Flu Watch

MMWR Week 12: March 19 to March 25, 2017

All data are provisional and subject to change as more reports are received.

SUMMARY

Geographic Spread

Influenza activity **increased** this week. South Carolina reported **widespread activity.**

Virologic Surveillance

This week, a total of 8,265 influenza cases (8,148 positive rapid antigen detection tests; 117 lab confirmed tests) were reported from 43 counties representing all four regions. The predominant circulating flu type was Influenza A. Since October 2, 2016, 73,710 influenza cases (72,287 positive rapid antigen detection tests; 1,423 lab confirmed tests) have been reported.

Influenza-Like Illness Surveillance

This week, 13.48% of patient visits to sentinel providers were seen for an influenza-like illness (ILI). This is above South Carolina's baseline (3.13%). The ILI activity level was **high.**

Influenza-Associated Hospitalizations

A total of 218 hospitalizations were reported by 49 hospitals. Since October 2, 2016, 2,482 influenza-associated hospitalizations have been reported.

Influenza-Associated Deaths

Three lab confirmed deaths were reported this week; however, 1 of these deaths occurred during MMWR week 6. Since October 2, 2016, 47 influenza-associated deaths have been reported.

Contents

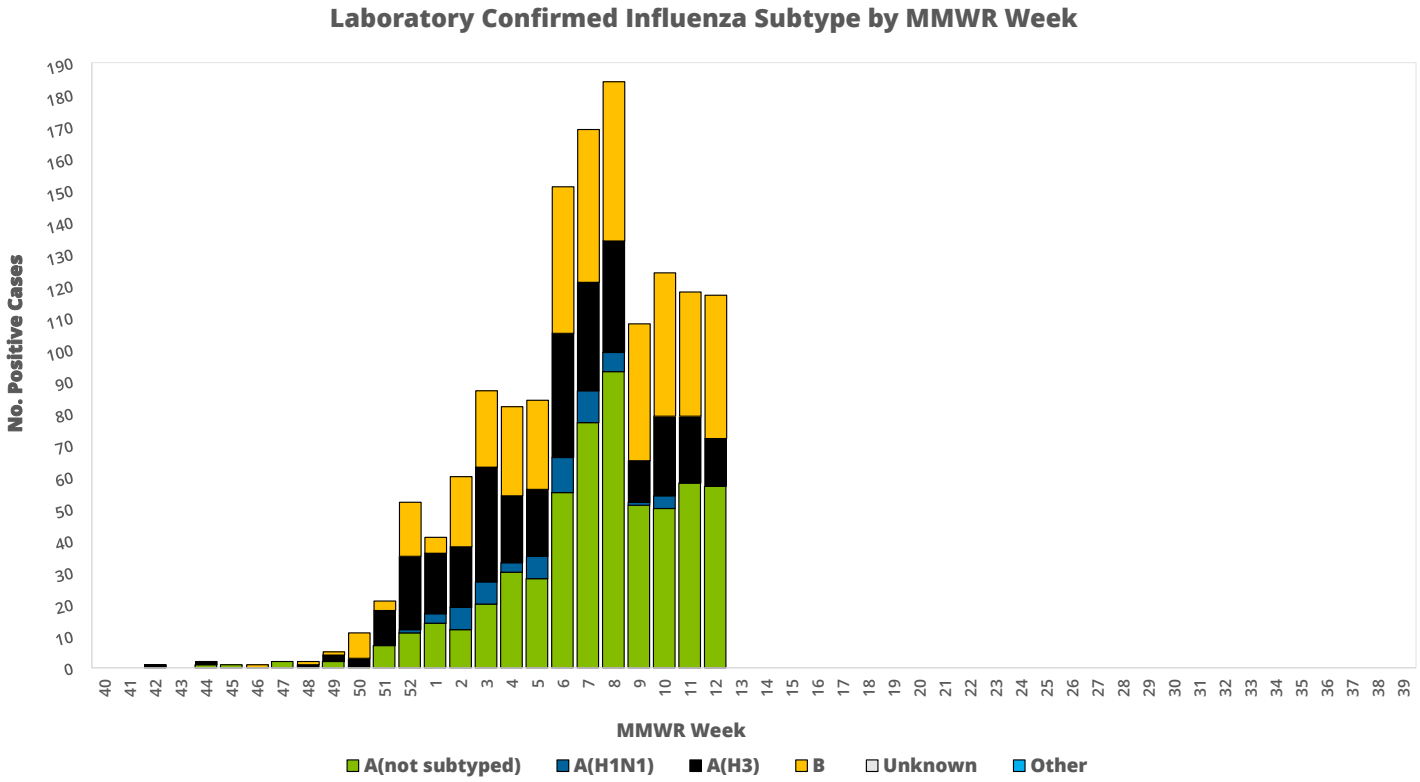
Virologic Surveillance

Lab Confirmed Influenza Cases

Lab Confirmed Influenza Cases include positive testing via respiratory culture, RT-PCR, DFA, and IFA. Reporting is required to DHEC within 3 days via the South Carolina Infectious Disease and Outbreak Network (SCION) or DHEC 1129 card. This week, **117** lab confirmed cases were reported. This compares to **97** lab confirmed cases this same week last season. The predominant circulating influenza subtype was **Influenza A.**

