Asymptomatic Bacteriuria across a Large Health-system Implementation of a Multifaceted Toolkit Targeting Overtreatment of

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Session: 51. Antimicrobial Stewardship: Interventions to Improve Outcomes

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Background. Overtreatment of asymptomatic bacteriuria (ASB) is a major challenge for antimicrobial stewardship (ASP). A February 2017 review of our health-system showed >50% of inpatients with a positive urine culture (PUC) were treated despite no urinary tract infection (UTI) symptoms or compelling indications (CI) (pregnancy or pending urologic procedure). In Fall 2017, we piloted a multifaceted toolkit (MTK) to support an ASB educational campaign (EC) at 26 hospitals.

Methods. A MTK of flyers, a urinary testing algorithm, and narrated slides (Figure 1) was distributed in Fall 2017 and implementation was customized by each hospital's ASP. Impact of EC on treatment of patients with no urinary symptoms (NUS) or altered mental status (AMS) alone were assessed retrospectively by sampling inpatient PUCs from February 1–28, 2018 in a manner identical to a pre–EC sample. Patients were excluded if CI, age <18 years, neutropenic, or admitted on UTI therapy (NUS) or altered mental status (AMS) alone were assessed retrospectively by sampling inpatient PUCs from February 1–28, 2018 in a manner identical to a pre–EC sample. Patients were excluded if CI, age <18 years, neutropenic, or admitted on UTI therapy. Only patients with NUS or with AMS as only symptom were included for the analysis. The primary outcome was time to appropriate therapy defined as the time a positive urine culture (PUC) was received with an antibiotic prescription. The secondary outcomes were: (1) categorical data is shown using odds ratio (OR) and (2) continuous data is shown using the Wilcoxon rank-sum test.

Results. Preliminary pre- and post-EC data from the same 14 hospitals are shown. Patients with NUS decreased slightly post-EC, while those with AMS alone received less empiric therapy.

Figure 1. MTK Components

Figure 2. Patient Symptoms Pre- and Post-EC

Figure 3. Treatment of Patients with NUS or with AMS as Only Symptom

Twelve hospitals (86%) completed the MTK survey. Six used all components, five some, and one none. Those who implemented the MTK cited flyers and slides as most useful and preferred the AMS flyer. Although available, only 55% of hospitals affirmed provider algorithm use.

Conclusion. Post-EC, less patients with a PUC had NUS, those with NUS were less likely to be treated, and those with AMS alone received less empiric therapy. MTK implementation appeared to impact ASB treatment, and perhaps, testing. Lower use of the testing algorithm may signal a need for simplification. More data are needed to identify the optimal component.

Disclosures. All authors: No reported disclosures.

235. If Symptoms Aren’t Described, Antibiotics Aren’t Prescribed: Implementation of a Multifaceted Toolkit Targeting Overtreatment of Asymptomatic Bacteriuria across a Large Health-system

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Background. Antibiotic resistance is a global public health problem. The American College of Physicians (ACP) recommends that clinicians limit the use of antibiotics for patients with no symptoms (NUS) or with altered mental status ( AMS) alone as the only presenting symptom.

Methods. Asymptomatic bacteriuria (ASB) is defined as the presence of bacteria in the urine in the absence of symptoms, and is the most common source of urinary tract infection (UTI) in hospitalized patients. In the presence of symptoms, antibiotics are indicated, but in the absence of symptoms, antibiotics should not be prescribed. We sought to determine the extent to which the symptom of urinary tract infection was described when circumstances warranted the absence of symptoms. We conducted a retrospective cohort study of hospital inpatients. The hospital’s ASP reviewed charts of all patients admitted during the study period and identified patients admitted with a positive urine culture who were treated for symptoms of urinary tract infection but with symptoms that did not indicate UTI.

