and was treated 74.6% of the time (Figure 3). Significant risk factors for MDR UTI included female gender ($P = 0.005$), IV abx ($P = 0.001$), and recurrent UTI ($P = 0.017$).

**Conclusion.** Incidence of symptomatic UTI at our center was lower than previous reports. *E. coli* and *E. faecalis* were the most common urinary pathogens identified. MDR risk factors identified were biologically plausible and consistent with prior literature. ASB treatment occurred frequently and is an area to target stewardship interventions.

**Figure 1:** Bacteriuria Adjudication

**Figure 2:** Microbiologic and Susceptibility Results

**Table 1:** Bacteriuria Treatment in Year

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

1509. Clinical Significance of *Staphylococcus aureus* Bacteruria

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**Session:** 150. Urinary Tract Infection

Friday, October 5, 2018: 12:30 PM

**Background.** The clinical significance of *Staphylococcus aureus* bacteruria (SABU) is unclear and often presumed to represent hematogenous spread of occult S. aureus bacteremia (SAB). The aim of this study was to evaluate the clinical significance of SABU by assessing factors associated with the development of invasive S. aureus disease and 12-month mortality. We also describe the proportion of patients with methicillin-resistant *S. aureus* (MRSA), symptomatic urinary tract infection (UTI), asymptomatic bacteriuria, concomitant SAB, and calculate Charlson comorbidity scores.

**Methods.** This is a retrospective cohort study of all SABU isolates in a tertiary care hospital from 1 January 2007 to 31 December 2016. Cases were identified by screening specimens processed in the microbiology laboratory with records in the Phoenix/BG data system. Demographic data, Charlson comorbidity score, antimicrobial susceptibility profiles, urinary catheter use, residence in a long-term care facility, and UTI symptoms were obtained through chart review.

**Results.** A total of 356 patients with SABU were identified and 237 met inclusion criteria. Seventeen patients had concurrent invasive S. aureus infections and 220 had SABU without invasive infection or SAB. Of the 220 patients with SABU and no invasive S. aureus infection, none developed invasive disease. The 12-month mortality rate was 6.8% in those without concurrent SAB and 52.9% in those with invasive infection. In those without concurrent invasive S. aureus infection, male sex ($P = 0.033$), MRSA ($P = 0.008$), collection of blood cultures ($P = 0.005$), and Charlson comorbidity score ($P \leq 0.001$) were identified as risk factors for 12-month mortality.

**Conclusion.** Patients without evident invasive S. aureus infection at the time of urine culture were not observed to present with invasive disease in the following year. Mortality increases with Charlson score and invasive infection in patients with SABU. Clinicians may consider isolated UTI, contamination, and colonization before embarking on extensive searches for occult staphylococcal infection in patients who present without obvious invasive infection, particularly in those without comorbid disease.

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1510. Treatment of Asymptomatic Bacteriuria prior to Transcatheter Aortic Valve Replacement

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**Session:** 150. Urinary Tract Infection

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**Background.** Based on large population-based studies, the risk of prosthetic valve endocarditis (PVE) after surgical aortic valve replacement is 0.57% per person year. There is no causal link from asymptomatic bacteriuria (ASB) to PVE; however, antibiotics are often prescribed in an abundance of caution given the catastrophic downside. The risk of PVE is yet to be determined in patients who receive a transcatheter aortic valve replacement (TAVR), but likely lower due to the minimally invasive approach. At our institution, ASB is heterogeneously treated with antibiotics prior to TAVR. Herein we quantified some untoward outcomes of treatment of ASB prior to TAVR.

**Methods.** A single-center retrospective study was conducted for patients who underwent TAVR between October 2012 and June 2017. Pre- and post-procedural urinalyses (UA), culture results, antibiotic regimens, development of resistance, symptoms of UTI, 30-day readmission rates, and 30- and 90-day mortality rates were collected.

