



South Carolina Influenza Surveillance Report 2014-2015 Influenza Season Summary

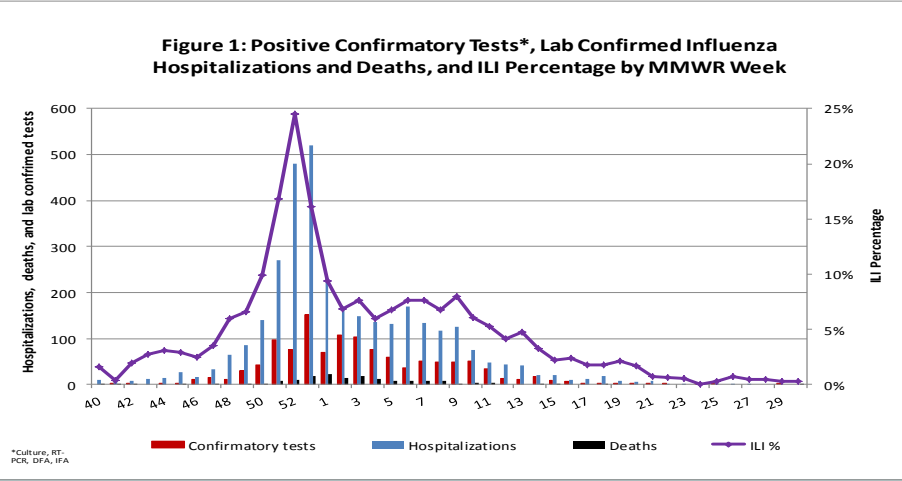
Influenza Season Review

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 antigen detection 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 1 (MMWR week 30).

Of the past six influenza seasons, the 2014-15 influenza season, which officially ended on September 28, was the most active in all influenza surveillance indicators. The season was most similar to the 2012-13 season, with influenza A H3N2 being the predominant circulating strain. From February to April, a slight increase in influenza B viruses was observed. Nationally, the same trend was observed. The season peaked at the end of December.

From September 28, 2014 to August 1, 2015, 1,192 positive cultures, RT-PCRs, DFAs, and IFAs were reported in SC. There were 3,365 influenza associated hospitalizations and 156 influenza associated deaths were reported. Three of these deaths were in children under 18. More than 82,000 positive rapid antigen detection tests were also reported.

Table 1 summarizes the predominant circulating strains over the last six seasons. Influenza H1N1 was predominant during the 2009 - 10, 2010 - 11, and 2013 - 14 seasons. Influenza H3N2 was predominant during 2012 - 13 and 2014 - 15. Figure 1 shows the number of positive confirmatory tests, lab confirmed influenza hospitalizations and deaths, and influenza-like illness (ILI) by MMWR week for SC. Peak flu activity was observed during the last weeks of December and first week of January.



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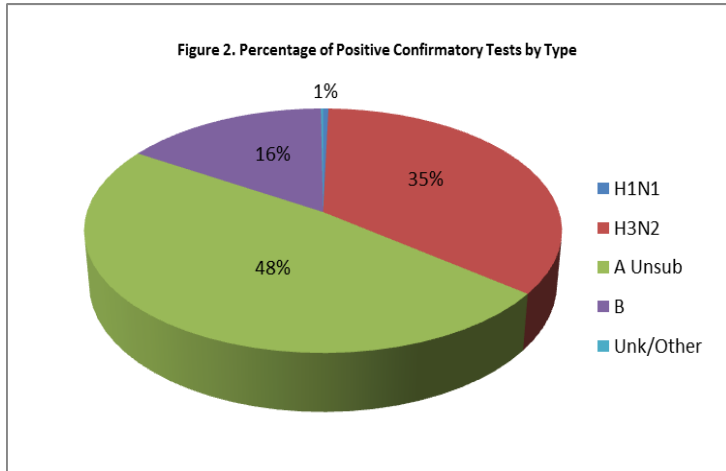
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NOTEWORTHY

- The 2014-15 influenza season was an H3N2 predominant season
- A greater number of influenza B viruses were observed from February through April

Season	Predominant Strain (s)
2009-10	H1N1
2010-11	H1N1
2011-12	H1N1, H3N2
2012-13	H3N2
2013-14	H1N1
2014-15	H3N2

