pedal edema (31.4%), pallor (39.4%), vomiting (26.7%) were most common findings apart from fever and dyspnoea. None of them had bleeding manifestations. The most common diagnosis wasScrub typhus (32.4%), followed by coinfections (13.7%), H1N1 influenza in 8.8% cases. 30.4% patients did not fall into any diagnostic criteria. Leptospira, dengue and Malaria were present in 4.4 and 2 cases, respectively. A total of 50 patients were admitted and ventilated during their stay in the hospital. APACHE 2 score was observed to better predict mortality than SOFA score. Factors which predicted mortality were male sex, old age, long duration of fever with ARDS cases followed by H1N1. Coinfections were common cause of mortality with ARDS. Predictors of mortality were male gender, old age, long duration of invasive ventilation, higher serum procalcitonin levels and low GCS at admission. APACHE 2 score was a better predictor of mortality than SOFA score.

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1476. Objective Surveillance Definitions for Hospital-Acquired Pneumonia in Non-Ventilated Patients

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Abstract: S457

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Background. Pneumonia is the most common hospital-acquired infection; most cases occur in nonventilated patients, yet the majority of hospitals do not track non-ventilator hospital-acquired pneumonia (NV-HAP) given the complexity and subjectivity of CDC’s current surveillance definition and large number of patients at risk. We sought to develop a novel, electronically computable surveillance definitions for NV-HAP to facilitate routine surveillance methods.

Methods. We developed ten candidate definitions based on different combinations of 6 clinical indicators and applied them to 60,725 adult admissions of ≥3 days to Brigham and Women’s Hospital between July 2015 and June 2017. Potential indicators included worsening oxygenation, new antibiotics given for ≥2 days, fever, abnormal white blood cell count, chest imaging orders, and respiratory cultures on hospital day ≥2. Worsening oxygenation was defined as ≥2 days of decreased oxygen saturation or escalation of supplemental oxygen beyond ≥2L stable oxygenation. We calculated incidence and prevalence rates for each definition. We then matched each case with up to four controls on the basis of clinical service and duration of hospitalization and measured associations between each definition and increased mortality and length of stay adjusting for patients’ demographics, comorbidities, and severity of illness.

Results. The incidence of NV-HAP ranged from 7.6 events per 100 admissions with the least restrictive definition (worsening oxygenation alone), to 0.7 events per 100 admissions (worsening oxygenation, fever or leukocytosis, and new antibiotics), to 0.2 events per 100 admissions (all signs present). Crude mortality rates ranged from 17% (3.8–5.0) to 8.5 (95% CI 6.3–11.4). Odds ratios for days-until-discharge in cases vs. controls ranged from 1.7 (95% CI 1.5–1.9) to 2.1 (95% CI 2.0–2.2). A trend in decreasing LOS was observed but did not reach statistical significance.

Conclusion. We demonstrate the feasibility of applying electronically computable surveillance definitions for NV-HAP to NV-HAP and mortality rates comparable to existing estimates based on manual surveillance methods. Further work is needed to better understand the clinical correlates of these events and their potential preventability.

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1477. MUCOVIP Project: Concordance Between Upper and Lower Airway Microbiota in Children with Cystic Fibrosis

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Background. Inconsistent intra-individual microbiota between upper and lower respiratory niches has been reported among infants with Cystic Fibrosis (CF). We aimed to investigate the concordance between the bacterial community composition measured from the same patient and during the same visit, thus suggesting a signature bacterial biodiversity among children with CF unable to expectorate.

Methods. Further work is needed to better understand the clinical correlates of these events and their potential preventability.

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1478. A Retrospective Review of Pseudomonas aeruginosa Infection in a Quarternary Intensive Care Unit: Epidemiology, Outcomes, and Antibiotic Susceptibilities 2013–2016

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Background. Pseudomonas aeruginosa (PA) is known to cause infection in the intensive care unit (ICU) and contribute to substantial morbidity and mortality. The objectives of this study were to describe the epidemiology, antimicrobial resistance and outcomes in critically ill patients with pseudomonal infection.

Methods. Patients with PA isolated during ICU admission from 2013–2016 were identified from provincial microbiology data. Patients were classified as colonized or infected. Those with infection were reviewed for source of infection, patient characteristics, antimicrobial susceptibilities, appropriateness of empiric antimicrobial therapy and 30-day mortality. Independent predictors of mortality were identified using multivariable regression.

Results. A total of 196 unique patients were culture-positive for PA. 140 (71%) were infected and included for analysis. Mean patient age was 55.4 years (18.4 SD) and 62% were male. Admission categories included medical (71%), surgical (20%), and trauma (9%). Mean APACHE II score at the time of ICU admission was 19.4 (9.8 SD). One hundred and twenty-six (60%) patients required invasive mechanical ventilation, 102 (73%) vasopressor support and 27 (19%) new initiation of renal replacement therapy. Thirty-two (23%) died within 30 days of ICU admission. The median length of stay was 15 (IQR 5–27). Mortality was 18% at 3 days (IQR 0–7). Sources were respiratory (66%) followed by skin/soft tissue (11%), urinary (11%), and blood (5%). Twenty (14%) isolates were multi-drug resistant (MDR) and six (4%) were extensively drug resistant (XDR). There were no pan-resistant isolates. One hundred and one (52%) of infections were nosocomial. Empiric antimicrobial therapy was effective in 97 (69%) cases. On multivariable analysis liver disease (aOR 6.2, 95% CI 1.5–25.7; P = 0.01), malignancy (aOR 5.0, 95% CI 1.5–17.3; P = 0.01) and higher APACHE II score at the time of admission (aOR 1.1, 95% CI 1.0–1.1; P = 0.02) were independently associated with 30-day mortality.

Conclusion. PA in the ICU may be associated with substantial mortality and is mostly commonly isolated from the respiratory tract. Existing malignancy, liver disease and higher APACHE II score at admission were independently associated with mortality.

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1479. Evaluating the Impact of Procalcitonin on Antibiotic Utilization in Chronic Obstructive Pulmonary Disease Exacerbations

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Background. Antibiotic prescription rates for treating exacerbations of chronic obstructive pulmonary disease (COPD) have been reported as high as 90% to the United States. Research has shown that over 50% of COPD exacerbations are due to viral etiologies. Elevations in procalcitonin (PCT) levels can be seen in bacterial infections and can help guide the need for antimicrobial therapy. The goal of this study is to evaluate the impact of PCT on antibiotic use in patients with COPD exacerbations.

Methods. We conducted a retrospective, pre- and post-intervention study. Patients at least 18 years of age, with a diagnosis of COPD exacerbation, and had a PCT level drawn within 24 hours of admission were included. Exclusion criteria included patients presenting with severe trauma, sepsis, bacterial pneumonia, patients who required invasive mechanical ventilation, and patients with an initial admission to the ICU. The primary outcome was antimicrobial duration of therapy. Secondary outcomes included hospital length of stay (LOS), respiratory-related 30-day readmission rates, and neurological events and their potential preventability.

Results. A total of 139 patients were evaluated with 64 and 75 patients in the pre- and post-intervention cohorts, respectively. PCT guidance was associated with a significant reduction in number of antibiotic days of therapy (7.1 days vs. 2.4 days; P < 0.001). A trend in decreasing LOS was observed but did not reach statistical