Prevalence of antibiotic use in a Family Medicine practice

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Background

Antibiotic Stewardship is a valuable strategy to mitigate the spread of antibiotic resistance and prevent antibiotic-related toxicities.

- The Infectious Disease Society of America (IDSA) has guidelines for institutional antimicrobial stewardship programs
- Little guidance for adapting these for outpatient practices **[1]**
- Local surveillance of antibiotics us a strategy to reduce AMR **[2]**

According to the CDC, there were 269.4 million antibiotic prescriptions in the US in 2015

- 838 antibiotic prescriptions/1,000 Americans
- Most common classes include: penicillin (23%), macrolides (23%), cephalosporins (14%).
- Over 80% of antibiotic prescriptions originate from outpatient practices
- Estimated 30% of outpatient antibiotics are unnecessary **[3]**

Despite high prescribing rates, there remains a lack of awareness about prescribing trends in primary care

Objectives

This project aims to describe antibiotic prescribing rates at the University of Maryland Family Medicine Practice.

Primary Objective: Rate of antibiotic prescriptions per primary care visit between 1/1/17-1/1/18.

Secondary Objectives:

- To classify the most commonly prescribed antibiotics by drug class
- To characterize the most common diagnoses resulting in antibiotic prescriptions

Methods

This study was a retrospective chart review of patients who received an antibiotic prescription between January 1, 2017 and January 1, 2018, from University of Maryland Family Medicine Practice (UFM). The number of total patient visits at the practice was obtained through billing records. All patients less than 90 years old were included in the study. Data collected included patient demographics and comorbidities; number of visits and season for visits that resulted in an antibiotic prescription; medication, dose, and route of administration for each antibiotic prescribed; and indication for use based on ICD-10 billing codes. Antibiotics were categorized by drug class. Data was analyzed using descriptive statistics.

Results

- 1,548 antibiotic prescriptions for 1,126 individual patients out of 28,905 visits during the 12-month period (53 antibiotic prescriptions per 1,000-visits).
  - 8% of patients prescribed an antibiotic were not see for an in-office visit.
- Most commonly prescribed classes of antibiotics: macrolides (22.73%), penicillin (17.65%), nitrofurantoin (9.56%), Bactrim (9.43%), and fluoroquinolones (9.29%).
- Most common diagnoses associated with antibiotic prescriptions: genitourinary infections, respiratory infections, skin and soft tissue infections, eyes-ear-nose-throat infections, and sexually transmitted infections.
- Highest prevalence of antibiotic prescribing was noted in age groups 25-34 years old and 55-64 years old.
- One-third of the antibiotics were prescribed in winter, while spring and summer contributed to one-quarter of the total antibiotic prescriptions.

Figures

Figure 1: **Number of Visits**

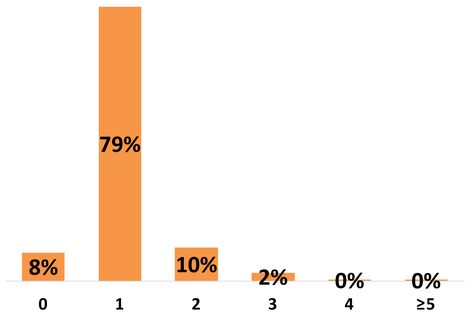


Figure 2: **Total Antibiotics Prescribed by Drug Class**

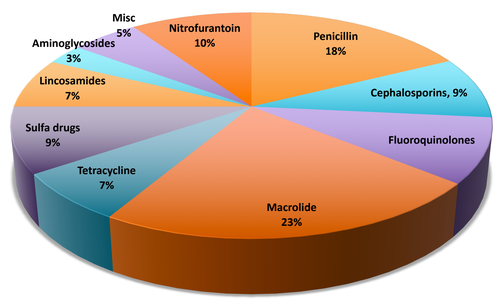


Figure1:

Figure 3:

Antibiotic Use by Gender

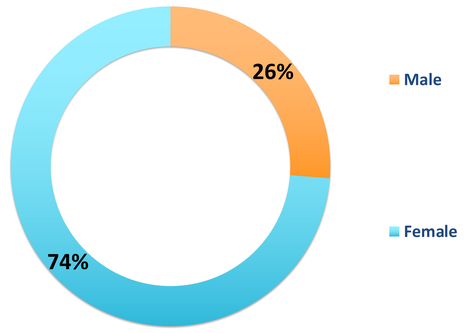


Figure 4: **Diagnoses per Antibiotic Prescription**

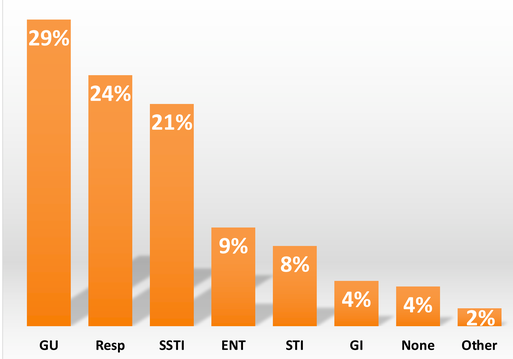


Figure 6: **Antibiotic Use by Season**

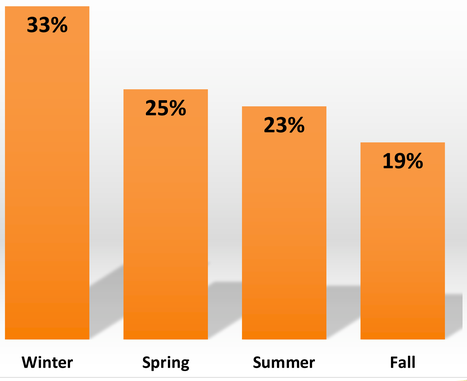


Figure 5: **Number of Comorbidities**

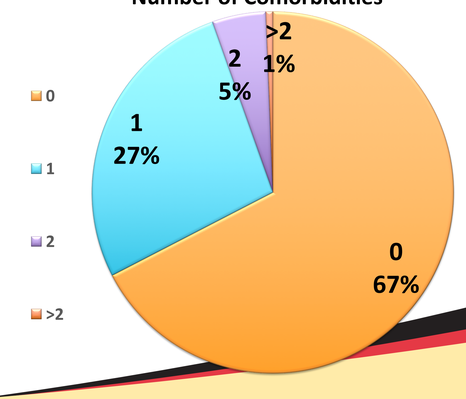
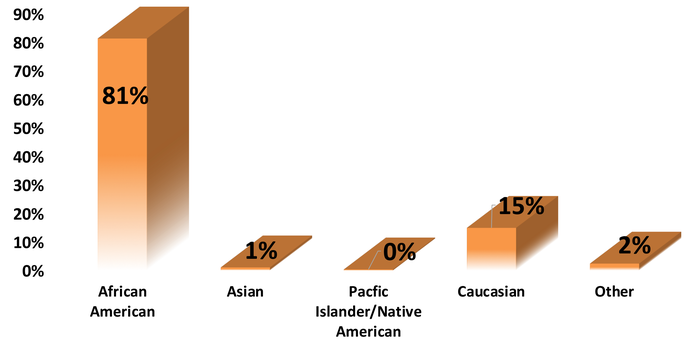


Figure 7: **Antibiotic Prescriptions per Race**



Conclusions

The antibiotic prescribing rate for this practice was noticeably lower than prior national reports. Macrolides and penicillins were the most common antibiotic classes used at this practice as well as in prior national reports, though we saw less cephalosporin usage and a higher proportion of nitrofurantoin, sulfa-drug, and fluoroquinolone prescriptions. This study provides insight into antibiotic use in a primary care practice and helps direct future antibiotic stewardship projects. Future research is necessary and in development to assess the appropriateness of antibiotic use for the most common diagnoses.

Bibliography

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3. Sanchez GV, Fleming-Dutra KE, Roberts RM, Hicks LA. Core Elements of Outpatient Antibiotic Stewardship. MMWR Recomm Rep 2016;65(No. RR-6):1–12

Notes

Authors of this presentation have the following to disclose concerning possible financial or personal relationships with commercial entities that may have a direct or indirect interest in the subject matter of this presentation.

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