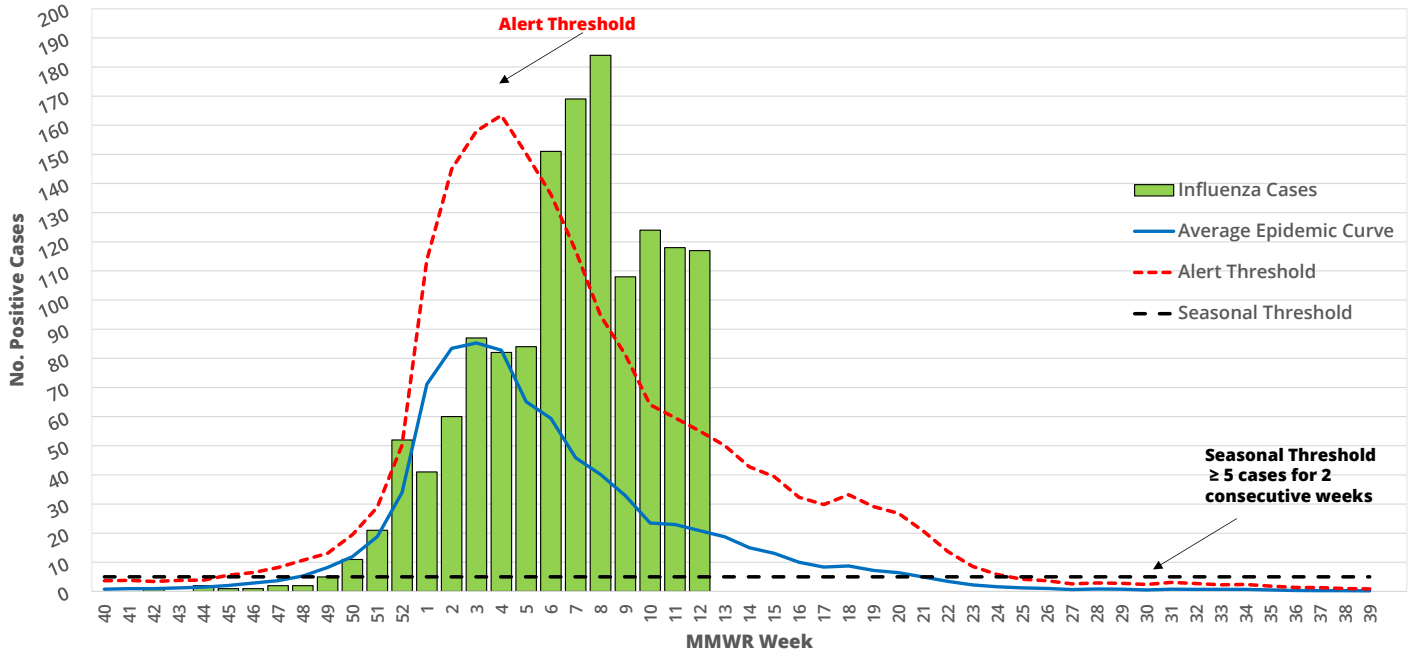
Table: Lab Confirmed Influenza Cases

Virus Type/ Subtype	No. Positive This week	No. Positive Previous week	No. Positive Cumulative YTD 2016-17	No. Positive Cumulative YTD 2015-16
A not subtyped	57 (48.7%)	58 (49.2%)	569 (40.0%)	144 (19.1%)
A(H1N1)	0	0 (0.00%)	60 (4.2%)	482 (64.1%)
A(H3)	15 (12.8%)	21 (17.8%)	340 (23.9%)	23 (3.1%)
B	45 (38.5%)	39 (33.0%)	454 (31.9%)	102 (13.6%)
Other	0	0	0	1 (0.1%)
Unknown	0	0	0	0
Total	117	118	1423	752

