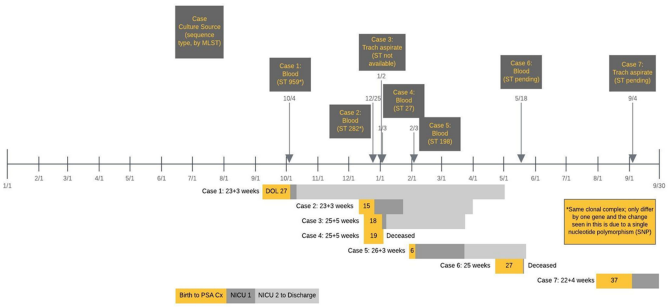

Figure 1.

comparison in the adjacent NICU (NICU 2, larger, outborn–surgical). We performed multilocus sequence testing (MLST) of available clinical isolates to identify clonality. We initiated quarterly prospective surveillance of *P. aeruginosa* colonization of infants through nares, perirectal swabs, and tracheal aspirates of intubated infants or oropharyngeal swabs of nonintubated infants. We also swabbed incubators, ventilatory equipment, and sinks for selective *P. aeruginosa* culturing. **Results:** We identified 7 invasive *P. aeruginosa* infections in the inborn NICU (5 bloodstream and 2 pneumonia) over an 11-month period (Figure 1). Over the same period, there were no *P. aeruginosa* bloodstream infections in the adjacent NICU. Affected neonates were high risk: gestational age ranged from 22 weeks and 4 days to 26 weeks and 3 days; day of life at infection ranged from 6 to 37; 6 infants were on a jet ventilator; and all infants were receiving enteral nutrition (6 of 7 with donor human milk and 7 of 7 with expressed mother's milk). Two infants died from their infection, and 5 infants survived to hospital discharge. All 7 isolates were pansusceptible to routine antimicrobials. MLST of the first 4 available isolates demonstrated 4 different sequence types; however, the first 2 were from the same clonal complex, indicating relatedness (Figure 1). For environmental samples, 8 obtained 8 cultures (swabs) of incubators and ventilatory equipment, and 24 cultures of faucets and drains of all sinks. Only sink cultures were positive, yielding 3 isolates identified as *P. aeruginosa* and 4 isolates identified as *P. aeruginosa*–like. Whole-genome sequencing (WGS) is underway to identify relatedness to the clinical isolates. We initiated quarterly infant surveillance by swab culture for *P. aeruginosa* nasal colonization then escalated to perirectal and oropharyngeal swab or tracheal aspirate cultures (intubated infants) in subsequent quarters. We did not detect any infants colonized with *P. aeruginosa*. **Conclusions:** We identified a cluster of *P. aeruginosa* in high-risk neonates with no point source. Molecular typing indicated a multiclonal cluster. This finding poses a management dilemma. A colonized water system is suspected and WGS of environmental samples is underway.

Funding: No
Disclosures: None

Antimicrobial Stewardship & Healthcare Epidemiology 2021;1(Suppl. S1):s74–s75
doi:10.1017/ash.2021.147

Presentation Type:
Poster Presentation
Subject Category: Pediatrics

Healthcare-Associated Viral Respiratory Infections in a Pediatric Intensive Care Unit and Cardiovascular Intensive Care Unit

Kelly Feldman; Jasjit Singh and Wendi Gornick

Background: Healthcare-associated infections (HAIs) affect patient health and are tracked closely by infection prevention. Patients in a pediatric intensive care unit (PICU) acquired viral respiratory infections had longer use of respiratory support. We sought to determine the types of viral respiratory HAIs (VR-HAIs) acquired in the PICU and the characteristics of those affected. **Methods:** CHOC Children's Hospital is a 334-bed tertiary-care center. Charts were reviewed on patients with VR-HAIs from fiscal years (FY) 2005–2020. High-risk VR-HAI (HR-VR-HAI) were influenza

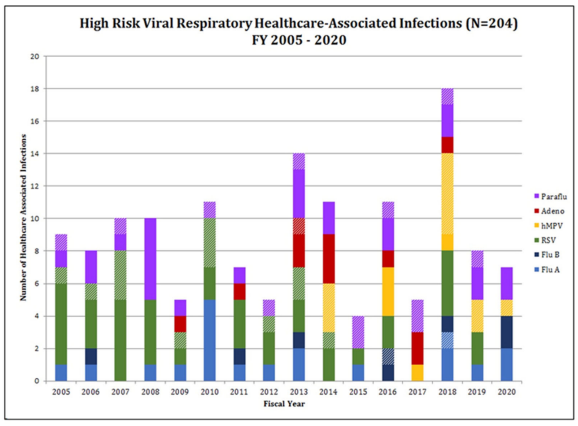

Figure 1. High Risk Viral Respiratory Healthcare-Associated Infections in a children's hospital between fiscal years 2005 to 2020. Total viruses are indicated by the bar for the year. The subset of viruses that were acquired in an ICU are indicated with cross hatching.

