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 mcg/mL, cefepime = 32 mcg/mL, ciprofloxacin ≥ 4 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 weeks 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		
Trough, steady state	97.83	25.62
Continuous Infusion		
6 hour	55.12	16.91
12 hour	47.49	13.32
18 hour	39.36	9.31
24 hour	39.90	10.92
48 hour	40.64	19.64

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

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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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 B-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**). Pneumococcus 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 TMP-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.

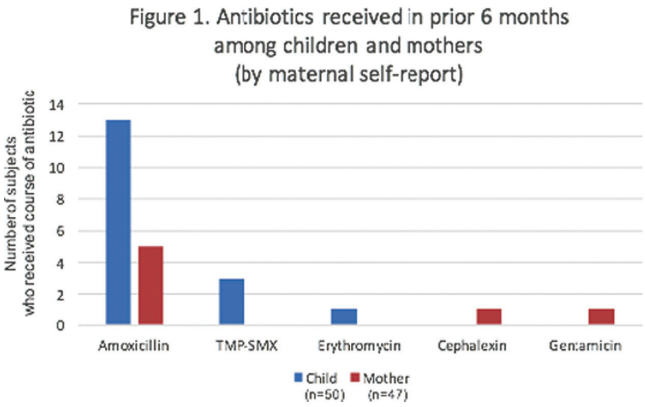

Figure 2. Prevalence of antimicrobial susceptibility among pneumococcal isolates in children and adults

	Children (n=31)		Adults (n=9)	
	I/R n (%)	S n (%)	I/R n (%)	S n (%)
TMP-SMX	26 (84)	5 (16)	6 (67)	3 (33)
Oxacillin	23 (74)	8 (26)	3 (33)	6 (67)
Erythromycin	16 (52)	15 (48)	2 (22)	7 (78)
Azithromycin	15 (48)	16 (52)	2 (22)	7 (78)
Tetracycline	10 (32)	21 (68)	4 (44)	5 (56)
Clindamycin	5 (16)	26 (84)	1 (11)	8 (89)
Rifampicin	1 (3)	30 (97)	0 (0)	9 (100)
Vancomycin	1 (3)	30 (97)	0 (0)	9 (100)
Levofloxacin	0 (0)	31 (100)	0 (0)	9 (100)
Chloramphenicol	0 (0)	31 (100)	0 (0)	9 (100)

* TMP-SMX, trimethoprim-sulfamethoxazole; I/R, intermediate/resistant; S, susceptible

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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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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 ≤2 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.