Flu Watch

South Carolina Department of Health and Environmental Control
Division of Acute Disease Epidemiology
Week Ending January 4, 2013 (MMWR Week 1)
All data are provisional and may change as more reports are received.

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MMWR Week 1 at a Glance:

Influenza Activity Level: REGIONAL
Note: Activity level definitions are found on page 14

ILI Activity Status (South Carolina baseline is 2.05%*): The state ILI percentage was 2.53%. These data reflect reports from 11 (35.5%) providers.

SC Viral Isolate and RT-PCR Activity: 90 positive specimens were reported. Since 9/29/13, 275 positive specimens have been reported.

Positive Rapid Flu Test Activity: 3710 rapid tests were reported. Since 9/29/13, 13,781 positive rapid tests have been reported.

Hospitalizations: 228 lab confirmed hospitalizations were reported. Since 9/29/13, 870 lab confirmed hospitalizations have been reported.

Deaths: Five lab confirmed deaths were reported. Since 9/29/13, 17 lab confirmed deaths have been reported.

Summary of ILI Activity, Positive Confirmatory Tests, and Influenza Associated Hospitalizations and Deaths					
	Cumulative (9/29/13 - 1/4/14)	*Current MMWR Week (1)*	*Previous MMWR Week*	*Change from previous week*	*2012-2013 MMWR Week 1*
Number of positive confirmatory tests (Culture, PCR, IFA, DFA)	**275**	**90**	**41**	▲ **49**	**84**
Number of positive rapid tests	**17,550**	**3710**	**3997**	▼ **287**	**3434**
Percent of ILI visits reported by ILINet providers	**-**	**2.53%**	**2.72%**	▼ **0.19%**	**2.12%**
Total number of patient visits for ILI	**845**	**92**	**92**	**0**	**105**
Percent of fever-flu ER visits reported by hospitals	**-**	**8.97%**	**10.17%**	▼ **1.20%**	**9.04%**
Number of lab confirmed flu hospitalizations	**870**	**228**	**190**	▲ **38**	**206**
Number of lab confirmed flu deaths	**17**	**5**	**3**	▲ **2**	**6**

Laboratory-Confirmed Cases* Compared to Previous Week and Season		
	Cumulative season total through MMWR week 1	**Current MMWR week (1) total**
2012-2013	679	84
2013-2014	275	90
% Change from previous week	+49%	+54%
% Change 2012-13 compared to 2013-14 season	-55%	+7%
4 year average (2010-11 to 2013-14)	255	51

*Includes culture, PCR, IFA, DFA

I. Virologic Surveillance

Positive confirmatory influenza test results Current MMWR Week (12/29/13 – 1/4/14)*		
	BOL	**Other clinical labs**
Number of specimens tested	15	-
Number of positive specimens	13	77
Influenza A unsubtyped		17
Influenza A H1N1	13	30
Influenza A H3N2		
Influenza B		
Other		
Includes culture, RT-PCR, DFA, and IFA		

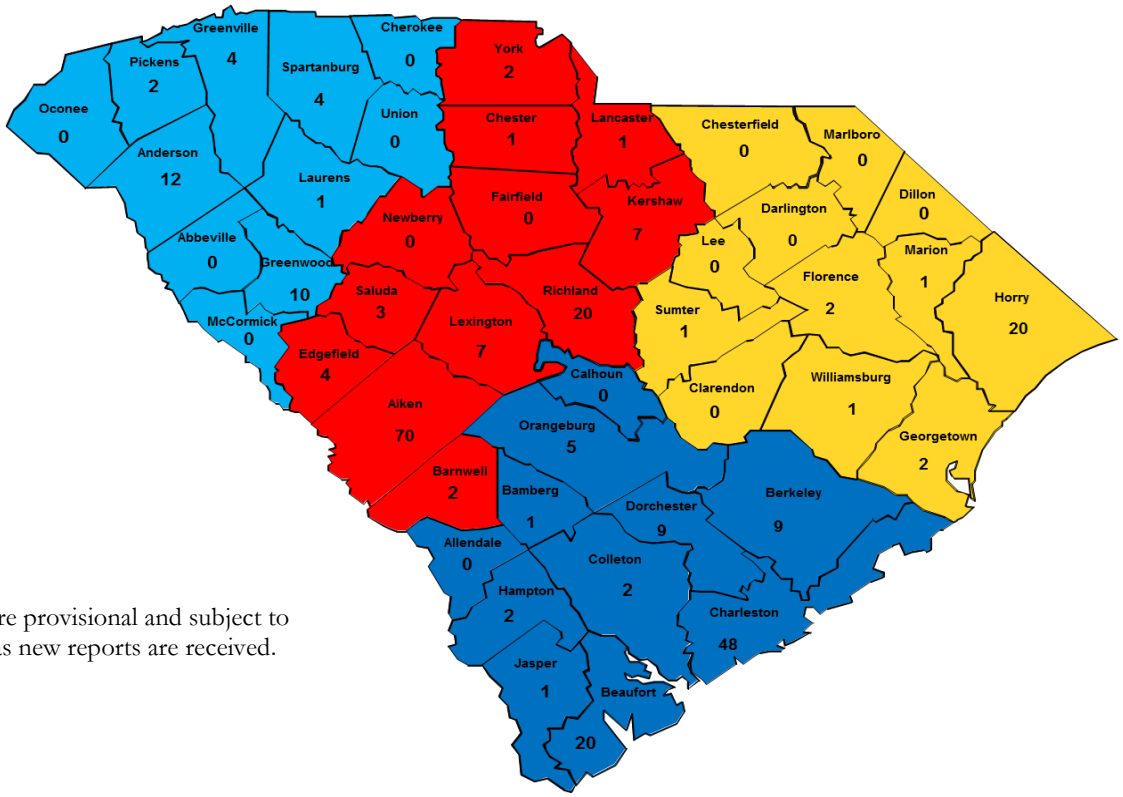
For the current MMWR reporting week, 90 positive specimens were reported.

Positive confirmatory influenza test results Cumulative (09/29/13 – 1/4/14)*		
	BOL	**Other clinical labs**
Number of specimens tested	137	NA
Number of positive specimens	66 (48.2%)	209
Influenza A unsubtyped		29 (13.9%)
Influenza A H1N1	65 (98.5%)	177 (84.7%)
Influenza A H3N2	1 (1.5%)	
Influenza B		3 (1.4%)
Other		
Includes culture, RT-PCR, DFA, and IFA		

Positive Confirmatory Tests by County
Current Week 12/29/13 – 1/4/14

County	Positive Tests	County	Positive Tests	County	Positive Tests
Abbeville		Dillon		Marion	
Aiken	34	Dorchester		Marlboro	
Allendale		Edgefield	1	McCormick	
Anderson	3	Fairfield		Newberry	
Bamberg	1	Florence	1	Oconee	
Barnwell		Georgetown	1	Orangeburg	1
Beaufort	9	Greenville	2	Pickens	
Berkeley		Greenwood		Richland	8
Calhoun		Hampton	1	Saluda	2
Charleston	5	Horry	8	Spartanburg	2
Cherokee		Jasper	1	Sumter	
Chester		Kershaw	1	Union	
Chesterfield		Lancaster	1	Williamsburg	1
Clarendon		Laurens	1	York	
Colleton		Lee		Unknown	1
Darlington		Lexington	5		

