centrifuged at 2,500 rpm for 10 minute and stored at -80°C until assayed. Ceftolozane and tazobactam concentrations were quantified using previously validated high-performance liquid chromatography (HPLC) methods.

**Results.** Ceftolozane and tazobactam concentrations are shown in Table 1. The susceptibility profile (VITEK® 2) demonstrated the following minimum inhibitory concentrations (MICs): gentamicin ≤ 1 mg/mL, cefepime = 32 mcg/mL, ceftriaxone = 2 mcg/mL, meropenem = 8 mcg/mL. Colistin, polymyxin B, and C/T MICs were confirmed via E-test (2 mcg/mL, 2 mcg/mL, and 1.5 mcg/mL, respectively). The patient clinically improved with resolution of signs and symptoms of infection after 6 days with CI/C/T. Suppressive therapy was continued indefinitely in lieu of source control. A subjective increase in gout pain was reported, but no other major adverse events were noted during therapy.

**Conclusion.** Adequate systemic drug concentrations of C/T well above the MIC were achieved when administered as a CI of 6g over 24 hours. Based on serum ceftolozane concentrations, dose modification of CI may be possible with future evaluation. Continuous infusion represents a potentially well-tolerated delivery for C/T and warrants further study.

### Table 1. Ceftolozane and tazobactam drug concentrations.

| Collection Time       | Ceftolozane Concentration (µg/ml) | Tazobactam Concentration (µg/ml) |
|-----------------------|----------------------------------|----------------------------------|
| Intermittent Infusion |                                 |                                  |
| 6 hour                | 55.12                            | 16.91                            |
| 12 hour               | 47.49                            | 13.32                            |
| 18 hour               | 39.00                            | 9.23                             |
| 24 hour               | 39.90                            | 10.92                            |
| 48 hour               | -5.40                            | 19.64                            |

**Disclosures.** D. P. Nicolau, Merck: Investigator and Speaker’s Bureau, Research support. P. B. Bookstaver, Rock Pointe: Content Developer, Consulting fee

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### 782. Antimicrobial resistance patterns of colonizing Streptococcus pneumoniae among young child-mother pairs in the rural highlands of the Peruvian Andes

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**Session.** 76. Treatment of Resistant Infections - Clinical Analyses

**Background.** Despite widespread use of pneumococcal conjugate vaccines (PCVs), Streptococcus pneumoniae (pneumococcus) remains an important cause of pneumonia. Prior to widespread PCV use, we found a high prevalence of nasopharyngeal (NP) colonization with pneumococcus resistant to multiple antibiotic classes among young children in the rural highlands of Peru. We sought to confirm contemporary resistance profiles among young children, their mothers, and animal contacts in the post-PCV era.

**Methods.** We enrolled eligible members of Peruvian households whose children had participated in our previous study. Mothers were questioned about antibiotic use for themselves and their children age <3 years. NP samples were collected from children, mothers, and their animal contacts including cows, guinea pigs, and dogs, when available. Samples were cultured for pneumococcus using standard methods and routine disk antibiotic susceptibility testing was performed. Drinking water and milk samples were tested, when available, for the presence of β-lactam and tetracycline residues (IDEXX β-Tetra testing kit; Westbrook, ME).

**Results.** Members of 47 households were enrolled, including 50 children and 47 mothers (3 sibling pairs). The median (IQR) age of children was 1.2 years (0.6-2.2) and number of household members was 5 (4-6). Sixteen of 50 (32%) children and 7/47 (15%) mothers had received antibiotics in the prior 6 months (Fig 1). Pneumococcal colonization was detected in 31/50 (62%) children, 9/47 (19%) mothers, and 1/31 (3%) guinea pigs. Pneumococci were not detected in dogs (n = 29) or cows (n = 7). Resistance to multiple classes of antibiotics, including TSM-SMX, tetracyclines, and β-lactams, was common among children and adults (Fig 2). No antibiotic residues were detected in water (n = 41) or milk (n = 7) samples.

**Conclusion.** Pneumococcal colonization was common among young children, less prevalent among adults, and rare among animals. Resistance to macrolides and tetracyclines was common despite very little reported use of these antibiotics in people. Additional studies should evaluate whether this high prevalence of resistance is a result of local prescribing practices or unintentional environmental exposures.

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### 783. Associations Between Timeliness of Therapy and Clinical and Economic Outcomes Among Patients With Serious Infections Due to Gram-negative Bacteria (GNB): How Much Does Delayed Appropriate Therapy (DAT) Matter?