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 28, 2014 to August 1, 2015, BOL tested 324 specimens for influenza. Of these, 180 (55.6%) specimens were positive for influenza. During this time, 912 positive specimens were reported by other clinical and commercial labs. Influenza A H3N2 was the predominant circulating strain. As in previous seasons in which H3N2 was predominant, more influenza B cases were reported in

the spring than in the fall and winter. However, only a slight increase in influenza B cases was observed. The greatest number of positive specimens reported in a single week occurred during week 53 (last week of December). Of the total positive influenza specimens reported, 420 (35.2%) were influenza A H3N2, 575 (48.2%) were A unsubtype, 190 (15.9%) were influenza B, 5 (0.4%) were influenza A H1N1, 1 (0.1%) was an influenza A & B coinfection and 1 (0.1%) was unknown type (Figure 2). Figure 3 shows the percentage of positive confirmatory tests reported by DHEC public health region. Approximately 83% 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. Individuals over 64 had the highest percentage of positive confirmatory tests, followed by 5-24 year olds. In the previous season (H1N1 predominant) the highest number of confirmatory tests were seen in 25-49 year olds and 50-64 year olds. Figure 5 displays the number of positive confirmatory tests by age group and type.

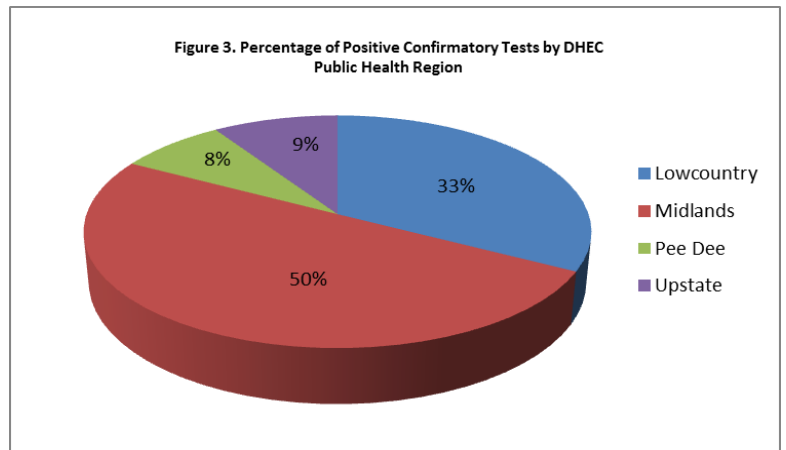
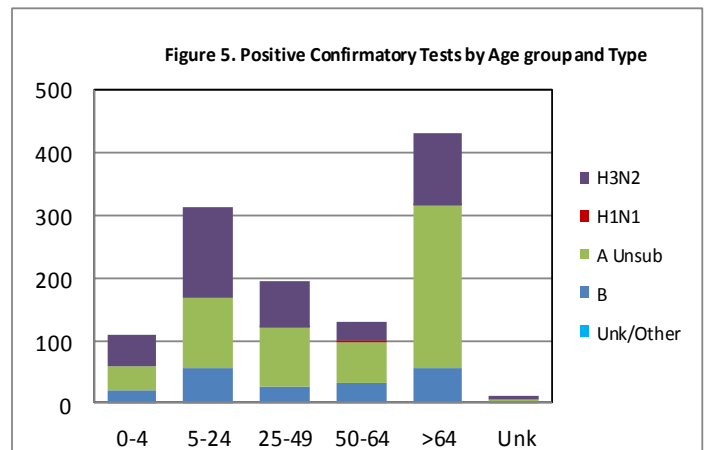
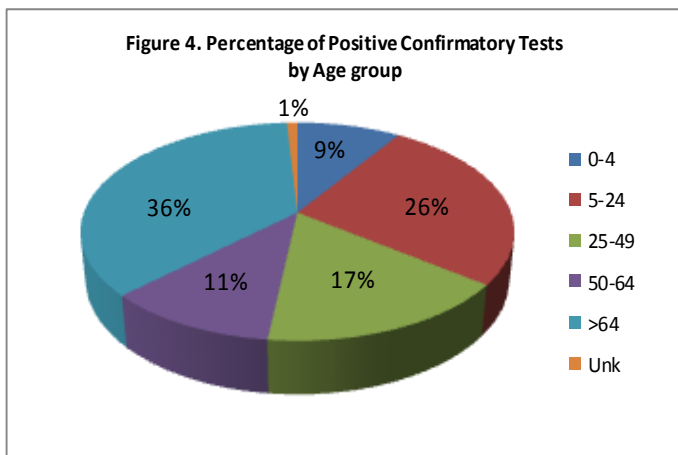


Figure 4 shows the percentage of positive confirmatory tests by age group. Individuals over 64 had the highest percentage of positive confirmatory tests, followed by 5-24 year olds. In the previous season (H1N1 predominant) the highest number of confirmatory tests were seen in 25-49 year olds and 50-64 year olds. Figure 5 displays the number of positive confirmatory tests by age group and type.



