

Section 7

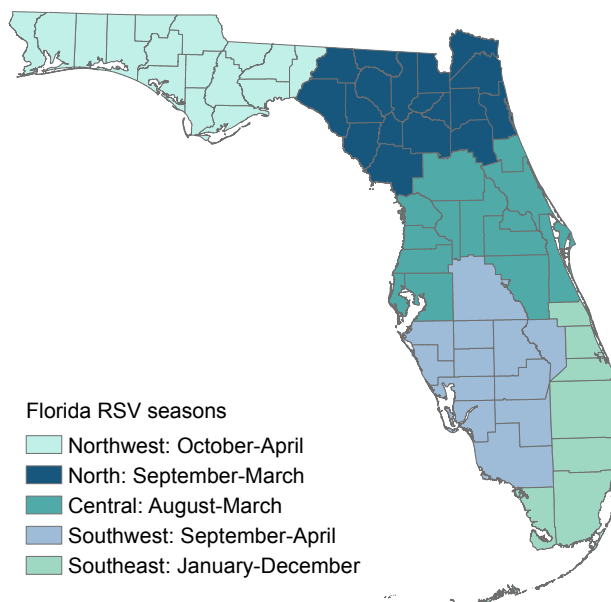
Respiratory Syncytial Virus Surveillance

Background

Respiratory syncytial virus (RSV) is a common respiratory virus that primarily infects young children. RSV causes cold-like symptoms such as fever, cough, and runny nose. RSV can also cause more severe symptoms like wheezing or difficulty breathing, particularly in young children with underlying health conditions. Children <5 years old and older adults are at increased risk of hospitalization for complications due to RSV infection. The Centers for Disease Control and Prevention (CDC) estimates that 1-3% of all children in the U.S. will be hospitalized within their first 12 months of life due to RSV infection. RSV infection is the most common cause of bronchiolitis (inflammation of small airways in the lungs) and pneumonia in infants <1 year old.

In the U.S., RSV activity is most common during the fall, winter, and spring months, though activity varies in timing and duration regionally. In Florida, RSV season is longer than the rest of the nation and in some areas of the state is year-round. CDC marks the start of RSV season as the first two consecutive weeks during which the average percent of specimens that test positive for RSV at hospital laboratories is $\geq 10\%$. The Florida Department of Health has established regular RSV seasons based on these thresholds for Florida (Map 1). RSV activity in Florida typically peaks in November through January, with an overall decrease in activity during the summer months. Although summer months typically have less RSV activity overall, laboratory data for southeast Florida consistently show $\geq 10\%$ of specimens testing positive for RSV in most summer months. For that reason, RSV season in southeast Florida is considered year-round.

Map 1: Florida RSV Seasons



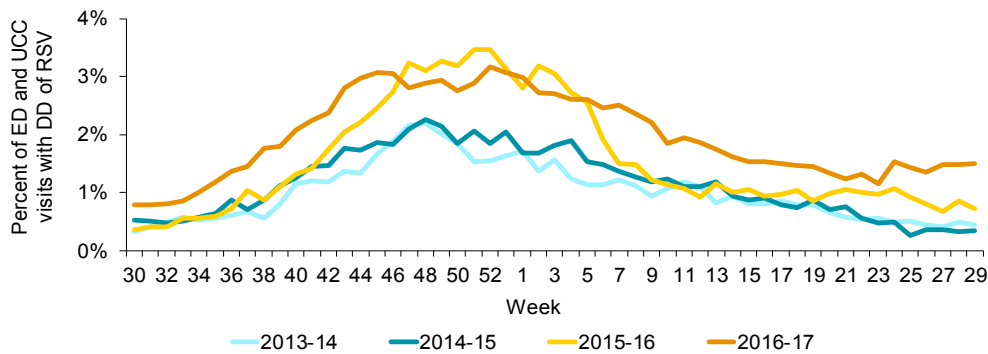
For the purpose of this report, the RSV reporting year is defined by standard reporting weeks as outlined by CDC, where every year has a minimum of 52 reporting weeks and some years have 53; there were 52 weeks in 2016. In Florida, increased surveillance for RSV begins in week 30 (July 24, 2016) and ends in week 29 of the following year (July 22, 2017). Florida produces a weekly RSV report as part of a larger respiratory disease report during the influenza season (October through May) and a biweekly report during the summer months that summarizes RSV surveillance data. These reports are available at www.FloridaHealth.gov/FloridaFlu.

