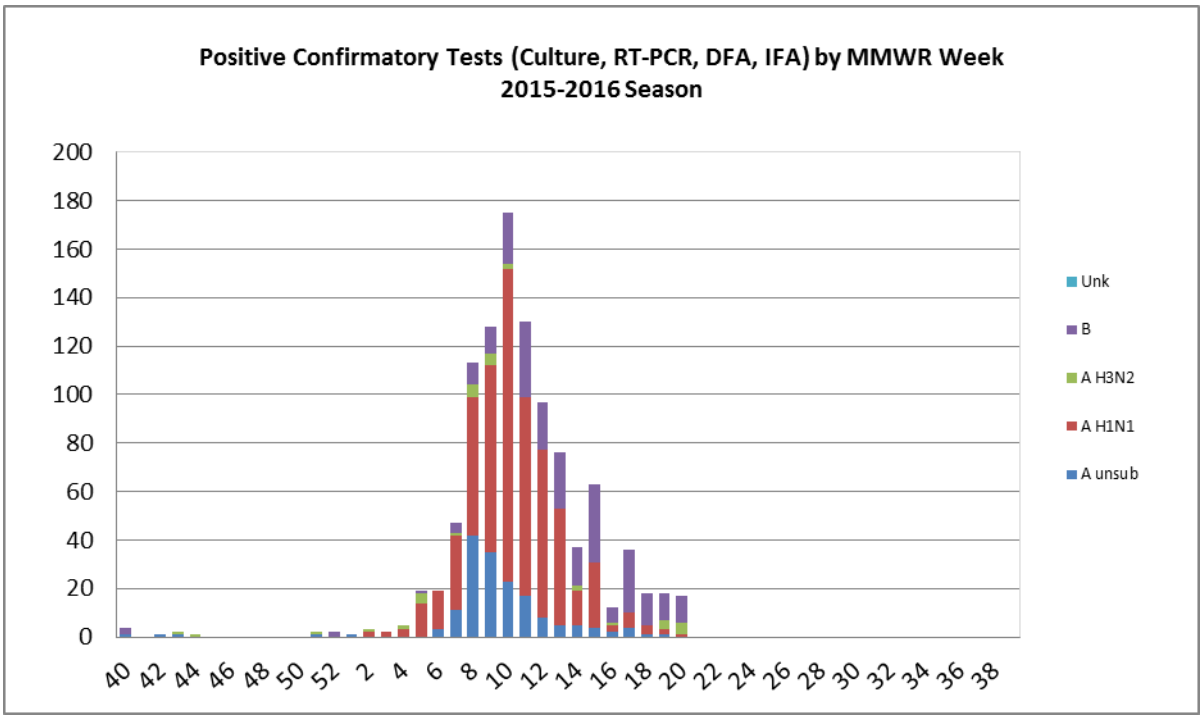
Summary of Laboratory Confirmed Tests, ILI Activity, Influenza Associated Hospitalizations and Deaths Compared to Previous Week and Previous Season						
	Current week	*Previous week*	*Change from previous week*	*Cumulative* (2015-16)	*Cumulative* (2014-15)	*Cumulative change 2015-16 compared to 2014-15*
Number of positive confirmatory tests (culture, RT-PCR, DFA, IFA)	**17**	**18**	▼ **0.05%**	**1029**	**1,184**	▼ **13%**
Positive rapid antigen tests	**239**	**296**	▼ **19%**	**31,990**	**73,101**	▼ **56%**
Percent of ILI visits reported by ILINet providers	**5.41%**	**4.90%**	▲ **0.51%**	**--**	**--**	**--**
Number of lab confirmed flu hospitalizations	**12**	**19**	▼ **36%**	**1,826**	**3,341**	▼ **45%**
Number of lab confirmed flu deaths	**0**	**0**	**--**	**39**	**155**	▼ **75%**

