providers only send urine cultures from patients after clinical failure. This results in overestimation of resistance.

Methods. For 2 months, PC clinicians were instructed to alter practice by sending a UA with reflex to culture for all patients suspected of having UTI. A retrospective chart review collected antibiotic prescriptions, UA and culture results. We generated a combination UTI-specific antibiogram (CUSA) based on data from all urine cultures sent from this clinic. Using the CUSA we developed an empirical UTI treatment algorithm and evaluated prescribing trends before and after its implementation.

Results. The CUSA as compared with the E. coli urinary antibiogram for the PC clinic is shown in Table 1. Distribution of organisms is represented by Figure 1. Based on the CUSA, a treatment algorithm was developed that included preference for nitrofurantoin and TMP/SMX for patients with cystitis, and allowed for use of TMP/SMX even in pyelonephritis cases without risk factors for resistance. Cephalosporins were advised over fluoroquinolones. Of 304 patients in whom urine cultures were sent pre-implementation, 178 empirical antibiotic prescriptions were written, while 126 were written for 388 patients after implementation. Nitrofurantoin prescriptions increased (47% to 55%), TMP/SMX (19%) and cephalosporin use (4%) remained the same, and fluoroquinolone prescribing decreased (28% to 20%).

Conclusion. We used a CUSA to develop a treatment guideline more reflective of our causative pathogens and institutional resistance patterns. We saw a shift in usage from antibiotics with more to antibiotics with less collateral damage.

Table 1: E. coli Urine Antibiogram vs. CUSA

| Antibiotic          | PC Urine E. coli Antibiogram | CUSA (157) |
|---------------------|-------------------------------|------------|
| Amox/Clav          | 54                            | 69         |
| Cephalxin          | 62                            | 78         |
| Cipro              | 82                            | 86         |
| TMP/SMX            | 84                            | 97         |
| Nitrofurantoin     | 82                            | 83         |
| Cipro              | 77                            | 86         |
| Nitrofurantoin     | 98                            | 87         |

Figure 1.

Disclosures. All authors: No reported disclosures.

1853. Impact of Antimicrobial Stewardship Interventions on Antimicrobial Utilization in Asymptomatic Urinaria
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Background. Antimicrobial therapy for asymptomatic bacteriuria (ASB) is often unnecessary and a common reason for inappropriate antimicrobial use in hospitalized patients. ASB treatment leads to development of resistance, drug toxicities and increased risk of Clostridium difficile infections. We evaluated a multi-faceted interdisciplinary antimicrobial stewardship approach to reduce unnecessary antimicrobial utilization for ASB.

Methods. This was an IRB approved study evaluating the impact of antimicrobial stewardship on antibiotic utilization for ASB in a pilot medical-surgical unit. The pre-intervention phase was from August to October 2017 and the post-intervention phase was from December 2017 to March 2018. The intervention phase consisted of educational in-services to hospitalist groups, Infectious Disease physicians, nurses, and pharmacists. An electronic real-time surveillance system was used to identify positive antimicrobial therapy for ASB.

Results. During the intervention phase, hospitalist providers only send urine cultures from patients after clinical failure. This results in overestimation of resistance.

Methods. For 2 months, PC clinicians were instructed to alter practice by sending a UA with reflex to culture for all patients suspected of having UTI. A retrospective chart review collected antibiotic prescriptions, UA and culture results. We generated a combination UTI-specific antibiogram (CUSA) based on data from all urine cultures sent from this clinic. Using the CUSA we developed an empirical UTI treatment algorithm and evaluated prescribing trends before and after its implementation.

Results. The CUSA as compared with the E. coli urinary antibiogram for the PC clinic is shown in Table 1. Distribution of organisms is represented by Figure 1. Based on the CUSA, a treatment algorithm was developed that included preference for nitrofurantoin and TMP/SMX for patients with cystitis, and allowed for use of TMP/SMX even in pyelonephritis cases without risk factors for resistance. Cephalosporins were advised over fluoroquinolones. Of 304 patients in whom urine cultures were sent pre-implementation, 178 empirical antibiotic prescriptions were written, while 126 were written for 388 patients after implementation. Nitrofurantoin prescriptions increased (47% to 55%), TMP/SMX (19%) and cephalosporin use (4%) remained the same, and fluoroquinolone prescribing decreased (28% to 20%).

Conclusion. We used a CUSA to develop a treatment guideline more reflective of our causative pathogens and institutional resistance patterns. We saw a shift in usage from antibiotics with more to antibiotics with less collateral damage.

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| Nitrofurantoin     | 98                            | 87         |

Figure 1.

Disclosures. All authors: No reported disclosures.

1854. Effective Antimicrobial Stewardship for Outpatient Parenteral Antimicrobial Therapy (OPAT): Nationwide Experience in Infectious Disease Physician Infusion Centers
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Background. Antimicrobial stewardship (AS) is an important factor in combating antimicrobial resistance and optimizing clinical outcomes, especially in the outpatient setting. With no AS guidelines in the United States for OPAT, we developed an antimicrobial stewardship program (ASP) for OPAT in 2016, which was piloted and applied to Infectious Disease practices and infusion centers. The program was expanded and assessed nationally in additional centers in 2017, adding appropriate-ness of empiric therapy (tx), supervision of first doses of antimicrobials, compliance with tx regimen, appropriate tx changes and staff education.