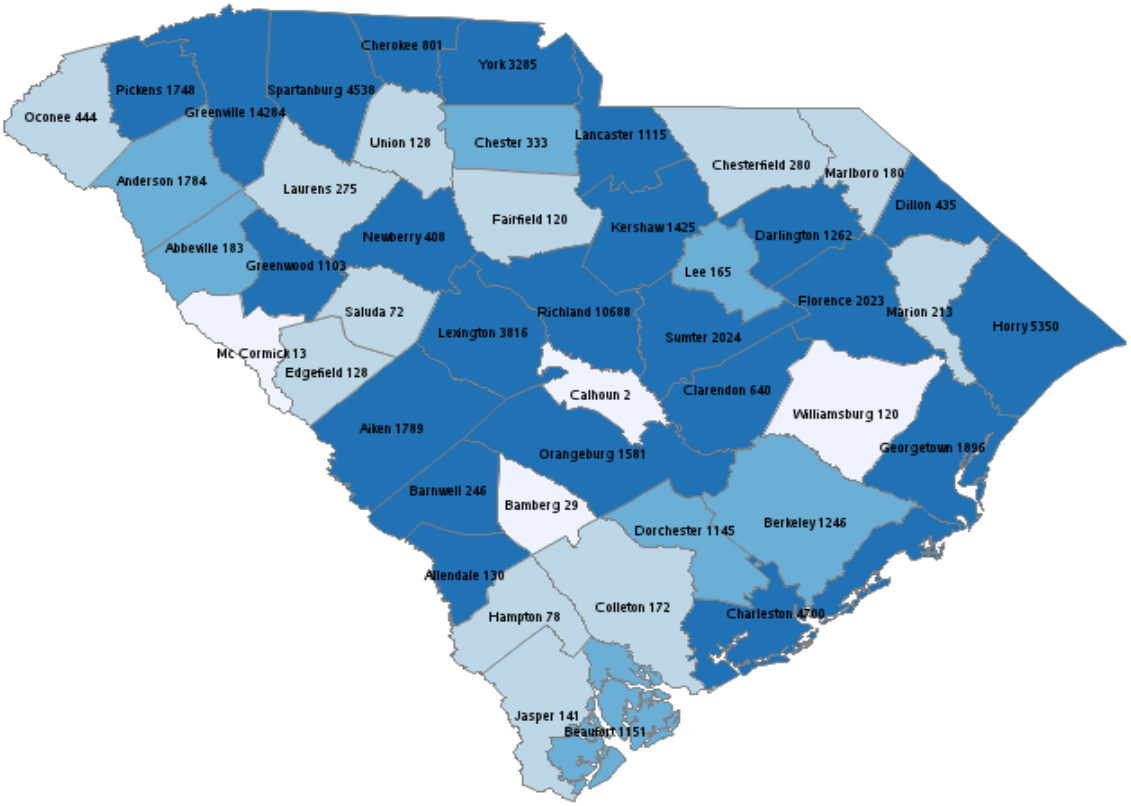


Virologic Surveillance

Laboratory Confirmed Influenza Cases Average and Thresholds



Cumulative Influenza Case Rate/100,000 By County



Includes all lab confirmed and positive rapid cases

Virologic Surveillance

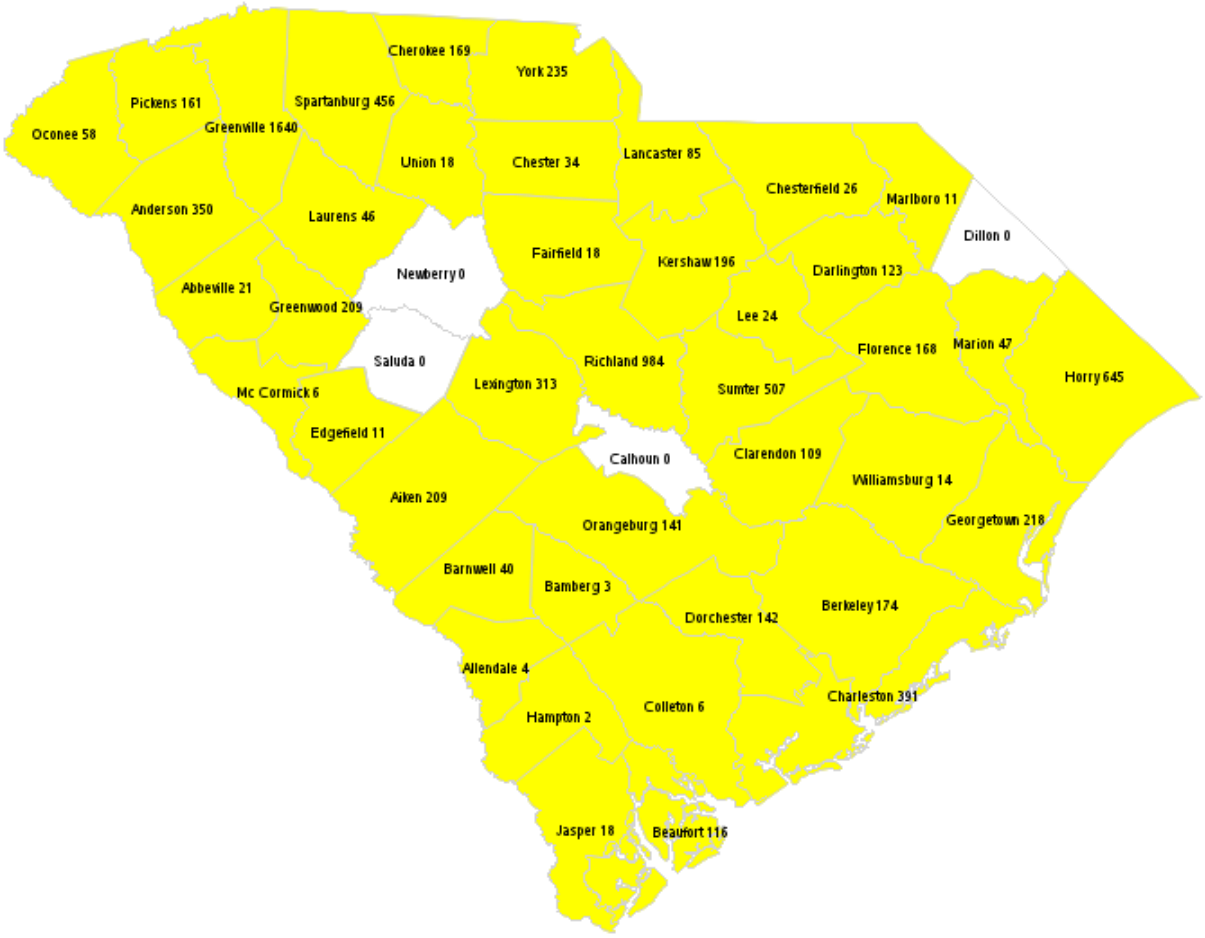
Positive Rapid Antigen Detection Tests

Positive Rapid Antigen Detection Tests Providers are required to report weekly aggregate no. of positive results and influenza type to their respective regional health department. This week, **8148** positive rapid tests were reported. This compares to **1967** positive rapid tests reported this same week last season. The predominant influenza type was **Influenza A.**

Table: Positive Rapid Antigen Detection Tests

Virus Type	No. Positive		No. Positive	
	This week	Previous week	Cumulative YTD 2016-17	Cumulative YTD 2015-16
Influenza A	4451 (54.6%)	3301 (55.3%)	46213 (63.9%)	18215 (74.8%)
Influenza A/B	57 (0.7%)	42 (0.7%)	536 (0.7%)	345 (1.4%)
Influenza B	3609 (44.3%)	2621 (43.8%)	25340 (35.1%)	5695 (23.4%)
Unknown	31 (0.4%)	10 (0.2%)	198 (0.3%)	106 (0.4%)
Total	8148	5974	72287	24361

