

Influenza Season in Review

This end of season report summarizes data received through SC's mandatory and voluntary influenza surveillance systems. Reporting of positive confirmatory tests (culture, RT-PCR, DFA, IFA), lab confirmed influenza hospitalizations and deaths, and positive rapid tests is mandatory. Additionally, sentinel providers report influenza-like illness through the U.S. Outpatient Influenza-like Illness Network (ILINet). All data in this report are current as of August 16 (MMWR week 33).

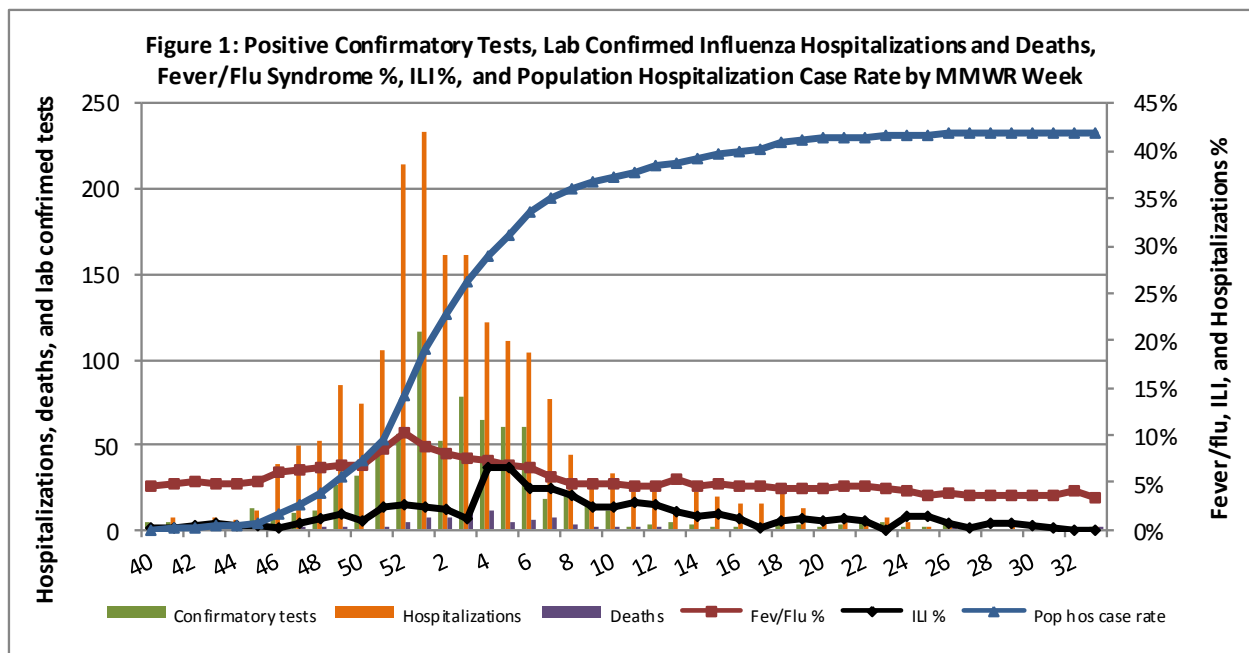
Of the past six influenza seasons, the 2013-14 influenza season, which officially ends on September 27, was most similar to the 2010-11 season. Influenza A H1N1 was the predominant circulating strain. Nationally, the same trend was observed. In SC, fewer positive tests were reported this season than in the previous season; however, more hospitalizations and deaths were reported. The season peaked in late December/early January.

From September 29, 2013 to August 16, 2014, 767 positive cultures, RT-PCRs, DFAs, and IFAs were reported in SC. There were 1941 influenza associated hospitalizations and 78 influenza associated deaths reported. Two of these deaths were in children under 18. Approximately 40,794 positive rapid antigen detection tests were also reported.

Figure 1 shows the number of positive confirmatory tests and lab confirmed influenza hospitalizations and deaths, ILI and fever/flu syndrome percentages, and the population hospitalization case rate by MMWR week for SC.

