Session: 51. Antimicrobial Stewardship: Interventions to Improve Outcomes
Thursday, October 4, 2018: 12:30 PM

Background. Upper respiratory infections (URIs) are a source of unnecessary antibiotic use in the USA.1 To address antibiotic overuse in our clinics, we participated in a multiphase stewardship collaborative established by the United Hospital Fund. We aimed to pilot stewardship policies for adult URIs at the Montefiore Medical Group (MMG) practices in Bronx, New York.

Methods. Phase 1: evaluation of provider use of ICD-10 codes for URIs generally not requiring antibiotics at target sites (TS) with random chart abstraction validation. Phase 2: implementation of stewardship interventions (Table 1). Prescribing patterns were evaluated using electronic health record data at the end of Phase 2 comparing TS (n = 6; two resident clinics, four nonresident clinics) to the prior year and to non-target sites (NTS) (n = 13).

Results. There were 6,819 visits of interest from October 2017 to February 2018 within MMG. Top three codes utilized are shown in Figure 1. TS prescribing declined postintervention and compared with NTS (Table 2). Nonresident TS participated in four interventions, and resident TS were involved in 2–3. Macrolides were the most utilized antibiotic class (Figure 2).

Conclusion. We attribute the decline in prescribing at TS to the collective impact of our stewardship activities. Stewardship team driven interventions had better uptake than provider-driven initiatives. We plan to continue activities with the highest uptake of our stewardship activities. Stewardship team driven interventions had better uptake than provider-driven initiatives. We plan to continue activities with the highest uptake and feasibility. Long-term goals include development and integration of stewardship metrics into our outpatient quality structure.

Reference
1. Shapiro DJ, Hicks LA, Pavia AT, Hersh AL. Antibiotic prescribing for adults in ambulatory care in the USA, 2007–2009. J Antimicrob Chemother. 2014;69(1):234–40.

Table 1: Phase 2 Interventions and Uptake

| Interventions                      | Intended Clinic Uptake |
|------------------------------------|------------------------|
| Provider Lectures                  | 5/5                    |
| Provider Report Card               | 6/6                    |
| Viral Prescription pad             | 0/6                    |
| Commitment Poster                 | 5/6                    |
| Follow-up Phone Calls to Patients  | 0/2                    |
| Educational Email to Patients      | 4/4                    |
| In-office Video Session with Patients | 1/1                |
| Waiting Room Video                 | 3/6                    |

Table 2: Prescribing Rates for Top 3 URI ICD-10 Codes

| Antibiotics Prescribed (%) | P-value* |
|----------------------------|----------|
| TS—October 2017–February 2018 | 435 (17%) | 0.0001 |
| TS—October 16–February 17 | 633 (25%) | 0.0001 |
| NTS—October 17–February 18 | 736 (25%) | 0.0001 |

*Comparing to October 17–February 18 TS; χ² used.

Disclosures. All authors: No reported disclosures.
220. Taking Off With Antimicrobial Intervention Rounds (AIR): Successes of a Pilot Stewardship Service at a Tertiary-Care VA Medical Center
Utken Akpolat, Pharm.D., BCPS1; Roberto Vlaisailides, MD, PhD2; Robin Jump, MD, MPH3; and Usha Stielff, MD, MPH3,4. Louis Stokes Cleveland Department of Veterans Affairs Medical Center, Northeast Ohio VA Healthcare System (NOVANS), Cleveland, Ohio. 1Case Western Reserve University School of Medicine, Cleveland, Ohio; 2Geriatric Research Education and Clinical Center (GRECC), Louis Stokes Cleveland Department of Veterans Affairs Medical Center, Cleveland, Ohio.

Session: 51. Antimicrobial Stewardship: Interventions to Improve Outcomes
Thursday, October 4, 2018: 12:30 PM

Background. Prospective audit and feedback is one of the core strategies of an antimicrobial stewardship program (ASP). Here, we hypothesized that the addition of AIR to our extant ASP would enhance appropriate use of parenteral (IV) antibiotics (ABs) on a large inpatient medical service.

