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# The Burden of Respiratory Syncytial Virus Infection in Young Children

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BACKGROUND: The primary role of respiratory syncytial virus (RSV) in causing infant hospitalizations is well recognized, but the total burden of RSV infection among young children remains poorly defined.

METHODS: We conducted prospective, population-based surveillance of acute respiratory infections among children under 5 years of age in three U.S. counties. We enrolled hospitalized children from 2000 through 2004 and children presenting as outpatients in emergency departments and pediatric offices from 2002 through 2004. RSV was detected by culture and reverse-transcriptase polymerase chain reaction. Clinical information was obtained from parents and medical records. We calculated population-based rates of hospitalization associated with RSV infection and estimated the rates of RSV-associated outpatient visits.

RESULTS: Among 5067 children enrolled in the study, 919 (18%) had RSV infections. Overall, RSV was associated with 20% of hospitalizations, 18% of emergency department visits, and 15% of office visits for acute respiratory infections from November through April. Average annual hospitalization rates were 17 per 1000 children under 6 months of age and 3 per 1000 children under 5 years of age. Most of the children had no coexisting illnesses. Only prematurity and a young age were independent risk factors for hospitalization. Estimated rates of RSV-associated office visits among children under 5 years of age were three times those in emergency departments. Outpatients had moderately severe RSV-associated illness, but few of the illnesses (3%) were diagnosed as being caused by RSV.

CONCLUSIONS: RSV infection is associated with substantial morbidity in U.S. children in both inpatient and outpatient settings. Most children with RSV infection were previously healthy, suggesting that control strategies targeting only high-risk children will have a limited effect on the total disease burden of RSV infection. 2009 Massachusetts Medical Society

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