I. Confirmatory testing

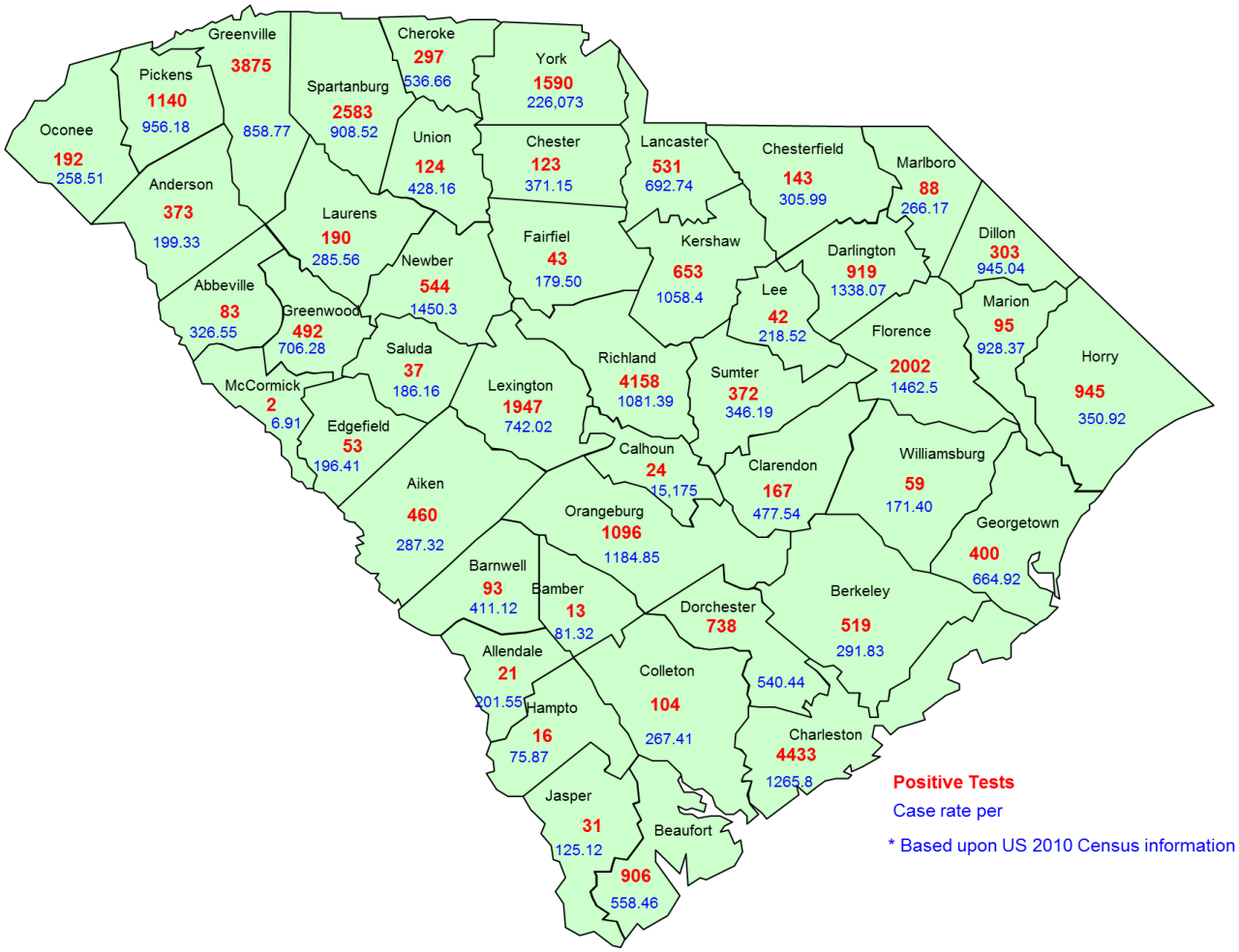
Positive confirmatory influenza test results Current MMWR Week 5/15/16 – 5/21/16)*	
	BOL and reference labs
Number of positive confirmatory tests	17
Influenza A unsubtyped	0
Influenza A H1N1	1
Influenza A H3N2	5
Influenza B	11
Other	0
Includes culture, RT-PCR, DFA, and IFA	

For the current MMWR reporting week, 17 positive confirmatory tests were reported.