Contents

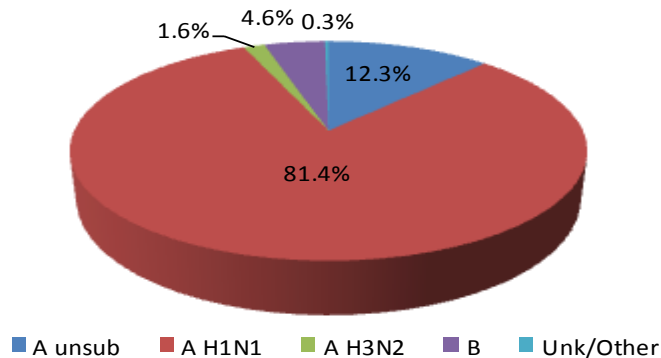
Summary	1
Laboratory Reporting	2
Positive rapid antigen tests	3
ILINet	4
Hospitalizations and deaths	5
National surveillance	6
SC surveillance components	7



Laboratory Reporting

In SC, laboratories are required to report positive influenza cultures, RT-PCRs, DFA, and IFAs. Reports are received from the DHEC Bureau of Labs (BOL), clinical, and commercial laboratories. From September 29, 2013 to August 16, 2014, BOL tested 333 specimens for influenza. Of these, 171 (51.4%) specimens were positive for influenza. During this time, 596 positive specimens were reported by other clinical and commercial labs. Influenza A H1N1 was the predominant circulating strain. As in previous seasons, more influenza B cases were reported in the spring than in the fall and winter. However, a significant increase in influenza B cases was not observed. The greatest number of positive specimens reported in a single week occurred during week 1 (first week of Janu-

Figure 2. Percentage of Positive Confirmatory Tests by Type



ary). Of the total positive influenza specimens reported, 624(81.4%) were A H1N1, 94(12.3%) were A unsubtyped, 35(4.5%) were influenza B, 12 (1.6%) were A H3N2, 1(0.13%) was an influenza A & B coinfection and 1(0.13%) was unknown subtype (Figure 2). Figure 3 shows the percentage of positive confirmatory tests reported by DHEC public health region. Approximately 71% of all positive specimens were identified in counties in the Lowcountry and Midlands regions. Figure 4 shows the percentage of positive confirmatory tests by age group while Figure 5 displays the number of positive confirmatory tests by age group and type.

Figure 3. Percentage of Positive Confirmatory Tests by DHEC Public Health Region

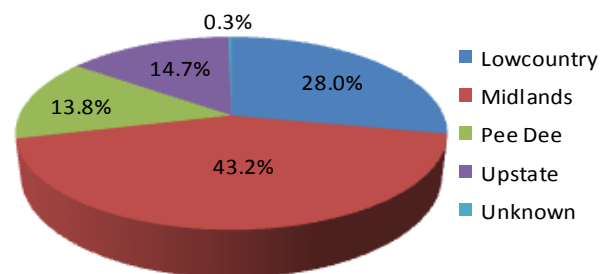


Figure 4. Percentage of Positive Confirmatory Tests by Age group

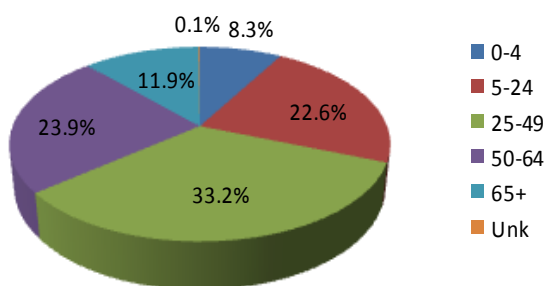
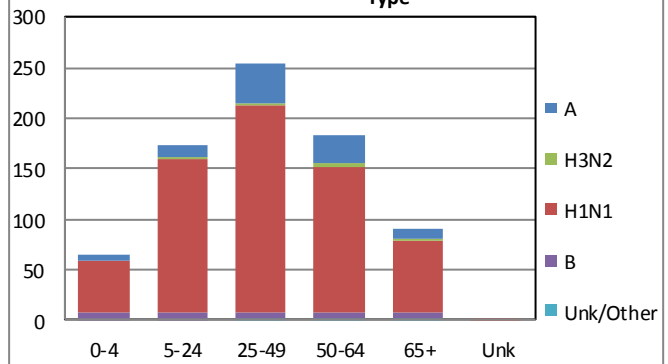