Methods. Adult patients on medicine wards beginning in October 2017 and not followed by the infectious diseases (ID) service were included for stewardship intervention if they were on IV ABs ≥48 hours. Recommendations were classified into: (1) duration of therapy; (2) dose adjustment; (3) IV to oral conversion; (4) adverse event prevention; (5) AB avoidance; (6) anti-pseudomonal or (7) vancomycin de-escalation; (8) AB discontinuation; (9) ID consult; (10) alternative AB; (11) allergy assessment; or (12) diagnostics. Early impact of the interventions was assessed after 3 months via the Standardized Antimicrobial Administration Ratio (SAAR) and compared with the 3-month pre-AIR period. The SAAR is used to benchmark facilities’ AB use against those of similar complexity; SAAR = 1 indicates that observed = predicted use.

Results. For 158 interventions made, the most common syndromes were pneumonia (41%), skin and soft tissue (29.4%), and urinary tract infections (17.7%). Intervention categories other than 4, 9, and 11 had acceptance rates >85% (Figure 1). The SAAR decreased from the pre- to post-AIR period in terms of agents for: broad-spectrum use in HAI (SAAR relative ratio [RR]: 0.80, 95% CI [0.73–0.88]); MRSA (SAAR RR: 0.81, 95% CI [0.76–0.91]); and all indications (SAAR RR: 0.86, 95% CI [0.82–0.90]). During the same periods, surgical wards without AIR showed no Δ in AB use.

Conclusion. The majority of AB use recommendations delivered by a pharmacist-physician stewardship team were highly accepted by medical providers and led to a 15–20% decrease in overall AB use, without adverse effect during the immediate postintervention period. Potential clinical benefits, such as decreased rates of Clostridium difficile disease, will need to be measured as the AIR program advances. It is worth noting that interventions for AB allergy assessment were least accepted by providers, possibly due to time required to comply. Design of prospective audit and feedback programs may need to address this potential deficiency.

Disclosures. All authors: No reported disclosures.

221. Save the Quinolones! Impact of a Non-Restrictive Fluoroquinolone Reduction Initiative on Antibiotic Resistance at an Urban Teaching Hospital
Steven Smoke, PharmD1; Slava Plotkin, PharmD2; Neeki Patel, PharmD2; Adriana Gregoria, MD1 and Maria DeVivo, PharmD3. Pharmacy, Jersey City Medical Center, Jersey City, New Jersey; Medicine, Jersey City Medical Center, Jersey City, New Jersey.

Session: 51. Antimicrobial Stewardship: Interventions to Improve Outcomes
Thursday, October 4, 2018: 12:30 PM

Background. The use of fluoroquinolones, one of the most commonly used antibiotic classes in the United States, is associated with adverse drug events, Clostridium difficile infection and antibiotic resistance in Staphylococcus aureus and other Gram-negative bacilli. Many hospitals have instituted resource-intensive interventions to minimize fluoroquinolone use. In hospital settings with fewer resources, education and awareness campaigns offer a more feasible approach. The purpose of this study was to assess the impact of a nonrestrictive fluoroquinolone reduction initiative on inpatient antibiotic resistance.

Methods. This is a retrospective pre- and postinterventional ecological study. The fluoroquinolone reduction initiative consisted of house staff education on risks of fluoroquinolone use and alternatives. Buttons promoting “Save the Quinolones” were also distributed and worn to increase visibility. The preintervention period and postintervention periods were February 2016 to December 2016 and February 2017 to December 2017, respectively. The primary outcome measure was the percentage of S. aureus susceptible to oxacillin isolated before and after the intervention. Secondary outcome measures were the rate of fluoroquinolone use, and the percentages of Escherichia coli, Proteus mirabilis, Klebsiella pneumoniae, and Pseudomonas aeruginosa susceptible to levofloxacin. Antibiotic use data were collected as inpatient intravenous antibiotic days per 1,000 patient-days (DOT/1,000 patient-days). Chi-square test was used to compare outcomes.

Results. In the postintervention period, fluoroquinolone use decreased from 75 to 40.1 DOT/1,000 patient-days (~34.9, 95% CI [37.3–32.5, P < 0.001]). S. aureus susceptibility to oxacillin increased from 47.2% to 55.2% (difference 8.0%, CI 1.2 to 14.7, P = 0.02). P. aeruginosa susceptibility to levofloxacin increased from 60% to 70.7% (difference 10.7, 95% CI 0.8 to 20.6, P = 0.04). No difference in susceptibility rates of E. coli, P. mirabilis or K. pneumoniae was detected.