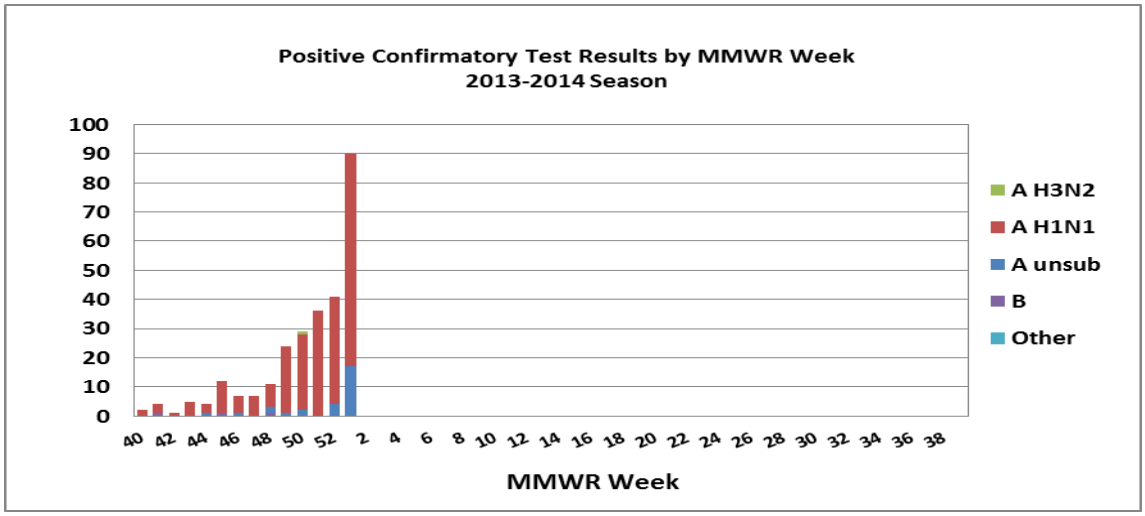
Map of Positive Confirmatory Tests by County
Cumulative 09/29/13 – 1/4/14



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

Positive Confirmatory Tests by County and Type
Cumulative 9/29/13 - 1/4/14

	A H1N1	A H3N2	B	A Unsub	Unk		A H1N1	A H3N2	B	A Unsub	Unk
Upstate											
Abbeville						McCormick					
Anderson	9			3		Oconee					
Cherokee						Pickens	2				
Greenwood	10					Spartanburg	1			1	
Greenville	2			1		Union					
Laurens				1							
Midlands											
Aiken	68			2		Lancaster				1	
Barnwell	2					Lexington	7				
Chester	1					Newberry					
Edgefield	4					Richland	14			6	
Fairfield						3	1				
Kershaw	6			1		York	2				
Pee Dee											
Chesterfield						Horry	16			4	
Clarendon						Lee					
Darlington						Marion				1	
Dillon						Marlboro					
Florence	1			1		Sumter	1				
Georgetown	2					Williamsburg	1				
Low Country											
Allendale						Colleton	2				
Bamberg	1					Dorchester	8			1	
Beaufort	19	1	1			Hampton	2				
Berkeley	8			1		Jasper					
Calhoun						Orangeburg	5				
Charleston	44		2	2							
Unknown County				1							