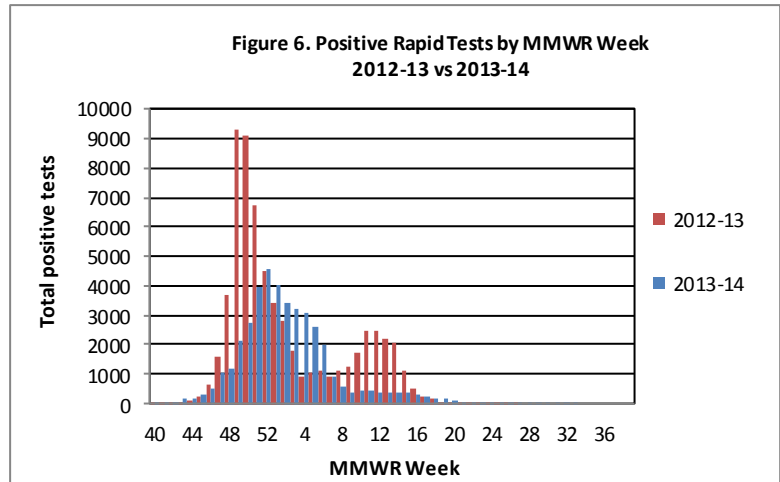
Figure 5. Positive Confirmatory Tests by Age group and Type



Positive Rapid Antigen Tests

SC providers are required to report the total number of patients with positive rapid antigen detection tests by type each week. A total of 40,794 positive rapid antigen detection tests were reported from September 29, 2013 to August 16, 2014. This compares to 63,627 for the same time period during the 2012-13 season. Of the positive rapid tests reported in SC this season, 86.8% were influenza A, 11.1% were influenza B, 1.5% were influenza A/B, and less than 1% were unknown or other.

Figure 6 shows positive rapid antigen detection tests for the 2012-13 and 2013-14 seasons by MMWR week. Nearly twice as many positive rapid antigen detection tests were reported during the 2012-13 season as were reported in 2013-14.



This season the peak number of positive rapid antigen detection tests was observed during week 52 compared to week 49 in the previous season.

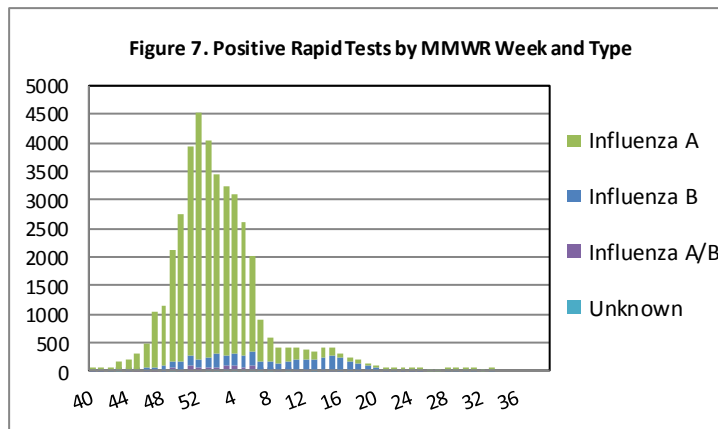
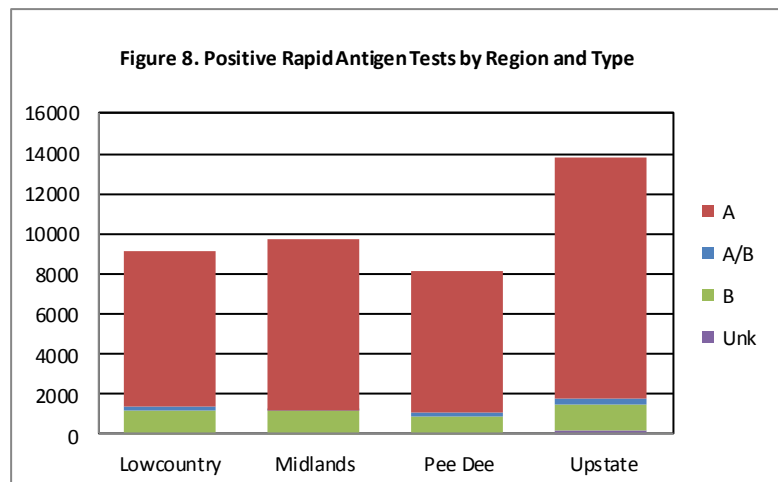


