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**Background:** While data are limited, oral ribavirin (RBV) has been shown to be a cost-effective alternative to aerosolized RBV for the treatment of respiratory syncytial virus (RSV) in immunocompromised patients with significant reductions in acquisition and administration costs. We evaluated the clinical and economic impact of an RBV intervention program at a large, academic medical center.

**Methods:** This single-center, retrospective cohort study evaluated hematopoietic cell and solid-organ transplant patients admitted to Duke University Hospital (DUEH) with documented or suspected RSV receiving aerosolized and/or oral RBV from July 2013 to April 2018. The ID consult service approval requirement was initiated for aerosolized RBV beginning in October 2015. Education was done at this time to promote oral RBV as the preferred therapy for immunocompromised, RSV-infected adults and children. No restrictions or treatment protocols were in place prior to that time for either formulation. Clinical outcomes, adverse effects, and drug acquisition cost were collected. A cost-avoidance analysis was performed using DUH acquisition cost for actual and alternate RBV therapy.

**Results:** A total of 118 treatments (115 unique adult and pediatric patients) were included. Demographics were comparable between groups with and median age was 52 years in the Oral RBV and 61 years in the Aerosol RBV group. The predominant transplant type was lung (62.5% in Oral RBV and 55.6% in Aerosol RBV) followed by hematopoietic (16.7% in Oral RBV and 27% in Aerosol RBV). The median (range) duration of therapy was 4 (1–16) days for Oral RBV and 5 (1–23) days for aerosolized RBV. The total cost avoidance was $2,522,915 with oral RBV. Clinical outcomes are summarized in Table 1.

**Conclusion:** In our large tertiary care center, the use of oral RBV led to substantial cost avoidance with clinical outcomes comparable to aerosolized RBV in immunocompromised patients. Larger prospective trials evaluating oral RBV for RSV treatment are warranted.

### Table 1. Clinical outcomes by RSV Route of Administration

|                          | Oral RBV (n = 48) | Aerosol RBV (n = 63) | Both (n = 7) |
|--------------------------|------------------|----------------------|-------------|
| Unfavorable outcome*     |                  |                      |             |
| 20-day all-cause mortality| 24 (50)         | 43 (68)              | 5 (71)      |
| 30-day all-cause mortality| 9 (19)          | 10 (16)              | 2 (28)      |
| ICU admission            | 4 (8)            | 8 (13)               | 2 (28)      |
| New azithromycin requirement | 17 (35)        | 30 (48)              | 4 (57)      |
| Anemia (decline in Hgb ≤ 2 g/dL) | 5 (10)        | 9 (14)               | 3 (43)      |

*composite of elements below

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2796. The Impact of Syndromic Molecular Point-of-Care Testing for Respiratory Viruses on Antibiotic Use in Adults Presenting to Hospital with Exacerbation of Airways Disease: Further Analysis From a Randomized Controlled Trial  
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**Background:** The ResPOC study demonstrated that syndromic molecular point-of-care testing (POCT) for respiratory viruses was associated with earlier discontinuation of unnecessary antibiotics. Subgroup analysis suggests this occurs predominantly in patients with exacerbation of airways disease. Molecular POCT use is becoming widespread but there is a lack of evidence to inform the choice between multiplex syndromic panels vs. uniplex tests for influenza (42%) patients tested positive for viruses. Of those testing positive for viruses by POCT were compared according to virus types detected. Survival curves were generated for duration of antibiotics and compared using the log-rank test.

**Results:** There were 118 patients with exacerbation of airways disease in the POCT group who received antibiotics and 111 in the controls. In the POCT group 49/118 (42%) patients tested positive for viruses. Of those testing positive for viruses by POCT 17/49 (35%) had early discontinuation of antibiotics vs. 9/81 (13%) in those testing negative and 71/111 (64%) in controls, P = 0.0001. Survival curve analysis showed a reduced time to antibiotic discontinuation in those testing positive for viruses, P = 0.034. Of those positive for viruses by POCT 20% were positive for influenza, 43% for rhinovirus and 37% for other viruses combined. The proportion with early discontinuation of antibiotics was not different between the virus types, P = 0.53.

**Conclusion:** Syndromic molecular POCT for influenza and rhinovirus detection of exacerbation of airways disease leads to early discontinuation in those positive for viruses. As most viruses detected were non-influenza viruses and there was no difference in antibiotic use between virus types, syndromic molecular POCT for respiratory viruses should be favored over uniplex POCT for influenza.

2797. Rates of Respiratory Syncytial Virus (RSV) Infection among Hospitalized Adults by Congestive Heart Failure Status—United States, 2015–2017  
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**Background:** Respiratory syncytial virus (RSV) can cause severe disease in older adults and adults with cardiopulmonary conditions, such as congestive heart failure (CHF). RSV vaccines in development may target adults based on age or medical conditions. We assessed rates of RSV infection in hospitalized adults by CHF status using RSV surveillance conducted through the Centers for Disease Control and Prevention’s Emerging Infections Program, a population-based platform in the United States.