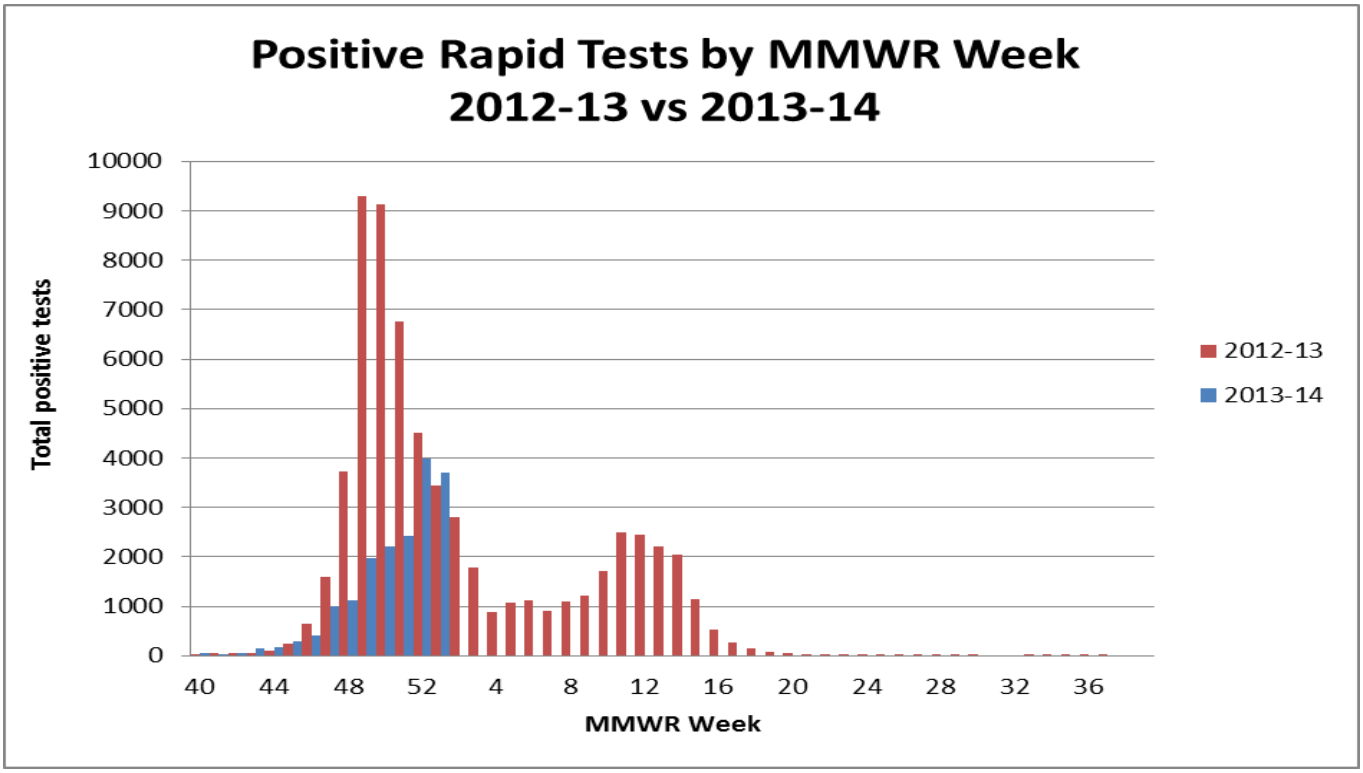


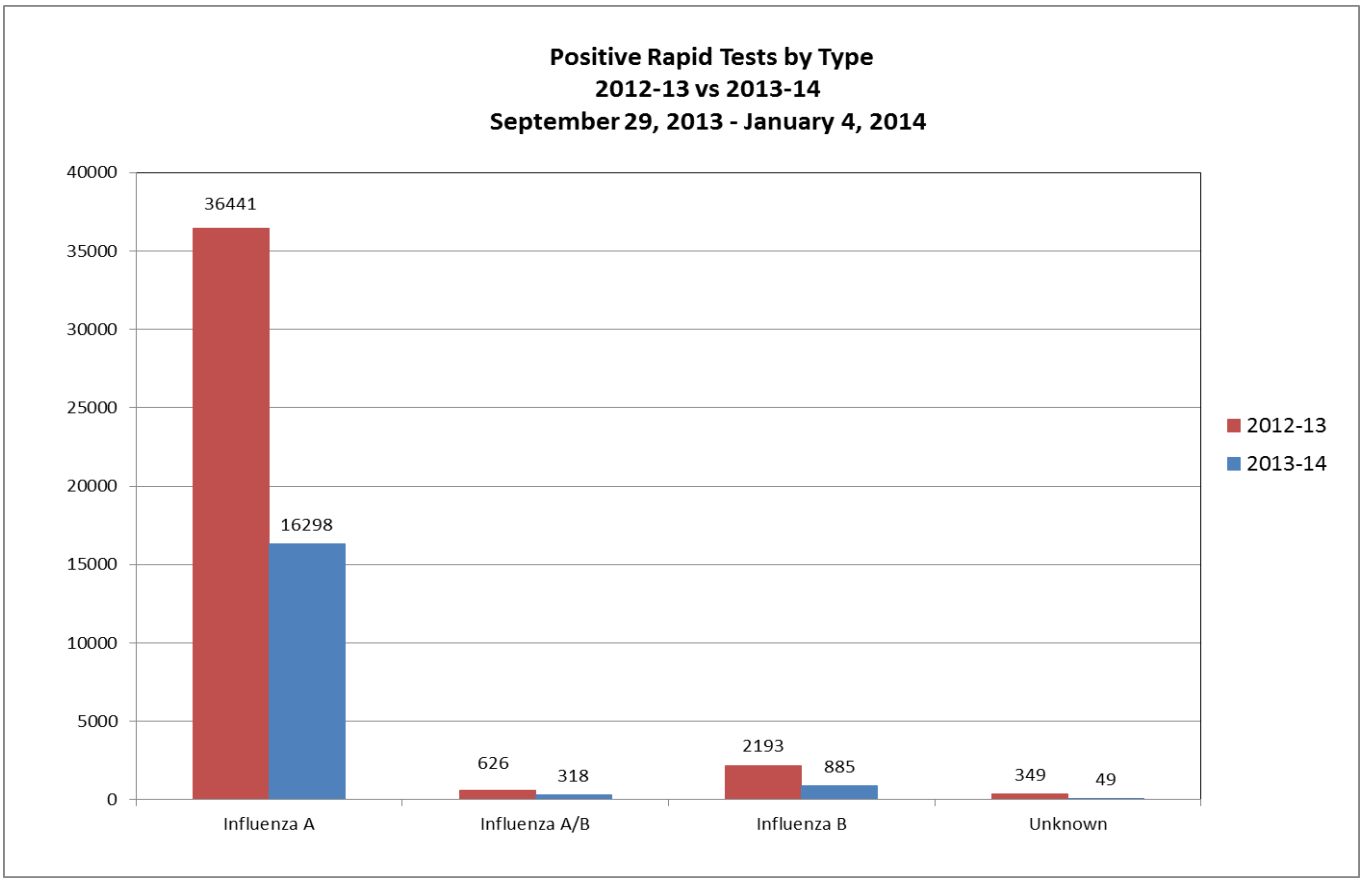
II. Positive Rapid Antigen Tests

For the current MMWR reporting week, 3710 positive rapid antigen tests were reported. Of these, 3476 were influenza A, 47 were influenza A/B, 162 were influenza B, and 25 were unknown. This compares to 3434 this time last year.

Positive Rapid Flu Tests by County
Current Week (12/29/13 – 1/4/14)

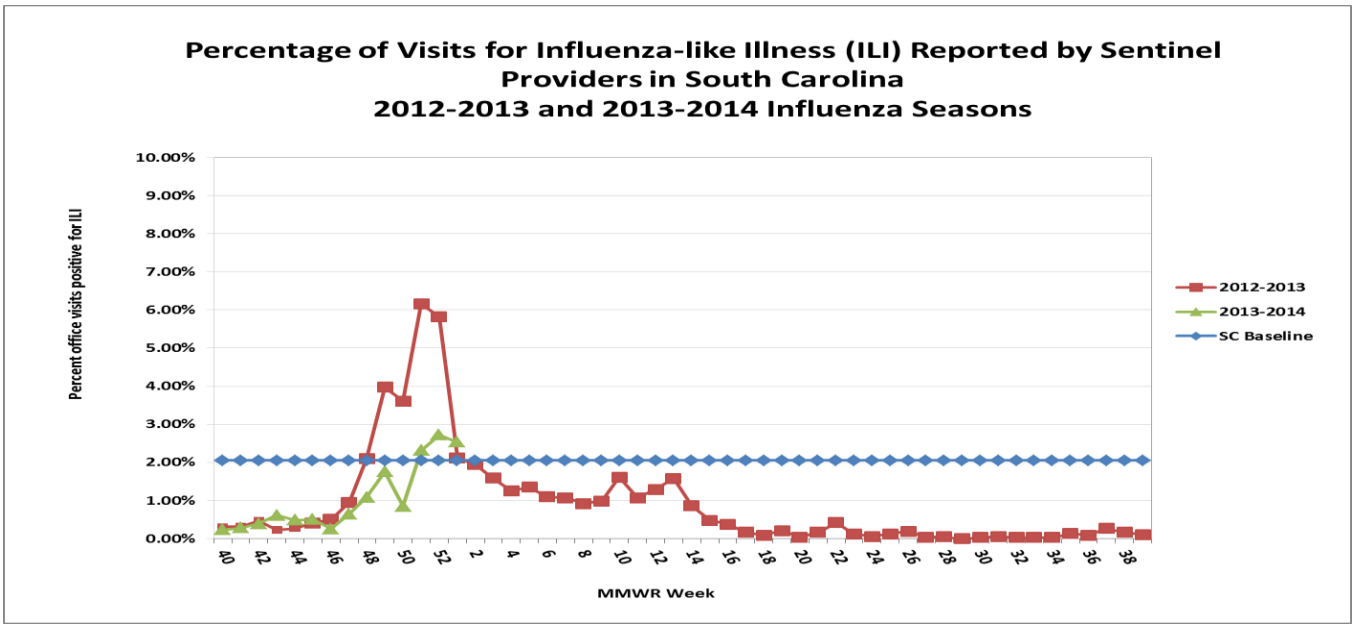
County	Positive Tests	County	Positive Tests	County	Positive Tests
Abbeville	14	Dillon		Lexington	241
Aiken		Dorchester	64	Marion	
Allendale		Edgefield		Marlboro	12
Anderson	177	Fairfield	6	McCormick	
Bamberg		Florence	269	Newberry	66
Barnwell		Georgetown	107	Oconee	60
Beaufort	1	Greenville	773	Orangeburg	40
Berkeley	51	Greenwood	79	Pickens	81
Calhoun		Hampton	9	Richland	370
Charleston	313	Horry	158	Saluda	
Cherokee	1	Jasper		Spartanburg	319
Chester		Kershaw	87	Sumter	37
Chesterfield	14	Lancaster	46	Union	10
Clarendon	21	Laurens	6	Williamsburg	18
Colleton	1	Lee	1	York	157
Darlington	101				


Positive Rapid Tests by MMWR Week
2012-13 vs 2013-14
Total positive tests
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
40
44
48
52
4
8
12
16
20
24
28
32
36
MMWR Week
2012-13
2013-14