Methods. An assessment instrument was developed through literature review, expert opinion and validated with a logistic model. Patients receiving OPAT in 2017 were randomly selected and retrospectively reviewed based on annual patient volume from 14 OPAT practices. The table shows the ASP assessment tool consisting of 7 Core Elements (CE) scored at 10 points each and 6 Other Elements (OE) scored at 5 points each. Logistic regression was used to validate the relationship between the composite outcome elements and all other elements (aOR = 0.929, P = 0.0005, c = 0.704). Appropriateness of empiric tx and tx length was evaluated using evidence-based guidelines. Each patient OPAT course was assessed and scored for compliance to required elements with an achievable score per patient of 100 points (100%). IV to PO conversion was evaluated secondarily. Descriptive statistics were used.

Results. A total of 200 OPAT courses were scored for compliance to each ASP element as noted in the table. The overall compliance rate for CE and OE was 93.0% and 93.3%, respectively. All CEs were ≥ 29.0% compliant, except for duration of tx. This exceeded guidelines in 15% of patient courses due to severe disease presentation. For the CEs, all achieved ≥ 29.0% compliance except laboratories performed as ordered. Early conversion from IV to PO resulted in a reduction of 240 IV days for 1.2 days per patient.

Conclusion. We successfully developed an OPAT ASP with national expansion. Opportunities were identified for improvement in laboratory processes and enhanced evaluation regarding tx durations. This validated ASP provides a valuable tool for measuring antimicrobial resistance and optimizing clinical outcomes, especially in the outpatient setting.

Table: ASP Assessment Scores

| ASP Core Elements | Score per Patient | Total Score Achieved (n=200) | Percent |
|-------------------|-------------------|-----------------------------|---------|
| Appropriate empiric selection | 1 | 1.910 | 95.9 |
| Appropriate change(s) in therapy, if applicable | 1 | 1.910 | 95.9 |
| Duration of OPAT not exceeding guidelines | 1 | 1.910 | 95.9 |
| Compliance with therapy regimen | 1 | 1.910 | 95.9 |
| No diffuse infection during OPAT | 1 | 1.910 | 95.9 |
| No Emergency Department visit during OPAT | 1 | 1.910 | 95.9 |
| No unplanned hospital admission during OPAT | 1 | 1.910 | 95.9 |
| Total vs. Achievable ASP Core Score Elements (%) | 13,020| 14.030 | 99.6 |

No reported disclosures.
1855. Antimicrobial Stewardship (AMS) and the Outpatient Parenteral Antimicrobial Therapy (OPAT) Setting

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Background. Antimicrobial resistance is a major threat to human health. In the OPAT setting broad-spectrum daily antimicrobials may be chosen in preference to other agents requiring multiple daily doses for reasons of convenience. The role and effectiveness of antimicrobial stewardship (AMS) in the Australian hospital-in-the-home (OPAT) setting have not previously been studied.

Methods. The National Antimicrobial Prescribing Survey (NAPS) was developed in 2011 to provide an audit of antimicrobial prescribing in Australian hospitals and is conducted by The Australian National Centre for Antimicrobial Stewardship (NCAS). The Hospital NAPS was modified for the OPAT setting, trialed in 2016 in five health services and rolled out to all Australian OPAT services as a pilot in 2017.

Results. Twenty-three OPAT services throughout Australia participated in the NAPS pilot. In total, 1,154 prescriptions for 722 patients (63% male) were included. Patients ranged in age from 1 month to 101 years; median age was 58 years. The majority of common indications for parental antimicrobials were: cellulitis (30%), osteomyelitis (8%), pneumonia (7%), abscess (6%), Cystic Fibrosis exacerbation (5%), endocarditis (4%), septic arthritis (4%), prostatic joint infection (4%), and exacerbation of bronchiectasis (2%). Peflacillin–tazobactam or ceftriaxone were prescribed in 20% of cases. The majority of prescriptions for antimicrobials were tailored to treating community-acquired pneumonia and exacerbations of chronic obstructive airways disease were not compliant with guidelines. The median duration of parenteral therapy for cellulitis was 4 days; however, duration ranged overall from 1 to 44 days for this indication. Prescriptions were compliant with guidelines in 43% of cases, and appropriateness of antimicrobial prescribing was assessed as optimal in 74%, adequate in 13%, suboptimal in 8.5% and inadequate in 3%. Antimicrobial therapy duration was incorrect in 9% of cases.

Conclusion. Opportunities exist for improving AMS interventions in the OPAT setting, specifically in regards to the use of broad-spectrum antimicrobials and in the treatment of respiratory tract infection. Importantly, not all OPAT services have the same access to AMS.