**Methods:** RSV surveillance was performed during two seasons (2015–2017) from October 1–April 30 at seven US sites covering an annual catchment population up...
to 13.7 million adults. Adults (≥ 18 years) admitted to a hospital from the catchment area and with laboratory-confirmed RSV infections identified by clinician-directed testing were included. Demographic data and any history of CHF were abstracted from medical charts. For adults ≥ 65 years, county-level CHF prevalence was obtained from 2015 Centers for Medicare and Medicaid Services (CMS) data. To estimate county-level CHF prevalence for adults < 65 years, we used 2015-2016 National Health and Nutrition Examination Survey and CMS data. We calculated crude incidence rates (and 95% exact Poisson confidence intervals) of RSV by CHF status and age group (≥ 65 years vs. < 65 years) using RSV cases (numerator) and catchment area county-level population estimates from the US Census (denominator).

**Results:** During 2015-2017, a total of 2,211 hospitalized RSV cases were identified; 2,055 (92.9%) had CHF status documented. The majority were ≥ 65 years (n = 1236, 60.1%) and 26.8% (n = 550) had CHF. The crude rate of RSV was 62.7 (95% CI: 57.5-68.2) per 100,000 population in adults with CHF compared with 6.1 (95% CI: 5.7-6.4) per 100,000 population in adults without CHF (rate ratio: 10.3, 95% CI: 9.3-11.3). In both age groups, those with CHF had higher rates of RSV than those without CHF. Rates were highest in adults ≥ 65 years with CHF (73.4 per 100,000 population, 95% CI: 66.4-80.9).

**Conclusion:** Using population-based surveillance, we found that adults with CHF had RSV hospitalization rates 10 times higher than those without CHF. Identifying high-risk populations for RSV infection are critical to inform clinical practice and future RSV vaccine policy.

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2798. Respiratory Viral Infections in Patients with Lymphoma and Multiple Myeloma: Risk Factors Associated with Progression to Lower Respiratory Tract Infection and Mortality

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**Background:** Respiratory viral infections (RVIs) commonly infect immunocompromised patients, and may cause increased morbidity and mortality. However, data on lymphoma and multiple myeloma (MM) patients with RVIs is scarce. The objectives of our study were to identify risk factors for progression to lower respiratory tract infection (LRTI) and fatal outcome in this patient population with RVIs.

**Methods:** All lymphoma or MM patients at our center who were diagnosed with either influenza, respiratory syncytial virus (RSV), parainfluenza virus (PIV) or human metapneumovirus (hMPV) from January 2016 and July 2018 were included in our study. All demographics and clinical data were collected from electronic medical records retrospectively. Patients were classified as having an upper respiratory tract infection (URTI) if nasal wash was positive for the respiratory virus with no radiological evidence of lower respiratory tract involvement. Patients were deemed with lower respiratory tract infection (LRTI) and fatal outcome in this patient population with RVIs.

**Results:** A total of 353 patients were included in our study; of those 207 (59%) were MM patients. Most patients were on active chemotherapy (317, 90%) and steroids (242, 68%) at the time of diagnosis. Majority of the patients were infected with PIV and influenza (figure). A total of 150 (43%) patients had an LRTI of those 36 (24%) were proven. Mortality was 12% (n = 18) within 30 days of onset of infection. Diagnosis of MM, active disease, the use of steroids (regardless of dose), prior stem cell transplantation, nosocomial infection and lymphopenia ≤ 200 cells/mL were significantly associated with LRTI (table).

**Conclusion:** Using population-based surveillance, we found that adults with CHF had RSV hospitalization rates 10 times higher than those without CHF. Identifying high-risk populations for RSV infection are critical to inform clinical practice and future RSV vaccine policy.

**Disclosures:** All authors: No reported disclosures.

2799. Inability to Locally Differentiate Rhinovirus/Enterovirus Results Impacts Infection Control Practices

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**Background:** Rhinoviruses and Enteroviruses are closely related members of the family picornaviridae; however, they have distinct clinical manifestations. Rhinoviruses cause respiratory infections while Enteroviruses often present as non-specific febrile illnesses. Enterovirus D68 (EV-D68) is unusual in that although it is classified as an enterovirus it causes respiratory illness. Most of the currently used nucleic acid amplification assays for respiratory viruses do not distinguish between Rhino and Enteroviruses because of their shared homology. Rhino/Enterovirus infections are common in the Summer and Fall. In October of 2018 the NYS DOH issued a health advisory describing increased numbers of EV-D68 infection. Although there is no specific treatment for EV-D68, the advisory recommended contact precautions in addition to the droplet precautions recommended for other respiratory viruses. This recommendation creates logistical difficulties since there are no commercial test kits that can identify EV-D68. The aim of this study was to determine the incidence of EV-D68 among patients admitted to Stony Brook Hospital that tested positive for RV/Enterovirus.

**Methods:** Nasopharyngeal swabs were tested with the BioFire FilmArray Respiratory Panel (RP 2) test. 44 Rhino/Enterovirus positive specimens were sent for further identification to the NYS DOH Virology Lab. Enterovirus from Rhinovirus by qRT-PCR. EV-D68 was identified by sequencing.

**Results:** During one week in October, 10 patients were admitted with positive EV-D68 (5 adults and 5 children). In contrast, all 21 admitted patients who had specimens sent for typing had Rhinovirus.

**Conclusion:** This study confirmed that there was significant EV-D68 activity among patients who required hospitalization consistent with the NYS DOH advisory in the Fall of 2018. In contrast, in the Winter a drop in the prevalence of Rhino/enterovirus was observed. EV-D68 was not found in any of the samples sent for typing. These data informed our internal decision to cohort all patients this past Winter with positive Rhino/enterovirus results, positively impacting patient cohorting capabilities during a time with increased local influenza activity.