POSITIVE RAPID ANTIGEN DETECTION 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 82,275 positive rapid antigen detection tests were reported from September 28, 2014 to August 1, 2015. This compares to 63,627 for the same time period during the 2013-14 season. Of the positive rapid tests reported in SC this season, 79.9% were influenza A, 18.6% were influenza B, 1.1% were influenza A/B, and less than 1% were unknown or other.

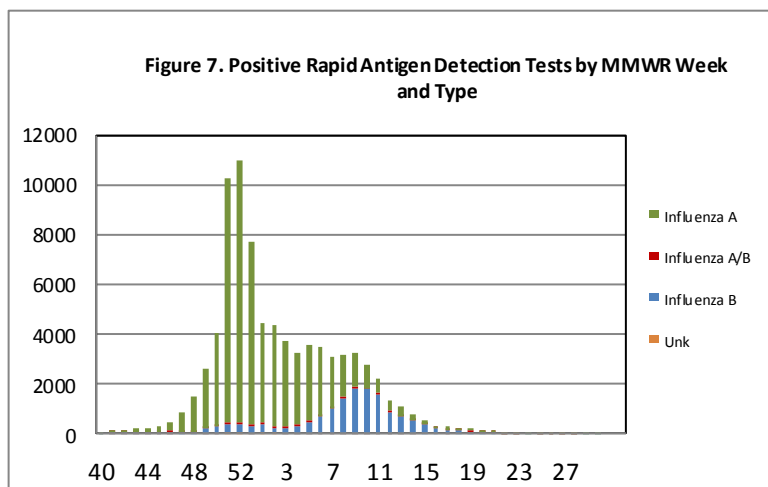
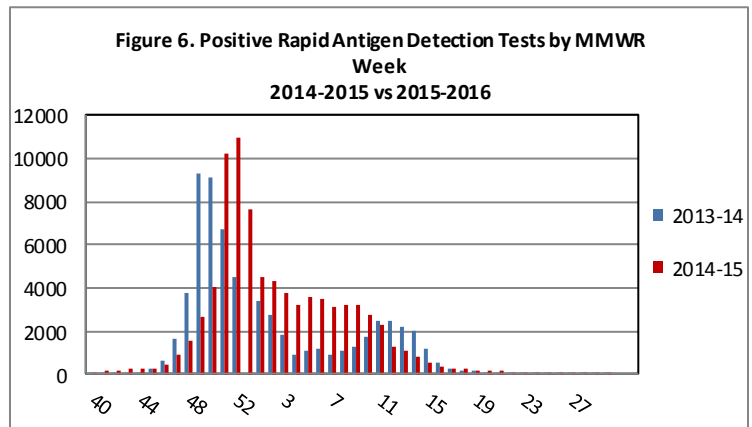
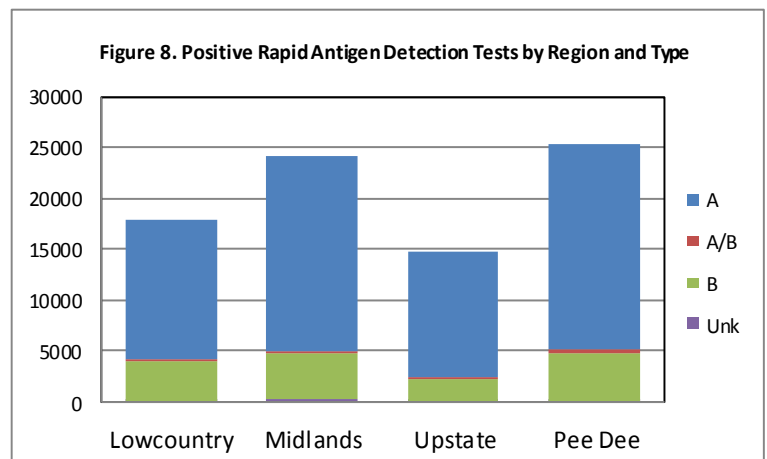


Figure 6 shows positive rapid antigen detection tests for the 2013-14 and 2014-15 seasons by MMWR week. During the 2014-15 season nearly 29% more positive rapid antigen detection tests were reported than in the 2013-14 season. This season the peak number of positive rapid antigen detection tests was observed during week 52, compared to week 51 in the previous season.