Positive confirmatory influenza test results Cumulative (10/4/15 – 5/21/16)*	
	BOL and reference labs
Number of positive confirmatory tests	1029
Influenza A unsubtyped	166
Influenza A H1N1	587
Influenza A H3N2	35
Influenza B	240
Other	1
Includes culture, RT-PCR, DFA, and IFA	


Positive Confirmatory Tests (Culture, RT-PCR, DFA, IFA) by MMWR Week
2015-2016 Season
200
180
160
140
120
100
80
60
40
20
0
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
Unk
B
A H3N2
A H1N1
A unsub

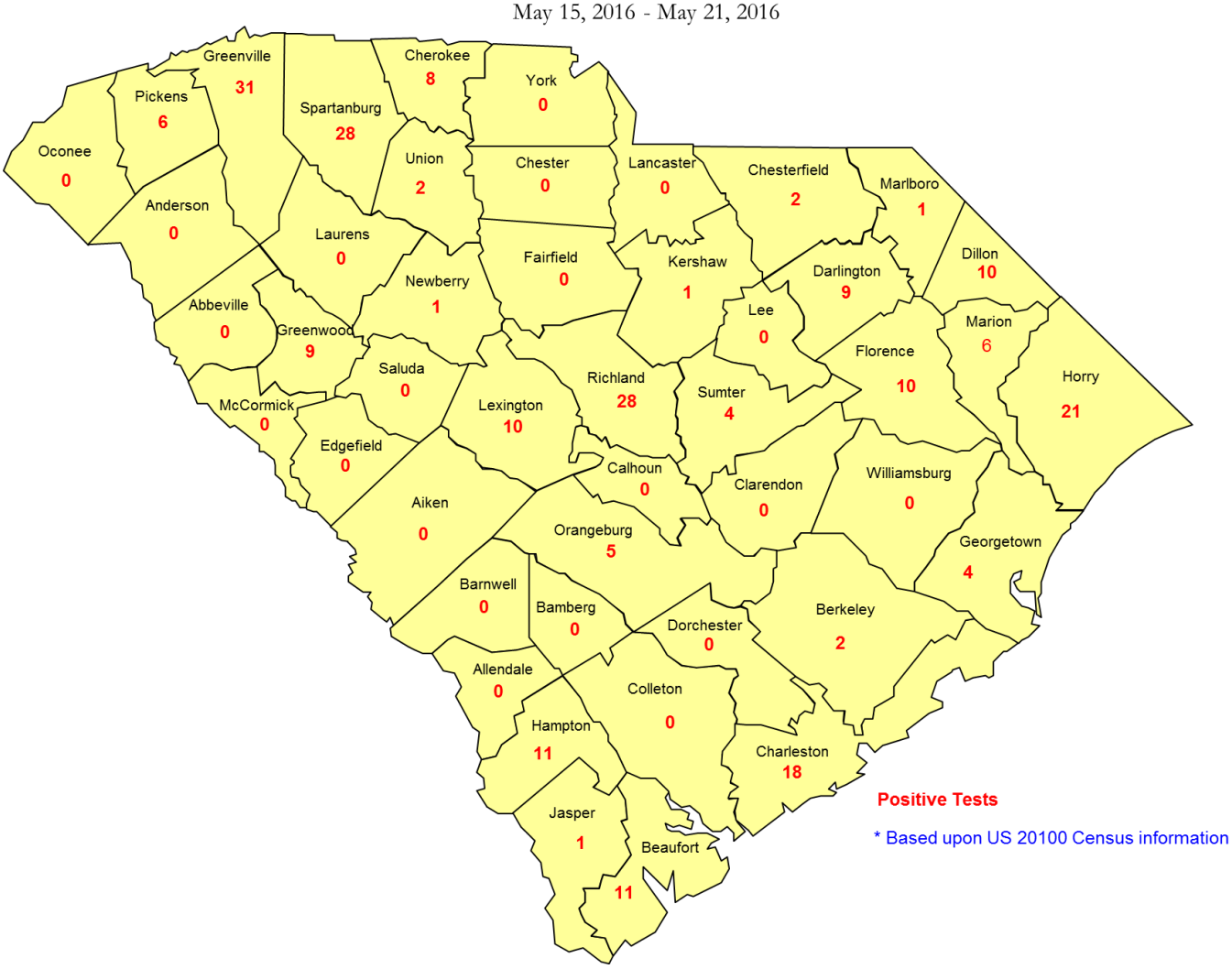
Map of all Laboratory Confirmed Cases (n) and Population Case Raters/100,000 by County
October 4, 2015 - May 21, 2016

