



Flu Watch

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

Week Ending March 31, 2012 (MMWR Week 13)

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

In this issue:

ILINet	2
Virologic surveillance	4
Rapid antigen tests	6
Hospitalizations and deaths	9
Syndromic surveillance	11
Activity level definitions	14
SC influenza surveillance components	15
National influenza surveillance	16

MMWR Week 13 at a Glance:

Influenza Activity Level: Local

Note: Activity level definitions are found on page 14

ILI Activity Status (South Carolina baseline is 2.05%*): Below baseline in the Upstate (0%), the Midlands (.59%), and along the Coast (.97%). The state ILI percentage is .31%. These data reflect reports from 15 (34.4%) providers.

Note: See map of counties on page 3 for regional descriptions

SC Viral Isolate and RT-PCR Activity: Twelve positive specimens were reported. Ninety-two positive specimens have been reported this season.

Positive Rapid Flu Test Activity: One hundred fifty-seven positive rapid tests were reported. So far this season, 1872 have been reported.

Hospitalizations*: Five lab confirmed hospitalizations were reported. Seventy-six lab confirmed hospitalizations have been reported this season.

Deaths*: No lab confirmed deaths were reported. One lab confirmed death has been reported this season.

**Lab confirmation includes positive rapid tests, culture, PCR, DFA, or IFA.*

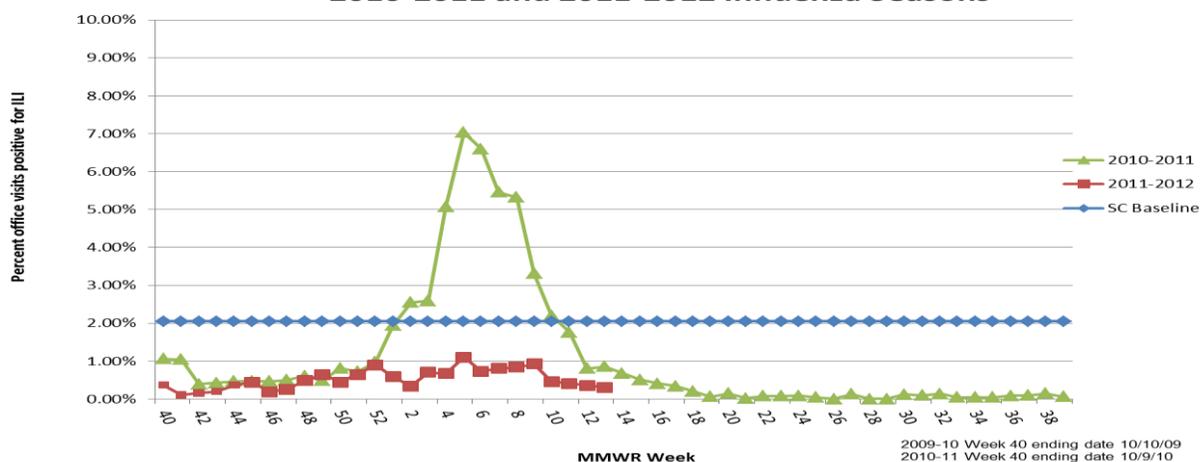
Summary of ILI Activity, Positive Confirmatory Tests, and Influenza Associated Hospitalizations and Deaths

	<i>Current week</i>	<i>Previous week</i>	<i>Change From previous week</i>
Percent of visits to ILINet providers for ILI	.31	.36	▼ .05
Number of positive confirmatory tests	12	22	▼ 10
Number of lab confirmed flu hospitalizations	5	8	▼ 3
Number of lab confirmed flu deaths	0	0	0

I. ILINet Influenza-Like Illness Surveillance

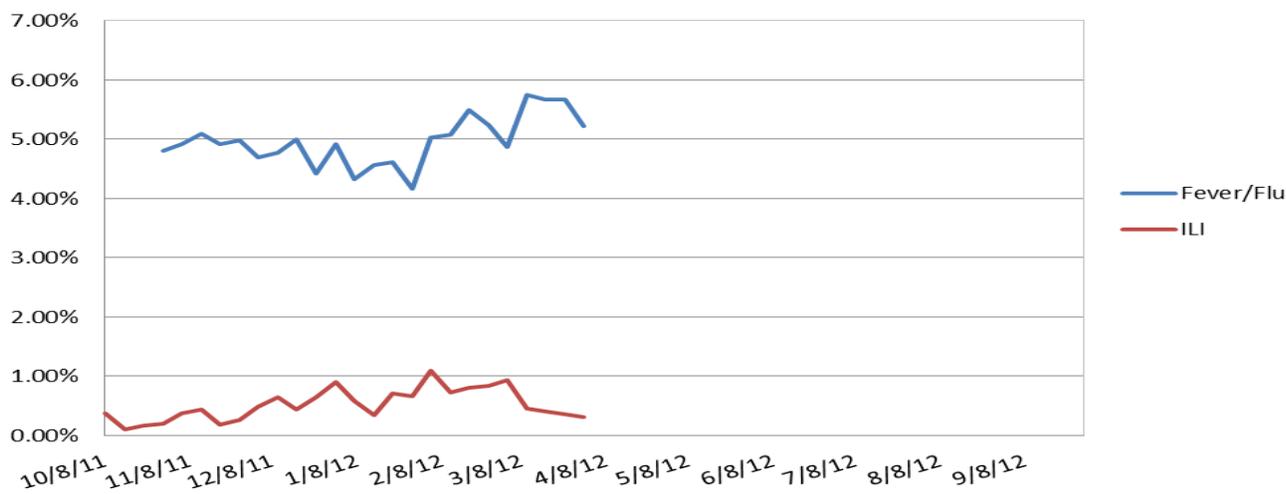
During MMWR week 13, .31% of patient visits to SC ILINet providers were due to ILI. This is below the state baseline (2.05%). This ILI percentage compares to .86% this time last year. Reports were received from providers in 13 counties, representing 6 of the 8 regions. The statewide percentage of ER visits with fever-flu syndrome (only includes hospitals participating in SC syndromic surveillance) was 5.22%.

**Percentage of Visits for Influenza-like Illness (ILI) Reported by Sentinel Providers in South Carolina
2010-2011 and 2011-2012 Influenza Seasons**



*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.

