Specimens within 2 hours of sample collection. The primary objective of this study was a polymerase chain reaction (PCR) test that was previously utilized for nasal MRSA of anti-MRSA therapy and increasing risk for significant drug-related adverse effects.

Pathogen for patients with pneumonia in the presence of certain risk factors. Empiric treatment beginning within the first 2 hospital days, and continued for at least 3 consecutive days were included. Patients were excluded if they had been transferred from another acute care facility, had cystic fibrosis, had a hospital length of stay of 1 day or less, co-existent urinary tract infection, gastrointestinal/ intra-abdominal infection, or simultaneous presence of other CAP pathogens. Pneumonia and sepsis were identified by ICD-9 codes.

Results. A total of 13,165 patients met the inclusion criteria, of which 1,247 had E. coli CAP. Majority of patients with E. coli were nonnursing home residents (90.2%, 1,125/1,247), 69.3% (864/1,247) patients with E. coli presented with "sepsis syndrome" compared with only 48.1% in other Gram-negative CAP and 62.5% in P. CAP. Aspiration pneumonia was diagnosed in 5.9% (73/1,247) with E. coli CAP. Blood cultures were positive in 59.9% (748/1,247) of patients with E. coli CAP with 84.8% positivity in patients with sepsis syndrome. Patients with E. coli CAP compared with P. were more likely to require ICU-level care (42.6% vs. 38.2%), mechanical ventilation (19.3% vs. 13.8%). In-hospital mortality was 14.8% in E. coli CAP compared with 7.4% in P. CAP. The median cost of hospitalization was greater in E. coli CAP than P. ($12,420.1 vs. $9,857.5). Re-admission within 30 days was greater among patients with E. coli CAP than P. (5.4% vs. 4%), 36.8% of isolates were resistant to fluoroquinolones, 10.4% to ceftriaxone and 18.1% to aminoglycosides. Only 10/1,247 (0.8%) were multi-drug-resistant.

Conclusion. E. coli is an important cause of severe CAP, with higher mortality, greater need for ICU-level care, and higher re-admission rates than patients with pneumococcal pneumonia. The rate of fluoroquinolone resistance was high and empiric quinolones should be used with caution for patients who are critically ill due to E. coli CAP.

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1458. A Single-Center Quasi-Experimental Study to Evaluate the Impact of Utilizing Rapid Diagnostic Technology to Detect Methicillin-Resistant Staphylococcus aureus in Respiratory Culture Samples

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Background. Methicillin-resistant Staphylococcus aureus (MRSA) is a relevant pathogen for patients with pneumonia in the presence of certain risk factors. Empirc broad-spectrum antimicrobial therapy, including anti-MRSA therapy, is frequently initiated in patients hospitalized with pneumonia. The low yield of respiratory cultures makes a molecular de-escalation difficult, potentially leading to extended durations of anti-MRSA therapy and increasing risk for significant drug-related adverse effects. A polymerase chain reaction (PCR) test that was previously utilized for nasal MRSA screening was internally validated to identify the presence of MRSA in respiratory specimens within 2 hours of sample collection. The primary objective of this study was to determine the effect of this respiratory PCR test on duration of anti-MRSA therapy in noninvasive care unit (ICU) patients hospitalized with pneumonia.

Methods. Implementation of the PCR test in non-ICU units occurred December 1, 2017. During the post-intervention (INT) period (December 1, 2017–March 31, 2018), PCR results were evaluated daily by antimicrobial stewardship and decentralized staff pharmacists for therapy de-escalation opportunities, with recommendations communicated to prescribers. The pre-INT group (December 1, 2016–March 31, 2017) consisted of non-ICU patients hospitalized with pneumonia who received anti-MRSA therapy for at least 48 hours, or who qualified for anti-MRSA therapy per institutional guidelines.

