California, Davis Student Health Center (UCSDHC) has made prescribing NTF preferred for acute cystitis since 2001 as TMP/SMX has community resistance rates of ~20%. Ciprofloxacin is the second line agent at UCSDHC.

Methods. UCSDHC reviewed all urine cultures and susceptibilities for clinical and epidemiologic purposes. Susceptibility results were gathered from the UCSDHC microbiology laboratory from 2001–2016. Prescribing data was obtained from UCSDHC under diagnosis codes consistent with cystitis or UTI to demonstrate antibiotic prescribing trends. Susceptibilities were evaluated over the 15-year time period (2001–2016). TMP/SMX, FQs, and NTF were the primary agents evaluated in this study.

Results. From 2001–2016, 3,831 E. coli and 296 S. pneumoniae were evaluated, accounting for 88% of the total number of organisms. E. coli susceptibilities to NTF remained >98% from 2001–2016. E. coli susceptibilities to FQs trended down from 99% in 2001 to 88% in 2016. E. coli susceptibilities to TMP/SMX remained stable around 80% from 2001–2016. S. pneumoniae remained highly susceptible to NTF, FQs, and TMP/SMX (95%, 97%, and 100% respectively at the end of the study period).

In total, 12,298 prescriptions were written from 2008–2016. Eighty percent (9,875) were NTF and 17% (2,016) were FQs. The remaining 1% and 2% were TMP/SMX and ‘Other’, respectively.

Conclusion. After changes in prescribing practice in 2001, NTF was used in 80% of cystitis cases over 15 years and retained excellent activity against common urinary pathogens. TMP/SMX, however, had susceptibilities trending down notably despite limited FQ use. TMP/SMX did not regain increased activity over the time period.

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1134. Assessment of Antimicrobial Susceptibility Testing Profiles of Urine Isolates from Veterans to Guide Empiric Therapy for Suspected Urinary Tract Infection

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Background. Urinary tract infection (UTI) is common among patients at Veterans Affairs Medical Centers (VAMCs), many of whom are elderly men with underlying medical or urological problems. Most UTI treatment guidelines address uncomplicated UTI in women and assume knowledge of local antimicrobial susceptibility testing (AST) patterns for uropathogens, which often are unknown or are inferred from E. coli. To inform selection of empiric therapy for UTI at our VAMC, we compiled AST data for one year’s urine isolates.

Methods. We compiled AST results (bioMerieux VITEK®) for the 2,494 significant urinary isolates from the Minneapolis VAMC clinical microbiology laboratory from June 2013 through May 2014. For “drug-bug” combinations that were not tested we imputed results based on local or published data, and/or expert opinion. We then calculated cumulative % susceptible for 25 relevant antimicrobial agents, overall and stratified by Gram stain and clinical site (intensive care unit, inpatient, outpatient, community residential centers, or extended care). In ambiguous situations susceptibility was analyzed as both 0% and 100%.

Results. The 2,494 urine isolates included 946 Gram-positive and 1,548 Gram-negative organisms. E. coli and P. aeruginosa were the most common and are predominantly by clinical site. E. coli represented only 27% of isolates (9–37%, depending on site). Enterococcus (14%) and other Gram-positives (23%) were also prevalent. Cumulative AST profiles varied significantly (i) by Gram stain, (ii) between E. coli and other Gram-negatives, and (iii) by clinical site. No tested oral agent provided ≥ 80% overall susceptibility. Although AST data were unavailable for fosfomycin, imputation suggested 82%-95% susceptibility overall.

Conclusion. Among urine isolates from veterans, E. coli was a minor contributor since its AR patterns were derived predominantly by clinical site. E. coli provided ≥ 80% susceptibility overall was fosfomycin, suggesting that it could be an important option for empiric lower UTI therapy for veterans. Urine isolate-specific antibiograms that reflect local AST data, stratified by Gram stain group and clinical site, could improve empirical UTI therapy for veterans, as could performance of urine isolate-specific AST data.

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1135. Poor Clinical Outcomes Associated with Community-Onset Extended-Spectrum Cephalosporin-Resistant Enterobacteriaceae Urinary Tract Infections

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Background. Urinary tract infections (UTIs) are the most common bacterial infections among adults in the community. Recent data suggest an increase in bacterial resistance to first line antibiotics used for UTI, though the impact on clinical outcomes is unclear. The objective of our study was to determine clinical outcomes associated with community-onset extended-spectrum cephalosporin-resistant (ESC- R) Enterobacteriaceae (EB) UTI.