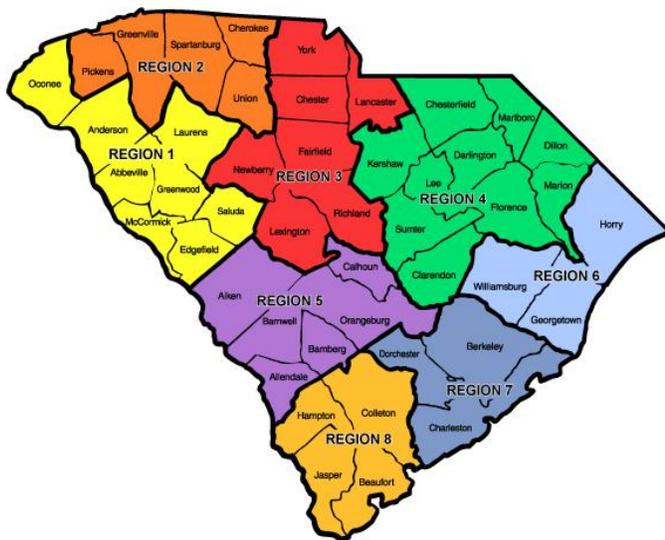
**SC Fever/Flu Syndrome Category compared to SC ILI Surveillance
Statewide (10/8/11-3/31/12)**



**Reported Influenza-Like Illness by Sentinel Providers
March 25, 2012 – March 31, 2012**

County	ILI %	County	ILI %
Abbeville	---	Greenwood	NR
Aiken	0%	Hampton	NR
Allendale	---	Horry	NR
Anderson	0%	Jasper	NR
Bamberg	---	Kershaw	1.48%
Barnwell	---	Lancaster	---
Beaufort	NR	Laurens	NR
Berkeley	NR	Lee	---
Calhoun	---	Lexington	NR
Charleston	NR	Marion	---
Cherokee	---	Marlboro	---
Chester	---	McCormick	NR
Chesterfield	---	Newberry	---
Clarendon	---	Oconee	---
Colleton	---	Orangeburg	---
Darlington	---	Pickens	0%
Dillon	NR	Richland	.38%
Dorchester	NR	Saluda	0%
Edgefield	---	Spartanburg	0%
Fairfield	0%	Sumter	NR
Florence	1.23%	Union	---
Georgetown	.97%	Williamsburg	---
Greenville	0%	York	.73%

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



Geographic Region	ILI %	# of Reporters
Upstate-Regions 1 -2	0	8
Midlands-Regions 3-5	.59	6
Coastal-Regions 6-8	.97	1

*County ILI percentages are affected by the number of reporting providers within that county.

II. Virologic Surveillance

Positive confirmatory influenza test results Current MMWR Week (3/25/12 – 3/31/12)*

	BOL	Other clinical labs
Number of specimens tested	10	NA
Number of positive specimens	6	6
Influenza A unsubtype		3
Influenza A H1N1	1	3
Influenza A H3N2	4	
Influenza B	1	
Other		

Includes culture, RT-PCR, DFA, and IFA

During MMWR week 13, 12 positive specimens were reported.

Positive confirmatory influenza test results Cumulative (10/2/11 – 3/31/12)*

	BOL	Other clinical labs
Number of specimens tested	137	NA
Number of positive specimens	66	26
Influenza A unsubtype		10
Influenza A H1N1	35	11
Influenza A H3N2	25	4
Influenza B	6	1
Other		

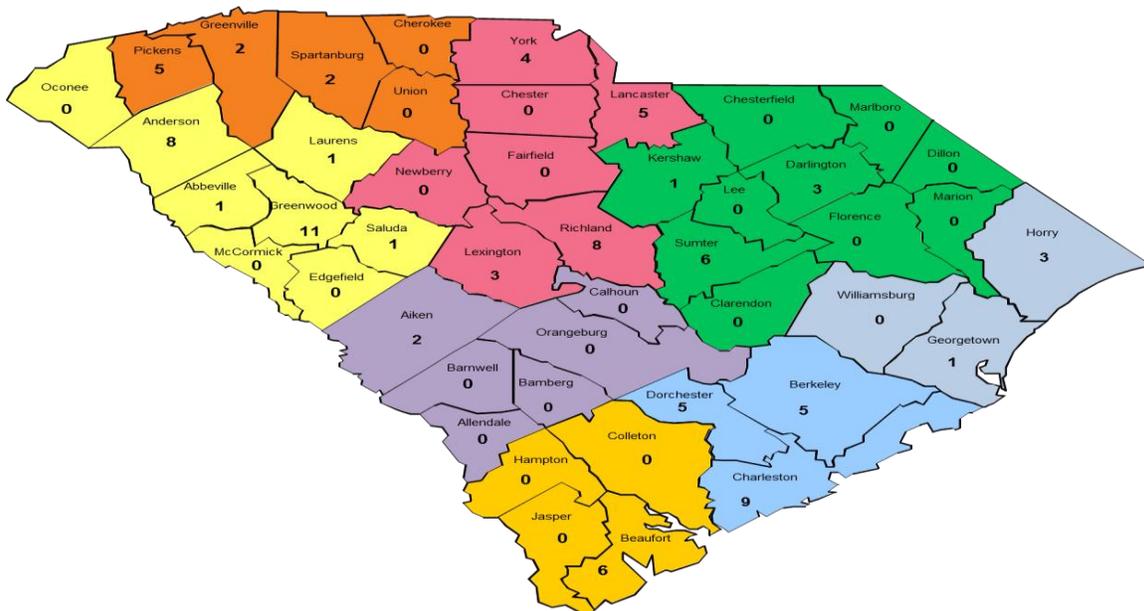
Includes culture, RT-PCR, DFA, and IFA

**Positive Confirmatory Tests by County
Current Week 3/25/12 – 3/31/12**

County	Positive Tests	County	Positive Tests	County	Positive Tests
Abbeville		Dillon		Lexington	
Aiken		Dorchester	1	Marion	
Allendale		Edgefield		Marlboro	
Anderson	1	Fairfield		McCormick	
Bamberg		Florence		Newberry	
Barnwell		Georgetown		Oconee	
Beaufort	4	Greenville	1	Orangeburg	
Berkeley		Greenwood		Pickens	
Calhoun		Hampton		Richland	1
Charleston		Horry		Saluda	
Cherokee		Jasper		Spartanburg	2
Chester		Kershaw		Sumter	
Chesterfield		Lancaster	2	Union	
Clarendon		Laurens		Williamsburg	
Colleton		Lee		York	
Darlington					

*All data are preliminary and may change as more reports are received.