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1856. Comparison of Antibiotic Susceptibility in Hospitals vs. Hospital-Based Emergency Departments

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Background. Antibiotic susceptibility varies by hospital location (inpatient vs. emergency department (ED)) and by geographic location. Despite these differences, hospitals often have one antibiotic to determine empiric guidelines. The purpose of this study was to evaluate if large health system’s bacterial sensitivity for key organisms is the same in the inpatient vs. the ED setting to determine whether ED-specific antibiotics are necessary based on region.

Methods. A health-system, consisting of primarily large general community hospitals across 20 US states, evaluated 156 of their hospitals and hospital-based EDs. These hospitals and hospital-based EDs were divided into regions based on geographic area for assessment. Inpatient and ED susceptibilities were then compared and classified based on susceptibility differences. (Minimal 0–4, Moderate 5–10, Considerable >10). One year of susceptibility data for E. coli, P. aeruginosa and S. pneumoniae was evaluated for antibiotic sensitivity.

Results. A total of 171,556 nonduplicate isolates were evaluated including 139,562 E. coli urine isolates (inpatient 41,612, ED 97,950), 28,685 P. aeruginosa (inpatient 19,983, ED 8,702) and 3,309 S. pneumoniae (inpatient 1,565, ED 1,474). The ED was expected to have less resistance than inpatients as ED patients primarily come from a community setting. For E. coli urinary isolates, minimal differences were found for sulfamethoxazole/trimethoprim, and moderate differences were seen in cefazolin and ceftriaxone for the California/Nevada and Texas San Antonio regions. Moderate or considerable differences were seen in nearly all regions for ciprofloxacin. Considerable differences in S. pneumoniae susceptibilities were seen between the inpatient and ED for azithromycin and penicillin G, while one region also had a considerable difference for levofloxacin. P. aeruginosa had one region with a considerable difference, with the Colorado + Central Kansas regions showing less resistance inpatient than the ED.

Conclusion. Differences in inpatient vs. ED bacterial sensitivities warrant justification for specific regions to monitor and develop inpatient and ED-specific antimicrobials.

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1857. Implementing Antibiotic Stewardship in Urgent Care Centers
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Session: 221. Antimicrobial Stewardship: Outpatient Settings
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Background. Antibiotic stewardship (AS) has historically focused on inpatient facilities with primary care clinics; many antibiotics (ABx) are prescribed in urgent care clinics (UCCs). However, few centers have described implementing AS in such settings. We sought to reduce total ABx use in our UCCs as well as specifically decrease azithromycin use.

Methods. We conducted this study in four UCCs owned by a large community-based academic healthcare system in northern Delaware. The UCCs average >55,000 visits annually and include 38 providers (physicians, physician assistants and nurse practitioners). A new electronic health record was implemented in October 2016; ABx utilization data are not available prior to this time. Beginning in January 2017, all providers received in-person education on guideline-recommended management of common infectious diseases, including bronchitis, sinusitis, and pharyngitis. The lead physician performed chart audits and provided group and individual education and feedback via email and telephone. Individual ABx utilization rates were not provided, but documentation of rationale for ABx need was emphasized. Patient education included ABx links on the check-in website, posters in waiting and examination rooms, and patient education materials embedded within each discharge packet, with an emphasis on providing evidence-based care rather than “denying ABx.” We calculated number of total ABx prescriptions (Rx) and of azithromycin Rx per 100 visits in January, and calculated rate ratios comparing January 2017 (pre-intervention) to January 2018 (post).

Results. During the 16-month intervention period, total ABx use declined from 67 Rx per 100 visits to 44/100 visits (rate ratio, 0.55, 95% CI 0.37–0.80) and azithromycin use declined from 13 Rx/100 visits to 5/100 visits (RR 0.32, 95% CI 0.10–0.88). Seasonal variability was apparent (figure).

Conclusion. A multifaceted educational approach positively impacted provider behaviors and patient expectations, and did not rely upon providing ABx utilization data (either clinic- or individual-level). Ensuring leadership support of providers if patients expressed dissatisfaction and standardized messaging and tools were critical for managing patient expectations.

Disclosures. All authors: No reported disclosures.

1858. Use and Perceptions of an Institution-Specific Antibiotic Prescribing “App” among Emergency Department and Urgent Care Clinicians
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Background. We developed an application (app), accessible by mobile device or computer, to provide institution-specific antibiotic prescribing recommendations for common infections. The app was disseminated to emergency department (ED) and urgent care clinicians in August 2014. The purpose of this study was to assess current use of the app and its perceived impact on prescribing.

Methods. We developed and administered an online survey. The survey instrument was pre-tested by a survey methodology, two emergency medicine physicians, an infectious diseases (ID) physician, and an ID pharmacist and subsequently piloted in a group of 70 providers. The final survey was administered to all clinicians in the Denver Health ED and two urgent care centers, including physicians, advanced practice providers, and Emergency Medicine residents. Respondents were eligible if they had worked at least one ED or urgent care shift within 90 days and either personally prescribed antibiotics or oversee other clinicians who prescribe antibiotics.

Disclosures. All authors: No reported disclosures.