Figure 7 shows positive rapid antigen detection tests by type and MMWR week for the 2013-14 season. Throughout the season influenza A was the predominant circulating strain.

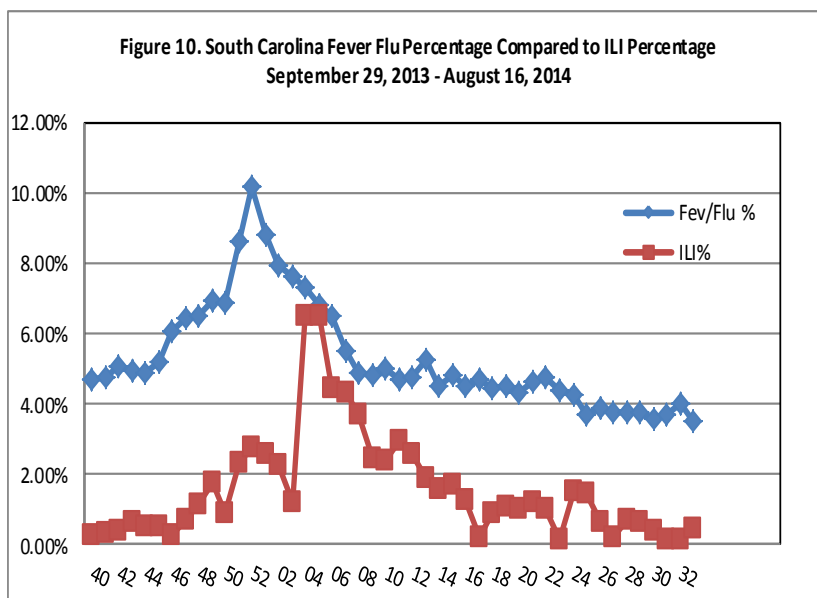
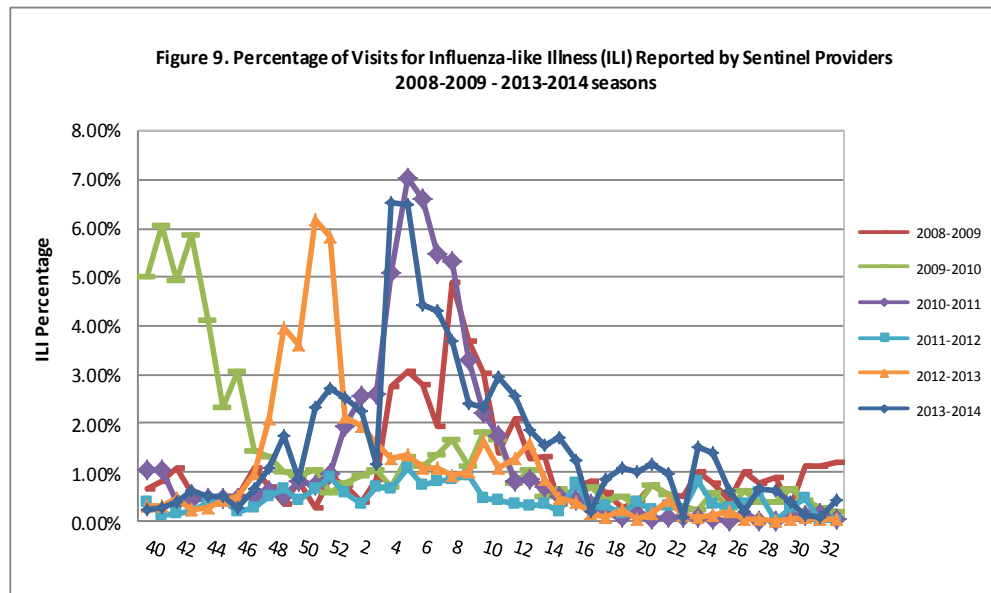
Figure 8 presents positive rapid antigen detection tests by DHEC public health region and type. Approximately 34% of positive rapid antigen detection test reports were received from the Upstate Region. The Midlands, Lowcountry, and Pee Dee Regions reported 24%, 22%, and 20% of positive rapid antigen detection tests, respectively.



