

985. Uncommon Outcomes due to Common Colds: Epidemiology and Outcomes Associated with Nosocomial Viral Infections in Children

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Background. Hospitalized children are at risk for healthcare-associated infections (HAI), including nosocomial viral infections (NVI). Previous studies have described the complications associated with RSV and influenza in hospitalized children, but less is known about the epidemiology and outcomes associated with other respiratory and gastrointestinal (GI) viruses.

Methods. Cases of NVI were identified from existing surveillance data at the Children's Hospital of Philadelphia during a 13 month period between January 2013-2014. Infections meeting CDC surveillance criteria as an upper respiratory infection (URI), bronchitis/bronchiolitis, gastroenteritis or pneumonia caused by a viral pathogen were included. Demographic and clinical data were obtained through systematic chart review of cases to identify outcomes. Additional outcome data were abstracted from data collected during apparent cause analysis (ACA) performed on all NVI. Data analyses were performed with Stata 12.1.

Results. During the study period, 174 NVIs were identified in 133 patients. Median age of affected patients was 1.5 years (interquartile range (IQR) 0.6 – 5.8 years). The majority of infections were respiratory (68%). Rhinovirus was the most common respiratory pathogen (75, 43%) and norovirus was the most common GI pathogen (29, 17%). Most patients with NVI were in the intensive care units (ICU) (34%), medical/surgical (21%) and oncology (13%) units. The most common chronic comorbid conditions include respiratory (37%), cardiovascular (35%) and gastrointestinal (34%). NVI cases occurred year-round, but most were identified during the winter (37%) and spring (29%) months. Median length of stay was 27 days (IQR 9-108 days) at time of infection onset. Adverse outcomes within 48 hours of NVI onset included transfer to the ICU (13%), initiation of non-invasive ventilation (11%), and intubation (5%). 22 patients (17%) experienced a delay in discharge and 7 (4%) died within 30 days of infection.

Conclusion. NVIs can lead to serious complications in hospitalized children, including escalation of care and prolonged length of stay. Efforts to reduce transmission should target both respiratory and GI infections. Additional data on risk factors for acquisition are needed to guide improvement.

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