

A regional report: Respiratory Syncytial Virus infection in the 2016-17 season

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Respiratory syncytial virus (RSV) is the most frequent cause of bronchiolitis in children and responsible for more than 125,000 hospitalizations and 250 infant deaths every year.¹ In this report, an anecdotal increase in RSV bronchiolitis infections in Lubbock, Texas, is discussed.

Seasonal outbreaks occur each year, beginning in early winter, peaking in January or February, and ending in spring. Outbreaks depend not only on environmental factors, but also on characteristics specific to the virus. RSV is a non-segmented, single-stranded RNA virus without the ability to reassort genome segments; therefore, it cannot undergo antigenic shifts. However, RSV is dependent on an RNA polymerase, which cannot proofread or edit, so its genome is susceptible to mutations. There are two distinct RSV antigenic subtypes, A and B, which differ genealogically. Each of the subtypes has further variability within each of its genomes. RSV A is considered less common, yet responsible for more severe clinical disease and outbreaks due to increased antigenic diversity as compared to RSV B, which is thought to be more common but less frequently associated with outbreaks.²

Data were obtained from the clinical virology laboratory of the University Medical Center Hospital in Lubbock, Texas. All patients were identified to be RSV positive by polymerase chain reaction (PCR) detection (Verigene®). In the 2016 to 2017 season, experts in Lubbock believe they have seen greater

Table. Total number of positive RSV tests for inpatient and outpatient encounters

Total (inpatient and outpatient)	RSV A+	RSV B+
December 2016	0	11
January 2017	10	26
February 2017	8	12
Total	18	49
Inpatient only	RSV A+	RSV B+
December 2016	0	1
January 2017	5	8
February 2017	5	7
Total	10 (56%)	16 (33%)

numbers and more severe cases of RSV positive bronchiolitis. Although last year's data have not been obtained, this rise is consistent with anecdotal evidence from various hospitals around the country reporting increased numbers of RSV positive bronchiolitis cases requiring inpatient hospitalization. Our data also appear consistent with the traditional understanding of RSV A and RSV B infections.³ We had more patients with RSV B, yet a higher percentage of patients with RSV A bronchiolitis were treated as inpatients versus as outpatients (56% RSV A vs. 33% RSV B).

More data are needed nationwide to aid in identifying etiologies of increased and more severe RSV bronchiolitis. This information could have implications for management, vaccine studies, reporting standards, and even changes in monoclonal antibody prophylaxis guidelines.⁴ Other factors to consider in our patients include younger age, prematurity, male sex, crowding, lack of breastfeeding, congenital heart

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disease, immunodeficiency, and prophylaxis status, which are all factors that influence susceptibility to RSV infection.⁵ More studies are needed to better identify these characteristics that may have implications for management on a regional, state, and national level.

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