U.S. Outpatient Influenza-like Illness Surveillance (ILINet)

During the 2013-14 influenza season, an average of 31 providers were enrolled in ILINet. Of these, 19 (61.3) reported at least once during the season. Sixteen (84.2%) of these providers reported at least half of the season (23 weeks). Eight providers reported more than 95% of the season, with three of these having reported every week!

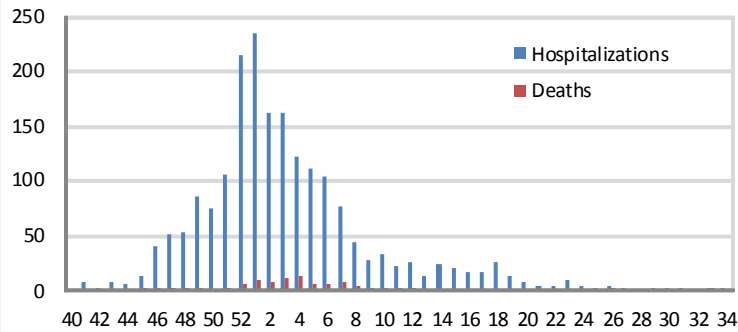
Sentinel providers reported 286,973 total visits this season, with 3,188 (1.1%) patient visits for ILI. Of the ILI visits, 735 (23.1%) were in 0-4 yr. olds, 1,262 (39.6%) were in 5-24 yr. olds, 834 (26.2%) were in 25-49 yr. olds, 276 (8.7%) were in 50-64 yr. olds and 81 (2.5%) were in those older than 64. These percentages are similar to those seen in previous seasons. More than 51% of ILI visits were seen in urgent care centers. Nearly 32% of the total visits for ILI were in pediatric practices and emergency medicine clinics. Another 8.5% were in family practice centers, 8.6% in student health centers, and 0.44% in internal medicine clinics. Figure 9 compares ILI percentages for the last six seasons by MMWR week. The 2013-14 season was similar to the 2010-11 season in terms of when activity peaked and the peak percentage.



The hospital ED syndromic surveillance system classifies emergency department chief complaint data into appropriate syndrome categories. The fever-flu syndrome is compared to ILINet data weekly. Figure 10 shows the comparison of the fever-flu percentage and ILI percentage by MMWR week. As in previous seasons, the fever/flu percentage was consistently higher than the ILI percentage throughout the season. Fever/flu syndrome peaked a few weeks before ILI; however, the overall patterns are similar. Dramatic decreases in ILI percentage during some weeks can be attributed to the number of reporting practices.