Figure 1.

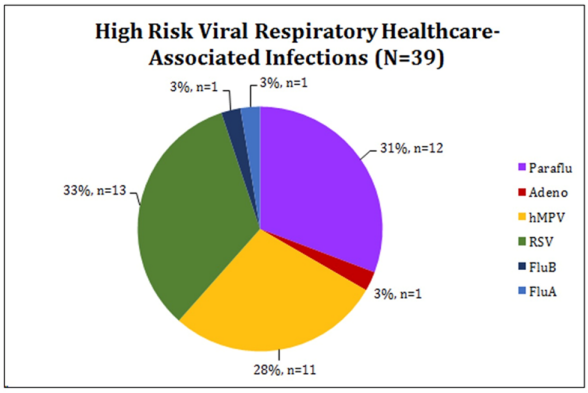

Figure 2. High Risk Viral Respiratory Healthcare-Associated Infections (parainfluenza, adenovirus, human metapneumovirus, respiratory syncytial virus, and influenza A/B) in an ICU between fiscal years 2005 to 2020.

Figure 2.

A and B, respiratory syncytial virus (RSV), adenovirus, parainfluenza, and human metapneumovirus (hMPV, added in FY 2014). Patients in the PICU, cardiovascular ICU (CVICU), and oncology ICU (OICU) with HR-VR-HAIs were reviewed. Patients were categorized according to underlying pathology, immunosuppression, and isolation prior to HR-VR-HAI. Increased respiratory support was defined as any increase from a patient's baseline support ±24 hours of viral diagnosis: increase in oxygen flow or transition from nasal cannula to high-flow nasal cannula or ventilator support. Antibiotic escalation, defined as initiation of antibiotic therapy for ≥2 days ±24 hours of viral diagnosis or broadening the spectrum of antimicrobials for ≥2 days ±24 hours of viral diagnosis. **Results:** During FY 2005–2020, there were 204 VR-HAIs: 143 HR-VR-HAIs (70%), of which 39 (27.2%) occurred in ICUs (Figure 1). Most of the HR-VR-HAIs were RSV, parainfluenza, and hMPV (Figure 2). Of 39 patients, 10 (25.6%) had underlying oncologic conditions, 9 of whom were immunosuppressed. Of 39 patients, 16 (41%) had structural cardiac disease, 4 (10.3%) had pulmonary disease, 5 (12.8%) had neurologic disease, and the remaining 4 (10.3%) had other comorbidities. Of 39 patients, 12 (31%) required an increase in respiratory support and 13 (33%) had escalation of antibiotics. Of 39 HR-VR-HAI patients, 2 died within 2 weeks of acquisition. **Conclusions:** HR-VR-HAIs are uncommon in ICUs. RSV, parainfluenza, and hMPV are the most common, and 1 of 3 of patients required escalation in respiratory support and/or escalation in antibiotics. All patients had

underlying comorbidities. In our series, there were 2 deaths within 2 weeks of infection.
Funding: No
Disclosures: None
Antimicrobial Stewardship & Healthcare Epidemiology 2021;1(Suppl. S1):s75–s76
doi:10.1017/ash.2021.148

Presentation Type:
Poster Presentation
Subject Category: Respiratory Viruses
Working with Respiratory Illness: Presenteeism Among Healthcare Personnel at Tertiary-Care Hospitals in Bangladesh, 2008–2016
Syeda Mah-E-Muneer; Md. Zakiul Hassan; Mejbah Uddin Bhuiyan; Kamal Hussain; Zubair Akhtar; Mustafizur Rahman; A. Danielle Iuliano; Eduardo Azziz-Baumgartner and Fahmida Chowdhury