Results. Of the 223 patients included in the analysis, 134 were in the 10-month historic group (October 2016–July 2017) and 89 were in the 5-month postintervention (PI) group (August 2017–January 2018). The PPI fired for 86% (n = 77) of patients in the PI group. Average time to appropriate therapy for all SAB patients and patients with MSSA significantly improved following the intervention (35.1 ± 20.4 hours, P = 0.004; 53.2 ± 30.3 hours, P = 0.001). During the intervention phase, therapy was more frequently changed between the time of Verigene results and antibiotic susceptibilities (77.6% vs. 86.5%, P = 0.254). The rate of ID consult also significantly improved following the intervention (89.6% vs. 97.8%, P < 0.02).

Conclusion. Implementing an ASP BPA and education on interpretation of Verigene results for SAB significantly improved time to appropriate therapy for all patients with SAB, patients with MSSA bacteremia, and rate of ID consult.

Disclosures. All authors: No reported disclosures.

236. The Impact of Earlier Intervention by an Antimicrobial Stewardship Team on Appropriate Antimicrobial Therapy for Specific Antimicrobial Agents

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Session: 51. Antimicrobial Stewardship: Interventions to Improve Outcomes

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Background. The optimal timing of intervention to obtain significant effects with regard to the consumption of antimicrobial agents or antimicrobial-resistant bacteria in facilities that lack the manpower to maintain an antimicrobial stewardship team (AST) is not well-known.

Methods. An observational retrospective study was performed at Fukuoka University Hospital between April 1, 2013 and March 31, 2016 to evaluate the optimal timing of intervention on appropriate antimicrobial therapy for specific antimicrobial agents, including broad-spectrum antimicrobial agents (piperacillin–tazobactam, carbapenems, fluoroquinolones) and anti-MRSA (vancomycin, teicoplanin, daptomycin, and linezolid) agents. In period 1, interventions were performed for patients using specific antimicrobial agents for >14 days. In period 2, interventions were performed for patients using anti-MRSA agents, and in period 3, interventions were performed for patients using any specific antimicrobial agents, regardless of the days of use, on a weekly basis. The effects on antimicrobial use, the antimicrobial-resistant bacteria, and the clinical outcomes among the three periods were compared.

Results. Preliminary pre- and post-EC data from the same 14 hospitals are shown. Patients with NUS decreased slightly post-EC, while those with AMS alone received less empiric therapy.

Figure 1. MTK Components

Figure 2. Patient Symptoms Pre- and Post-EC

Twelve hospitals (86%) completed the MTK survey. Six used all components, five some, and one none. Those who implemented the MTK cited flyers and slides as most useful and preferred the AMS flyer. Although available, only 55% of hospitals affirmed provider algorithm use.

Conclusion. Post-EC, less patients with a PUC had NUS, those with NUS were less likely to be treated, and those with AMS alone received less empiric therapy. MTK implementation appeared to impact ASB treatment, and perhaps, testing. Lower use of the testing algorithm may signal a need for simplification. More data are needed to identify the optimal component.

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health record (EHR) of patients discharged on oral antibiotics from the Medical Service at the William S Middleton VA Hospital for appropriateness of antibiotic choice and total duration of therapy. Depending on availability of team members, reviews occurred twice weekly and included patients discharged within the previous 4 days. If an antibiotic was felt to be inappropriate, the case was discussed with the prescribing service and pharmacist. Recommendations were documented in the form of a note placed in the EHR with an emphasis on education. These interventions were logged and information regarding prescribing team/provider, antibiotic, indication, and type of intervention was collected. Intervention types included (but were not limited to) antibiotic stop, change of antibiotic, dose, or duration of therapy, and laboratory recommendations.

**Results.** Stewardship rounds evaluated 463 patients discharged on oral antibiotics from the Medical Service over 177 hospital days. Forty-one interventions were logged in 88 (8.2%) patients, i.e., approximately 1 intervention for every 12 patients. The most common intervention type was antibiotic stop (49%), followed by a change in duration (15%). Interventions occurred most commonly in patients treated for COPD (27%), UTI (22%), and pneumonia (15%). Azithromycin (27%), cefpodoxime (12%), and trimethoprim–sulfamethoxazole (12%) were the antibiotics most frequently intervened upon.