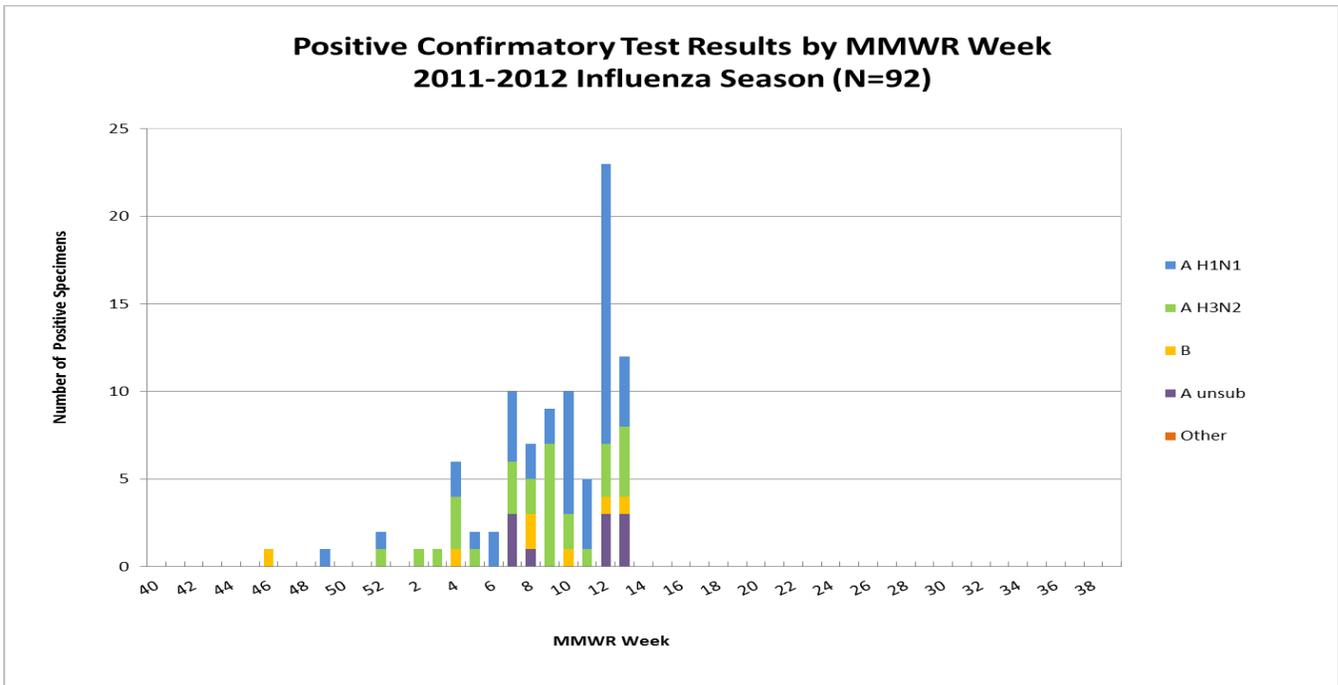
**Map of Positive Confirmatory Tests by County
Cumulative 10/2/11 – 3/31/12**



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

**Positive Confirmatory Tests by County and Type
Cumulative 10/2/11 - 3/31/12**

	A H1N1	A H3N2	B	A Unsub	Unk		A H1N1	A H3N2	B	A Unsub	Unk
Region 1						Region 2					
Abbeville	1					Cherokee					
Anderson		8				Greenville	2				
Edgefield						Pickens	5				
Greenwood	10	1				Spartanburg				2	
Laurens		1				Union					
McCormick						Region 4					
Oconee						Chesterfield					
Saluda	1					Clarendon					
Region 3						Darlington				3	
Chester						Dillon					
Fairfield						Florence					
Lancaster	3			2		Kershaw		1			
Lexington	2		1			Lee					
Newberry						Marion					
Richland	3	2	1	1		Marlboro					
York	3	1				Sumter	4	1	1		
Region 5				2		Region 6					
Aiken						Georgetown	1				
Allendale						Horry	2		1		
Bamberg						Williamsburg					
Barnwell						Region 8					
Calhoun						Beaufort	2	3	1		
Orangeburg						Colleton					
Region 7						Hampton					
Berkeley	2	3		1		Jasper					
Charleston	2	6		1							
Dorchester	3		2								



III. Positive Rapid Antigen Tests

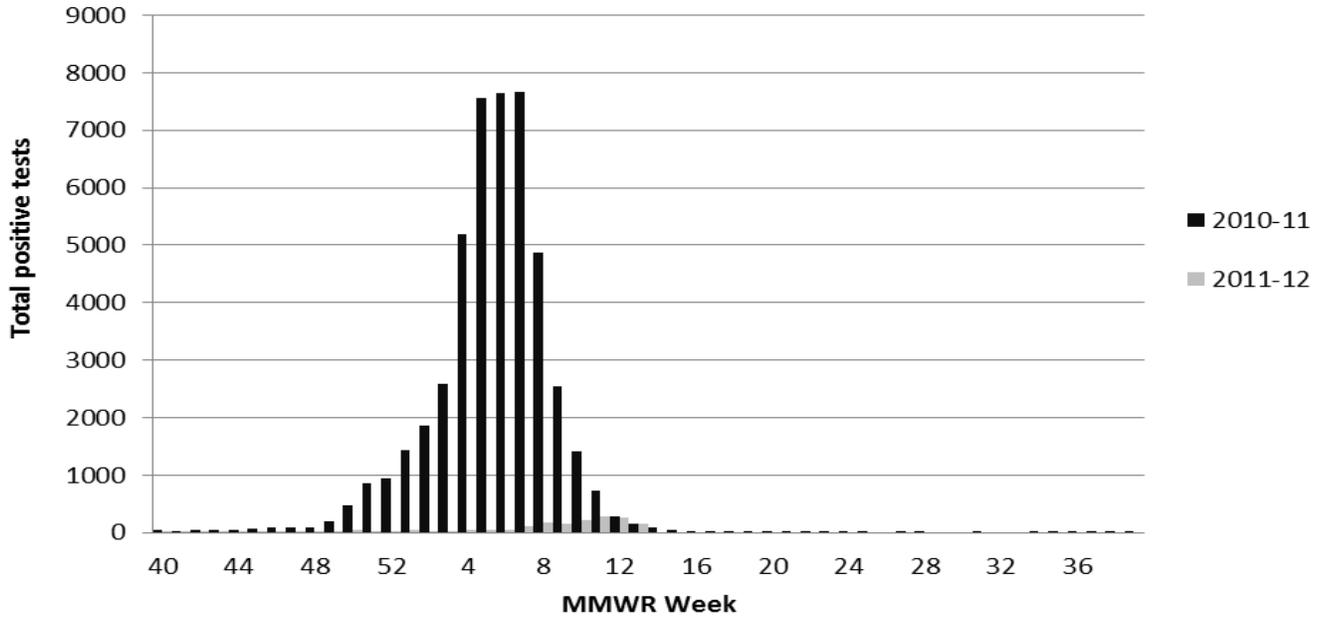
During MMWR week 13, 157 positive rapid antigen tests were reported. Of these, there were 130 influenza A, 19 influenza B, and 8 influenza A/B. During this MMWR week last year, 163 positive rapid tests were reported.

	Total Positive Rapid Antigen Tests				
	<i>Influenza A</i>	<i>Influenza B</i>	<i>Influenza A/B</i>	<i>Unk/Other</i>	<i>Total</i>
Current MMWR (3/25- 3/31/12)	130	19	8		157
Cumulative (since 10/2/11)	1485	269	105	13	1872

