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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 pediatri 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 locked swabs and/or tracheal aspirates were tested for adenovirus, human metapneumovirus (HMPV), influenza, paraflu influenza virus (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.

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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 IGRA during the study period. Excluding census tracts with fewer than 20 Health System patients (to reduce referral bias), census tracts with a greater 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 IGRA’s will be necessary to optimize TB prevention efforts.

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A total of 1,429 participants, 213 (14.9%) doctors and 988 (69.1%) nurses were enrolled. The mean age of the subjects was 33.0 years old, and 1,175 (82.2%) were female. Of the participants, 94.5% had received BCG vaccine. QFT-GIT assays were positive for 156 subjects (10.9%). Of the 213 doctors, 28 (13.1%) were positive by QFT-GIT, and among the 988 nurses, 94 (9.5%) had positive QFT-GIT results. Experience of working in hospital was significantly associated with positive LTBI test results by QFT-GIT assay. Gender and duration of employment as an HCW were significantly associated with having a positive QFT-GIT result in univariate analyses. In multivariate analyses, duration of employment as an HCW (>15 years) (odds ratio, 1.98; 95% confidence interval, 1.14–3.43) was independently associated with increased risk of a positive QFT-GIT result.

Conclusion. A high prevalence of LTBI was found among our HCWs. Considering the association between the experience of working in hospital and high risk of LTBI, the risk for tuberculosis infection among HCWs was higher than general population, which suggests that stricter preventive strategies against nosocomial tuberculosis infection should be implemented.

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