

(95) Pilot Surveillance of Infant Lower Respiratory Tract Infections and Respiratory Syncytial Virus in the United States During the COVID Pandemic

Friday, August 25, 2023

8:00 AM – 6:00 PM ADT

Poster Session A – COVID-19

Mina Suh, MPH¹; **Heidi Reichert, MA¹**; Naimisha Movva, MPH¹; Kimberley Fisher, PhD FNP-BC²; Charles T. Wood, MD MPH²; Zachary Wolf, MBA MS³; Tom Kaminski, MBA³; Meghan White, PharmD⁴; Jon P. Fryzek, PhD MPH¹; Christopher B. Nelson, PhD MPH⁴; William F. Malcolm, MD²

¹EpidStrategies, A Division of ToxStrategies, LLC, Rockville, MD; ²Duke University Health System, Durham, NC; ³Clinetic, Raleigh, NC; ⁴Sanofi, Swiftwater, PA

Background: Respiratory syncytial virus (RSV) is a leading cause of infant lower respiratory tract infections (LRTIs) and hospitalizations.

Objectives: During COVID, a pilot surveillance study was conducted across the Duke University Health System (DUHS) to describe LRTI patients aged < 1 year with RSV and their treatment pathway across healthcare settings.

Methods: From January 28 to May 11, 2021, infants with suspected acute respiratory infections, including those with LRTI or RSV LRTI, were continuously identified in the electronic health record using a three-pronged screening strategy: 1) signs/symptoms recorded in the visit reason (n=1,675); 2) ICD-10 codes for RSV and bronchiolitis (B97.4, J12.1, J20.5, J21.0, J21.8, and J21.9) (n=797); and 3) laboratory test orders (n=661). From ≥90 DUHS facilities including inpatient, emergency department, urgent care, outpatient, and telemedicine settings, a daily list of patient records meeting the screening criteria was generated and provided to the DUHS clinical team. Upon LRTI confirmation by the team, phone outreach to the infants' guardians was initiated within 24 hours to seek informed consent. From 10 days before the first LRTI visit (T-10) to 30 days post-visit (T+30), data were abstracted from the patient medical record for the consented infants.

Results: Of 1,915 unique infants with potential newly onset LRTI, 77 (4%) infants with confirmed LRTI were identified by the DUHS clinical team. Among the 77 infants with confirmed LRTI, 37 (48%) were consented into the study. 21 consented infants had RSV testing information, with 11 (52%) being RSV-positive. Among the 11 LRTI infants with RSV, 10 (91%) were full-term, 11 (100%) were generally healthy without preexisting conditions such as chronic lung disease or congenital heart disease, 7 (64%) were Black, Hispanic, Other, Unknown race/ethnicity, and 6 (55%) were publicly insured. Most LRTI infants with RSV sought their first consultation in the ambulatory care settings (n=9, 82%). Patient pathway from T-10 to T+30 showed 5 (45%) RSV LRTI infants had 2 or more HCU contacts.

Conclusions: This study demonstrates that EHR surveillance is feasible and efficient to screen many infants across a health system with multiple locations (≥ 90 facilities). Nearly all RSV cases were otherwise healthy, full-term infants seen in the ambulatory care settings; over half were non-white, and/or publicly insured. Having 2 or more health encounters per RSV episode was not uncommon. Capturing the complete patient pathway of infants with RSV across all health care settings is warranted to describe the true burden of this disease.