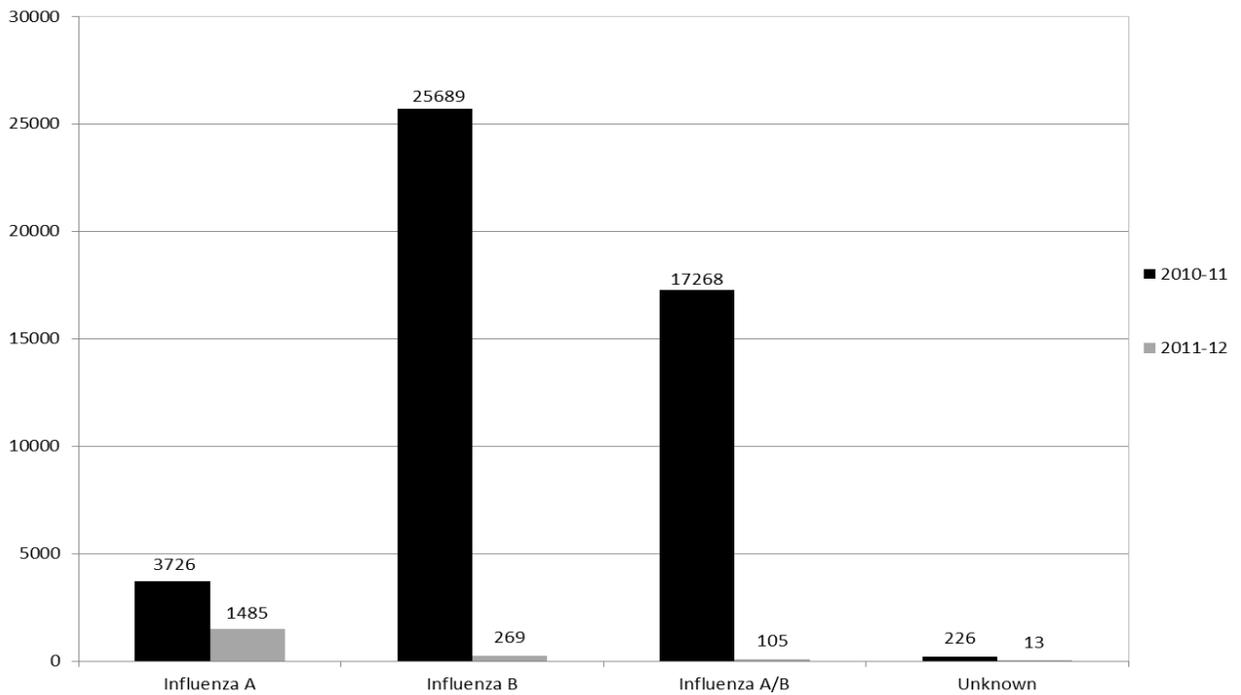
Positive Rapid Flu Tests by County Current Week 3/25/12 – 3/31/12

County	Positive Tests	County	Positive Tests	County	Positive Tests
Abbeville	3	Dillon		Lexington	3
Aiken	2	Dorchester	3	Marion	
Allendale		Edgefield		Marlboro	
Anderson	10	Fairfield		McCormick	
Bamberg		Florence	2	Newberry	
Barnwell		Georgetown	4	Oconee	4
Beaufort	18	Greenville	10	Orangeburg	
Berkeley		Greenwood	4	Pickens	3
Calhoun		Hampton		Richland	12
Charleston	22	Horry	14	Saluda	
Cherokee		Jasper		Spartanburg	2
Chester	2	Kershaw		Sumter	2
Chesterfield		Lancaster	5	Union	
Clarendon		Laurens	2	Williamsburg	
Colleton	2	Lee		York	20
Darlington	8				

Positive Rapid Tests by MMWR Week 2010-11 vs 2011-12



Positive Rapid Tests by Type 2011-2012 MMWR Weeks 40-13



**Positive Rapid Tests by County and Type
Cumulative 10/2/11 – 3/21/12**

	A	B	A/B	Unk		A	B	A /B	Unk
Region 1					Region 2				
Abbeville	26	4			Cherokee	2			
Anderson	102	11	5		Greenville	129	26	4	1
Edgefield					Pickens	44	6	1	
Greenwood	37	2	6		Spartanburg	127	2	3	
Laurens	16	3	2		Union	16		9	
McCormick	3				Region 4				
Oconee	33	7	1	1	Chesterfield	1			
Saluda	1	1			Clarendon	3	1		
Region 3					Darlington	35	3	1	5
Chester	54				Dillon				
Fairfield	1				Florence	42	8	9	
Lancaster	22	2			Kershaw	15	1	1	
Lexington	35	6	7		Lee				
Newberry	86				Marion	1			
Richland	94	29	3	5	Marlboro	1	1		
York	194	14	14	1	Sumter	31			
Region 5					Region 6				
Aiken	8	1			Georgetown	70	7		
Allendale					Horry	66	90	11	
Bamberg			1		Williamsburg		2	5	
Barnwell					Region 8				
Calhoun					Beaufort	45	6	1	
Orangeburg	5				Colleton	13	3		
Region 7					Hampton				
Berkeley	12	4	3		Jasper	5	1	1	
Charleston	152	16	10						
Dorchester	69	15							

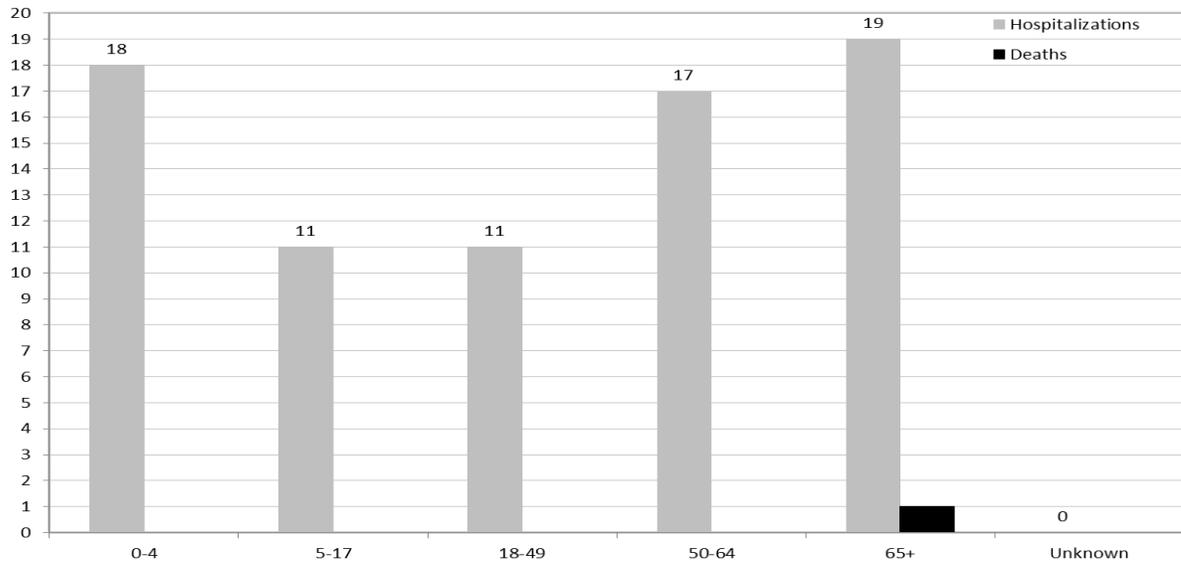
IV. Influenza hospitalizations and deaths

During MMWR week 13 five lab confirmed* influenza hospitalizations were reported. No lab confirmed deaths were reported.