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**Session.** 76. Treatment of Resistant Infections - Clinical Analyses

**Background.** Patients with serious GNB infections who receive DAT have worse outcomes. Most studies that have examined this issue include both antibiotic-resistant and susceptible pathogens. It is difficult to assign causality as DAT is correlated with resistance, which is associated with poorer prognosis. Our objective was to assess association between DAT and outcomes among patients with GNB infection, stratified by antibiotic susceptibility status.

**Methods.** Hospitalized adults between 7/2011–9/2014 were identified from Premier Hospital Database. Patients were diagnosed with complicated urinary tract infection, complicated intra-abdominal infection, hospital-associated pneumonia, or bloodstream infection, and had a positive culture for GNB from a site consistent with infection type (date of culture draw was index date). Patients were required to receive antibiotics on this date or ≤ 52 days after. Delayed therapy was defined as no receipt of an antibiotic with microbiologic activity during this period. Patients were stratified by antibiotic-resistant GNB (Third-generation cephalosporin-resistant Enterobacteriaceae, carbapenem-resistant (CR) Enterobacteriaceae, CR Pseudomonas sp., or multi-drug-resistant Pseudomonas sp.) vs. antibiotic-susceptible GNB counterparts. Inverse probability weighting and multivariate regression analyses were used to estimate the association between DAT and outcomes. Logistic models were used for composite mortality (in-hospital death or discharge to hospice) and discharge to home. Generalized linear models were used for post-index duration of antibiotic therapy, hospital length of stay (LOS), and costs.
**878. Effectiveness of Daptomycin in Patients with Persistent Meticillin-Resistant Staphylococcus aureus Bacteremia Despite Vancomycin Therapy**

**Background.** Clinicians often switch therapy in patients with persistent meticillin-resistant Staphylococcus aureus (MRSA) bacteremia despite prolonged vancomycin therapy. We evaluated the utilization of daptomycin in MRSA bacteremic patients who failed vancomycin therapy.

**Methods.** This single center, retrospective evaluation of adult patients who received daptomycin after receiving vancomycin for MRSA bacteremia from January 2011 to September 2016. Persistent bacteremia was defined as continued positive blood culture(s) despite receiving more than 72 hours of vancomycin. Patients with bacteremia from presumed pneumonia or MRSA bacteremia within 30 days of admission were excluded. Daptomycin dose was evaluated for appropriateness based upon patient weight and renal function. Duration of bacteremia was evaluated, including whether source control was achieved. Creactive protein (CRP) levels drawn during daptomycin therapy were assessed to evaluate safety. Hospital length of stay and patient disposition were collected for each patient. Data were presented with descriptive statistics.

**Results.** 700 patient received daptomycin during this study period; 66 were duplicates, 596 did not meet inclusion criteria and 38 patients were included. Minimum inhibitory concentration (MIC) of isolates were 1mcg/mL (31.6%), 1.5mcg/mL (42.1%) and 2mcg/mL (26.3%). Daptomycin dose was 4mg/kg (10.5%), 6mg/kg (63%), 8mg/kg (16%) and 10mg/kg (10.5%). Twenty-eight (73.7%) of 38 patients cleared bacteremia with daptomycin. Ten patients were switched back to vancomycin for the following reasons: persistent bacteremia (6), increase in daptomycin MIC (3), and blood culture was negative on the date daptomycin was initiated (1). Duration of bacteremia while receiving vancomycin vs. daptomycin was 8.5 ± 6.6 days and 4.9 ± 5.4 days, respectively. Only one patient experienced elevated CRP > 5 times upper normal limit. Daptomycin was utilized appropriately in 97.4% of the patients who failed vancomycin according to our current protocol.

**Conclusion.** Daptomycin was effective in a majority of the patients in clearing bacteremia but MICs increased in some patients. Prospective studies should be performed to confirm these findings.

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

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**879. Assessment of risk factors for inappropriate empiric antibiotic therapy in patients with Gram-negative sterile site infection complicated by sepsis or septic shock**

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Session: 76. Treatment of Resistant Infections - Clinical Analyses

**Background.** The association between the administration of inappropriate empiric antibiotic treatment (IEA) and an increased risk of hospital mortality has been consistently reported. This study explores pre-infection risk factors for IEA in patients with Gram-negative (GN) sterile site infections complicated by sepsis or septic shock.

**Methods.** Retrospective cohort study at Barnes-Jewish Hospital (2010–2015). Risk factors including history of hospitalization, receipt of intravenous antipseudomonal antibiotics, and isolation of GN organisms 90 days prior to admission were collected. Patients were included if ICU admission, duration of mechanical ventilation, central venous catheter, and urinary catheter insertion, and antibiotic days prior to isolation of a GN pathogen(s). IEA was defined as receipt of antibiotic therapy that lacked in vitro activity against the identified pathogen(s) within the 24 hours of the culture being obtained. Multivariable logistic regression analysis (MVLR) risk factor modeling that included IEA as the dependent outcome variable was conducted.