Lab confirmed influenza hospitalizations

Figure 11. Reported Cases of Laboratory Confirmed Influenza Hospitalizations and Deaths by MMWR week
September 29, 2013 - August 16, 2014



Laboratory confirmed influenza associated hospitalizations and deaths in all ages are reportable in SC. Lab confirmation includes culture, RT-PCR, DFA, IFA, and rapid tests. For deaths, autopsy reports consistent with influenza are also acceptable for confirmation. Hospitalizations are reported in aggregate form while deaths are reportable by name. From September 29, 2013 to August 16, 2014, 1941 lab confirmed influenza hospitalizations and 78 lab confirmed influenza deaths were reported. This compares to 1721 hospitalizations and 46 deaths reported through week 33 of the previous season. Two pediatric deaths were reported this past

season. Lab confirmed hospitalizations and deaths by MMWR week are shown in Figure 11. The greatest number of influenza hospitalizations were reported in late December and early January, with the peak occurring during the first week of January (MMWR week 1). Figure 12 shows the hospitalizations and deaths case rates by age group. Seniors age 65 and older and those age 50-64 had the highest hospitalization and death case rates. Figures 13 and 14 show the percentage of influenza deaths by race and gender. Of those with known race, 79% of those who died from flu were Caucasian and 62% were male.

Figure 12. Laboratory Confirmed Influenza Case rate/100,000 Hospitalizations (n=1941) and Deaths (n=78) by age group
September 29, 2013 - August 16, 2014

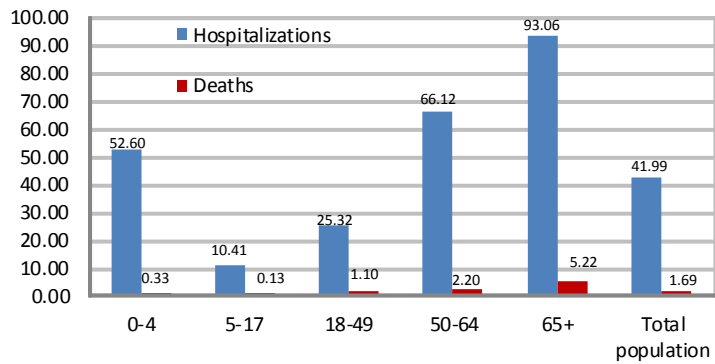


Figure 13. SC Influenza Deaths by Race (N=78)
9/29/13 - 8/16/14

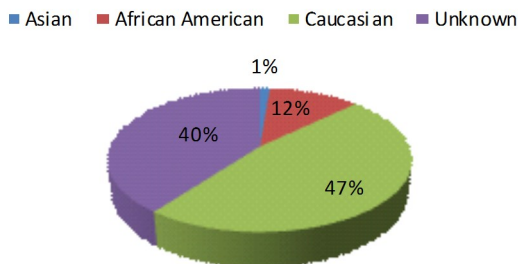
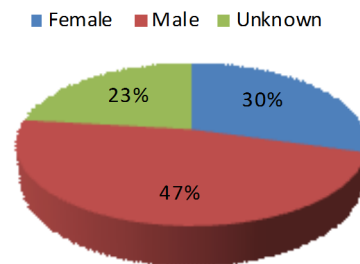