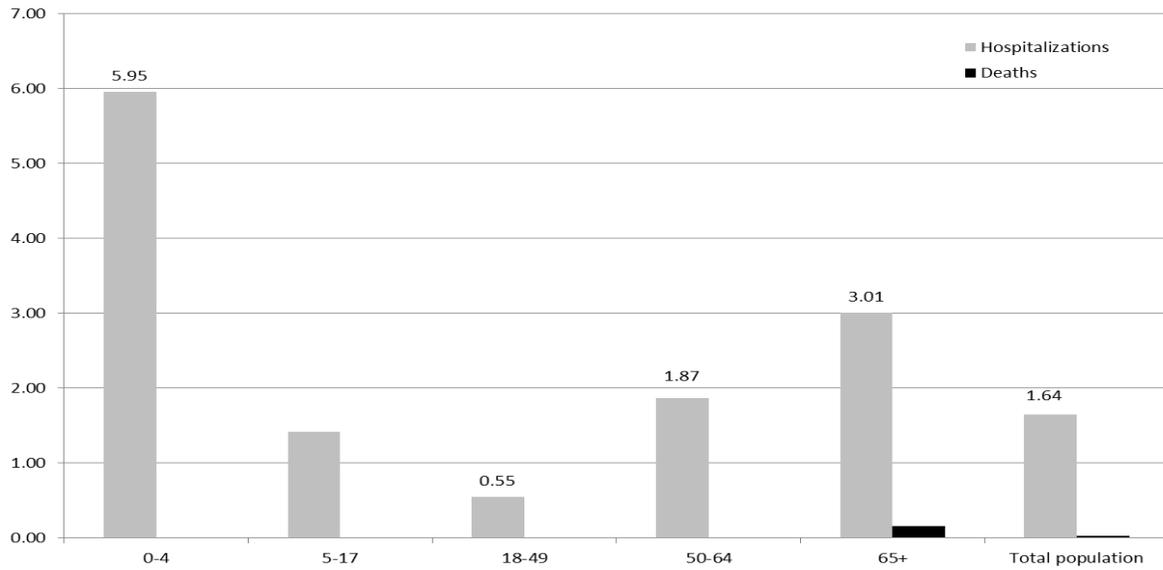
	Total number*	
Number of Hospitals Reporting (current week)	35	
	<i>Current MMWR (3/25- 3/31/12)</i>	<i>Cumulative (since 10/2/11)</i>
Hospitalizations	5	76
Deaths	0	1

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

**Reported Cases of Laboratory Confirmed Influenza
Hospitalizations (n=76) and Deaths (n=1)
October 2, 2011 - March 31, 2012**



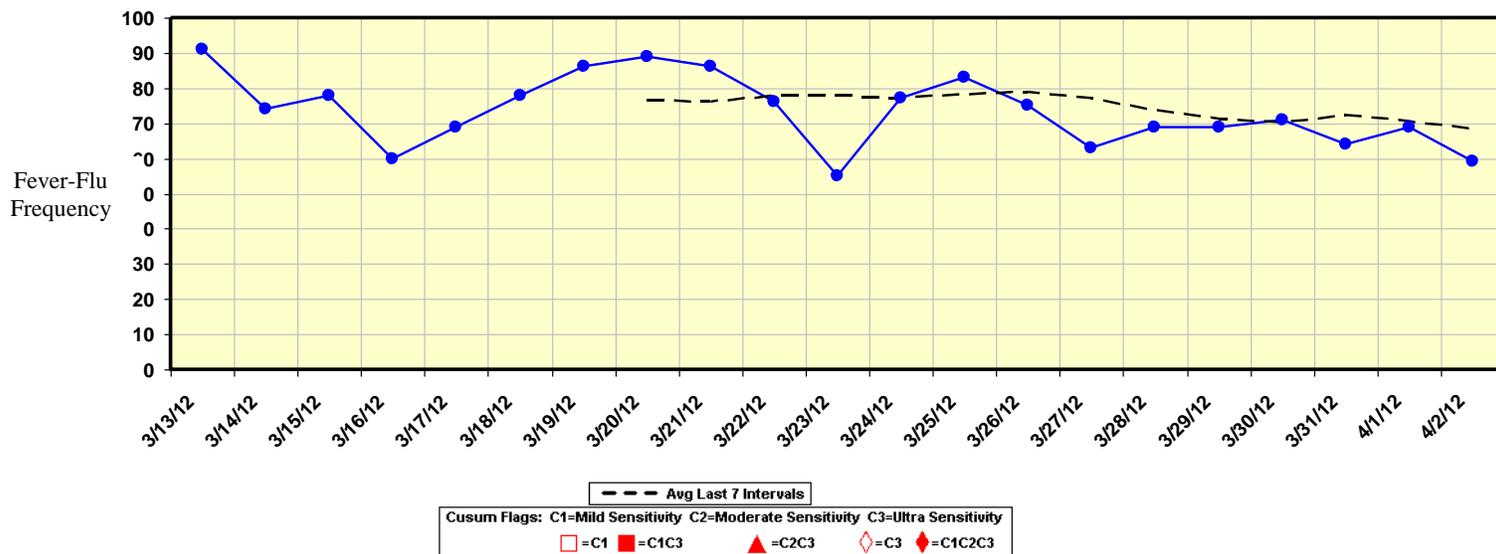
**Laboratory Confirmed Influenza Case rate/100,000
Hospitalizations (n=76) and Deaths (n=1) by age group
October 2, 2011 - March 31, 2012**



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



Statewide - Fever Flu Syndrome



Cumulative Sums Analysis (CUSUM):

- C1 = Flags because of sharp rise in counts from 1 day to the next
- C2 = Flags because of aberrant, initial, rapid rise in counts and peak in counts
- C3 = Flags because of a gradual rise in counts over a short time

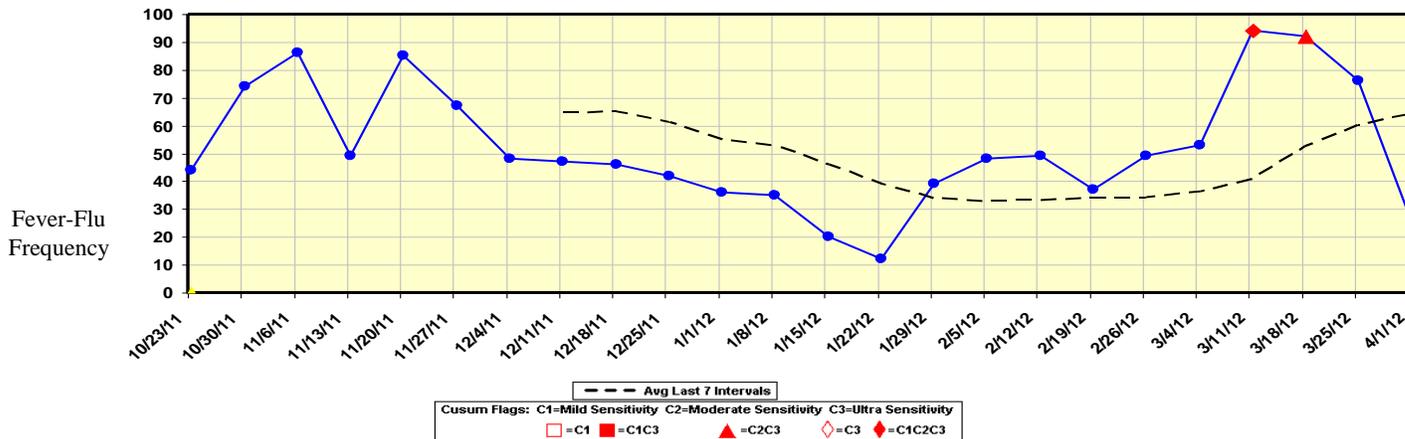
The SC Statewide Fever-Flu Syndrome graph above illustrates the daily counts of hospital emergency department (ED) visits with an Influenza-like Illness (ILI) for the past 21 days. A total of 21 hospital facilities are reporting to the SC-DARTS system. These 21 include: AnMed Health (Region 1); Self Regional (Region 1); Oconee Medical Center (Region 1); Palmetto Health Alliance (Region 2 & 3); Greenville Hospital System (Region 2); Kershaw Health (Region 4); McLeod Health (Region 4); Elgin Urgent Care (Region 4); Medical University of South Carolina (Region 7); Roper (Region 7); St. Francis (Region 7); Trident (Region 7); Colleton (Region 8); and Hampton Regional (Region 8).