Results. A total of 169 patients were evaluated; 109 in the post-INT group and 60 in the pre-INT group. Anti-MRSA therapy was administered to 74 patients (68%) in the post-INT group, compared with 56 patients (93%) in the pre-INT group. The median duration of anti-MRSA therapy post-INT was 23.5 hours, which was significantly shorter than the pre-INT duration of 55.5 hours ($P < 0.0001$). The post-INT group also had significantly less vancomycin-induced nephrotoxicity ($P < 0.0083$) and a shorter time to targeted therapy ($P < 0.0001$). No difference in 30-day all-cause mortality was observed ($P < 0.1338$).

Conclusion. Utilization of a PCR test to detect MRSA in respiratory specimens decreased duration of anti-MRSA therapy in non-ICU patients hospitalized with pneumonia.

Disclosures. All authors: No reported disclosures.

1459. The Scope of Mycoplasma Pneumoniae Pneumonia Diagnosed by Multiplex Polymerase Chain Reaction Respiratory Viral Panel in Pediatric Patients in Hawaii

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Background. Mycoplasma pneumoniae pneumonia (MPP) is classically associated with respiratory infections in mild to moderate in young children. The multiplex polymerase chain reaction (PCR) respiratory viral panel (RVP) allows for diagnosis of multiple viruses and bacteria.

Methods. A retrospective study was performed in patients 0–18 years old with positive MPP RVP from January 1, 2013 to June 30, 2017. Clinical cases of patients hospitalized with positive MPP testing by RVP PCR were reviewed for clinical, radiologic and laboratory data.

Results. A total of 3,621 RVPs were tested with 49 positive for MPP. In regard age of patients, 507/49 (incidence 1%) between 5–18 years old, while 22/49 (incidence 1%) between 5–18 years old. 75% of RVPs obtained were in patients under 5 years of age. Cough and fever were present for a mean of 8.3 and 7.6 days, respectively prior to RVP. Of the MPP positive patients, 21/49 (43%) were treated with scheduled although only 16 had a history of wheezing. Of the MPP positive patients, 38/49 had radiological findings of a pulmonary infiltrate (not peripheral) with 30/38 patients (79%) had bilateral infiltrates. Admission antimicrobial therapy was the following: 8% on no antibiotic, 21% on monomeric and nonmacrolide and nonmacrolide, and 9% on macrolide therapy alone. Pediatric intensive care unit (PICU) admission occurred in 8 patients did not PUCI PICU admission and 4 patients transferred from wards to PICU. All four PICU transfers had initially nonmacrolide therapy; 3 of 4 were under 5 years of age.

Conclusion. Over half of Pediatric MPP was diagnosed by rapid molecular diagnostic in patients under 5 years of age. Bilateral pulmonary infiltrates and new onset wheezing responsive to β agonists were commonly noted in patients who had MPP. A small subset of those younger patients required higher level of care after initial therapy with nonmacrolide therapy. While MPP has a lower incidence among younger infants and infection is rare and can have a significant clinical impact, MPP should be considered in all patients, especially younger patients who are nonresponsive to treatment of community acquired pneumonia.

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1460. Community-Acquired Bacteremic Pneumonia in Post-pneumococcal Vaccination Era in a Pediatric Hospital

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Background. From January 2012 PCV13 was introduced into immunization program in Argentina, 2 + 1 schedule for ≤2 years. The aims of this study were to describe epidemiological-clinical pattern of community-acquired bacteremic pneumonia (CABP) in the post-vaccination period and the risks factors of CABP occurrence, complications and lethality.

Methods. Cross-sectional study was performed in children with CABP diagnosis, hospitalized in Ricardo Gutierrez Children’s Hospital from January 2012 to December 2017.