Figure 14. SC Influenza Deaths by Gender (N=78)
9/29/13 - 8/16/14



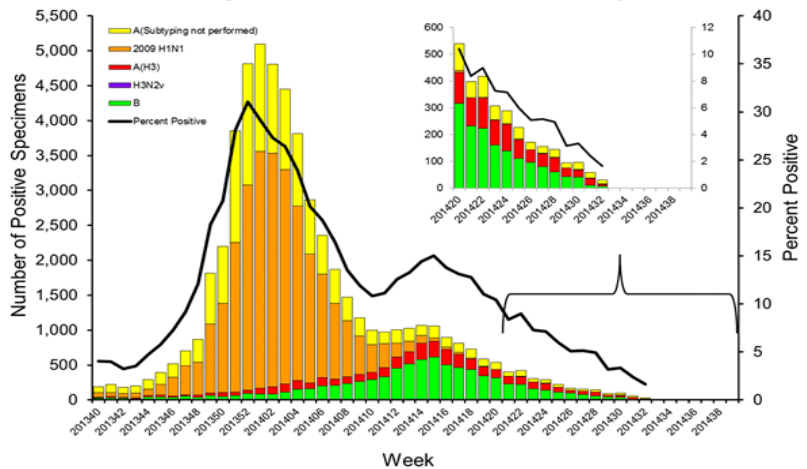
National influenza surveillance

WHO and NREVSS collaborating laboratories located in all 50 states and Washington, D.C. report to CDC the number of respiratory specimens tested for influenza and the number positive by influenza type and subtype.

From September 29, 2013 to July 19, 2014, these labs reported 56,264 positive influenza specimens compared to 74,646 in the previous season. Of these positive specimens, 50.5% were A H1N1, 6.8% were A H3N2, and 14.5% were influenza B. Approximately 28.1% of positive specimens were influenza A unsubtype. Nationally, 107 pediatric influenza deaths were reported this season.

The Influenza Hospitalization Surveillance Network (FluSurv-NET) conducts all age population-based surveillance for laboratory-confirmed influenza-related hospitalizations in select counties in the Emerging Infections Program (EIP) states and Influenza Hospitalization Surveillance Project (IHSP) states. Between September 29, 2013 and April 26, 2014, 9,518 laboratory-confirmed influenza-associated hospitalizations were reported. Those 65 and older, 50-64, and 18-49 accounted for 29.8%, 29.6%, and 27.6% of hospitalizations, respectively. Among all hospitalizations, 8,435 (88.6%) were associated with influenza A and 999 (10.5%) with influenza B. There was no virus type information for 46 (0.5%) hospitalizations and 38 (0.4%) were influenza A/B.

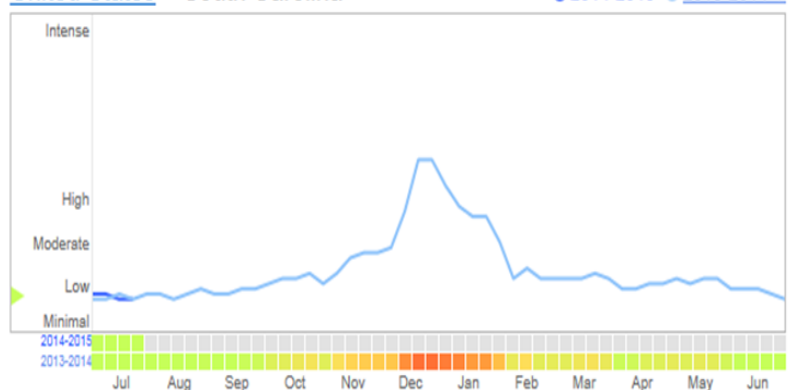
Influenza Positive Tests Reported to CDC by U.S. WHO/NREVSS Collaborating Laboratories, National Summary, 2013-14



Google Flu Trends

Google has compared internet searches for flu-related topics with traditional flu surveillance systems and found a close relationship between the number of people searching for flu-related topics and the number of people that actually have flu symptoms. Data on flu-related Google searches are now used to estimate the amount of flu circulating each season. Google data for SC matches well with data obtained through SC surveillance systems and shows the heaviest activity between December and January.

United States > South Carolina



South Carolina Influenza Surveillance Components

Mandatory reporting

- **Positive influenza culture, RT-PCR, DFA, and IFA:** Positive influenza culture results, RT-PCRs, DFAs and IFAs from commercial laboratories should be reported to DHEC within 3 days electronically via CHES or using a DHEC 1129 card.
- **Positive rapid antigen tests:** Summary numbers of positive rapid antigen tests by type should be submitted to the regional health department weekly.
- **Lab confirmed influenza hospitalizations:** Summary numbers of lab confirmed (culture, RT-PCR, DFA, IFA, or rapid) influenza related hospitalizations should be reported to the regional health department weekly.