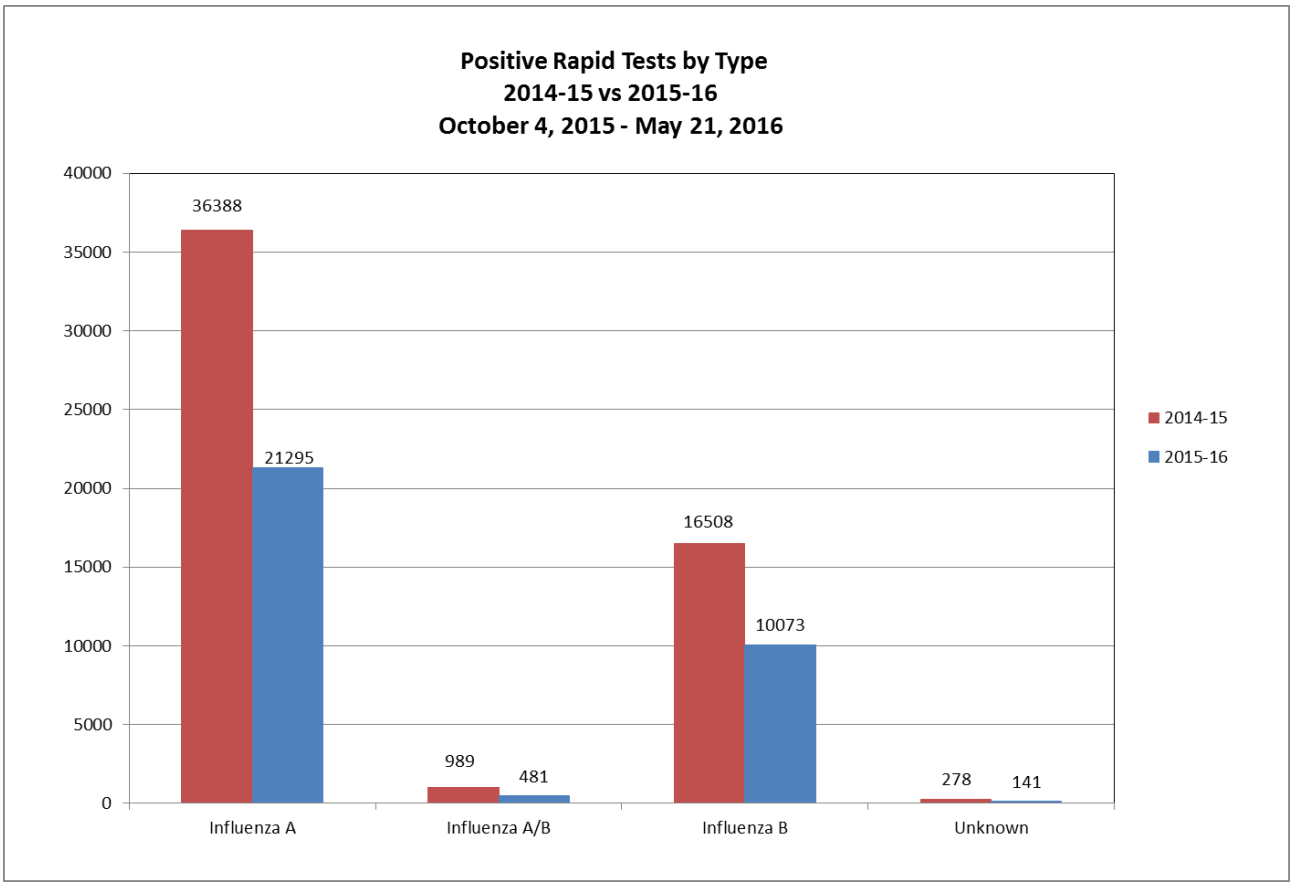


II. Positive Rapid Antigen Tests

During the most recent MMWR week, 239 positive rapid antigen tests were reported. Of these, 51 were influenza A, 182 were influenza B, 5 were influenza A/B, and 1 was other/unknown. This compares to 44 during this same week last year.