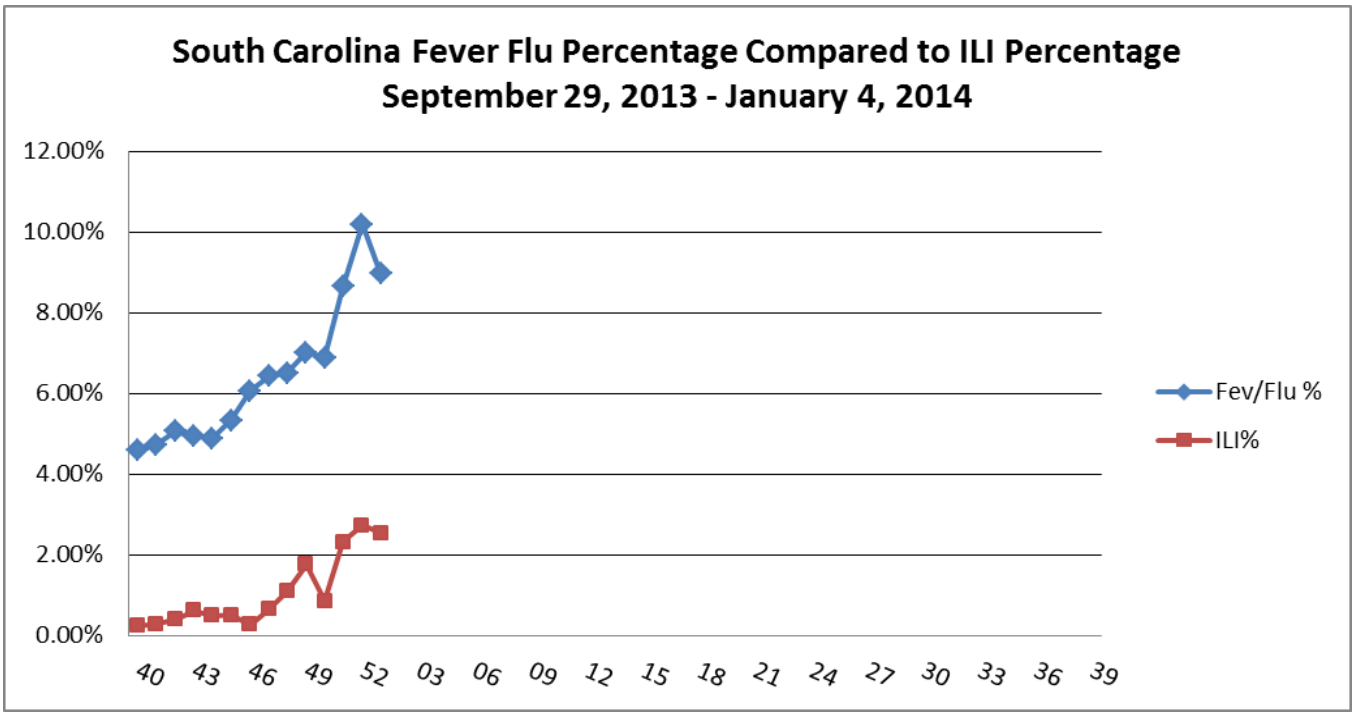

Positive Rapid Tests by Type
2012-13 vs 2013-14
September 29, 2013 - January 4, 2014
40000
35000
30000
25000
20000
15000
10000
5000
0
36441
16298
626
318
2193
885
349
49
Influenza A
Influenza A/B
Influenza B
Unknown
2012-13
2013-14

III. ILINet Influenza-Like Illness Surveillance

During the most recent MMWR week, 2.53 % of patient visits to SC ILINet providers were due to ILI. This is above the state baseline **(2.05%)**. This ILI percentage compares to 2.12 % this time last year. Reports were received from providers in 8 counties, representing 3 of the 4 regions. The statewide percentage of ER visits with fever-flu syndrome was 8.97%.



*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.



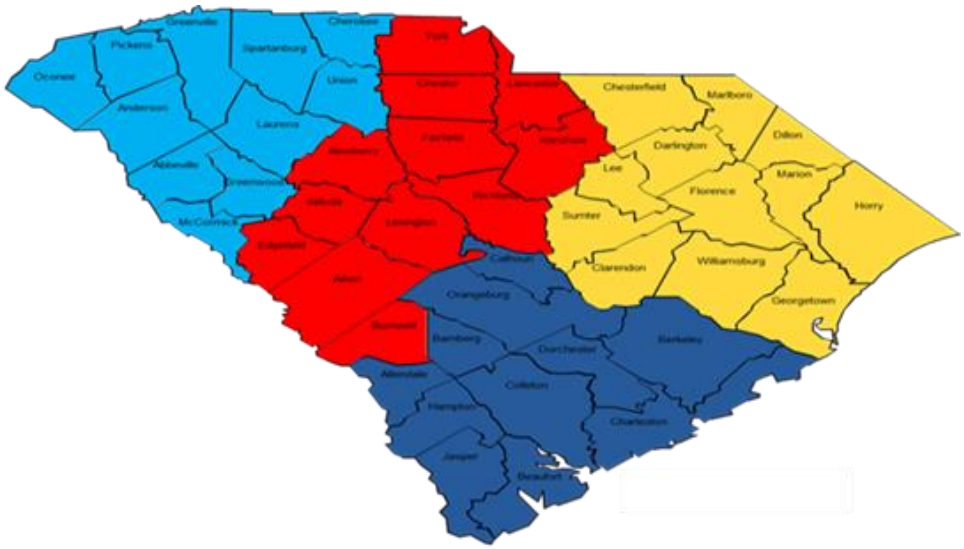
*Only includes hospitals participating in SC syndromic surveillance

Influenza-Like Illness Reported by Sentinel Providers
December 29, 2013 – January 4, 2014

County	ILI %	County	ILI %
Abbeville	---	Greenwood	NR
Aiken	0%	Hampton	NR
Allendale	---	Horry	NR
Anderson	NR	Jasper	NR
Bamberg	---	Kershaw	NR
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	0%
Dorchester	NR	Saluda	0%
Edgefield	---	Spartanburg	NR
Fairfield	---	Sumter	NR
Florence	1.54%	Union	---
Georgetown	1.63%	Williamsburg	---
Greenville	3.49%	York	0%