- **Lab confirmed influenza deaths:** Lab confirmed (culture, RT-PCR, DFA, IFA, or rapid or autopsy consistent with influenza) influenza related deaths in persons of any age should be reported to the regional health department within 24 hours.

patients seen in a week and the number of those patients with ILI symptoms by age group.

- **SC-DARTS:** SC-DARTS is a collaborative network of syndromic surveillance systems within South Carolina. The hospital ED syndromic surveillance system classifies ED chief complaint data into appropriate syndrome categories. These syndrome categories are then analyzed using the cumulative sum methodology to detect any significant increases. Syndromic reports are distributed back to the hospital on a daily basis.

Voluntary reporting

- **Outpatient influenza-like illness surveillance network (ILINet):** ILI is defined as fever (temperature of $>100^{\circ}$ F) plus a cough and/or a sore throat in the absence of another known cause. Sentinel providers submit weekly reports of the total number of

To learn more about CHES call 1-800-917-2093.

If you have questions about South Carolina influenza surveillance, please contact:

**Chasisity Springs, PhD, MSPH
Influenza Surveillance Coordinator**

Telephone: 803-898-0870

Fax: 803-898-0897

Email: springcb@dhec.sc.gov

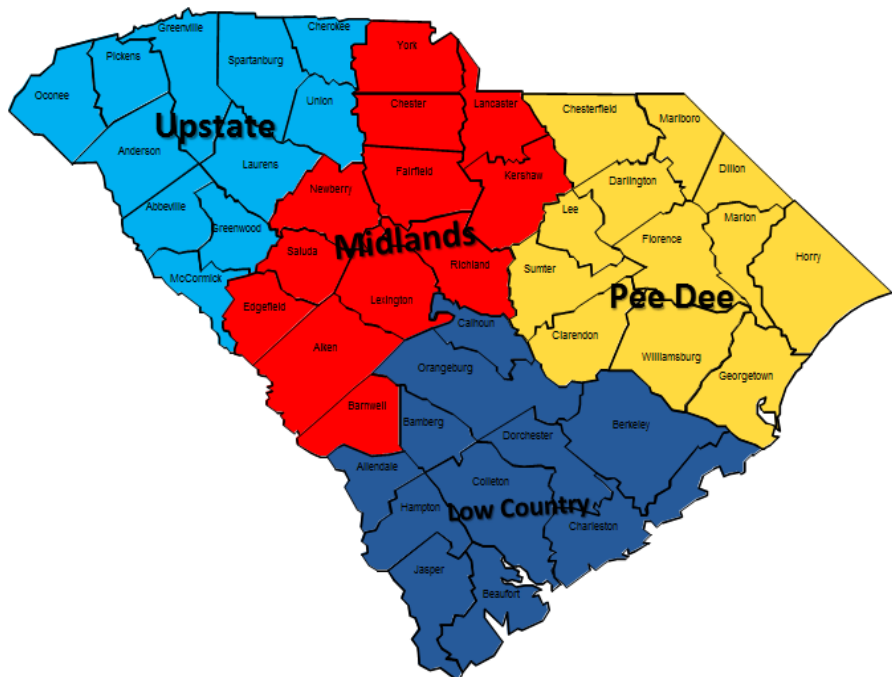
CDC urges you to take these steps to protect yourself and others from the flu:

- Get vaccinated against flu – it's your best defense.
- Cover your cough and wash hands often.
- Take antiviral drugs if your doctor recommends them.

South Carolina Department of Health and Environmental Control



We promote and protect the health of the public and the environment.



Bureau of Disease Control
Division of Acute Disease Epidemiology
 2100 BULL ST
 COLUMBIA, SC 29201
 PHONE: 803-898-0861
 FAX: 803-898-0897

This report contains data collected through SC's mandatory and voluntary surveillance. Data are current as of August 16, 2014 and are subject to change as reports are received.