Figure 7 shows positive rapid antigen detection tests by type and MMWR week for the 2013-14 season. Figure 8 presents positive rapid antigen detection tests by DHEC public health region and type. Approximately 31% of positive rapid antigen detection test reports were received from the Pee Dee Region. The Midlands, Lowcountry, and Upstate Regions reported 30%, 22%, and 18% of positive rapid antigen detection tests, respectively.



US OUTPATIENT INFLUENZA-LIKE ILLNESS NETWORK

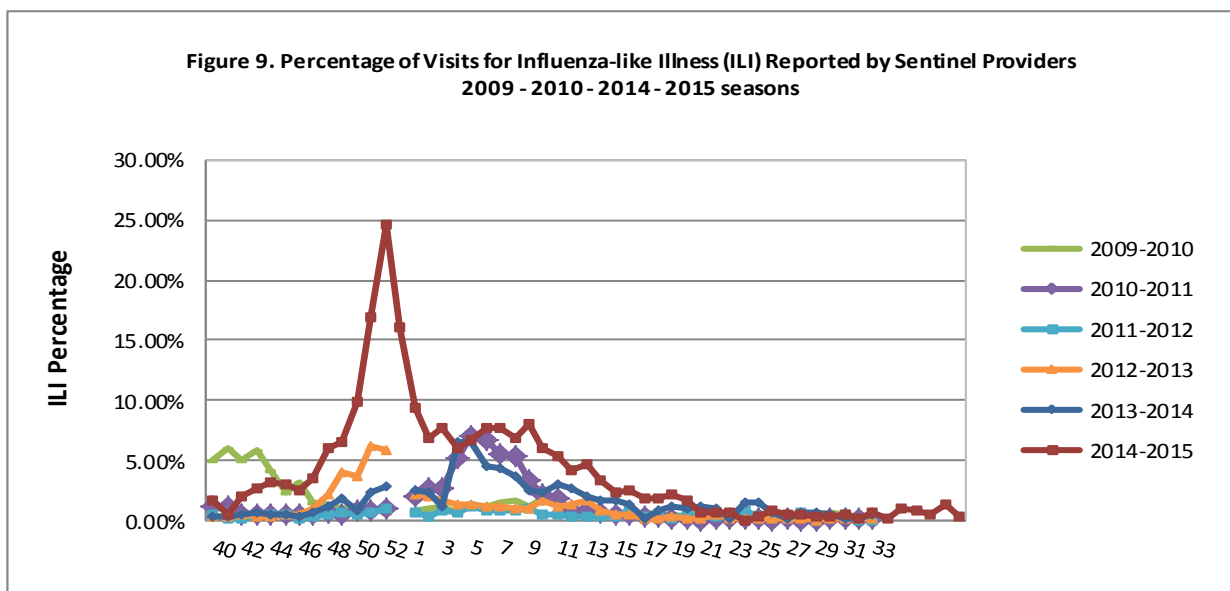
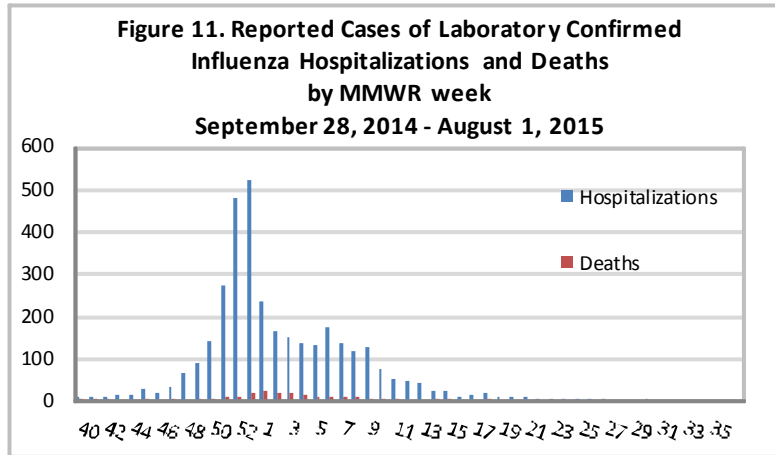


