

**R**espiratory Syncytial (sin-SISH-uhl) Virus, or RSV, is a common respiratory virus that usually causes mild, cold-like symptoms. Most people recover in a week or two, but RSV can be serious, especially for infants and older adults. RSV is the most common cause of bronchiolitis (inflammation of the small airways in the lung) and pneumonia (infection of the lungs) in children younger than 1 year of age in the United States. There are an estimated 177,000 annual hospitalizations and 14,000 deaths related to RSV in adults aged 65+.<sup>1</sup>

RSV in immunocompromised persons frequently results in lower respiratory tract infection.

### Racial Disparities

Data related to RSV infections and race are limited, at best. What research does exist has found that Black children were more likely to be hospitalized as a result of laboratory-confirmed influenza and/or RSV, but noted that the observed racial disparities required further study.<sup>2</sup>

### Sex/Gender Disparities

Males are more vulnerable to severe outcomes from RSV than females in large part because males experience greater immune system declines in later years than females, make males generally more susceptible to infections than females as they age.<sup>3</sup>

### Age Disparities

Because there are so few deaths that are specifically categorized as being the result of RSV (using RSV-specific ICD-10 codes J12.1, J20.5, and J21.0), it is difficult to accurately measure age-related mortality for the disease. Because there are fewer than 10 RSV-specific deaths in every age range in every state, the data are suppressed to protect patient identities. This leaves us with just 13 states (CA, CO, FL, IL, MA, MI, NJ, NY, NC, OR, PA, TX, and WA) that had more than 10 RSV-specific deaths from 2018-2020.

### Income Disparities

Research conducted at the census-tract level found that socioeconomic status (SES), specifically high levels of poverty and increased crowding (more people packed into smaller spaces), was associated with an increased incidence in hospitalization related to RSV, but *not* with more severe RSV disease.<sup>4</sup>

### Regional Disparities

Using currently available data, the best way to evaluate regional disparities is by utilizing the number of positive test results returned from polymerase chain reaction (PCR) tests conducted around the country. These data are tracked in 52-week seasons, from mid-August to early-August of the following year.

In the 2020-2021 season, largely as a result of COVID-19-related isolation protocols, the number of positive RSV PCR test results totaled just 22,320.4 for the entire United States, with the South accounting for 14,148.2 (63.4%) of those positive diagnoses.

In the 2021-2022 season, however, RSV saw a massive resurgence associated with the return to in-person school and work, with a total of 117,379.73 positive PCV tests across the U.S. The Midwest had the highest number of positive RSV diagnoses, with 42,880.67 (36.5%), followed by the West with 31,679.88 (27%), and the South with 29,465.5 (25.1%).<sup>5</sup>

The comparison between these two RSV seasons shows a direct correlation to COVID-19 isolation behaviors. Although initial stay-at-home orders were generally accepted by the public across the United States, once those initial orders expired, certain states were more likely to attempt to rush to return to “life as usual” than others. By the end of Summer 2020, beaches and shopping locations in Florida and other parts of the South had already reopened with several state legislatures working to enact legislation that prevented state and local health departments from issuing emergency declarations, mask mandates, vaccine mandates, and other basic public health measures.<sup>6</sup> 26 states passed laws limiting public health powers<sup>6</sup>, which forced people back into close quarters, thereby increasing their exposure to RSV.

### References

<sup>1</sup>Centers for Disease Control and Prevention. (2020, December 18). *Respiratory Syncytial Virus Infection (RSV)*. <https://www.cdc.gov/rsv/index.html>

<sup>2</sup>Iwane, M. K., et al. (2013). Disparities Between Black and White Children in Hospitalizations Associated With Acute Respiratory Illness and Laboratory-confirmed Influenza and Respiratory Syncytial Virus in 3 US Counties—2002–2009. *American Journal of Epidemiology* (177)7, 656-665. <https://doi.org/10.1093/aje/kws299>

<sup>3</sup>Ursin, R. L. & Klein, S. L. (2021, September). Sex Differences in Respiratory Viral Pathogenesis and Treatments. *Annual Review of Virology* (8), 393-414. <https://doi.org/10.1146/annurev-virology-091919-092720>

<sup>4</sup>Holmen, J.E., Kim, L., Cikesh, B. et al. (2021). Relationship between neighborhood census-tract level socioeconomic status and respiratory syncytial virus-associated hospitalizations in U.S. adults, 2015–2017. *BMC Infect Dis* (21), 293 (2021). <https://doi.org/10.1186/s12879-021-05989-w>

<sup>5</sup>The National Respirators and Enteric Virus Surveillance System. (2022). *RSV Census Regional Trends*. Retrieved from: <https://www.cdc.gov/surveillance/nrevs/rsv/region.html#northeast>

<sup>6</sup>Weber, L. & Barry-Jester, A. M. (2021, September 16). Over Half of States Have Rolled Back Public Health Powers in Pandemic. <https://www.usnews.com/news/best-states/articles/2021-09-16/over-half-of-states-have-rolled-back-public-health-powers-in-pandemic>