Results. A total of 135 CABP cases were included; 63% male; 31.1% ≤2 years; 75% of <5 years received PCV13; 30.4% had underlying diseases. The pathogens isolated were (n = 136): Streptococcus pneumoniae (Sp) 44.9% (all susceptible to Penicillin), Staphylococcus aureus (Sa) 37.5% (Methicillin-Resistant 90.2%), Haemophilus
influenza (H1) 15.4% (33.3% nonsubtype H1), B-hemolytic Streptococci Group A 1.5% and Neisseria meningitidis 0.7%. Seventy-one percent of cases had complications (pleural effusion 63%, necrotizing pneumonia 11.1%, pneumothorax 8.1%, lung abscess 3.7%, atelectasis 0.7%). Other clinical manifestations combined with CAPB were: sepsis 20%, cellulitis/abscess 9.6%, arthritis 6.7%, meningitis 5.9% and osteomyelitis 3.5%. Considerable was the predominant radiological pattern for all agents in 88.1%. Lethality rate was 3%. Sp was more associated with age ≥24 months [OR: 2.78 (1.18–6.64)] and Sp was more associated with age <24 months [OR: 4.76 (1.62–14.31)]. Complications were significantly higher among S. pneumoniae cases. Children with CAPB and sepia had on average higher lethality [OR: 13.38 (1.14–355.45) and OR: 17.71 (1.46–223.73)], respectively.

Conclusion. After PCV13 introduction Sp was still the most common organism causing CAPB, mainly in ≥24 months of age. Sa followed in frequency with high mortality. CAPB combined with other clinical manifestations were more associated with lethality.

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1461. Non-Invasive Pneumococcal Pneumonia in the United States, 2013–2014
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Background. Surveillance for pneumococcal pneumonia (PP) is challenging due to limitations of available diagnostic tests. Previous studies estimated PP from all-cause pneumonia or invasive pneumonia (i.e., positive S. pneumoniae sterile site culture). In 2014, pneumococcal conjugate vaccine (PCV13) was recommended for adults ≥26 years old. We established population-based surveillance for non-invasive pneumococcal pneumonia (NPP) to estimate disease burden and establish a baseline for PCV13 impact evaluation.

Methods. We defined a case as clinically or radiographically confirmed pneumococcal pneumonia, positive pneumococcal urine antigen test (UAT), and no evidence of invasive pneumococcal disease in a hospitalized adult ≥18 years old residing in our surveillance areas, which overlap with active bacterial core surveillance areas representing 17,000,000 adults across the United States. We estimated NPP incidence (cases/100,000 population) using using US Census data and applying vaccination rates to the population. The proportion of pneumococcal pneumonia (PP) tested by UAT in sampled facilities to account for the fact not all possible cases were tested and the proportion of pneumonia seen at facilities offering UAT in the catchment area.

Results. In 2013–2014, 1,854 patients met our case definition; median age was 65 years (range 18–102). On average, patients were diagnosed on hospital Day 1 (range 1–31 days) and hospitalized for 5 days (range <1–152). Adjusting the crude incidence of 610,000,000 (reported UAT cases) by factors 1 and 2, we estimated NPP incidence to be 99/100,000 population.

Clinical Description of Patients with UAT Confirmed NPP (N = 1,854)

| n (%) | Age ≥65 years 953 (51) |
|-------|------------------------|
|       | Radiographically confirmed pneumonia 1,604 (87) |
|       | Intensive care unit admission 653 (35) |
|       | Died 119 (6) |
|       | Underlying medical condition 1,752 (95) |
|       | Immunocompromising condition 764 (41) |
|       | Smoke tobacco 677 (37) |

Conclusion. Our population-based surveillance system allows us to estimate the incidence of laboratory confirmed NPP. Given imperfect UAT sensitivity, this is an underestimate. A more sensitive and serotype-specific UAT could provide improved detection and understanding of NPP. Nonetheless, NPP surveillance allows us to better understand populations at risk for NPP and establish a baseline to evaluate impact of PCV13 on NPP incidence among adults.

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1462. Hospital Admission Patterns in Adult Patients with Community-Acquired Bacterial Pneumonia Who Received Ceftriaxone and a Macrolide by Pneumonia Severity Index Score
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Background. Given the disparity in cost between inpatient and outpatient care, the IDSA/ATS community-acquired pneumonia (CAP) guidelines recommend use of site-of-care severity of illness indicators to identify CAP patients who may be candidates for outpatient treatment. Despite this level 1 recommendation, there are limited data on US hospital community-acquired bacterial pneumonia (CAPB) admissions patterns stratified by Pneumonia Severity Index (PSI) score and presence of comorbidities. This study described hospitalization and length of stay (LOS) patterns among adult patients with CAPB who received ceftriaxone (CTX) and a macrolide (M) at admission in the MedAssets database. The primary objective was to quantify the proportion of admissions and associated hospital LOS among “low-risk” patients (PSI score ≤ 90) where outpatient or short admission is advocated.