Methods. A retrospective cohort study was conducted in a large health system from 2010 to 2013. All patients presenting to an emergency department or outpatient clinic with UTI due to EB were included. Exposed subjects were those with EB UTI (confirmed resistance to an ESC) and insufficient data. Unexposed subjects were those with ESC-susceptible EB UTIs and were matched to cases 1:1 based on study year. Multivariable logistic regression analyses were performed to evaluate the association between ESC-R EB UTI and 1) clinical failure (defined as ongoing symptoms, repeat positive culture, or need for additional antibiotics within 7 days), 2) inappropriate initial antibiotic therapy (IAT) (defined as failure to receive an antibiotic to which the organism was susceptible within 48 hours of presentation).

Results. A total of 302 patients with community-onset EB UTI were included. On multivariable analysis, a UTI with an ESC-R EB was significantly associated with clinical failure (odds ratio [OR] 5.12, 95% confidence interval [CI] 2.79–9.39, P < 0.01). Other variables independently associated with clinical failure included presence of pyelonephritis at the time of UTI diagnosis (OR 2.15, 95% CI 1.14–4.03, p 0.02) and infection with Citrobacter species (OR 29.56, 95% CI 4.46–195.91, P < 0.01). ESC-R EB UTI was also associated with IAT on multivariable analysis (OR 3.73, 95% CI 2.25–6.21, P < 0.01).

Conclusion. Community-onset UTI due to an ESC-R EB organism is associated with a significantly increased risk of clinical failure, which may be due in part to the use of inappropriate initial antibiotic therapy. Further studies to determine which patients in the community are at high risk for drug-resistant infection to help inform prompt urine culture ordering and appropriate antibiotic prescribing for ESC-R EB.

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1136. Antibiotic Bladder Irrigation in Preventing and Reducing Chronic Urinary Catheter-Related Urinary Tract Infections (UTI)

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Background. Recurrent UTI is a common complication of chronic urinary catheter use. We report our experience with the use of antibiotic bladder irrigation to reduce catheter associated UTI and systemic antibiotics use.

Methods. Retrospective chart review of patients treated with antibiotic bladder irrigation for recurrent UTI related to chronic urinary catheter (2013–2016). Data collected include demographic, co-morbidities, urological anomalies, symptoms, documented pathologies during episodes of infection, and irrigation medication used. Antibiotic regimen included: gentamicin, gentamicin alternated with piperacillin-tazobactam, or tobramycin once weekly. Parameters for successful therapy and alleviation of symptoms included complete resolution of symptoms for six months and no systemic antibiotics use for six months post initiation of therapy, or reduced frequency of infections for one year post initiation of therapy.

Results. 39 patients were enrolled, all were patients who had been referred to infectious disease physicians after persistence of symptoms despite multiple rounds of appropriate antibiotics and had at least 6 episode of documented UTI despite following guideline for aseptic urinary catheter insertion and care. Mean age 66.5 y (range 27–92), 69% male. Most common urologic problem was neurogenic bladder in 48% and prostate or bladder surgery. 5 self-catheterize, 12 had suprapubic catheter and 22 had chronic indwelling catheter. Most common co-morbidities include: DM, BPH, paraplegia, spina bifida and multiple sclerosis. Most common presenting symptoms were abdominal pain 49% and fever 34%. Most common organisms were Escherichia coli 38%, Pseudomonas aeruginosa 23% and Enterococcus faecalis 18%. 67% used gentamicin bladder irrigation. 26 (66-67%) met the criteria for alleviation of symptoms and success with antibiotic irrigation therapy, and a further four featured improvement of frequency of symptoms despite not successfully meeting the study's pre-set criteria for full improvement. Patient did not report any associated side effect.

Conclusions. Use of antibiotic bladder irrigation was successful in reducing symp- tom frequency and requirement of systemic antibiotics. Further Studies needed to assess the benefit of this mode of therapy.

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1137. Antibiotic Susceptibilities and Appropriateness of Initial Drug Selection for Community-Acquired Urinary Tract Infections (UTI) Caused by Extended-Spectrum B-Lactamase (ESBL)-Producing Pathogens

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Poster Abstracts accounted for one quarter of all CAUTIs, was the most common pathogen in both (69.8% cUTI vs. 0.0001). FQs and TMP/SMX were discordant in 83% and 42% of ESBL UTI, respectively, while NF was concordant in 100% of patients with ESBL UTI and 89% of controls. Patients with CA ESBL UTI were significantly more likely to receive inappropriate initial AB therapy. Although ESBL producing strains were resistant to multiple AB classes, NF retained activity against 84% of ESBL isolates and was associated with appropriateness of initial therapy in 100% of patients with ESBL UTI. Nitrofurantoin is an appropriate oral option for treatment of CA UTI, even in patients with ESBL infection.

