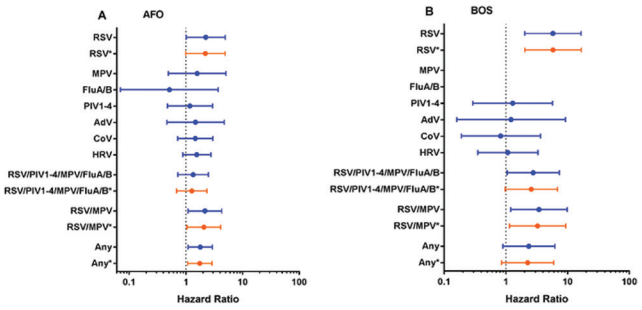
Figure 2. Association of respiratory virus URIs with late AFO (A) and BOS (B). Results from univariate (blue) and multivariable models (*orange; separate for each virus category) are shown. AFO estimates were adjusted for recipient age, recipient race and intensity of the conditioning regimen; BOS estimates were adjusted for recipient race and intensity of the conditioning regimen (categories without HRs have too few events to fit the model).



Disclosures. **M. Boeckh**, Gilead Sciences: Consultant, Grant Investigator and Investigator, Clinical trial support, Consulting fee and Research grant. Asun Biopharma: Consultant, Grant Investigator and Investigator, Clinical trial support, Consulting fee and Research grant. Humabs: Consultant, Consulting fee. Aviragen: Consultant and Grant Investigator, Consulting fee and Research grant. Chimerix Inc.: Consultant, Grant Investigator and Investigator, Clinical trial support, Consulting fee and Research grant. Ablynx: Consultant and Investigator, Clinical trial support and Consulting fee. GSK: Investigator, Clinical trial support. **A. Waghmare**, Ablynx: Investigator, Research support. Vicol: Investigator, Research support. **J. Chien**, Gilead Sciences, Inc.: Employee and Shareholder, Salary and stocks. **J. Englund**, Gilead: Consultant and Investigator, Consulting fee and Research support. Novavax: Investigator, Research support. GlaxoSmithKline: Investigator, Research support. Alios: Investigator, Research support. MedImmune: Investigator, Research support.

751. Acute Respiratory Illness Hospitalizations Among Young Children: Multi-Center Viral Surveillance Network, United States, 2015–2016

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Session: 69. Respiratory Infections: Viral
Thursday, October 4, 2018: 12:30 PM

Background. Viral infections are a significant cause of severe acute respiratory illnesses (ARI) in young children. Understanding the current epidemiology of these viruses is important for informing treatment and prevention measures. We describe the New Vaccine Surveillance Network (NVSN) and report preliminary results from 2015 to 2016.

Methods. Prospective active surveillance for hospitalized ARI was conducted from November 1, 2015 to June 30, 2016 among children <5 years of age at seven pediatric hospital sites (figure) using a broad case definition based on admission diagnoses. Parent interviews and medical chart reviews were performed, and mid-turbinate nasal and throat flocked swabs and/or tracheal aspirates were tested for adenovirus, human metapneumovirus (HMPV), influenza, parainfluenza viruses (PIV) 1–3, respiratory syncytial virus (RSV), and rhinovirus/enterovirus using molecular diagnostic assays at each site. Asymptomatic controls <5 years of age were also enrolled.

Results. Among 2,974 hospitalized children with ARI whose specimens were tested for viruses, 2,228 (75%) were <2 years old, with 745 (25%) 0–2 months, and 309 (10%) 3–5 months old. The majority were male (58%; n = 1,732) and 63% (n = 1,093) had no documented comorbid conditions. The median length of stay was 2 days; 1,683 (57%) received supplemental oxygen, 435 (15%) were admitted to intensive care, 95 (3%) required mechanical ventilation, and 1 (<1%) died. Viruses were detected in 2,242 (75%) children with ARI, with >1 virus detected in 234 (8%). RSV was detected in 1,039 (35%) children with ARI, HMPV in 245 (8%), influenza in 104 (4%), and PIV-1, PIV-2, and PIV-3 in 49 (2%), 2 (<1%), and 78 (3%), respectively. Rhinovirus/enterovirus was detected in 849 (29%) and adenovirus in 118 (4%) children with ARI, but were also detected in 18% (n = 227) and 5% (n = 60), respectively, of the 1,243 controls tested; the other viruses were more rarely detected in controls.

Conclusion. During the 2015–2016 season, viral detections were common in young children hospitalized for ARI at seven US sites. NVSN combines clinical data with current molecular laboratory techniques to describe respiratory virus epidemiology in cases of hospitalized pediatric ARI in order to inform current and future prevention, treatment, and healthcare utilization measures.

Figure. New Vaccine Surveillance Network (NVSN) site locations, 2015–16

Disclosures. **N. Halasa**, Sanofi Pasteur: Investigator, Research support. GSK: Consultant, Consulting fee. Moderna: Consultant, Consulting fee. **J. Englund**, Gilead: Consultant and Investigator, Consulting fee and Research support. Novavax: Investigator, Research support. GlaxoSmithKline: Investigator, Research support. Alios: Investigator, Research support. MedImmune: Investigator, Research support. **J. V. Williams**, Quidel: Board Member, Consulting fee. GlaxoSmithKline: Consultant, Consulting fee.

752. Geographic Analysis of Latent Tuberculosis Screening: A Health System Approach

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Session: 70. Tuberculosis and Other Mycobacterial Infections
Thursday, October 4, 2018: 12:30 PM

Background. Targeted testing and treatment of latent tuberculosis infection is a key element of tuberculosis (TB) elimination in the United States. In particular, foreign-born persons from TB-endemic countries are high priority for latent TB screening.

Methods. We used the DEDUCE interface to query the electronic medical records of all patients presenting to Duke University Health System from January 1, 2010 to November 1, 2017. Latent tuberculosis screening was identified using CPT codes for the tuberculin skin test (TST) and/or interferon gamma release assays (IGRA). Patients' home addresses were mapped to census tracts; demographic data for these tracts were obtained from the American Community Survey. Higher-risk foreign born persons were defined as persons born in Africa, Asia, or Latin America.

Results. Thirty-six thousand eight hundred and twenty-five patients received 48,419 TSTs and 5,366 received 5,746 IGRAs during the study period. Excluding census tracts with fewer than 20 Health System patients (to reduce referral bias), census tracts with a higher proportion of higher risk residents had a greater proportion of Health System patients screened for latent TB (P < 0.001, figure). Health system patients residing in census tracts with greater proportions of higher risk foreign born residents were more likely to be screened with TST than with an IGRA (P < 0.001).

Conclusion. Latent TB screening was significantly but weakly associated with a greater proportion of higher risk foreign born persons in a given census tract, and persons residing in such tracts were more likely to be screened with TST, which is not preferred due to cross-reaction with the BCG vaccine. Focusing latent TB screening on higher risk areas and using more IGRAs will be necessary to optimize TB prevention efforts.