**Results.** A total of 296 patients with median age of 83 (range 49–97) underwent TAVR. Two hundred and sixty UAs with reflex to culture (137 of which reflected) and eight additional urine cultures (UC) were sent. One hundred and thirty-three of 145 patients cultured had no documented symptoms. There were 44 patients with positive UC, of which nine (20%) had symptoms. Of the 35 with ASB, 27 received antibiotics prior to TAVR (77%). Among those who were treated, there was one case of C. diff, three cases of development of resistance in an organism previously isolated and three cases of newly acquired MDR. This amounts to a number needed to harm of 3.86. There were no cases of any of these outcomes, 30-day readmission or death within 90 days for the ASB patients who did not receive treatment. In the treatment group, there was one case of bacteremia for which the causative organism was different from the organism isolated in UC.

**Conclusion.** In this small cohort of mostly elderly TAVR patients, the rate of ASB was high as expected and most were treated. We documented cases of potential harm associated with antibiotic treatment, and found no such harmful episodes in the untreated group. Given the high number needed to harm and the historically low risk of PVE, antimicrobial stewardship experts should continue to encourage avoidance of antibiotics for ASB, including for patients undergoing invasive and minimally invasive cardiac procedures.

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1511. Utility of Clinical Scoring Models in Predicting Community Acquired Urinary Tract Infections with Extended-Spectrum β-Lactamase-Producing *Escherichia coli* in a General Hospital in Mexico City

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**Session:** 150. Urinary Tract Infection

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**Background.** Urinary tract infections (UTIs) are among the most common causes for antibiotic prescription. The use of clinical scoring models in predicting infection with extended-spectrum β-lactamase (ESBL)-producing *Escherichia coli* (E. coli) may help select an adequate empiric treatment.

**Methods.** This retrospective case-control study included all urine cultures with *E. coli* from symptomatic patients 18 years of age or more admitted to Medica Sur Hospital from December 2014 to 2016. Cases were ESBL producing cultures and controls non-ESBL. Demographic and clinical information was drawn from electronic file. Sensitivities and specificities were performed at various cutoffs and area under the receiver curve (ROC AUC) was determined for each of the two models studied.

**Results.** A total of 171 cases and 294 controls were included. Table 1 displays the statistically significant variables associated with ESBL in a multivariate regression

**Table 1:** Multivariate regression
model. ROC AUC in Figure 1 was 0.691 for Tumbarello and 0.670 for Duke. With a 2-point cutoff, sensitivity for Tumbarello was 71% and specificity 61%, for Duke 58% and 75%, increasing cutoff to 4 points increases specificity to 87 and 93%, decreasing sensitivity to 35 and 20%, respectively. Table 2 classifies by type of UTI, shows the percentage of adequate initial antibiotic for ESBL, and the number of cases predicted by each model. Tumbarello's model predicts all cases, while Duke's model predicts most cases of cystitis and pyelonephritis and all cases of complicated UTI and urosepsis.

Conclusion. Clinical scoring models have a high specificity identifying best non-ESBL infections, this aids in the choice of a more adequate empirical antibiotic for community-acquired UTI.

Table 1

| Variable                | ß-Coefficient | P   | Confidence Interval 95% |
|-------------------------|---------------|-----|------------------------|
| Recent antibiotic therapy | 0.23          | <0.001 | 0.16–0.35               |
| Diabetes mellitus       | 0.17          | <0.001 | 0.11–0.32               |
| Previous hospitalization| 0.16          | <0.001 | 0.10–0.32               |
| Connective tissue disease | 0.11          | <0.001 | 0.06–0.48               |
| Complicated UTI         | 0.11          | 0.017  | 0.02–0.19               |

Figure 1

Disclosures. All authors: No reported disclosures.

1512. Variation in Outpatient Urine Testing Practices for Uncomplicated Urinary Tract Infections
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Session: 150. Urinary Tract Infection
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Background. Urinary tract infections (UTIs) are common in outpatient settings. Evidence-based recommendations suggest empiric treatment of healthy female patients presenting with two or more classic symptoms of UTIs, rather than urine testing. It is unknown how often urine testing is ordered in the community, and if there are opportunities to reduce the number of unnecessary urine tests. This study aims to describe urine testing practices for uncomplicated UTIs in outpatient settings.