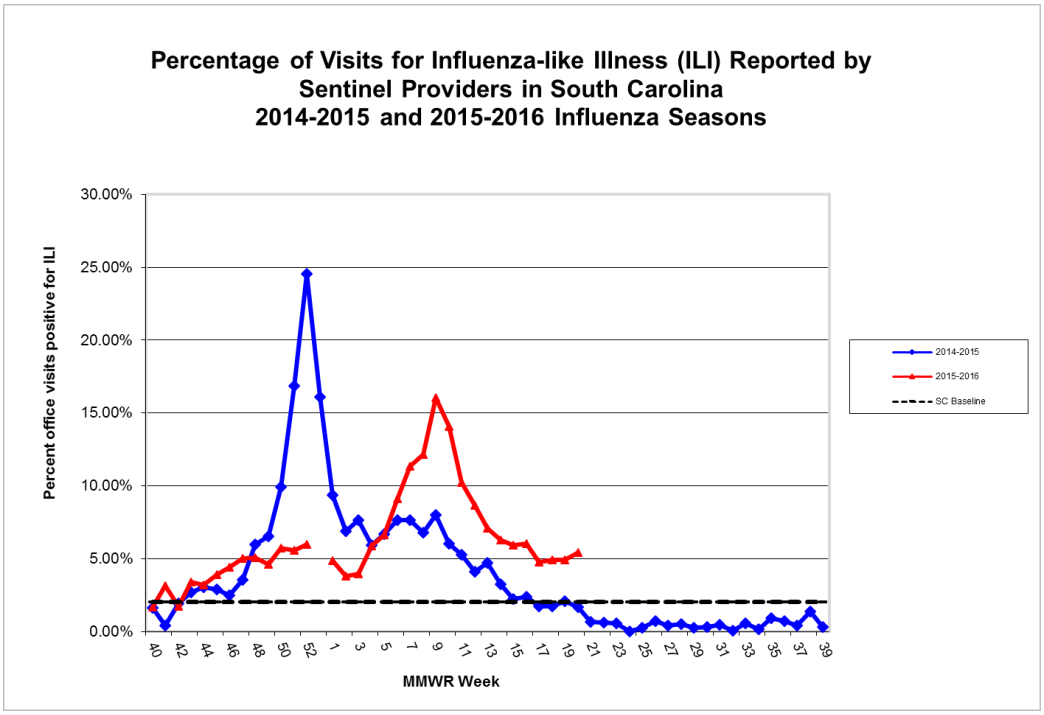
Map of Positive Rapid Influenza Tests, by County
May 15, 2016 - May 21, 2016



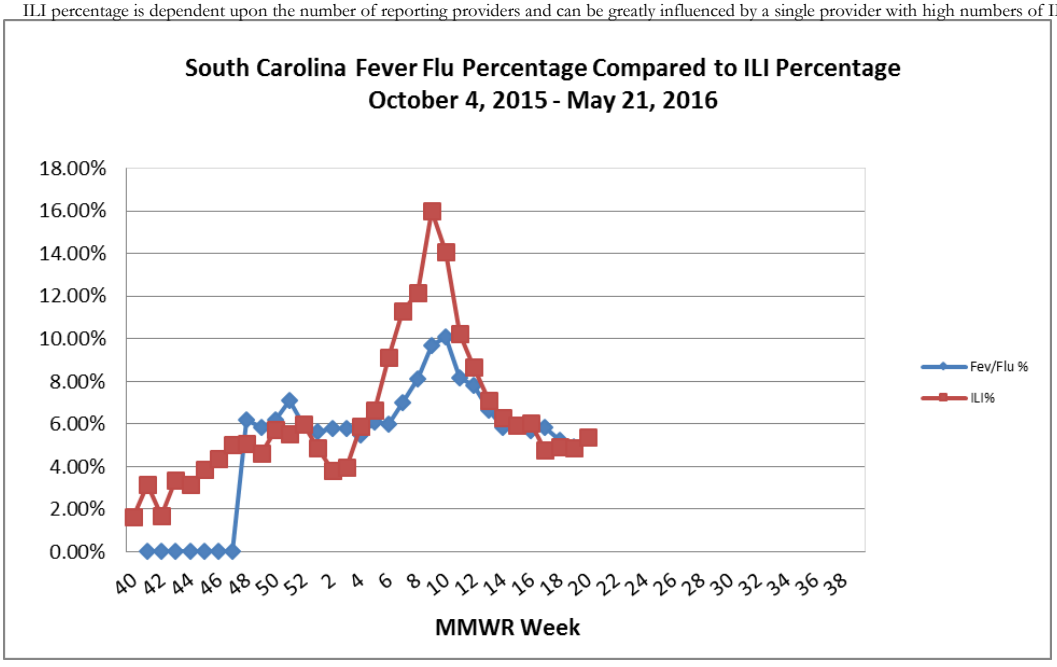

Positive Rapid Tests by Type
2014-15 vs 2015-16
October 4, 2015 - May 21, 2016
40000
35000
30000
25000
20000
15000
10000
5000
0
36388
21295
989
481
16508
10073
278
141
Influenza A
Influenza A/B
Influenza B
Unknown
2014-15
2015-16

III. ILINet Influenza-Like Illness Surveillance

During the most recent MMWR week, 5.41%* of patient visits to SC ILINet providers were due to ILI. This is above the state baseline **(2.05%)**. This ILI percentage compares to 1.69% this time last year. Reports were received from providers in 5 counties, representing 3 of 4 regions. The statewide percentage of ER visits with fever-flu syndrome was 5.39%.