Positive Rapid Influenza Tests Weekly Total By County



Highlighted areas indicate counts greater than or equal to 1

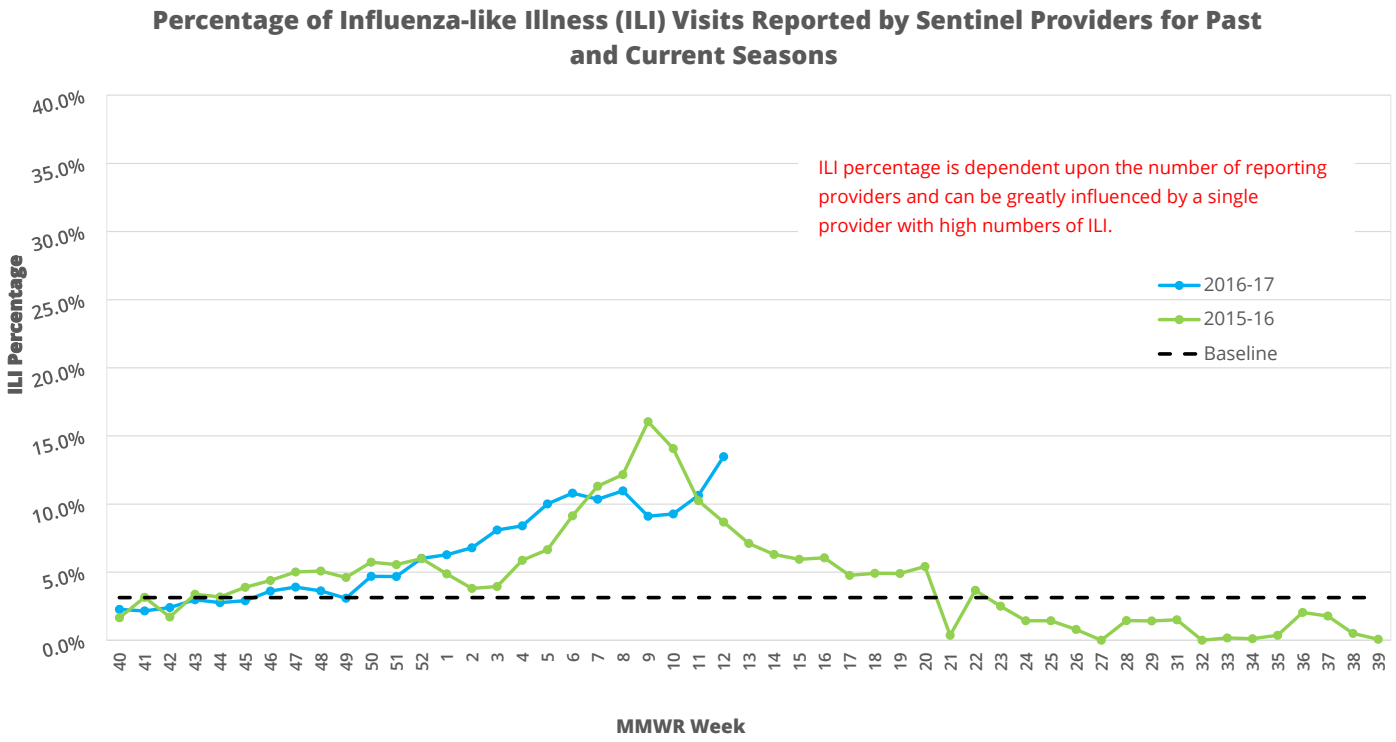
Influenza-Like Illness Surveillance

Influenza-Like Illness Surveillance Providers enrolled in the Center for Disease Control Influenza-Like Illness Network (ILINet) surveillance system report weekly aggregate no. of patient visits, and of those visits the number of patients seen for an influenza-like illness by age group (i.e. 0-4, 5-24, 25-49, 50-64, ≥ 65). This week, the ILI activity level was **high** and **13.48%** of patient visits to SC ILINet providers was attributed to an influenza-like illness. This is **above** the state baseline, **3.13%**. The ILI percentage for the current week last season was **8.68%**. Reports were received from providers in 12 counties, representing all 4 regions.

ILI Activity Level 2016-17 Calendar

OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
40	44	48	1	5	9	13	18	22	26	31	35