Statewide CUSUM Flag Alerts Description:

No flags for the past week.

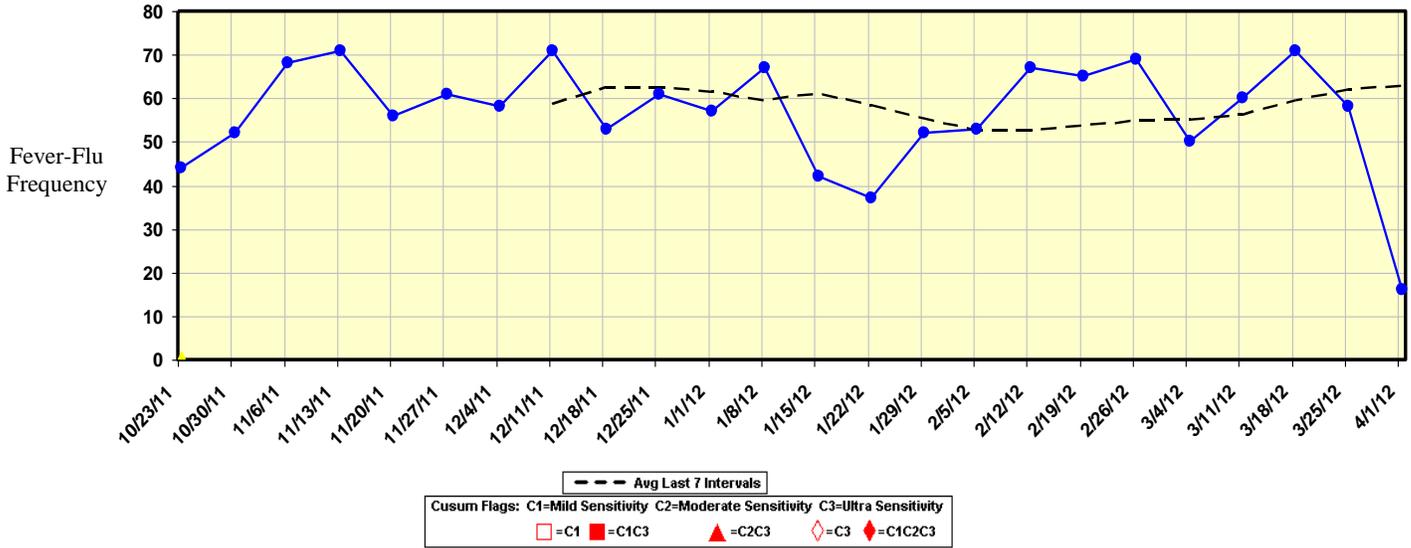
Below are the fever-flu syndrome graphs by Region for the past 180 days (weekly interval).

Region 1 - Fever Flu Syndrome



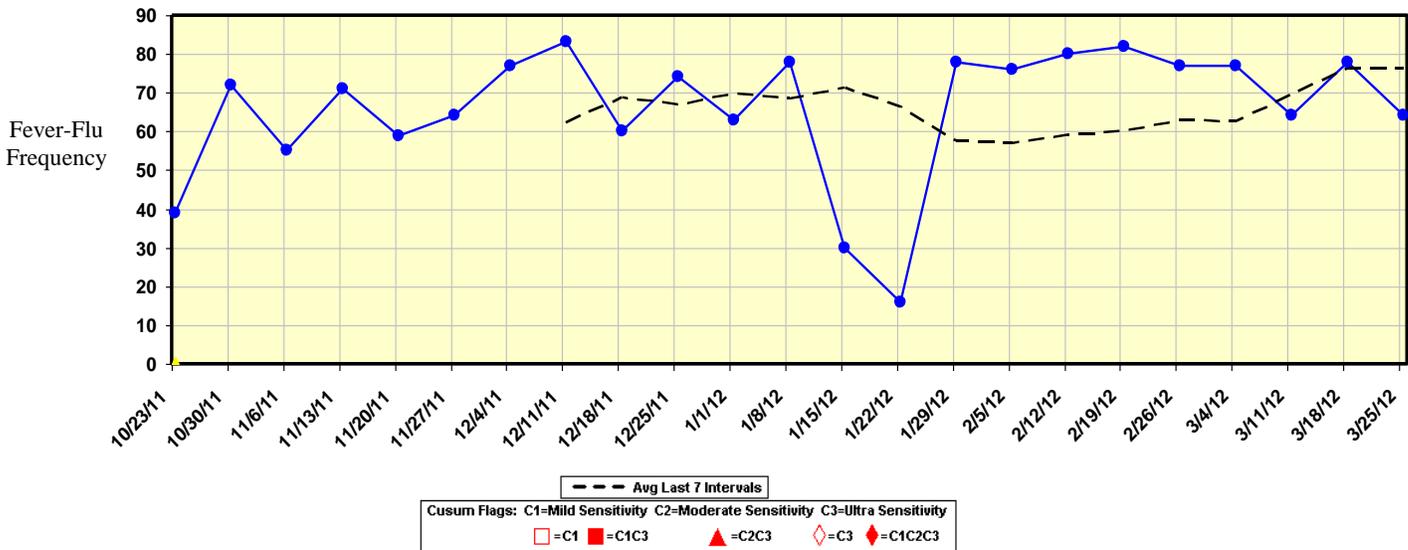
Region1 Hospitals (# of Facilities): AnMed Health (3); Self-Regional (1); Oconee Medical Center (1);