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

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

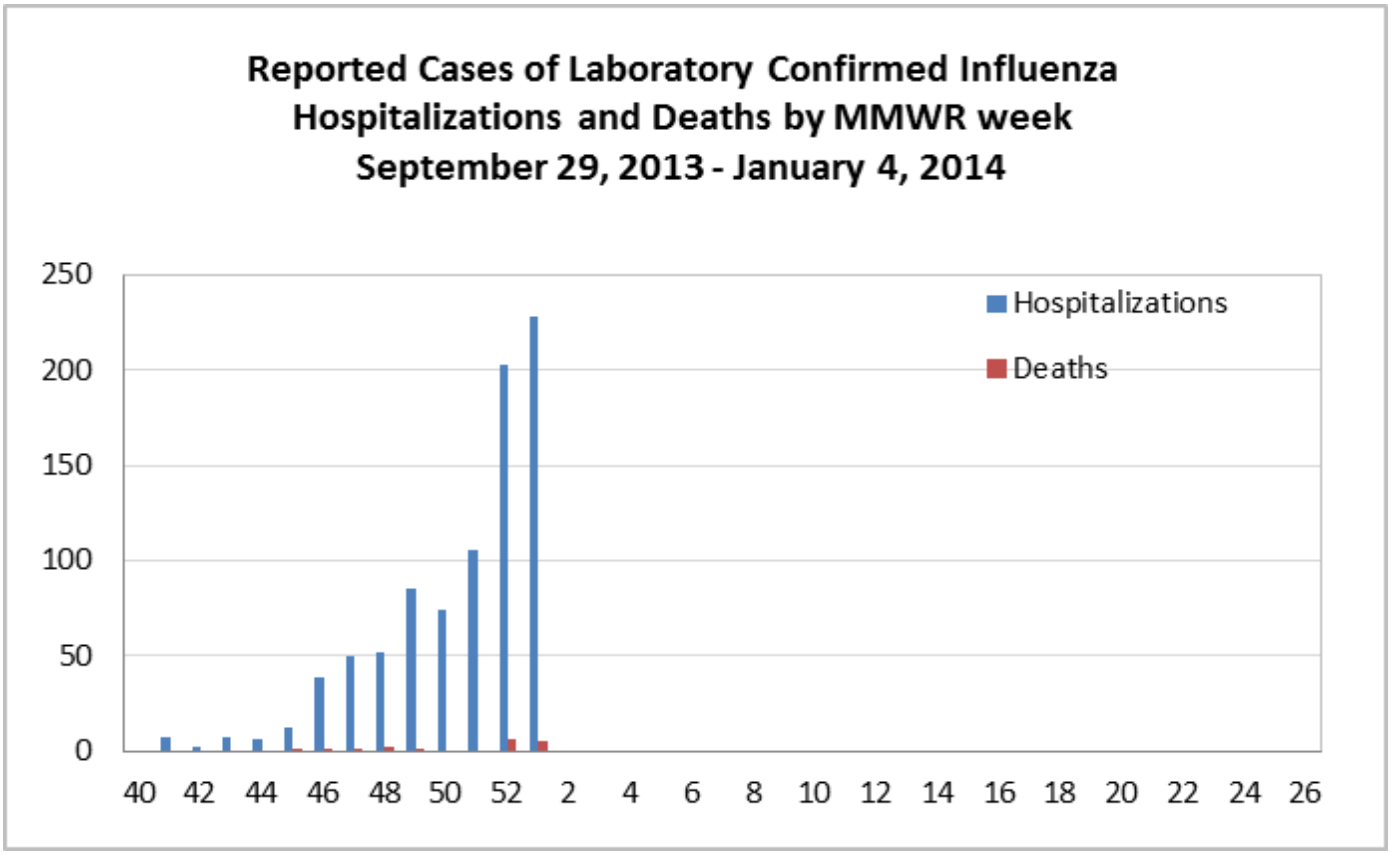


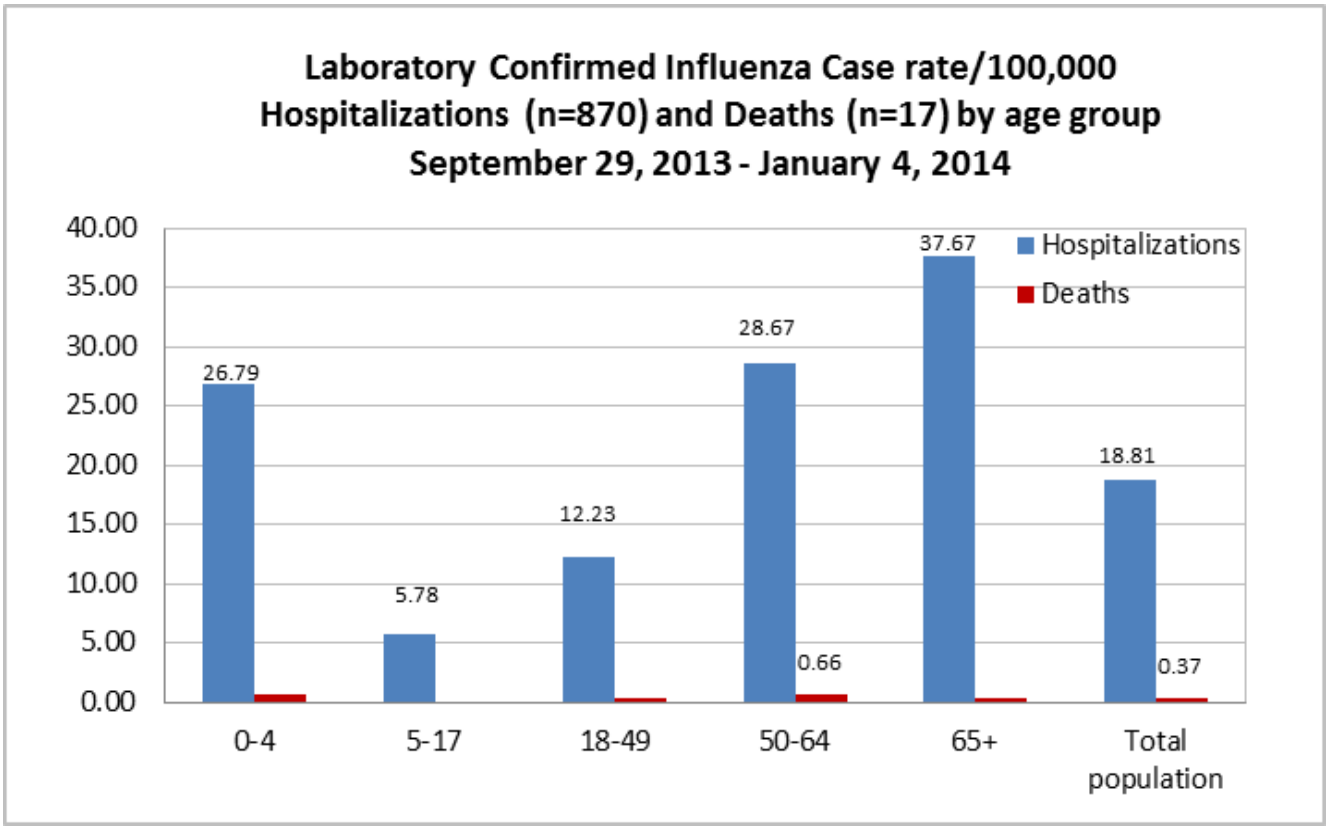
IV. Influenza hospitalizations and deaths

For the current MMWR reporting week, 228 lab confirmed influenza hospitalizations were reported. Five lab confirmed influenza deaths were reported.*

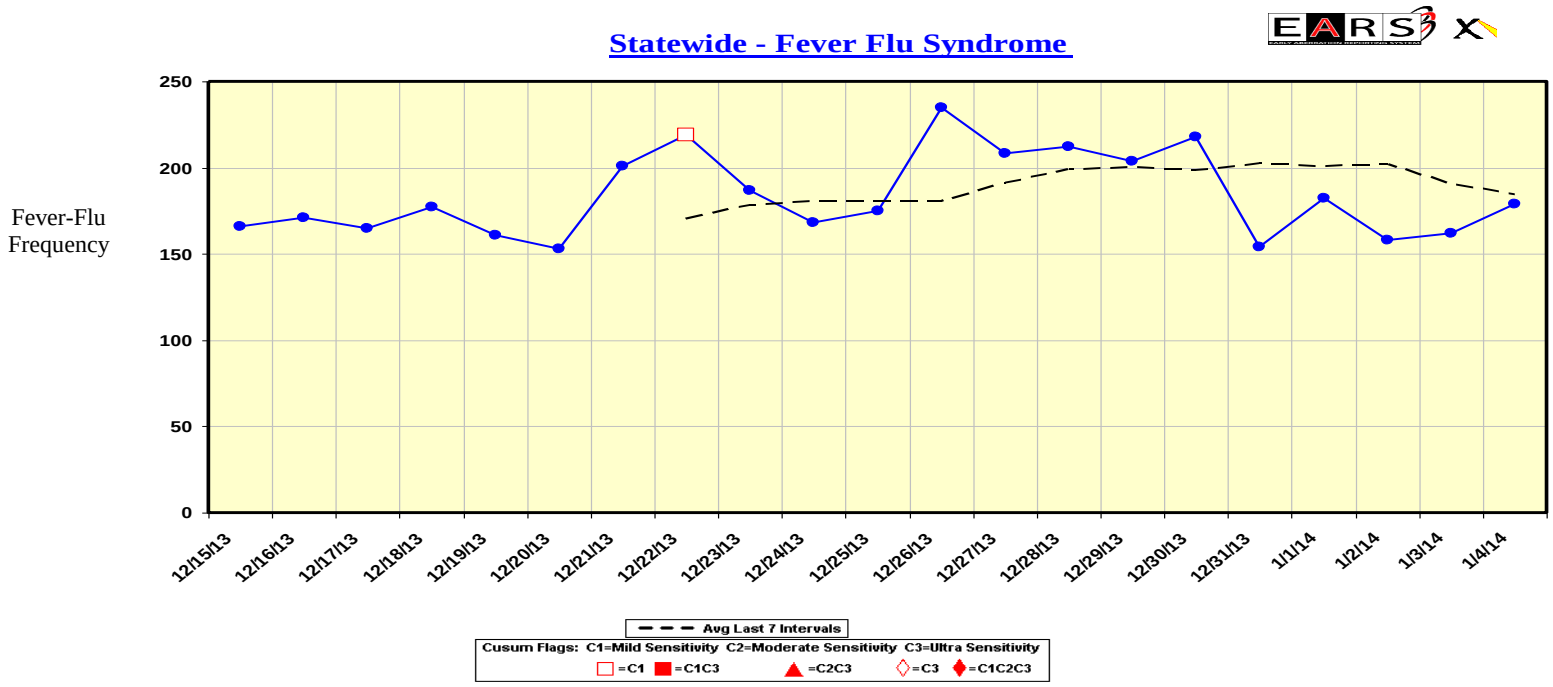
	Total number*	
Number of Reporting Hospitals (Current week)	53	
	Current MMWR Week (12/22/13-12/28/13)	***Cumulative (since 09/29/13)***
Hospitalizations	228	870
Deaths	5	17