41	45	49	2	6	10	14	19	23	27	32	36
42	46	50	3	7	11	15	20	24	28	33	37
43	47	51	4	8	12	16	21	25	29	34	38
		52				17			30		39

ILI ACTIVITY LEVELS: MINIMIAL LOW MODERATE HIGH



Influenza-Like Illness Surveillance

Influenza-Like Illness Reported by Sentinel Providers

County	ILI %	County	ILI %
Abbeville	---	Greenwood	NR
Aiken	4.38%	Hampton	---
Allendale	---	Horry	---
Anderson	NR	Jasper	---
Bamberg	---	Kershaw	---
Barnwell	---	Lancaster	---
Beaufort	16.67%	Laurens	NR
Berkeley	8.65%	Lee	---
Calhoun	---	Lexington	---
Charleston	20.74%	Marion	---
Cherokee	---	Marlboro	NR
Chester	---	McCormick	---
Chesterfield	---	Newberry	---
Clarendon	---	Oconee	NR
Colleton	---	Orangeburg	---
Darlington	13.17%	Pickens	0.00%
Dillon	__	Richland	5.12%
Dorchester	29.12%	Saluda	NR
Edgefield	---	Spartanburg	NR
Fairfield	---	Sumter	2.32%
Florence	1.25%	Union	---
Georgetown	NR	Williamsburg	---
Greenville	12.93%	York	3.13%

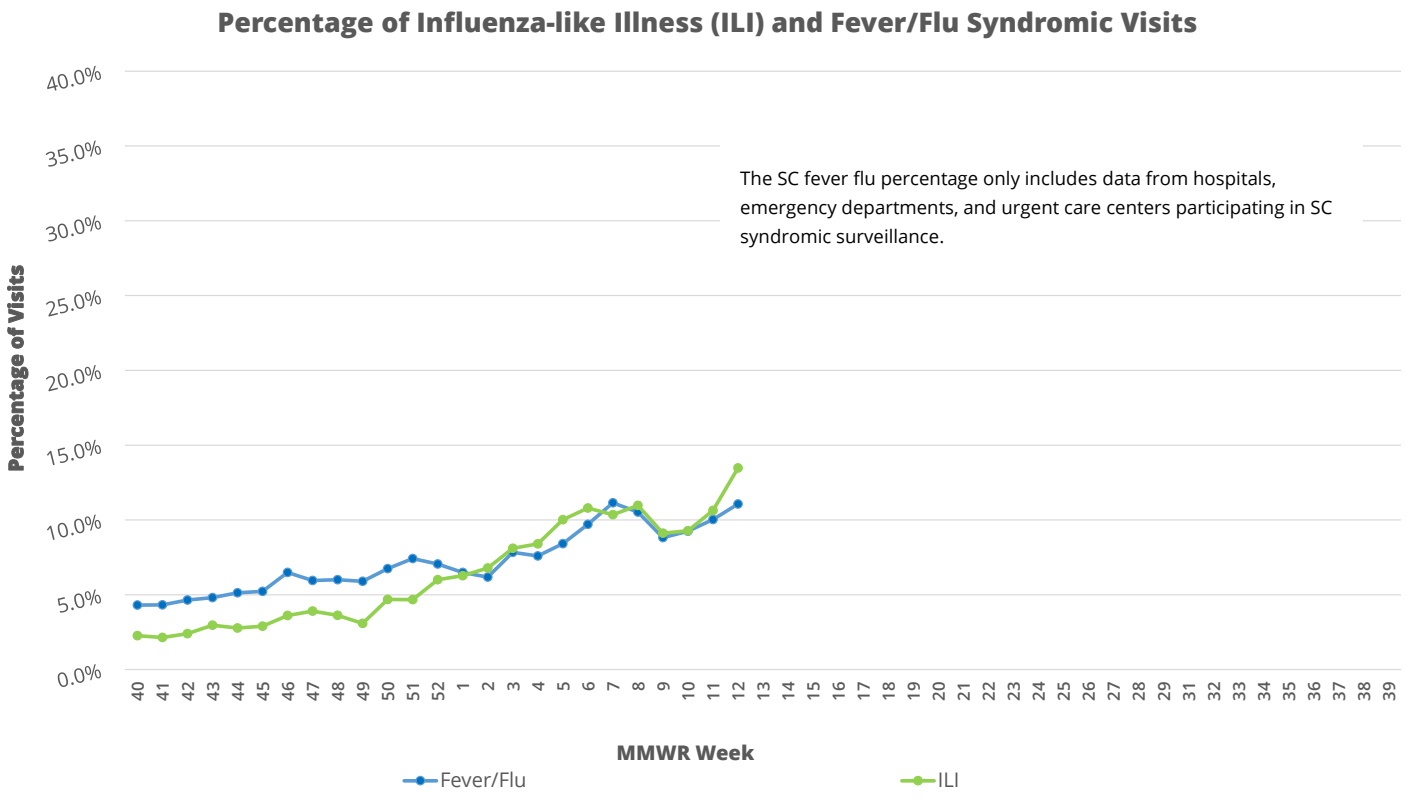
NR: No reports received
---: No enrolled providers