Region 2 - Fever Flu Syndrome



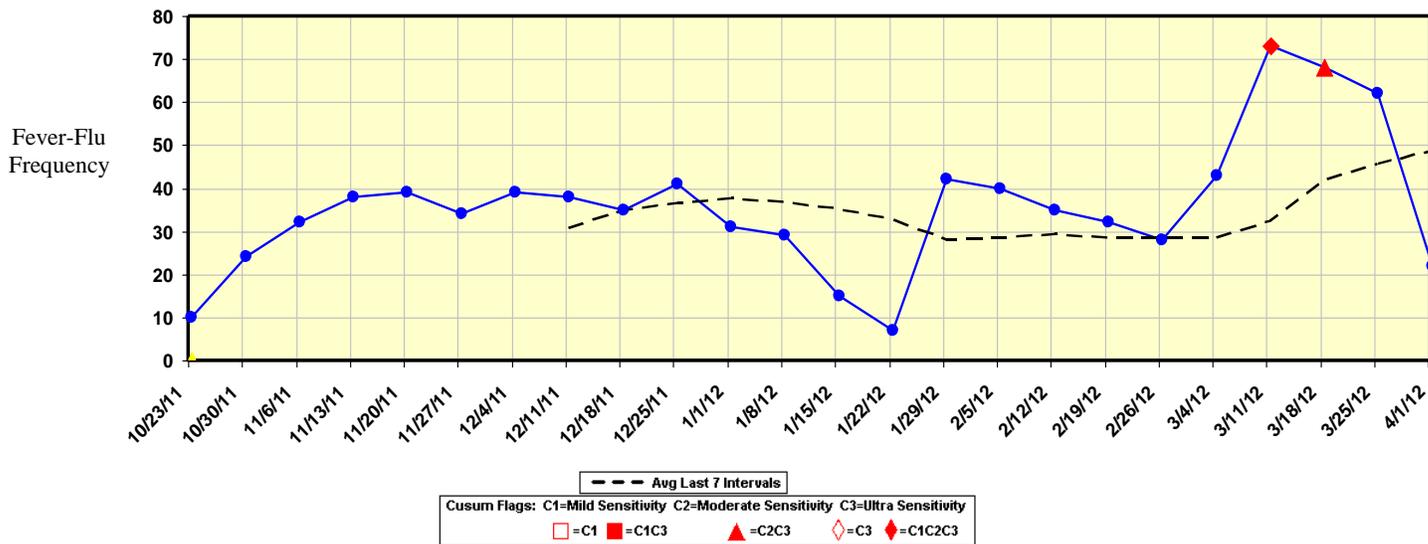
Region 2 Hospitals (# of Facilities): Greenville Hospital System (4); Palmetto Health Easley (1)

Region 3 - Fever Flu Syndrome



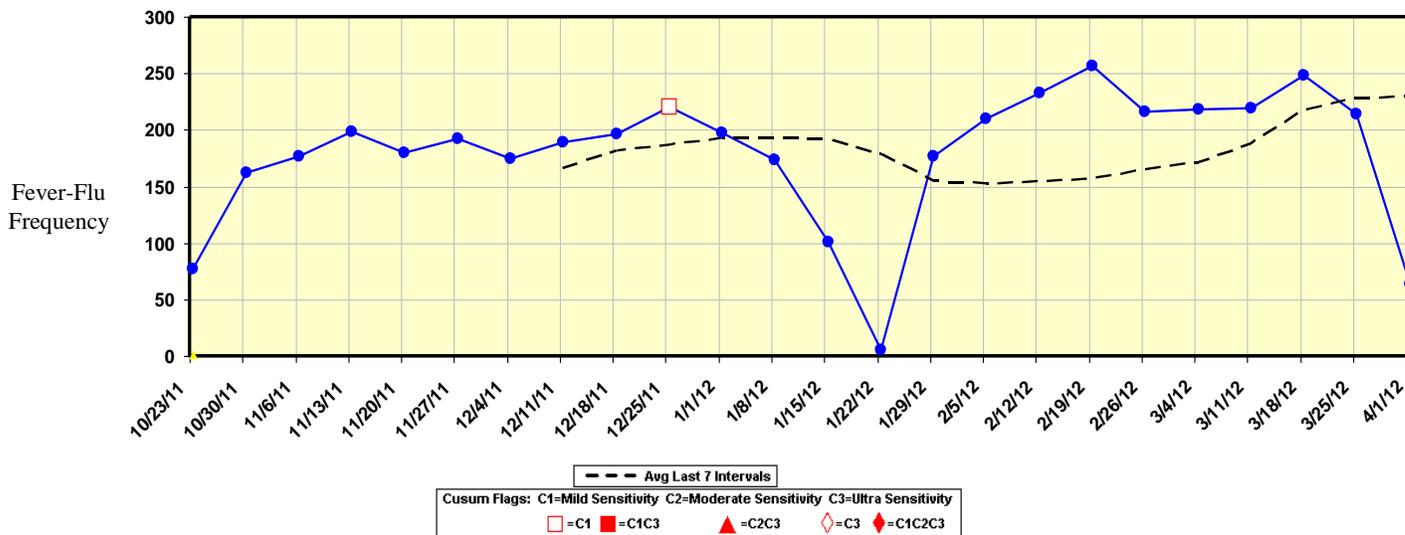
Region 3 Hospitals (# of Facilities): Palmetto Health Baptist (1), Palmetto Health Richland (1)

Region 4 - Fever Flu Syndrome



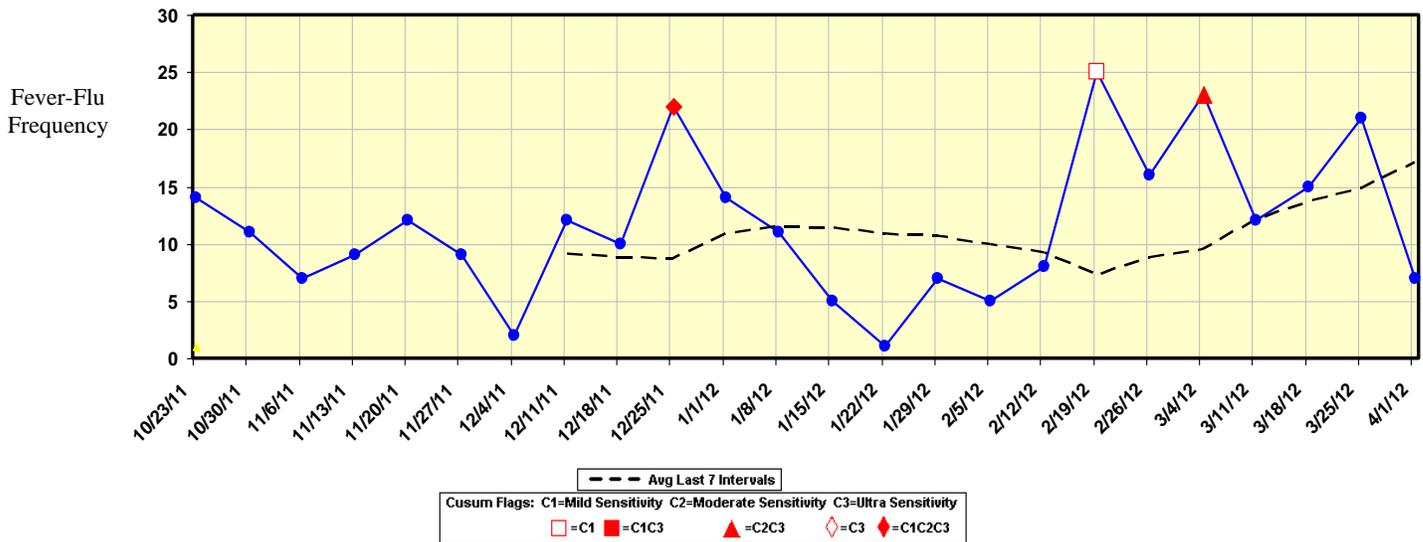
Region 4 Hospitals (# of Facilities): Kershaw Health (1); McLeod Health (1); Elgin Urgent Care (1)