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





Lab Confirmed Influenza Deaths by County September 29, 2013 – January 4, 2014	
County	**Deaths**
Aiken	1
Beaufort	1
Berkeley	1
Charleston	3
Colleton	1
Dorchester	1
Greenville	1
Horry	2
Laurens	1
Lexington	1
Orangeburg	2
Pickens	1
Richland	1
Total Deaths	17

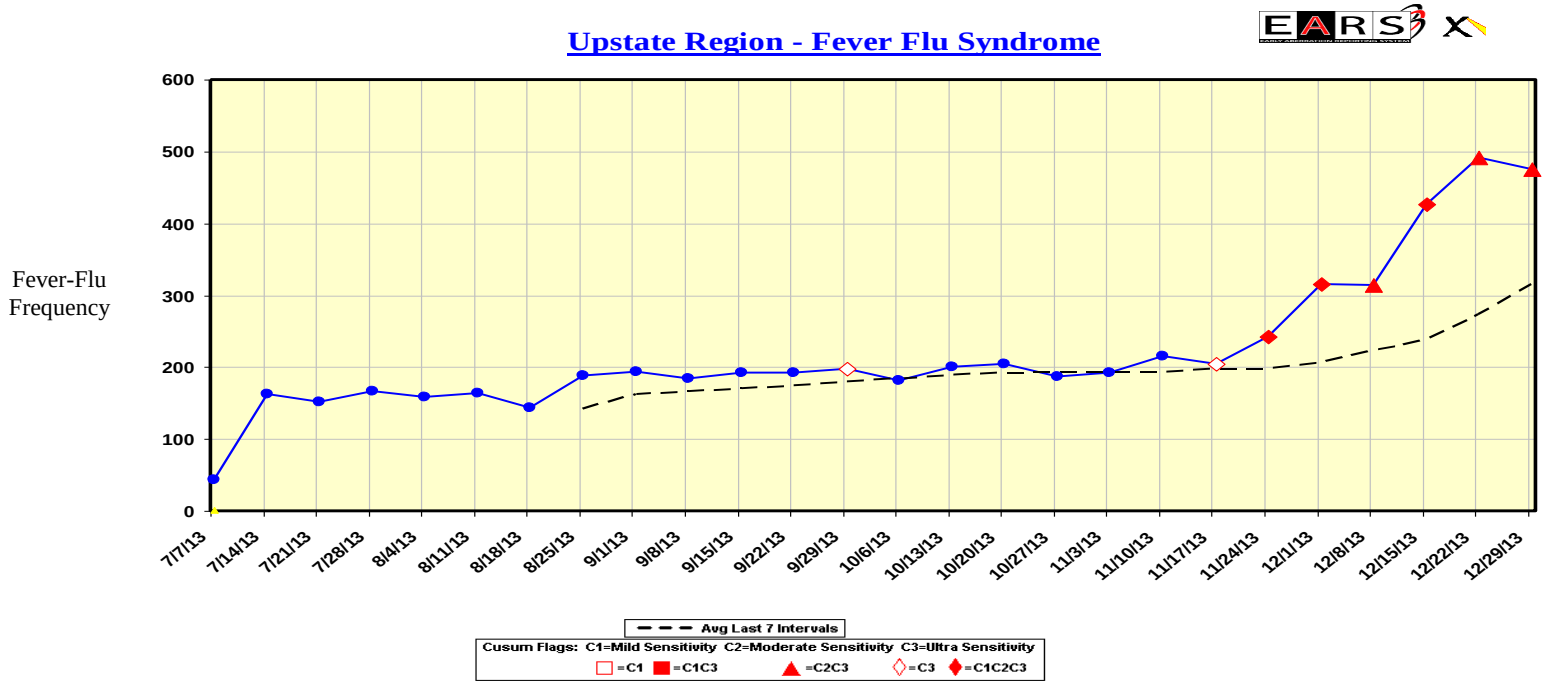


Cumulative Sums Analysis (CUSUM):
C1 = Flags because of sharp rise in counts from 1 day to the next
C2 = Flags because of aberrant, initial, rapid rise in counts and peak in counts
C3 = Flags because of a gradual rise in counts over a short time

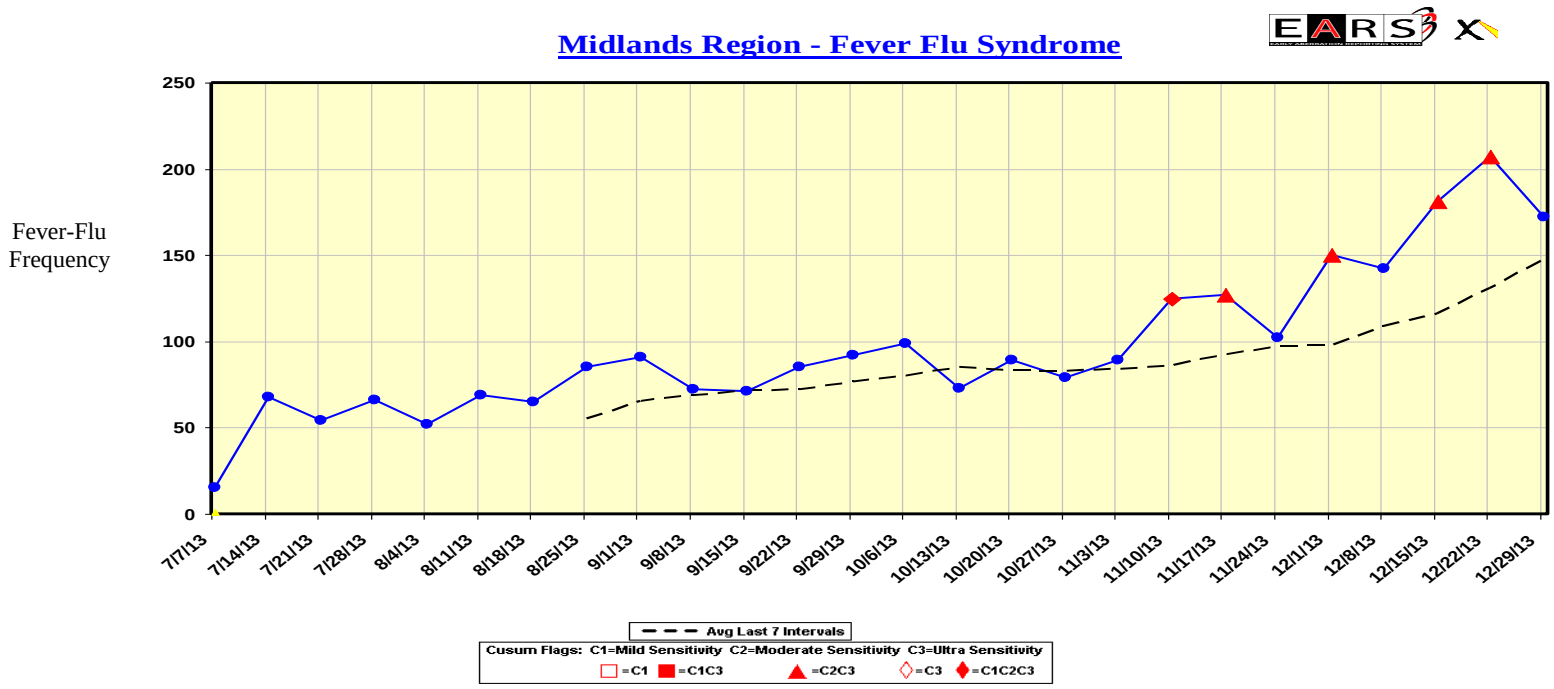
The SC Statewide Fever-Flu Syndrome graph above illustrates the daily counts of hospital emergency department (ED) visits with an Influenza-like Illness (ILI) for the past 21 days. A total of 22 hospital facilities are reporting to the SC-DARTS system. These 22 include: AnMed Health (Upstate Region); Self Regional (Upstate Region); Oconee Medical Center (Upstate Region); Palmetto Health Alliance (Upstate and Midlands Regions); Greenville Hospital System (Upstate Region); Kershaw Health (Midlands Region); McLeod Health (Pee Dee Region); Elgin Urgent Care (Midlands Region); Medical University of South Carolina (Low Country Region); Roper (Low Country Region); St. Francis (Low Country Region); Trident (Low Country Region); Colleton (Low Country Region); Hampton Regional (Low Country Region); and Mount Pleasant (Low Country Region).