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 Surveillance

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

(SC-DARTS) is a collaborative network of syndromic surveillance systems within South Carolina. Currently this network contains the following data sources: SC Hospital Emergency Department (ED) chief-complaint data and Poison Control Center call data. The hospital ED syndromic surveillance system classifies ED chief complaint data into appropriate syndrome categories (i.e. Respiratory, GI, Fever, etc.). This week, the statewide percentage of ER visits with fever-flu syndrome was **11.07%**.



Influenza-Associated Hospitalizations and Deaths

Influenza-Associated Hospitalizations

are reported weekly in aggregate no. to their respective regional health departments.

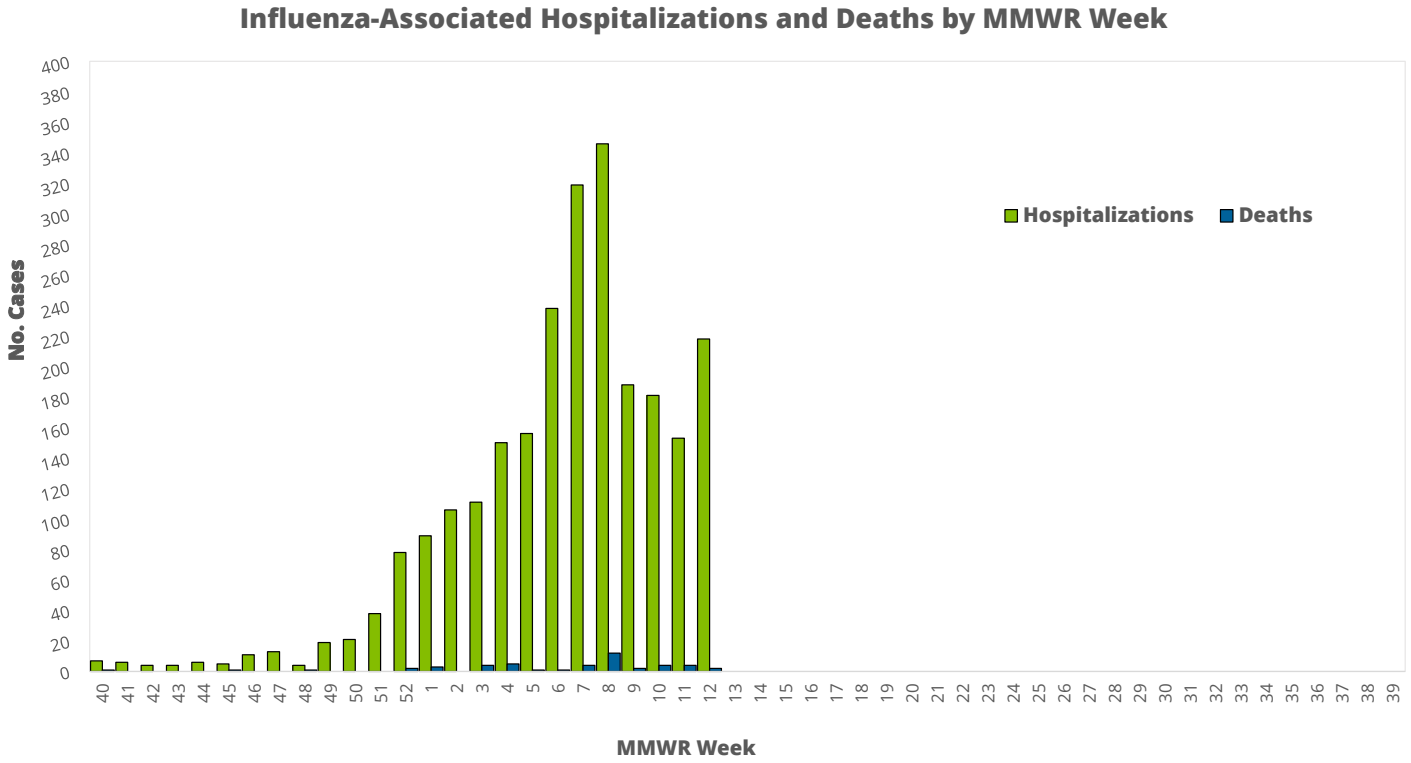
This week **218** laboratory confirmed hospitalizations were reported by **49** hospitals. This compares to **124** lab confirmed hospitalizations this same week last season.