Region 7 - Fever Flu Syndrome



Region 7 Hospitals (# of Facilities): Medical University of South Carolina (1), Roper (1), St. Francis (1), Trident (1)

Region 8 - Fever Flu Syndrome



Region 8 Hospitals (# of Facilities): Hampton Regional (1), Colleton (1)

VI. Influenza activity levels

Activity Level	ILI activity/Outbreaks		Laboratory data
No activity	Low	And	No lab confirmed cases
Sporadic	Not increased	And	Isolated lab-confirmed cases
	Not increased	OR	
Local	Increased ILI in 1 region; ILI activity in other regions is not increased	And	Lab confirmed outbreak in one institution
	2 or more institutional outbreaks (ILI or lab confirmed) in 1 region; ILI activity in other regions is not increased	OR	Recent (within the past 3 weeks) lab evidence of influenza in region with increased ILI
Regional	Increased ILI in 2-3 regions	And	Recent (within the past 3 weeks) lab evidence of influenza in region with the outbreaks; virus activity is no greater than sporadic in other regions
	Institutional outbreaks (ILI or lab confirmed) in 2-3 regions	OR	Recent (within the past 3 weeks) lab confirmed influenza in the affected regions
Widespread	Increased ILI and/or institutional outbreaks (ILI or lab confirmed) in at least 4 of the regions	And	Recent (within the past 3 weeks) lab confirmed influenza in the affected regions
		And	Recent (within the past 3 weeks) lab confirmed influenza in the state.

VII. 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 7 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 death reporting

Lab confirmed influenza deaths in adults should be reported to DHEC within 7 days. Lab confirmed influenza deaths in children under age 18 should be reported within 24 hours. These include results from viral culture, PCR, rapid flu tests, DFA, IFA or autopsy results consistent with influenza. Hospitals should report deaths to their regional health department by noon on Monday for the preceding week.

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

Laboratory Viral Isolate Network

Viral isolate surveillance is essential for identifying circulating influenza strain subtype information, and the identification of new strains that may need to be included in the next year's influenza vaccine. Participating providers receive culture media, packaging, processing and shipping labels in order to submit a subset of specimens to the Bureau of Labs (BOL).

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 of $U \geq 100^{\circ}\text{F}$) 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.

To join the SC-DARTS system or for more information, please contact: **Alecia Alianell at 803-898-0269 or alianeat@dhec.sc.gov**.

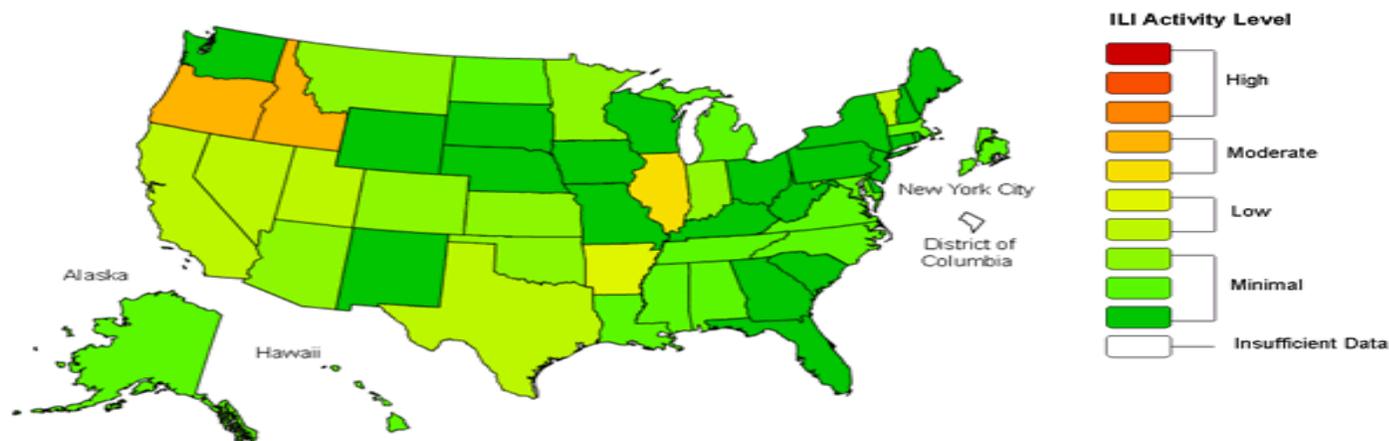
VIII. National Surveillance MMWR Week 12 (3/17-3/24)

During week 12 (March 18-24, 2012), influenza activity was elevated in some areas of the United States, but remained relatively low nationally.

- **U.S. Virologic Surveillance:** Of the 4,624 specimens tested by U.S. World Health Organization (WHO) and National Respiratory and Enteric Virus Surveillance System (NREVSS) collaborating laboratories and reported to CDC/Influenza Division, 908 (19.6%) were positive for influenza.
- **Pneumonia and Influenza (P&I) Mortality Surveillance:** The proportion of deaths attributed to P&I was below the epidemic threshold.
- **Influenza-associated Pediatric Mortality:** Four influenza-associated pediatric deaths were reported and were associated with 1 2009 H1N1 and 3 influenza A viruses for which the subtype was not determined.
- **Outpatient Illness Surveillance:** The proportion of outpatient visits for influenza-like illness (ILI) was 2.0%, which is below the national baseline of 2.4%. Regions 5 and 10 reported ILI above region-specific baseline levels. Three states experienced moderate ILI activity; 6 states experienced low ILI activity; New York City and 41 states experienced minimal ILI activity, and the District of Columbia had insufficient data to calculate ILI activity.
- **Geographic Spread of Influenza:** Sixteen states reported widespread geographic activity; 21 states reported regional influenza activity; 9 states reported local activity; the District of Columbia, Guam, Puerto Rico, and 4 states reported sporadic activity, and the U.S. Virgin Islands reported no influenza activity.

For more information, please visit <http://www.cdc.gov/flu/weekly/>.

**Influenza-Like Illness (ILI) Activity Level Indicator Determined by Data Reported to ILINet
2011-12 Influenza Season Week 12 ending Mar 24, 2012**



*This map uses the proportion of outpatient visits to health care providers for influenza-like illness to measure the ILI activity level within a state. It does not, however, measure the extent of geographic spread of flu within a state. Therefore, outbreaks occurring in a single city could cause the state to display high activity levels.

Data collected in ILINet may disproportionately represent certain populations within a state, and therefore, may not accurately depict the full picture of influenza activity for the whole state.

Data displayed in this map are based on data collected in ILINet, whereas the State and Territorial flu activity map are based on reports from state and territorial epidemiologists. The data presented in this map is preliminary and may change as more data is received.

Differences in the data presented here by CDC and independently by some state health departments likely represent differing levels of data completeness with data presented by the state likely being the more complete.