Figure 9 compares the 2009 -10 through 2014 -15 influenza season ILI percentages by MMWR week. Each of the past six seasons has been unique. As a result of the emergence of the 2009 H1N1 strain near the end of the 2008-09 season flu activity continued throughout the summer months and spilled over into the early portion of the 2009-10 season. The 2011-12 season was extremely mild, while the 2012 -13 season was very active and ILI activity peaked in December. The 2013 -14 season was not as active as the 2012 - 13 season and ILI activity peaked in late January/early February. The 2014 - 15 season has been the most active of the last six seasons. During this season ILI activity peaked towards the end of December (weeks 52 - 53), with maximum ILI percentage being approximately 24%.

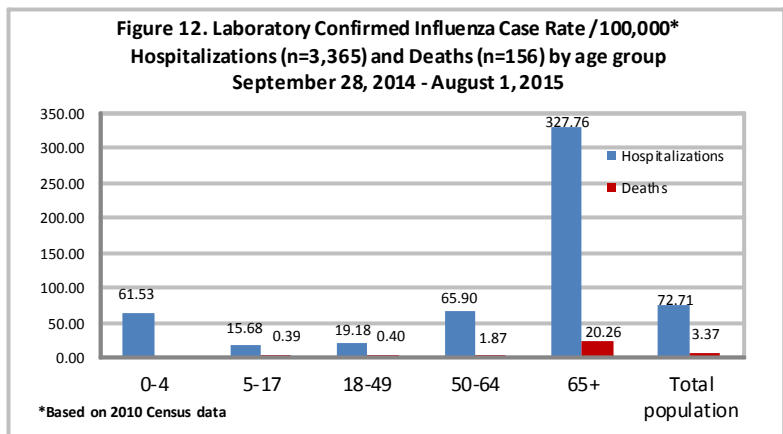
During the 2014-15 influenza season, 30 providers were enrolled in ILINet. Of these, 19 (63.3%) reported at least once during the season. Thirteen (68.4%) of these providers reported at least half of the entire season (23 weeks). Seven providers reported more than 95% of the season, with three of these having reported every week! Sentinel providers reported 353,363 total visits this season, with 14,741(4.7%) patient visits for ILI. Of the ILI visits, 2,046 (13.9%) were in 0 - 4 yr. olds, 6,046 (41.0%) were in 5 - 24 yr. olds, 4,421 (30.0%) were in 25 - 49 yr. olds, 1,404 (9.5%) were in 50 - 64 yr. olds and 824 (5.6%) were in those older than 64. Although the total number of patients seen with ILI by SC ILINet providers was more than triple that of the previous season, the age distribution is similar to what has been observed in previous seasons, with the majority of ILI having been reported in 5 - 24 yr. olds, followed by 25 - 49 yr. olds.

LAB CONFIRMED INFLUENZA HOSPITALIZATIONS AND DEATHS

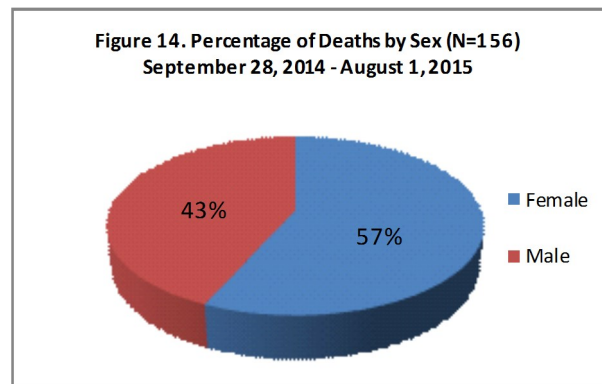
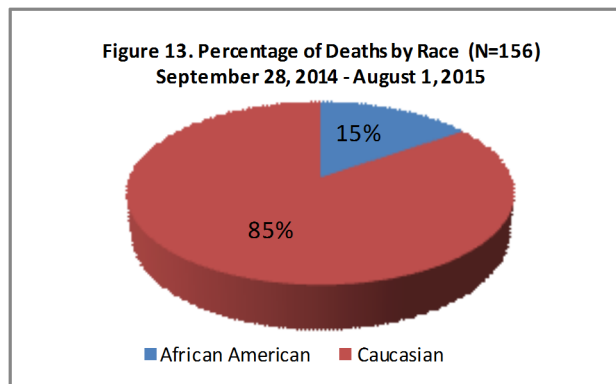


