

O1213 Trends in bronchiolitis admissions among infants following the introduction of RSV prophylaxis in Ontario, Canada: a population-based interrupted time series analysis spanning nearly 25 years

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Background: Bronchiolitis is a leading cause of hospital admissions among children worldwide. It has been estimated that over 80% of bronchiolitis admissions among infants is attributable to respiratory syncytial virus (RSV). Currently, no RSV vaccines have been licensed; however, prophylaxis (Palivizumab) has been widely available to infants at high risk of RSV-related illness to reduce the severity of illness. In Ontario, Canada's largest province, Palivizumab has been publicly funded for high-risk infants since 2002. The objective of this study was to investigate temporal trends in pediatric admissions for bronchiolitis, pre vs post Palivizumab funding, and further, to investigate potential differences across socioeconomic and other characteristics.

Methods: All infants born in Ontario Jan 1st, 1993 through Dec 31st 2015 were followed until the earliest of their second birthday, death or moving out of province using health administrative data. All hospital admissions where bronchiolitis was the primary admitting reason were captured up to a child's second birthday. To investigate differences in bronchiolitis admission rates pre- vs post-licensure of Palivizumab, an interrupted time series approach was used. An indicator term was used for those children considered at high-risk of RSV infection, according to program eligibility guidelines. All analyses were stratified by age (<6, 6-12, 12-24 months).

Results: Over 13 million children were included in this analysis spanning nearly 25 years, including almost 43,000 bronchiolitis admissions. Bronchiolitis burden was greatest among children <6 months of age; among these infants, bronchiolitis admission rates dropped from 35.6 to 21.8 per 1,000 over the study period. However, among high-risk infants (<6 months), the rate declined from 216.7 to 57.5 per 1,000. Statistically significant declines in bronchiolitis admissions were observed pre-vs-post intervention both overall ($p=0.0327$) and among high-risk infants (0.0202). Admission rates were highest among children of low socioeconomic status (i.e., area-level income, teenage mothers); however, this difference narrowed following the introduction of the publicly funded Palivizumab program.

Conclusions: Using a large, population-based study spanning over two decades, this study found a statistically significant decline in bronchiolitis admissions among infants following the introduction of an RSV prophylaxis program for high-risk children, along with evidence of narrowing social inequities.