Statewide CUSUM Flag Alerts Description:

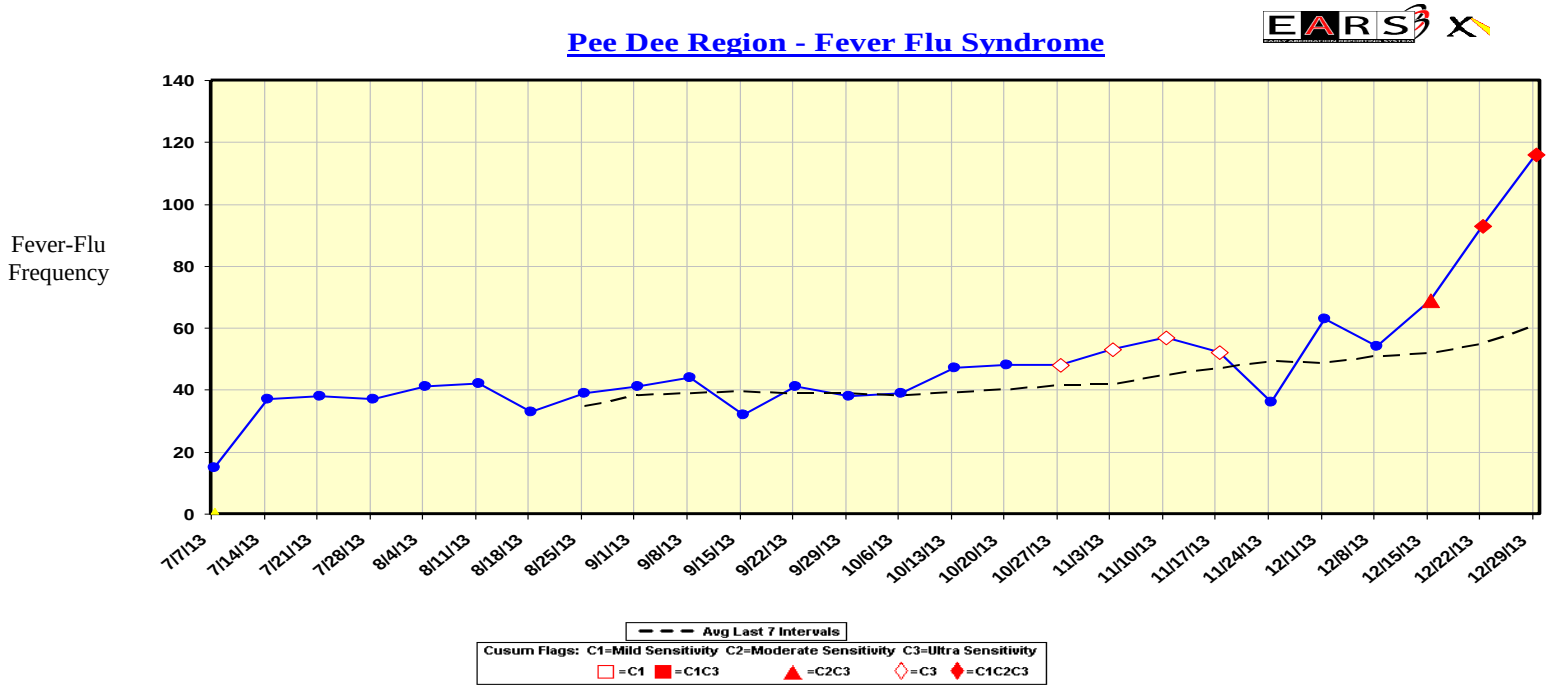
There were one C1 flag for the past week.
Below are the fever-flu syndrome graphs by Region for the past 180 days (weekly interval).



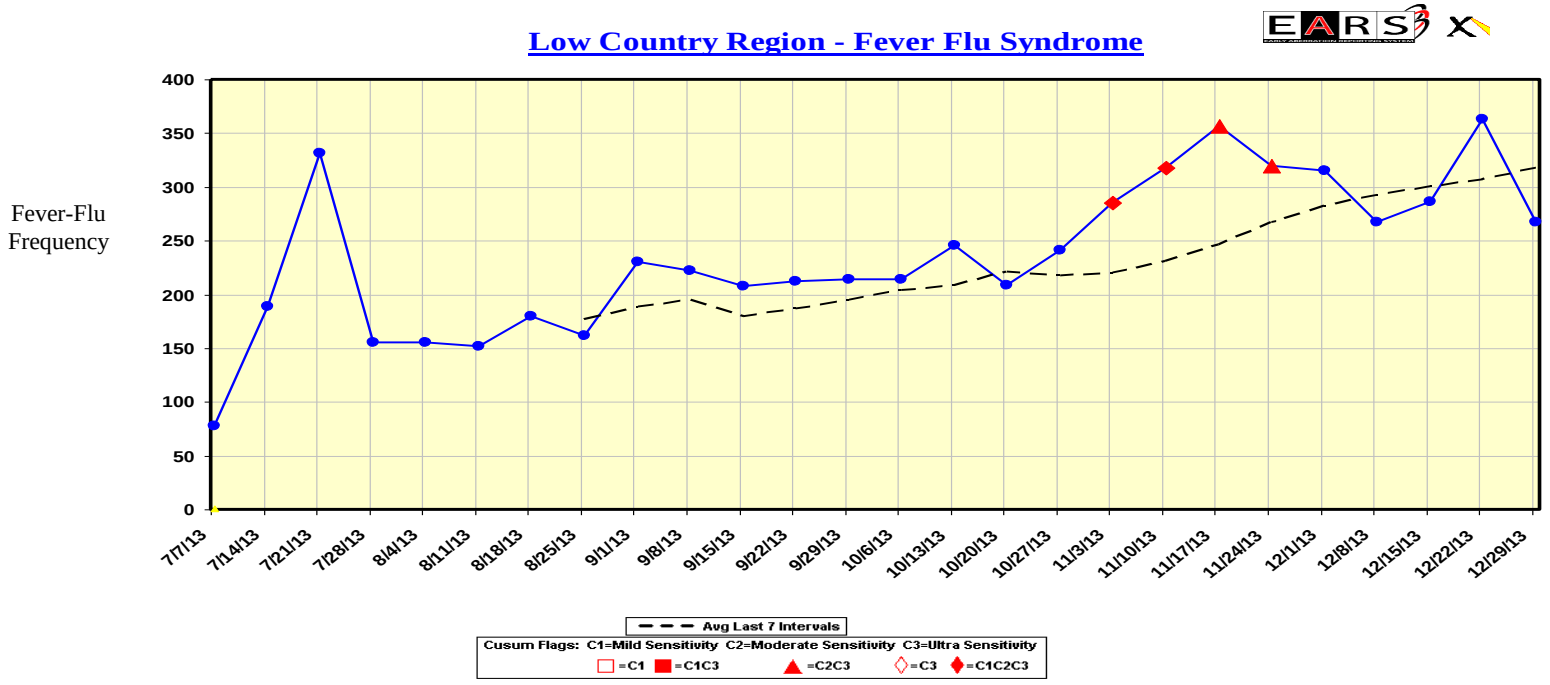
Upstate Region Hospitals (# of Facilities): AnMed Health (3); Self-Regional (1); Oconee Medical Center (1); Greenville Hospital System (4); Palmetto Health Easley (1)