**Conclusion.** Assessing postdischarge antibiotic therapy with feedback to prescribers is an additional area where Stewardship programs can focus to better optimize usage of antimicrobials.

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

238. Sharing Unit-Specific Stewardship Metrics With Front-line Providers to Improve Antibiotic Prescribing
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**Session:** 51. Antimicrobial Stewardship: Interventions to Improve Outcomes
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**Background.** Inpatient antimicrobials are estimated to account 30–50% inappropriate and novel antimicrobial stewardship (AS) strategies to engage prescribers are needed. The objective of this study was to describe the implementation of a customized antibiotic use and outcome report with family medicine (FAM) providers and the impact on prescribing behaviors for routine infections in hospitalized adults.

**Methods.** Single-center quasiresearch before and after AS/FAM collaborative intervention. January–March 2017 Standard of Care: routine audit and feedback. FAM leadership worked with AS pharmacists to design reporting process. January–March 2018 Monthly Interventions: reports of antimicrobial use, appropriateness, harms and successes; handheld prescribing tools/guidelines. Consecutive admissions to the adult FAM ward with respiratory, urinary, and skin infections were evaluated.

**Results.** Patients (n = 150, 76 pre/post, 74 post) were similar in age, comorbid conditions, and antimicrobial indications (Figure 1). Following intervention, unnecessary antibiotic interventions increased from 25% to 58% (P < 0.001). Narrow-spectrum agents increased from 41% to 59% (P = 0.005) while use of broader spectrum antibiotics (57 vs. 48%) and extended spectrum antibiotics (57 vs. 44%) were not significantly different in the cohort. Guideline concordant duration of therapy improved from 37% to 75% (P < 0.001). Consecutive unit-wide DOTS of broad extended agents decreased (Figure 2).

**Conclusion.** Reporting unit-specific antimicrobial use, harms and successes, without change in standard audit and feedback, improved antimicrobial prescribing and quality of care. These findings support the need to engage front-line providers like FAM in stewardship interventions and reporting.

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239. Implementation of a Vertical Antimicrobial Stewardship Intervention for Patients Colonized with Clostridium difficile
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**Session:** 51. Antimicrobial Stewardship: Interventions to Improve Outcomes
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**Background.** Clostridium difficile remains a pathogen of importance as global infections steadily rise. While traditionally thought of as a nosocomial infection, *C. difficile* prevalence is increasing in the community. This may be due partly to asymptomatic gastrointestinal colonization with *C. difficile*. Disruption of the gut microbiome in colonized patients (patients) through the use of antibiotics (ABX) and acid-suppressive therapy (AST) may lead to active colitis. In an effort to prevent progression to active disease, a novel vertical antimicrobial stewardship (AMS) intervention was initiated at our hospital on May 1, 2017. This study aims to describe our experience with this intervention.

**Methods.** This single-center, descriptive study evaluated the impact of a vertical AMS intervention for patients colonized with *C. difficile* as identified by surveillance nucleic acid amplification test (NAAT) upon hospital admission. Between May 1 and December 10, 2017, patients on five units (two hematology/oncology (HO), solid-organ transplant (SOT), intensive care unit (ICU) and medicine ward (MED)) were screened, with surveillance results reported to the AMS team. Positive results prompted the AMS pharmacists to evaluate patients for potential ABX and AST de-escalation interventions (INTV) daily until discharge.

**Results.** Of the 37 patients who developed active colitis, ABX INTVs were made on 6 (16%) with 33% acceptance and AST INTVs were made on 10 (27%) with 50% acceptance.

**Conclusion.** The rate of progression from colonization to colitis was low in all patient populations studied, despite high rates of ABX and AST use. Further research into what causes progression from colonization to colitis is needed.

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

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