Methods. Using the 2009–2013 Truven Health Analytics MarketScan database, we extracted outpatient claims data for premenopausal, nonpregnant women aged 18–44 years who met criteria for an uncomplicated UTI or cystitis with antibiotic prescribed ≤5 days of diagnosis. Women with recent infections, hospitalizations, urologic abnormalities, diabetes, chronic kidney disease, immune compromise, or other complicating factors were excluded. Urine laboratory tests coded within ±5 days of index UTI were identified. To explore variation in urine testing practices, we compared frequencies of urine testing types according to patient age, region, provider type, testing location, residence in a metropolitan statistical area (MSA), and office visit using Chi-square tests.

Results. Of 669,892 eligible patients with an uncomplicated UTI, 584,863 (87%) received at least one urine test. Of the patients who received at least one test, 285,639 (49%) patients received both a urinalysis (UA) and culture, 247,740 (42%) received a UA only and 51,484 (9%) received culture only. Significant variation in testing was observed by patient age, region, provider type, testing location, and office visit (Table 1). Patients in the Northeast and in urban locations more frequently received both a UA and culture. Patients who received both UA and culture were more likely to have been seen by an OB/GYN, whereas patients treated empirically without testing were more likely to have been seen by emergency physicians.

Conclusion. In contrast to evidence-based recommendations, the vast majority of patients with uncomplicated UTIs received at least one urine test. We observed variation in urine testing practices, which suggests that diagnostic testing stewardship opportunities exist for outpatients with UTIs.

Table 1

| Type of UTI/Initial Antibiotic | ESBL E. coli | Non-ESBL E. coli | Tumbarello | Duke |
|-------------------------------|-------------|-----------------|------------|------|
| Cystitis                      | 62%         | 45%             | 87%        | 60%  |
| Nitrofurantoin o fosfomycin   | 10%         | 10%             | 87%        | 60%  |
| Pyelonephritis                | 77%         | 77%             | 87%        | 60%  |
| Carbapenem                    | 58%         | 58%             | 87%        | 60%  |
| Complicated UTI               | 89%         | 89%             | 87%        | 60%  |
| Carbapenem                    | 56%         | 56%             | 87%        | 60%  |
| Urosepsis                     | 40%         | 40%             | 87%        | 60%  |
| Carbapenem                    | 65%         | 65%             | 87%        | 60%  |

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1513. A New Method for Rapid Phenotypic Antimicrobial Susceptibility Testing Directly from Patient Samples
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Background. Life-threatening syndromic hospital infections including sepsis, ventilator acquired pneumonia, catheter-associated urinary tract infection (CAUTI), and surgical site infections are often caused by multidrug-resistant pathogens. Implementing the targeted narrow-spectrum antimicrobial therapy as rapidly as possible at the onset of infection is critical for lowering morbidity and mortality for these infections. We present the new MultiPath technology for rapid syndromic infection detection, pathogen identification, and phenotypic antimicrobial susceptibility testing (AST). Our feasibility data demonstrate the technology’s potential application as a rapid CAUTI diagnostic.

Methods. The MultiPath technology detects and counts cells in a 30-minute assay using nonmagnified digital imaging. For identification, target pathogen cells are labeled using fluorescent in situ hybridization (FISH) with rRNA-specific probes, tagged with magnetic nanoparticles, deposited on a surface, imaged, and quantified. For AST, samples are mixed with growth medium, incubated for 4 hours in the presence of serial dilutions of antibiotics, FISH-labeled, magnetically selected, and quantified by digital imaging. The MultiPath assays use a dye-cation layer to optically sequester the sample preparation and wash steps. We demonstrate the technology’s potential application as a rapid CAUTI diagnostic.

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