The determination of unique seasonal and geographic trends of RSV activity has important implications for prescribing patterns for initiating prophylaxis in children considered at high risk for complications due to RSV infection. The American Academy of Pediatrics Red Book¹ currently recommends that preapproval for prophylactic treatment for these children be made based on state surveillance data. This recommendation, in conjunction with Florida's unique RSV seasons, led to the implementation of statewide surveillance for RSV. These surveillance data are designed to be used to support clinical decision-making for prophylaxis of at-risk children. Palivizumab is an antibody that reduces the risk of RSV infection when given to at-risk children. Palivizumab is prophylaxis to prevent illness, not a treatment for current RSV infection, that is administered in five monthly doses and provides protection for six months, beginning at the time of the first administered dose. The timing of RSV season in Florida influences the timing of palivizumab administration, underscoring the importance of RSV surveillance in Florida.

Surveillance in Florida

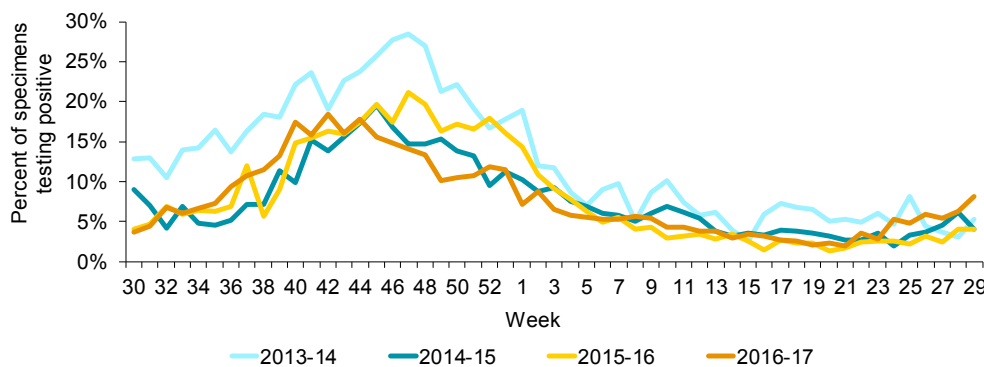
Florida's syndromic surveillance system, ESSENCE-FL, collects chief complaint and discharge diagnosis data from 305 emergency departments (EDs) and urgent care centers (UCCs). These data are used to monitor trends in RSV visits to EDs and UCCs when RSV or RSV-associated illness is included in the discharge diagnosis. In Florida, increased RSV activity statewide in children <5 years old associated with the 2016-17 RSV season spanned from September to April and peaked in late December (Figure 1). While peak activity was not as high during the 2016-17 RSV season, the percent of children <5 years old diagnosed with RSV at participating EDs and UCCs was overall greater than that observed during the 2013-14 and 2014-15 seasons.

Figure 1: Percent of Weekly Emergency Department (ED) and Urgent Care Center (UCC) Visits for Children <5 Years Old With Discharge Diagnosis (DD) of Respiratory Syncytial Virus (RSV) From ESSENCE-FL (305 Facilities), 2013-14, 2014-15, 2015-16, and 2016-17 Seasons, Florida



The Department also monitors RSV activity using data reported into the National Respiratory and Enteric Virus Surveillance System (NREVSS). NREVSS is a voluntary, laboratory-based surveillance system through which participating laboratories report RSV test results. The Department uses data from NREVSS in combination with validated electronic laboratory reporting data to monitor temporal patterns of RSV (Figure 2). Peak activity level for the 2016-17 season, as defined as the highest percent of specimens testing positive for RSV, was observed in October 2016. Of note, these data are for people of all ages, whereas the data in Figure 1 are limited to children <5 years old. This may account for the difference in patterns observed in Figures 1 and 2.

Figure 2: Percent of Specimens Testing Positive for Respiratory Syncytial Virus (RSV) as Reported by the National Respiratory and Enteric Virus Surveillance System and Electronic Laboratory Reporting Results, 2013-14, 2014-15, 2015-16 and 2016-17 Seasons, Florida



References

- 1 Kimberlin DW; Jackson M (ed.). 2015. *Red Book: 2015 Report of the Committee on Infectious Diseases*. 30th ed. Elk Grove Village, IL: American Academy of Pediatrics.