Laboratory confirmed influenza associated hospitalizations and deaths in all ages are reportable in SC. Lab confirmation includes culture, RT-PCR, DFA, IFA, and rapid tests. For deaths, autopsy reports consistent with influenza are also acceptable for confirmation. Hospitalizations are reported in aggregate form while deaths are reportable by name. From September 28, 2014 to August 1, 2015 3,365 lab confirmed

influenza hospitalizations and 156 lab confirmed influenza deaths were reported. This compares to 1,940 hospitalizations and 77 deaths reported through week 30 of the previous season. Three pediatric deaths (under age 18) 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 the last weeks of December, with the peak occurring during the very last week of December (MMWR week 53). Figure 12 shows the hospitalizations and deaths case rates by age group.



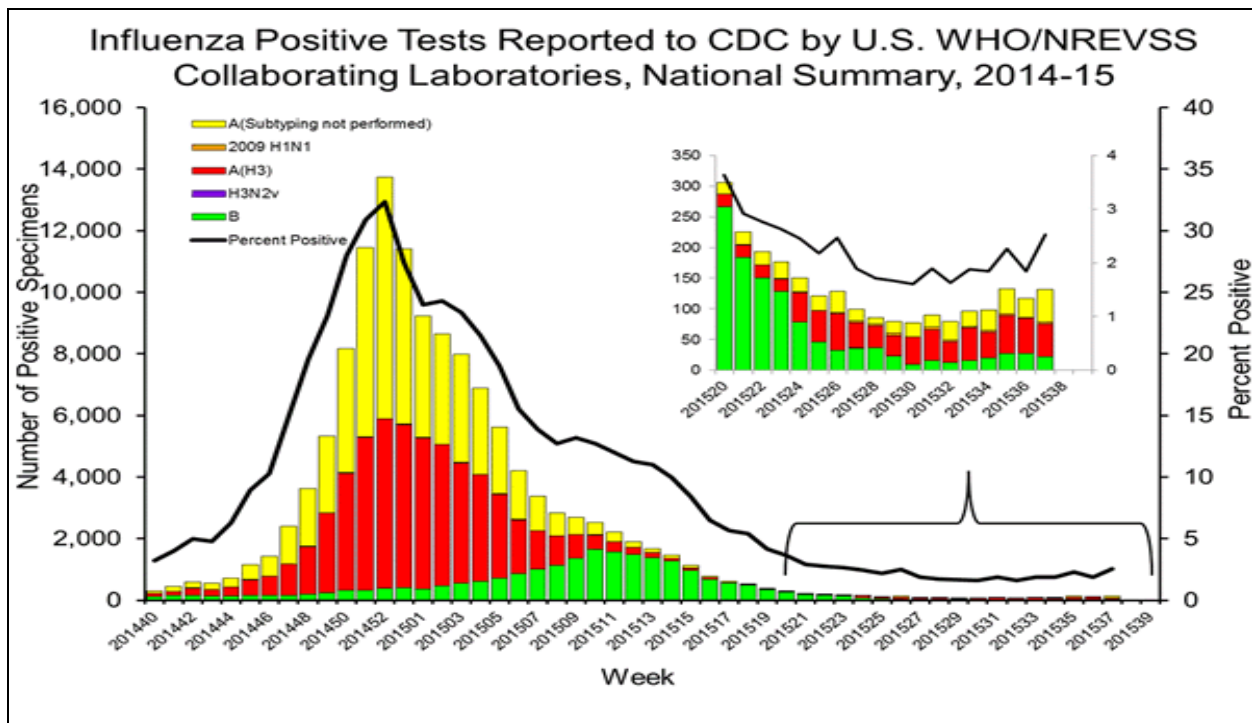
Seniors over 64 had the highest hospitalization and death case rates. This group accounted for 62% and 82% of hospitalizations and deaths, respectively. Figures 13 and 14 show the percentage of influenza deaths by race and sex. Of those with known race (7 unknown), 85% of SC influenza deaths were in Caucasians and 15% were in African Americans. Just over half (57%) were in females.