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1138. Prevalence and Accuracy of Screening Test of Asymptomatic Bacteriuria During Pregnancy in Siriraj Hospital Jintana Sreesompong, MD,1 Suraya Rahman, BSN,2 Kusol Rassameecharon, MD,2 Nithidharo M. Ngamwong, MD,1 Phakdit Chakrapong Seenaum,1 and Pornpan Koomanachai, MD,1
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Background. The early detection and treatment asymptomatic bacteriuria (ASB) during pregnancy prevents maternal and fetal complication. Thus the American College of OB-GYN recommends urine culture should be obtained at the first prenatal visit and the US Preventive Services Task Force obtains urine culture during 12–16 weeks of gestation. The new antennal care (ANC) model of Thai Ministry of Public Health uses screening at first ANC by urine dipstick. However, neither research nor routine ASB screen in Siriraj Hospital because there was low prevalence and all pregnancy been screened by the obstetricians.

Methods. Prospective cohort study was performed at the ANC clinic, OB-GYN department, Siriraj Hospital. Pregnancies of first antenatal care visit during January to December 2015 were enrolled. Urine culture (UC), Urine dipstick for nitrite (UDN), and a majority of infections were present on admission. CAUTI is associated with greater comorbidity burden (Charlson Comorbidity Index of 2.8 ± 2.2 vs. 1.7 ± 2.2) and a higher ICU care rate (23.2% vs. 17.8%) than cUTI patients (all P < 0.001). Although Escherichia coli was the most common pathogen in both (69.8% cUTI vs. 39.5% CAUTI), Pseudomonas aeruginosa accounted for one quarter of all CAUTIs and only 5.0% of cUTIs. Compared with cUTI, CAUTI carried a 2-fold increase in unadjusted mortality (3.6% vs. 1.6%) and a higher rate of 30-day readmission (3.9% vs. 2.5%) (all P < 0.001). Additionally, CAUTI was associated with a greater unadjusted ICU length of stay (LOS, 6.0 ± 8.8 vs. 5.5 ± 5.5 days), hospital LOS (8.4 ± 12.9 vs. 5.5 ± 6.4 days) and cost ($16,871+829,513 vs. $11,915 ± $19,657) (all P < 0.001).

Conclusion. The volume of CAUTI and cUTI hospitalizations in the US is high, and a majority of infections were present on admission. CAUTI is associated with greater mortality and resource use than cUTI. The high rate of P. aeruginosa portends a greater potential for antimicrobial resistance in CAUTI, which may require different prevention and treatment approaches from cUTI.

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1140. Significance of Prior Culture History for Predicting Urinary Tract Infection Caused by Multi-drug Resistant Enterobacteriaceae Jefferson Bohan, PharmD, BCPs; Richard Remington, MS, and Karl Madaras-Kelly, PharmD, MPH1, Vet. Med. Cr., Boise, Idaho, 2VA Med. Cr.,and Quantified Inc., Boise, Idaho, 3Coll. of Pharmacy, Idaho State University, Meridian, Idaho
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Background. Extended-spectrum β-lactamase (ESBL) producing E. coli, Klebsiella, and Proteus spp. (ERP) that cause urinary tract infections in US patients are resistant to first-line therapies (e.g., ceftriaxone). Prediction of UTI caused by ESBL-producing organisms is important for selection of empirical therapy. The objective was to develop a prediction model to identify UTI caused by ceftazidime (CRO) resistant ERP and compare the model to other commonly cited predictive models (Tumbarello M et al. AAC Jul 2011; Johnson SW et al. ICHE Apr 2013).

Methods. A single-center, matched, case-control of Veterans Affairs (VA) outpatients with a positive (>10^4 CFU/mL) urine culture was conducted. Patients were included if they had no UTI diagnosis or documented symptoms, age <18, transfer from another hospital, or a significant urine culture result. Cases were defined as any patient with a CRO-resistant ERP; controls were matched 4:1 cases to classes based on incident density (±30 days) by random selection. Logistic regression and receiver operator curves were used to develop and assess models.

Results. One hundred subjects were included in the analysis. Demographics were similar except for age (Case 73.5 years (13.7); Control 64.5 years (15.2); P = 0.02) and history of CRO-resistant ERP in last 6 months (Case 40% Control 0%; P < 0.01). Predictor variables in the final model (Likelihood Ratio) ERP, P < 0.01) included history of CRO-resistant ERP in last 6 months (131.5, 12.2–18308.0), cephalosporin use in past 60 days (12.7, 1.9–94.5), a resident in a skilled nursing or assisted living facility (8.0, 1.6–40.5), and hospitalization in last 6 months (OR 3.0, 95% CI 0.7–12.5). In the VA population, the other models predicted significantly less accurately than the above when considered (Figure 1).

Conclusion. Prior cephalosporin use, hospitalization and residency were important predictors of UTI caused by CRO-resistant ERP; however, prior history of CRO-resistant ERP was the most important predictor. A model that included prior culture results predicted CRO-resistant ERP with an area under the fitted model that do not contain prior ESBL history. Prior culture data should be considered when selecting empirical antibiotics for UTI. Validation in a larger cohort is warranted.