pedal edema (31.4%), pallor (39.4%), vomiting (26.7%) were most common find-
ing apart from fever and dyspnoea. Nine of them had bleeding manifestations. The most common diagnosis was Scrub typhus (32.4%), followed by coinfections (13.7%), H1N1 influenza in 8.8% cases. 30.4% patients did not fall into any diagnostic criteria. Leptospirosis, dengue and Malaria were present in 4.4 and 2 cases, respectively. A total of 50 patients were intubated and ventilated during their stay in the hospital. APACHE 2 score was observed to better predict mortality than SOFA score. Factors which pre-
dicted mortality were male sex, age ≥45 years, invasive ventilation and low GCS

Conclusion. Fever and ARDS have more incidence among young females and occur more frequently among malarial cases. Scrub typhus constituted the major-
ity of fever with ARDS cases followed by H1N1. Coinfections were common cause of Fever 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

Wenjing Ji, MSa, Cara Smith, MPHb, Zilu Zhang, MSa, Aileen Ochoa, MPHb, Jessica Young, PhDc, Chanu Rhee, MD, MPHd and Michael Klempas, MD, MPHd, e, f

1Xian Jiaotong University, Xian, China, 2Harvard Pilgrim Health Care Institute, Boston, Massachusetts, 3Division of Infectious Diseases, Brigham and Women’s Hospital, Boston, Massachusetts, 4Department of Population Medicine, Harvard Medical School and Harvard Pilgrim Health Care Institute, Boston, Massachusetts, 5Brigham and Women’s Hospital, Boston, MA, USA

Session: 148. Respiratory Infections: Miscellaneous

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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 subject-
vity of CDC’s current surveillance definition and large number of patients at risk. We sought to develop objective, electronically computable surveillance definitions for NV-HAP to facilitate routine surveillance.

Methods. We developed ten candidate definitions based on different combina-
tions of 6 clinical indicators and applied them to 60,725 adult admissions of 23 days to Brigham and Women’s Hospital between July 2015 and June 2017. Potential indicators included worsening oxygenation, new antibiotics given for ≥23 days, fever, abnormal white blood count, chest imaging orders, and respiratory cultures on hospital day ≥23. Worsening oxygenation was defined as ≥2 days of decreased oxygen saturation or escalation ≥2 supplemental oxygen levels for ≥2 days and ≥2 stable oxygen levels. We calcu-
lated incidence and OR 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% ham and Women’s Hospital. Boston, MA, USA

Conclusion. We demonstrate the feasibility of applying electronically comput-
able objective surveillance definitions for NV-HAP. These definitions yield incidence 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. MUCOVIB Project: Concordance Between Upper and Lower Airway Microbiota in Children with Cystic Fibrosis

Sandra Asen, MD, MSc; University Hospital Lausanne, Lausanne, Switzerland

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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 of 20 oropharyngeal and nasal samples and 20 corresponding sputa, collected from chil-
dren with CF above one year of age.

Methods. As part of the “cystic fibrosis, respiratory viruses, intracellular bacteria and fastidious organisms” (MUCOVIB) project, all children under 18 years of age with diagnosed CF were recruited into a Swiss multicentric study. Respiratory samples included OP swabs collected from all children in addition to sputa collected from those able to expectorate. Sequencing and data analysis of amplicons of the V3-V4 variable region of the 16S rRNA-encoding gene were performed. Paired-reads were assembled with USEARCH and classified into operational taxonomic units (OTUs) using various tools and assigned to taxonomical ranks using QIIME and the EzBioCloud database. Non-
netric multidimensional scaling, ANOVA and PERMANOVA were used to analyze the bacterial diversity in upper and lower respiratory niches.

Results. Fifty-eight children, of whom 29 (50%) provided 51 sputa samples. From these 29, 10 patients (40 samples) provided concomitant OP and sputa samples collected during the same visit. Equivalent species diversity (alpha-diversity; Shannon index) was documented from both upper and lower samples (P = 0.26). In most cases, hierarchical clustering based on OTU presence/absence clustered upper and lower samples from the same patient and during the same visit, thus suggesting a signature microbiota in most patients. A similar variance of bacterial microbiota was observed in upper and lower respiratory niches (P = 0.9422), with some differences in species composition.

Conclusion. Our preliminary findings conducted on a small subset of patients, suggested a good intra-individual concordance of the microbiota in upper and lower respiratory niches. Further work is needed to establish the clinical correlates of these observations and to evaluate the impact of PCT on antibiotic use in patients with CF exacerbations.

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

Brittany E. Kula, MD1; Wendy J. Slig, MD, MSc, FRCPc; and Darren Hudson, MD, MSc; Internal Medicine, University of Alberta, Edmonton, AB, Canada, 2Infectious Diseases and Critical Care Medicine, University of Alberta, Edmonton, AB, Canada, 3Critical Care Medicine, University of Alberta, Edmonton, AB, Canada

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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 character-
istics, antimicrobial susceptibilities, appropriateness of empiric antimicrobial therapy and 30-day mortality. Independent predictors of mortality were identified using mul-
tivariable logistic 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 or neurological (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 17 days (IQR 5–57). Mortality was 30% (7% died on ICU day 0–9). Sources were respiratory (66%) followed by skin/soft tissue (11%), urinary (10%), 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 is associated with substantial mortality and is most 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

Kevin Lin, PharmD1; Casey Dempsey, PharmD2; Shivani Patel, PharmD, BCPS3; John Butler, MD4 and Edward Septimus, MD, FIDSA, FSHEA1, 2; Memorial Hermann Southwest Hospital, Houston, Texas, 3Population Medicine, Harvard Medical School, Houston, Texas

Session: 148. Respiratory Infections: Miscellaneous

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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 infec-
tions 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 readmis-
sion rates or neurological status at time of discharge. P-values were calculated as ICU admission, requirement of invasive mechanical ventilation, or death.

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 vs. 2.4 days; P < 0.001). A trend in decreasing LOS was observed but did not reach statistical