Table: Influenza Associated Hospitalizations

Age Group	No. Hospitalizations				
	This week	Previous week	Rate per 100,000*	Cumulative YTD 2016-17	Cumulative YTD 2015-16
0-4	5	10	67.8	205	154
5-17	8	4	31.2	243	99
18-49	24	17	20.7	415	339
50-64	44	29	54.9	500	367
65+	137	93	177.1	1119	475
Unknown	0	0	--	0	0
Total	218	153	53.7	2482	1437

*Population size based on 2010 Census Data

Laboratory confirmation for hospitalizations and deaths includes culture, PCR, DFA, IFA, rapid antigen detection testing, or autopsy (deaths only).



Influenza-Associated Hospitalizations and Deaths

Table: Influenza Associated Deaths

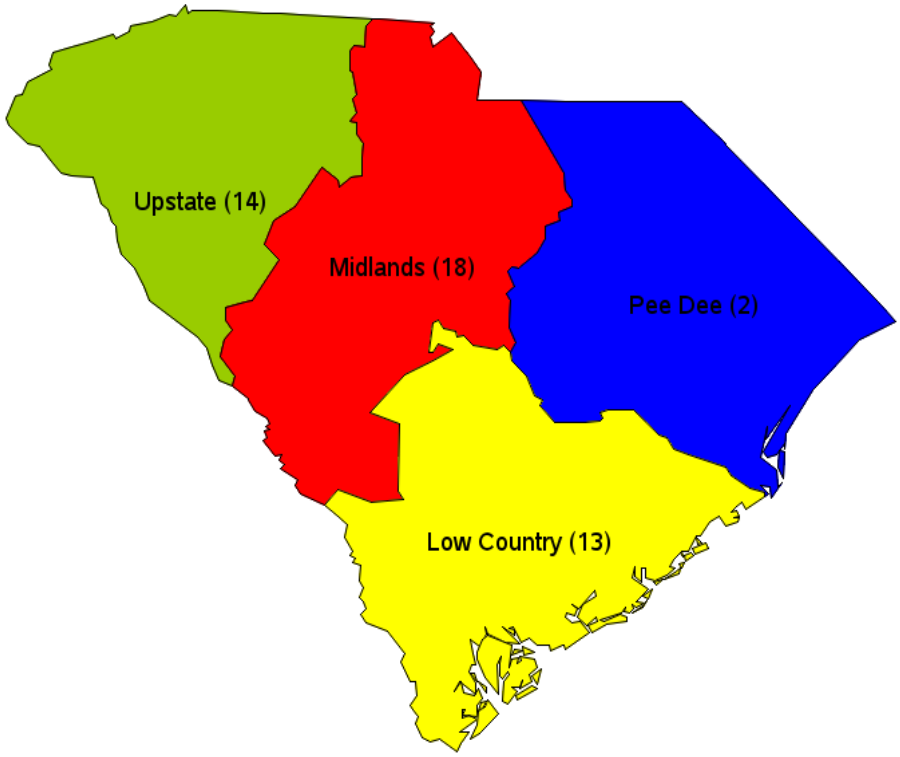
Age Group	No. Deaths				
	This week	Previous week	Rate per 100,000*	Cumulative YTD 2016-17	Cumulative YTD 2015-16
0-4	0	0	0.0	0	0
5-17	0	0	0.1	1	0
18-49	0	1	0.2	4	8
50-64	0	0	0.7	6	12
65+	2	3	5.7	36	15
Unknown	0	0	--	--	--
Total	2	4	1.0	47	35

*Population size based on 2010 Census Data

Influenza-Associated Deaths are urgently reportable to DHEC within 24 hours of initial notification.

2 laboratory confirmed deaths were reported this week. This compares to **3** laboratory confirmed deaths this same week last season.

Influenza-Associated Deaths by Region



National Influenza Surveillance

Synopsis:

During week 11 (March 12-18, 2017), influenza activity decreased, but remained elevated in the United States.

Viral Surveillance: The most frequently identified influenza virus subtype reported by public health laboratories during week 11 was influenza A (H3). 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 above the system-specific epidemic threshold in the National Center for Health Statistics (NCHS) Mortality Surveillance System.