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 sub-type. From September 28, 2014 to September 19, 2015, these labs reported 128,372 positive influenza specimens compared to 52,264 in the previous season. Of these positive specimens, 41.5% were A H3N2, 0.2% were A H1N1, and 16.9% were influenza B. Approximately 41.4% of positive specimens were influenza A unsubtype.

Pediatric influenza deaths in children under 18 are nationally notifiable. Nationally, 146 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 28, 2014 and May 2, 2015, 17,832 laboratory-confirmed influenza-associated hospitalizations were reported. Those 65 and older accounted for 61.1% of hospitalizations nationally, while those 50-64 accounted for 16.2%. Among all hospitalizations, 15,218 (85.3%) were associated with influenza A and 2,463 (13.8%) with influenza B. There was no virus type information for 40 (0.2%) hospitalizations and 11 (0.6%) were influenza A/B.

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 CHESS 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, rapid antigen detection test, or autopsy consistent with influenza) influenza related deaths in persons of any age should be reported to the regional health department within 24 hours.

Voluntary reporting

- Outpatient influenza-like illness surveillance network (ILINet): ILI is defined as fever (temperature of $\geq 100^{\circ}\text{F}$) 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 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

To learn more about electronic reporting call 1-800-917-2093.

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

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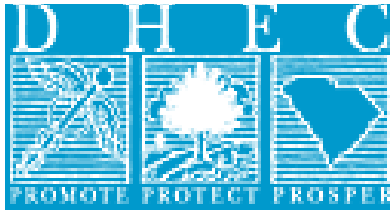
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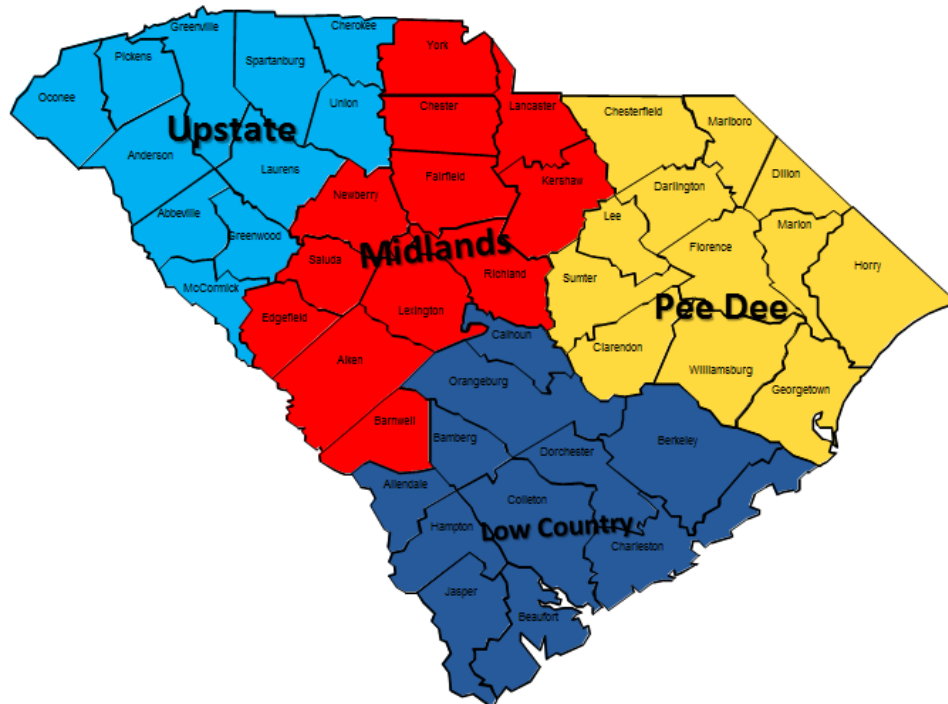
CDC urges you to take these steps to protect yourself and others from the flu:

- **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 Con-



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



**Bureau of Disease Control
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This report contains data collected through SC's mandatory and voluntary surveillance. Data are current as of August 1, 2015 and are subject to change as reports are received.

Find us on the web at <http://www.scdhec.gov/Health/DiseasesandConditions/InfectiousDiseases/Flu/FluData/>