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
May 15, 2016 – May 21, 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	NR	Lee	---
Calhoun	---	Lexington	NR
Charleston	5.76%	Marion	---
Cherokee	---	Marlboro	---
Chester	---	McCormick	NR
Chesterfield	---	Newberry	---
Clarendon	---	Oconee	---
Colleton	---	Orangeburg	---
Darlington	---	Pickens	0.00%
Dillon	__	Richland	0.00%
Dorchester	NR	Saluda	0.00%
Edgefield	---	Spartanburg	NR
Fairfield	---	Sumter	NR
Florence	NR	Union	---
Georgetown	NR	Williamsburg	---
Greenville	NR	York	0.00%

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

IV. Influenza-associated hospitalizations and deaths

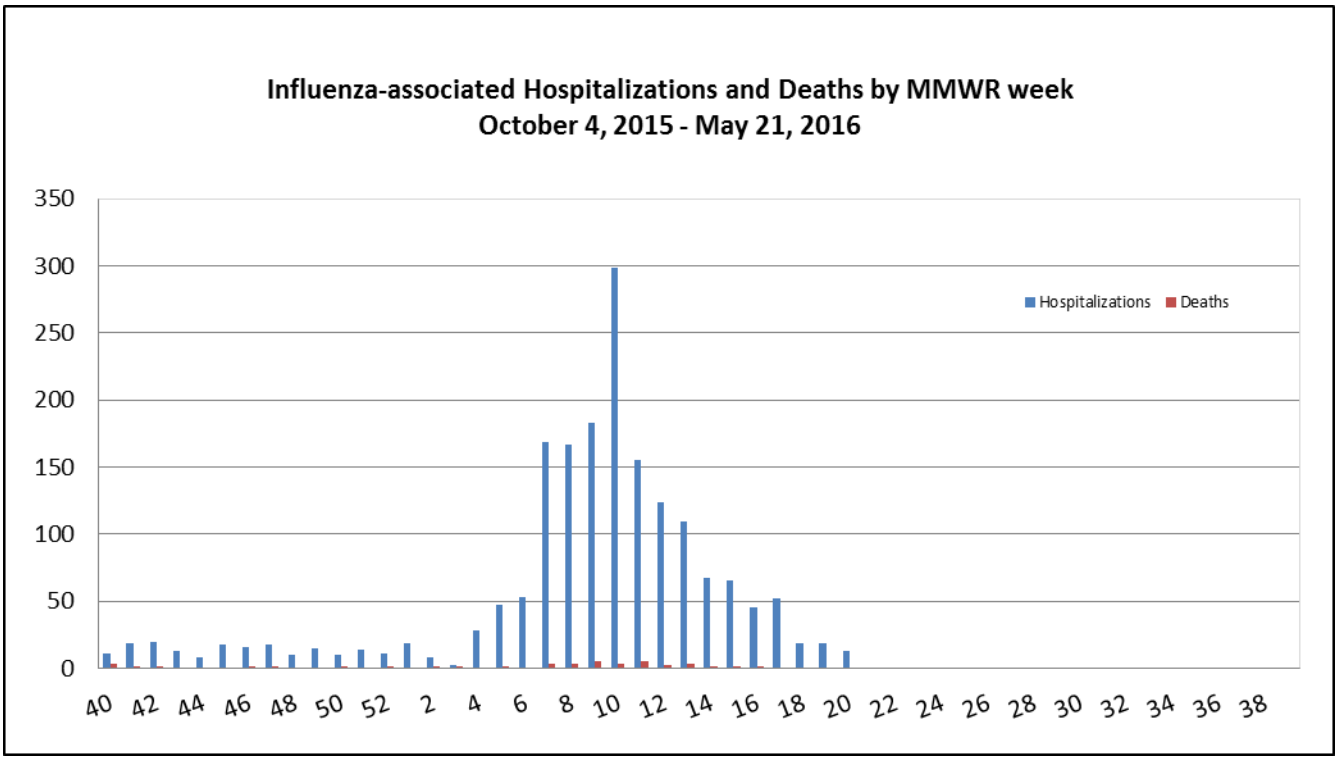
For the current MMWR reporting week, 13 laboratory confirmed influenza-associated hospitalizations were reported by 33 hospitals. No laboratory confirmed influenza-associated deaths were reported. Since October 4, 2015, 1,826 laboratory confirmed influenza-associated hospitalizations and 39 laboratory confirmed influenza-associated deaths have been reported. **Laboratory confirmation for hospitalizations and deaths includes culture, PCR, DFA, IFA, and rapid antigen detection test.**