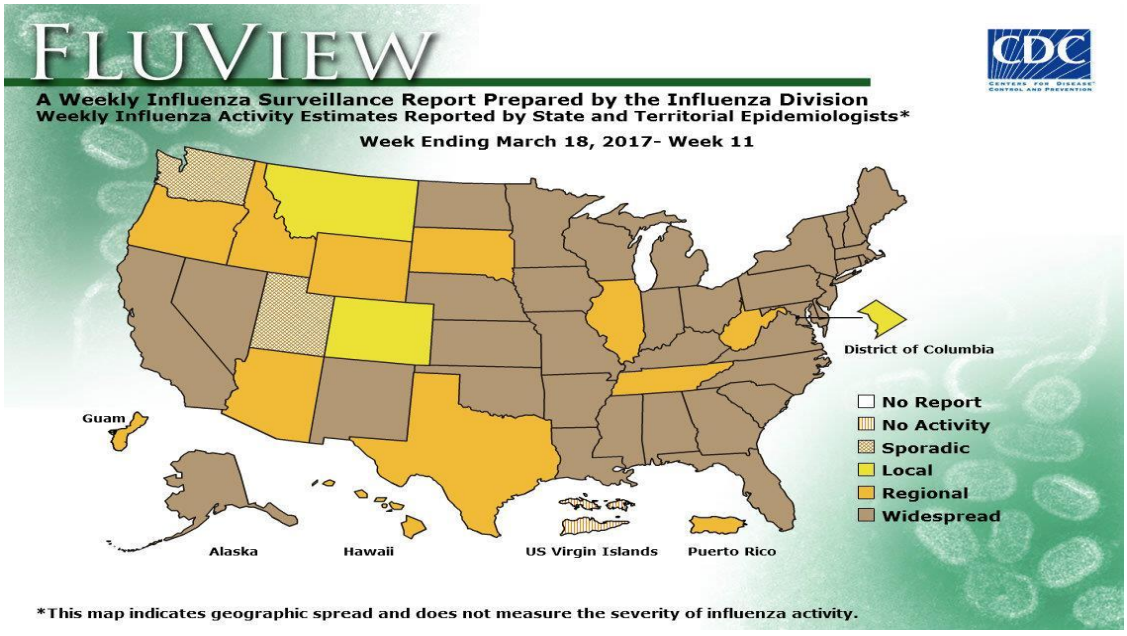
Influenza-associated Pediatric Deaths: Two influenza-associated pediatric deaths were reported.

Influenza-associated Hospitalizations: A cumulative rate for the season of 50.4 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 3.2%, which is above the national baseline of 2.2%. Seven of ten regions reported ILI at or above their region-specific baseline levels. 12 states experienced high ILI activity; six states experienced moderate ILI activity; nine states experienced low ILI activity; New York City, Puerto Rico, and 23 states experienced minimal ILI activity; and the District of Columbia had insufficient data.

Geographic Spread of Influenza: The geographic spread of influenza in 36 states was reported as widespread; Guam, Puerto Rico and 10 states reported regional activity; the District of Columbia and two states reported local activity; two states reported sporadic activity; and the U.S. Virgin Islands reported no activity.

For addition information, go to: http://www.cdc.gov/flu/weekly/



Influenza Surveillance Definitions

Activity Level (Geographic Spread): 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 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.

Activity Level (Influenza-like Illness): Comparison of the current week mean reported percent of visits due to ILI to the non-influenza weeks mean reported percent of visits due to ILI. The activity level corresponds to the number of standard deviations below, at, or above the mean for the current week compared to the mean of the non-influenza weeks.
Minimal: less than 2 standard deviations above the mean.
Low: 2 to less than 4 standard deviations above the mean.
Moderate: 4 to less than 6 standard deviations above the mean.
High: greater than or equal to 6 standard deviations above the mean.

Alert Threshold: indicates influenza activity (no. of laboratory confirmed influenza cases) that is higher than the past 5 seasons. Threshold is defined as 1.645 standard deviations above the average epidemic curve for each MMWR week.

Additional Resources

Center for Disease Control and Prevention
Weekly U.S. Influenza Surveillance Report

World Health Organization
FluNet Report

European Centre for Disease Prevention and Control
Weekly Influenza Situation

Government of Canada
Weekly Influenza Report

Average Epidemic Curve: Typical influenza activity (no. of lab confirmed influenza cases) for a season. Centered on the median week of the past 5 seasons, the 4 week moving average is calculated for each MMWR week.

Fever-Flu Syndrome: Includes chief complaints with any of the following ICD codes or terms: flu, fev, high temp, tem10, feel hot, night sweat, FEB, shiver, FUO, chill, 780.6, viral INF, pain all over, ILI, and body ache. Weekly fever flu count is the sum of all the 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 complaints 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-like Illness (ILI): Fever ≥ 100°F (37.8°C) AND cough AND/OR sore throat (without a known cause other than influenza). The SC baseline is the mean percentage of patient visits for ILI during non-influenza weeks (weeks when the percent of positive lab tests were less than 2% of the total season's positive lab tests for two consecutive weeks) 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. Nationally, the influenza season begins with MMWR week 40 and ends with MMWR week 39. The 2016-17 influenza season began on October 2, 2016 and will end on September 30, 2017.

Seasonal Threshold: indicates the start of the influenza season when the threshold is exceeded for two consecutive weeks. Threshold is defined as the median value of the average epidemic curve.