**Results.** 855 consecutive patients with first episode sepsis or septic shock were included. Compared with patients receiving appropriate empiric therapy (n = 715), variables significantly associated with IEA (n = 140) within 90 days prior to admission included recent hospitalization (23.1% v. 34.3%, P = 0.005), mean days of meropenem (0 v. 2.1, P = 0.010) and piperacillin-tazobactam (0 v. 1.6, P <0.001) therapy, and isolation of a GN organism(s) (8.4% v. 20.0%, P <0.001). Prior to isolation of the GN pathogen(s), median hospital (0 v. 6 days, P < 0.001) and ICU (0 v. 0 days, P < 0.001) length of stay, as well as the median duration of CVC dwell time (10 v. 17 days, P = 0.050) was associated with IEA. MVLR identified isolation of a GN pathogen (AOR 3.432 95% CI 1.472–9.232, P = 0.024) as independent risk factors for IEA.

**Conclusion.** Consideration of risk factors prior to admission and prior to collection of a sterile site specimen appear to be critical when making empiric antibiotic decisions targeting GN pathogens in patients with sepsis or septic shock.

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**880. Effect of Generic vs. Brand-Name Meropenem on Mortality in a Colombian Hospital’s Intensive Care Unit**

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Session: 76. Treatment of Resistant Infections - Clinical Analyses

**Background.** The quality of antibiotics is a crucial element in successful treatment of infections. Recently, the use of generic antibiotics has caused controversy because of studies reporting clinical failure and the emergence of antibacterial resistance associated with the sustained use of generic antibiotics. The present study was designed to determine the mortality benefit associated with the use of generic meropenem (GM) and brand-name meropenem (BNM) used to treat Gram-negative infections.

**Methods.** We conducted an ambispective cohort study comparing adult patients who received GM and BNM while in the intensive care unit of a tertiary care hospital in Cali, Colombia. Patients treated between June 2014 and March 2017 were included. Patients in the study only if the infecting organism was susceptible to meropenem. The GM and BNM cohorts were paired by age, infection type, and infection severity as measured by Sequential Organ Failure Assessment score. Mortality was compared between groups. Data were analyzed using descriptive and inferential statistics.

**Results.** A total of 168 patients were included; 68 patients (40%) were treated with GM and 100 (60%) were treated with BNM. The mean age was 57 years old; 72 (43%) women and 96 (57%) men. The common infection types were: pneumonia (18%), followed by K. pneumoniae (19%). Bacteremia (49%) was the most common infection type, followed by intraabdominal infection (24%). Multivariate analysis demonstrated that patients treated with GM had a risk of death 18 times higher (OR: 18.45 95% CI 1.47-232, P = 0.024) than patients treated with BNM. Patients with a history of cardiovascular disease, other comorbidities and time between bacterial culture and antibiotic therapy were excluded. Daptomycin dose was evaluated for appropriateness based upon patient weight and renal function. Duration of bacteremia was evaluated, including whether source control was achieved. Creactive protein (CRP) levels drawn during daptomycin therapy were assessed to evaluate safety. Hospital length of stay and patient disposition were collected for each patient. Data were presented with descriptive statistics.

**Results.** 700 patient received daptomycin during this study period; 66 were duplicates, 596 did not meet inclusion criteria and 38 patients were included. Minimum inhibitory concentration (MIC) of isolates were 1mcg/mL (51.6%), 1.5mcg/mL (42.1%) and 2mcg/mL (26.3%). Daptomycin dose was 4mg/kg (10.5%), 6mg/kg (63%), 8mg/kg (16%) and 10mg/kg (10.5%). Twenty-eight (73.7%) of 38 patients cleared bacteremia with daptomycin. Ten patients were switched back to vancomycin for the following reasons: persistent bacteremia (6), increase in daptomycin MIC (3), and blood culture was negative on the date daptomycin was initiated (1). Duration of bacteremia while receiving vancomycin vs. daptomycin was 8.5 ± 6.6 days and 4.9 ± 5.4 days, respectively. Only one patient experienced elevated CRP > 5 times upper normal limit. Daptomycin was utilized appropriately in 97.4% of the patients who failed vancomycin according to our current protocol.

**Conclusion.** Daptomycin was effective in a majority of the patients in clearing bacteremia but MICs increased in some patients. Prospective studies should be performed to confirm these findings.

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

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**876. Echinocandin-resistant Candida tropicalis Bloodstream Infections**

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