Conclusion. A nonrestrictive fluoroquinolone reduction initiative led to a significant decrease in fluoroquinolone use. This was associated with decreased antibiotic resistance in S. aureus and P. aeruginosa.

Disclosures. All authors: No reported disclosures.

222. The Impact of Education and Prospective Audit and Feedback on Reducing Ciprofloxacin Utilization at a Small Community Academic Hospital
Alyssa M. Thompson, PharmD1; Jason G. Newland, MD, MEd2; Helen Newland, PharmD1; Jennifer Feldmann, MSN, ACNP-BC3 and Stephen Y. Liang, MD, MPH4.
1Barnes-Jewish West County Hospital, Creve Coeur, Missouri; 2Washington University School of Medicine, St. Louis, Missouri; 3Center for Clinical Excellence, BJC HealthCare, St. Louis, Missouri.

Session: 51. Antimicrobial Stewardship: Interventions to Improve Outcomes
Thursday, October 4, 2018: 12:30 PM

Background. Fluoroquinolones have been associated with severe and even disabling side effects. Increasing resistance has rendered these agents less favorable for empiric therapy. In light of these concerns and in response to a period of above-average use at a small community-based academic hospital, we implemented a quality improvement initiative to reduce utilization of ciprofloxacin.

Methods. The multidisciplinary Antibiotic Stewardship Program (ASP) at Barnes-Jewish West County Hospital, a 77-bed facility, developed and disseminated guidelines for ciprofloxacin use to all physicians via an electronic newsletter and in-person meetings with provider groups identified as having high ciprofloxacin utilization rates beginning in June 2017. Included in the guidelines were recommendations for more effective, safer alternatives to ciprofloxacin for common infection types. In December 2017, the ASP pharmacist initiated prospective audit and feedback (PAF) for all ciprofloxacin orders. Ciprofloxacin utilization was measured monthly in days of therapy (DOT)/1,000 patient-days utilizing medication administration data. Patient days were determined according to National Healthcare Safety Network (NHSN) conventions.

Results. During the preintervention period (June 2015 to June 2017), ciprofloxacin utilization rates averaged 73.3 DOT/1,000 patient-days, but in May 2017, use increased to 138.3. Following provider education, average utilization decreased to 56.9 DOT/1,000 patient-days from September 2017 to November 2017. With the addition of PAF, average ciprofloxacin utilization decreased to 43.6 DOT/1,000 patient-days from December 2017 to March 2018, a 41% reduction compared with the preintervention period. Utilization of other fluoroquinolones did not increase.

Conclusion. Education was a useful tool in reducing inappropriate ciprofloxacin use; however, a combination of prospective audit and feedback with education achieved the greatest impact on curbing ciprofloxacin use. This multimodal approach was effective and sustainable at a small hospital with limited antibiotic stewardship resources.

Disclosures. J. G. Newland, Merck: Grant Investigator, Research grant.

223. Impact of Different Stewardship Strategies Applied to a Single Antibiotic Over Time
Katherine Lasardi, PharmD, BCPS-AQ ID1; Ryan Dare, MD, MS2; 1Hospital Pharmacy, University of Arkansas for Medical Sciences, Little Rock, Arkansas and 2Division of Infectious Diseases, University of Arkansas for Medical Sciences, Little Rock, Arkansas.

Session: 51. Antimicrobial Stewardship: Interventions to Improve Outcomes
Thursday, October 4, 2018: 12:30 PM

Background. Recommended strategies for antimicrobial stewardship (AMS) include prospective audit with feedback (PAF) and preauthorization (PA). Depending on hospital culture, initiation of PA can be difficult. The impact of various single AMS strategies on antibiotic consumption has been described, although the impact of several strategies over time has not been reported.

Methods. At an academic institution, the impact of various AMS strategies on daptomycin utilization was evaluated over time. A progression of four different approaches was used for restriction: Period 1 (P1): September 2012–June 2013—PAF. Period 2 (P2): July 2013-January 2016—8-day automatic stop. Period 3 (P3): February 2017–January 2018—Preauthorization stop. Period 4 (P4): January 2018–May 2018—PA. Transition to each strategy was supported by a policy change, approved through the Pharmacy and Therapeutics Committee and Hospital Medical Board. During P1–3, reserved medication orders were reviewed daily by AMS with recommended interventions when appropriate and providers were notified of pre-set stop dates (P2–3). During P4, ordering providers were required to...