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 once 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 most 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%). Piperacillin–tazobactam or ceftriaxone were prescribed in 20% of cases. The majority of prescriptions for antimicrobials to treat 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 large health system’s bacterial sensitivity for key organisms in the inpatient vs. the ED setting to determine whether ED-specific antimicrobial guidelines 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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Background. Antibiotic stewardship (AS) has historically focused on inpatient facilities and primary care clinics; many antibiotics (ABs) are prescribed in urgent care clinics (UCCs). However, few centers have described implementing AS in such settings. We sought to review total ABs 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 >65,000 visits annually and include 38 providers (physicians, physician assistants and nurse practitioners). A new electronic health record was implemented in October 2016; AB use 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 pharmacist performed chart audits and provided group and individual education and feedback via email and telephone. Individual AB utilization rates were not provided, but documentation of rationale for AB use was needed. Patient education included AB 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 ABs." We calculated number of total AB prescriptions (Rx) and of azithromycin Rx per 100 visits to ED patients, and calculated rate ratios comparing January 2017 (pre-intervention) to January 2018 (post).

Results. During the 16-month intervention period, total AB 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 ABs 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.

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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 pilot-tested 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 prescribe antibiotics or oversee other clinicians who prescribe antibiotics.