Methods. A retrospective study of patients hospitalized for CAPB and in the MedAssets database during 2012–2015 was performed. Inclusion criteria: (1) age ≥ 18 years, (2) a primary diagnosis for CAPB, (3) received CTX and a M on hospitalization Day 1 or 2, and (3) ≥21-year enrollment before the index date. For patients with multiple hospitalizations for CAPB during the study period, only the first episode was considered. Distribution of hospital admissions was stratified by PSI categories and Charlson Comorbidity Index (CCI). Both PSI and CCI were derived from diagnosis codes. Hospital LOS and mortality rates were tabulated across resulting PSI-CCI categories.

Results. During the study period, 68,254 patients met inclusion criteria. Among hospitalized CAPB patients, 35% had a PSI score ≤ 70 and 33% had a PSI score between 71–90. The mean LOS for patients with a PSI score ≤ 70 and 71–90 ranged between 5.2 and 6.6 days, depending on CCI score. Mortality was less than 0.5% for patients with PSI ≥ 100 and 1.4% for patients with a 71–90 PSI score.

Conclusion. More than two-thirds of hospitalized CAPB patients who received CTX and an M had a PSI score ≤ 90. On average, hospital LOS was 5–6 days for CAPB patients with PSI ≤ 90. These findings reflect the critical need to identify outpatient treatments that can effectively reduce hospital admissions.

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1463. Comparative Evaluation of Adverse Tendon Events Between Recipients of Fluoroquinolones and Ceftriaxone/ Azithromycin Among Veterans Affairs Patients with Community Acquired Bacterial Pneumonia
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Background. Fluoroquinolones (FQs) are used commonly for patients with community-acquired bacterial pneumonia (CAPB). A recent FDA Drug Safety Communication strengthened labeling regarding tendinopathy/tendon rupture for FQs. The data prompting this change lacked a comparator group of patients using other antibiotics, like ceftriaxone/azithromycin (CTX-AZ) for similar indications. The objectives of this study were to compare the incidence of adverse tendon events (TE) between FQ and CTX-AZ among patients with CAPB and determine if FQ treatment is independently associated with TE.

Methods. A retrospective cohort study was performed among patients in the Upstate New York Veterans’ Healthcare Administration. Inclusion criteria: (1) age ≥ 18 years, (2) diagnosis of CAPB (ICD9 code with manual confirmation) from January 2014 to December 2015, (3) receipt of IV/oral FQ or CTX-AZ ≥ 1 day, and (4) treatment initiated as inpatient. Data were collected from pts’ medical records. Occurrence of TE was defined using a natural word search algorithm of patients’ clinical progress notes within 90 days of starting FQ or CTX-AZ therapy. Search terms were: tendinopathy, tendon rupture, tendinits, and Achilles heel pain/tear/sore/torn/rupture. Classification and regression tree (CART) was used to identify breakpoints in continuous variables associated with TE.

Results. There were 379 FQ and 274 CTX-AZ recipients. Mean ± standard deviation (SD) ages for FQ and CTX-AZ recipients were, 73.0 ± 12.7 vs. 72.8 ± 12.7 years, respectively, and mean ± standard deviation (SD) APACHE-II scores between groups were 10.4 ± 5.1 vs. 8.5 ± 3.6, respectively (P = 0.001). Residence in the intensive care unit at start of therapy did not differ (FQ: 11.6% vs. CTX-AZ: 10.2%, P = 0.58). The incidence of TE did not differ between groups (FQ: 9.3% vs. CTX-AZ: 9.2% [95% confidence interval: 0.57–1.8%]). In multivariate analyses (figure), treatment was not independently associated with TE (aOR: 1.78, 95% confidence interval: 0.51–6.21, P = 0.37) after adjustment for treatment duration, APACHE-II, age ≥52 years and BMI ≥27.5.