Background: Healthcare personnel (HCP) in crowded and resource-poor countries (eg Bangladesh), might be at risk of exposure to and transmission of respiratory illnesses to coworkers, patients, and caregivers. The infection control practices in public hospitals are inadequate in Bangladesh. We estimated the incidence of respiratory illness episodes among HCP, and proportion of HCP who worked during respiratory illnesses, including influenza virus infection, at 2 tertiary-care public hospitals in Bangladesh. **Methods:** From May 2008 to February 2016, HCP (defined as physicians, nurses, interns, patient care assistant, cleaners, and administrative staff working in adult and pediatric medicine wards) were asked to self-report to study physicians when they experienced new onset of cough, rhinorrhea, difficulty breathing, or fever during the April–September influenza epidemic period each year. Study physicians followed HCP throughout their respiratory illness episodes and recorded respiratory symptoms, onset dates, duration of illness, and days of presenteeism and absenteeism during illness. Nasopharyngeal and oropharyngeal swabs were collected after informed written consent and were tested for influenza by rRT-PCR. We used hospital records to enumerate total HCP working in the study wards during influenza season and multiplied by 6-months follow-up per year to calculate person-time contribution for estimating respiratory illness incidence. **Results:** HCP self-reported 107 episodes of respiratory illness during 656 person years of follow-up, for an estimated incidence of 16.3 per 100 person years (95% CI, 13–20). Of 107 episodes, 33 (31%) included fever and cough. The mean illness length was 3.9 days (SD, ±1.8). HCP worked an average of 3.4 days (SD, ±1.4) while ill. HCP missed work for a median of 1 day (IQR, 1–2) during 29 (27%) of 107 illness episodes. HCP consented to collect swabs during 56 (52%) episodes, and among them 8 (14%) of 56 tested positive for influenza (flu-A, n = 5; flu-B, n = 3). Also, 63% of HCP with influenza reported fever and cough. HCP experiencing either respiratory illness or influenza worked for similar periods of days while ill: mean, 4 (SD, ±2.2) versus mean, 3.3 (SD, ±1.4) ($P = .257$). HCP worked during 105 (98%) of 107 respiratory illness and 7 (88%) of 8 influenza episodes. **Conclusions:** Most HCP in Bangladesh, including those with influenza, worked during respiratory illnesses. The potential value of stay-at-home policies, compensation for sick days, and influenza vaccination in reducing HCP-associated respiratory pathogen transmission could be assessed in Bangladesh and similar settings.
Funding: No
Disclosures: None
Antimicrobial Stewardship & Healthcare Epidemiology 2021;1(Suppl. S1):s76
doi:10.1017/ash.2021.149

Presentation Type:
Poster Presentation
Subject Category: Respiratory Viruses Other than SARS-CoV-2
Respiratory Syncytial Virus: An Underrecognized Healthcare-Associated Infection
Erin Gettler; Thomas Talbot; H. Keipp Talbot; Danielle Ndi; Edward Mitchel; Tiffanie Markus; Bryan Harris and William Schaffner

Background: Despite significant morbidity and mortality, estimates of the burden of healthcare-associated viral respiratory infections (HA-VRI) for noninfluenza infections are limited. Of the studies assessing the burden of respiratory syncytial virus (RSV), cases are typically classified as healthcare associated if a positive test result occurred after the first 3 days following admission, which may miss healthcare exposures prior to admission. Utilizing an expanded definition of healthcare-associated RSV, we assessed the estimates of disease prevalence. **Methods:** This study included laboratory-confirmed cases of RSV in adult and pediatric patients admitted to acute-care hospitals in a catchment area of 8 counties in Tennessee identified between October 1, 2016, and April 30, 2019. Surveillance information was abstracted from hospital and state laboratory databases, hospital infection control databases, reportable condition databases, and electronic health records as a part of the Influenza Hospitalization Surveillance Network by the Emerging Infections Program. Cases were defined as healthcare-associated RSV if laboratory confirmation of infection occurred (1) on or after hospital day 4 (ie, "traditional definition") or (2) between hospital day 0 and 3 in patients transferred from a chronic care facility or with a recent discharge from another acute-care facility in the 7 days preceding the current index admission (ie, "enhanced definition"). The proportion of laboratory-confirmed RSV designated as HA-VRI using both the traditional definition as well as with the added enhanced definition were compared. **Results:** We identified 900 cases of RSV in hospitalized patients over the study period. Using the traditional definition for HA-VRI, only 41 (4.6%) were deemed healthcare associated. Adding the cases identified using the enhanced definition, an additional 12 cases (1.3%) were noted in patients transferred from a chronic care facility for the current acute-care admission and 17 cases (1.9%) were noted in patients with a prior acute-care admission in the preceding 7 days. Using our expanded definition, the total proportion of healthcare-associated RSV in this cohort was 69 (7.7%) of 900 compared to 13.1% of cases for influenza (Figure 1). Although the burden of HA-VRI due to RSV was less than that of influenza, when stratified by age, the rate increased to 11.7% for those aged 50–64 years and to 10.1% for those aged ≥65 years (Figure 2). **Conclusions:** RSV infections are often not

Figure 1

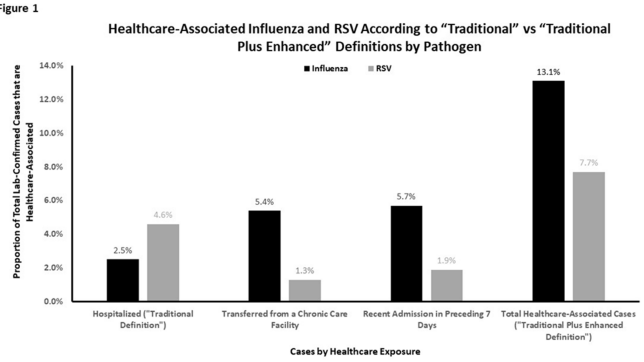

Figure 2