Midlands Region Hospitals (# of Facilities): Palmetto Health Baptist (1); Palmetto Health Richland (1); Kershaw Health (1); Elgin Urgent Care (1)



Pee Dee Region Hospitals (# of Facilities): McLeod Health (1)



Low Country Region Hospitals (# of Facilities): Medical University of South Carolina (1); Roper (1); St. Francis (1); Trident (1); Hampton Regional (1); Colleton (1); Mount Pleasant (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
	OR		
	Not increased	**And**	Lab confirmed outbreak in one institution
Local	Increased ILI in 1 region; ILI activity in other regions is not increased	**And**	Recent (within the past 3 weeks) lab evidence of influenza in region with increased ILI
	OR		
	2 or more institutional outbreaks (ILI or lab confirmed) in 1 region; ILI activity in other regions is not increased	**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
Regional	Increased ILI in 2-3 regions	**And**	Recent (within the past 3 weeks) lab confirmed influenza in the affected regions
	OR		
	Institutional outbreaks (ILI or lab confirmed) in 2-3 regions	**And**	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 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 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 lab confirmed influenza deaths in adults should 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 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 of U≥U100°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.

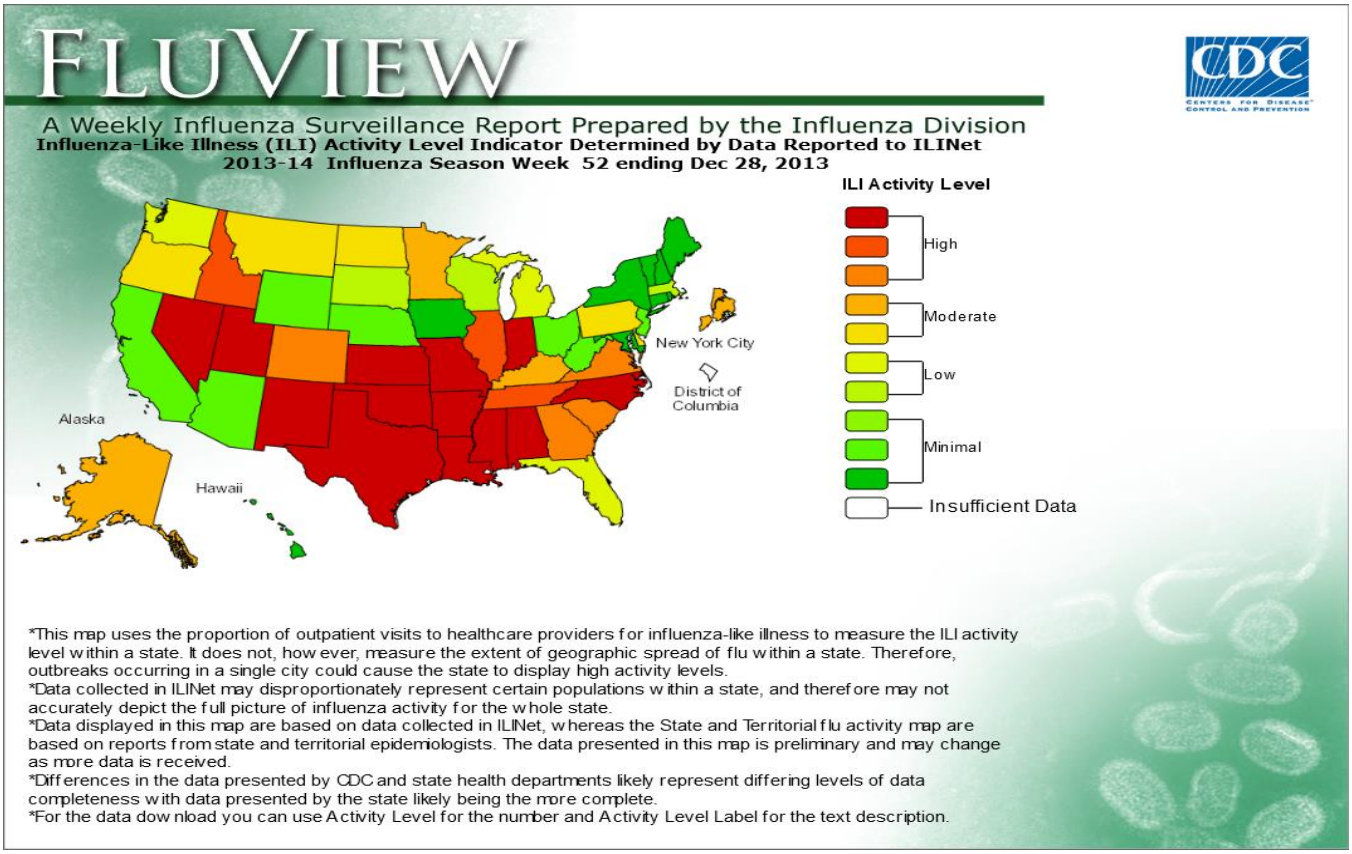
South Carolina Disease Alerting, Reporting & Tracking System (SC-DARTS)

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: **Kelly Johnson at 803-898-1588 or johnsok@dhec.sc.gov.**

VIII. National Surveillance MMWR Week 52 (12/22– 12/28)

During week 52 (December 22-28, 2013), influenza activity continued to increase in the United States.

- **Viral Surveillance:** Of 6,419 specimens tested and reported by U.S. World Health Organization (WHO) and National Respiratory and Enteric Virus Surveillance System (NREVSS) collaborating laboratories during week 52, 1,711 (26.7%) were positive for influenza.
- **Pneumonia and Influenza Mortality:** The proportion of deaths attributed to pneumonia and influenza (P&I) was below the epidemic threshold.
- **Influenza-Associated Pediatric Deaths:** Two influenza-associated pediatric deaths were reported.
- **Influenza-associated Hospitalizations:** A cumulative rate for the season of 5.8 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 4.3%, above the national baseline of 2.0%. All 10 regions reported ILI at or above region-specific baseline levels. Twenty states experienced high ILI activity; eight states and New York City experienced moderate ILI activity; six states experienced low ILI activity; 16 states experienced minimal ILI activity, and the District of Columbia had insufficient data.
- **Geographic Spread of Influenza:** The geographic spread of influenza in 25 states was reported as widespread; 20 states reported regional influenza activity; Puerto Rico and three states reported local influenza activity; the District of Columbia and two states reported sporadic influenza activity, and the U.S. Virgin Islands and Guam did not report.

A description of surveillance methods is available at: http://www.cdc.gov/flu/weekly/overview.htm