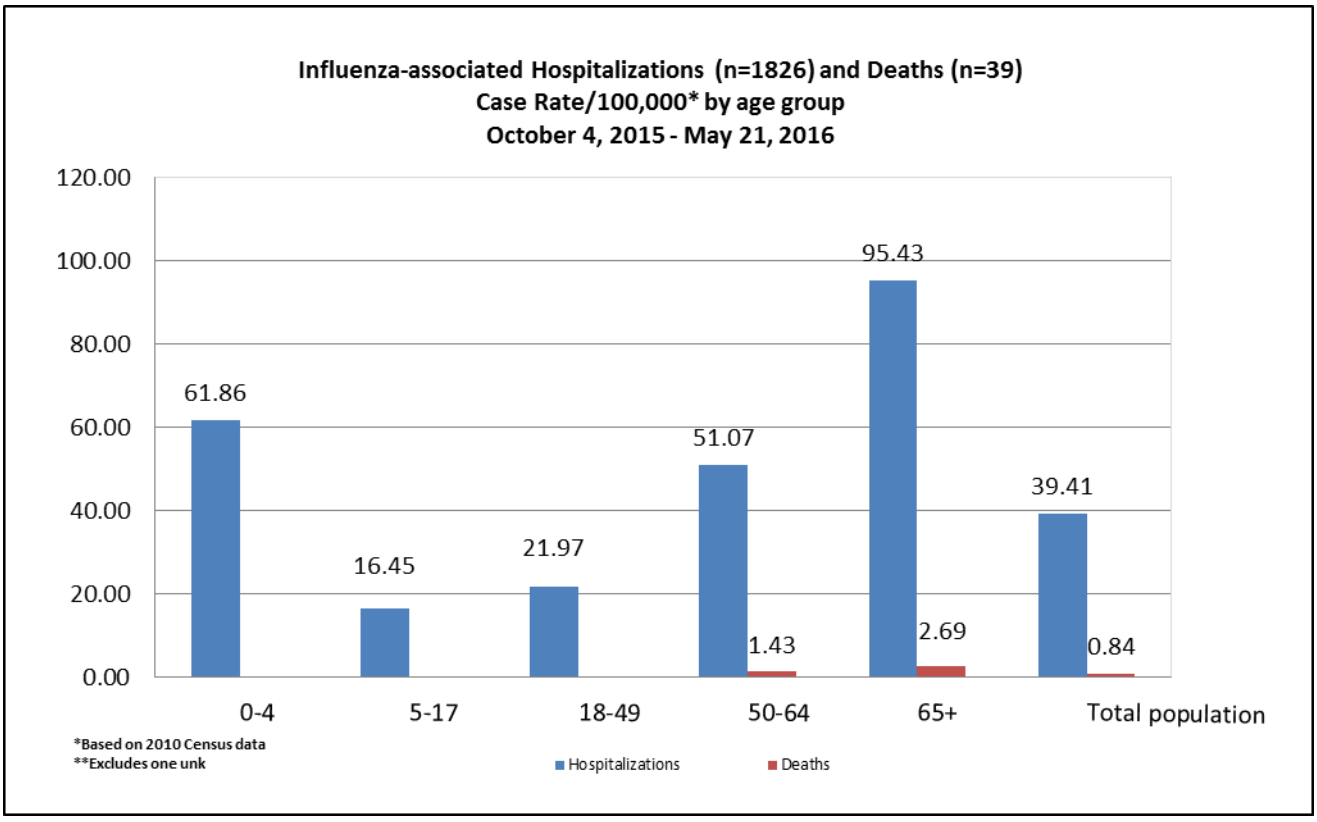
Current MMWR Week (5/15/16 - 5/21/16)							
	0-4	**5-17**	**18-49**	**50-64**	**65+**	**Unknown**	**Total**
Hospitalizations	1	1	2	6	3	0	13
Deaths							0

Cumulative (10/4/15 -5/21/16)							
	0-4	**5-17**	**18-49**	**50-64**	**65+**	**Unknown**	**Total**
Hospitalizations	187	128	440	465	603	3	1826
Deaths	0	1	8	13	17		39

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

Influenza associated deaths by Region	
Region	**Total**
Lowcountry	11
Midlands	6
Pee Dee	10
Upstate	12

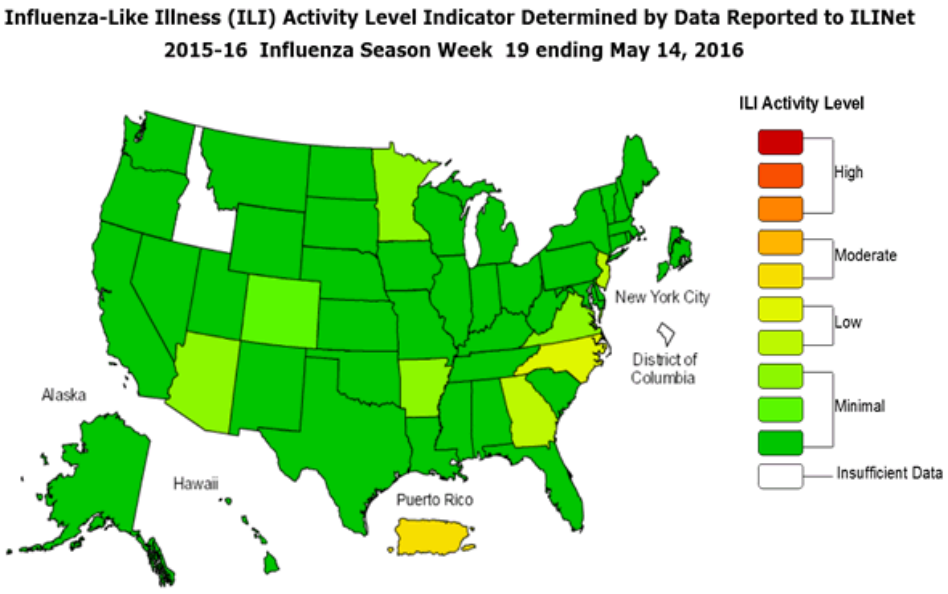

Influenza-associated Hospitalizations and Deaths by MMWR week
October 4, 2015 - May 21, 2016
350
300
250
200
150
100
50
0
Hospitalizations
Deaths
40 42 44 46 48 50 52 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38


Influenza-associated Hospitalizations (n=1826) and Deaths (n=39)
Case Rate/100,000* by age group
October 4, 2015 - May 21, 2016
120.00
100.00
80.00
60.00
40.00
20.00
0.00
61.86
16.45
21.97
51.07
1.43
95.43
2.69
39.41
0.84
0-4
5-17
18-49
50-64
65+
Total population
*Based on 2010 Census data
**Excludes one unk
Hospitalizations
Deaths

V. National surveillance (5/8/16 – 5/14/16)

During week 19 (May 8, 2016 – May 14, 2016), influenza activity decreased.

- **Viral Surveillance:** The most frequently identified influenza virus type reported by public health laboratories during week 19 was influenza B. The percentage of respiratory specimens testing positive for influenza in clinical laboratories decreased.
- **Pneumonia and Influenza Mortality:** The proportion of deaths attributed to pneumonia and influenza (P&I) was below the system-specific epidemic threshold in the NCHS Mortality Surveillance System and at the system-specific epidemic threshold in the 122 Cities Mortality Reporting System.
- **Influenza-associated Pediatric Deaths:** One influenza-associated pediatric death was reported.
- **Influenza-associated Hospitalizations:** A cumulative rate for the season of 31.3 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 1.4%, which is below the national baseline of 2.1%. One of 10 regions reported ILI at or above region-specific baseline levels. Puerto Rico experienced moderate ILI activity; three states experienced low ILI activity; New York City and 46 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 Puerto Rico and two states was reported as widespread; seven states reported regional activity; the District of Columbia, Guam, and 19 states reported local activity; and the U.S. Virgin Islands and 22 states reported sporadic activity.



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.

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) (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