Results. A total of 3,776 patients were included in the final analysis (2,706 with CAP, 1,070 with HCAP). 69% (2,586/3,776) of patients received excess antibiotic duration (Figure 1). Antibiotics prescribed at hospital discharge accounted for 52% of total and 94% of excess antibiotic days. Factors associated with excess duration included: identification of bacterial pathogen (OR 1.9, 95% CI: 1.3, 2.8), more signs of pneumonia (OR 1.2, 95% CI: 1.1, 1.3 per sign), and uncomplicated CAP (OR 2.7 vs. HCAP). Comorbid heart failure was protective (OR 0.8, 95% CI: 0.6, 0.9). Hospitals varied widely with even the top performing hospital over-treating half of patients (Figure 2).

There were no differences in any outcome for patients receiving excess vs. appropriate antibiotic duration.

Conclusion. Most hospitalized patients with pneumonia receive an excess antibiotic duration. CAP and antibiotics prescribed at discharge are major sources of excess use and thus key targets for stewardship.

![Figure 1. Proportion of Patients Who Received an Excess Antibiotic Duration](image1)

![Figure 2. Proportion of Patients who Received an Excess Antibiotic Duration by Hospital](image2)

Disclosures. All authors: No reported disclosures.

Discussion. A national goal has been set to decrease inappropriate antibiotic use by 2020. To quantify decreases in use, consumption metrics and benchmarking strategies were calculated. The relationship between increased or decreased antibiotic use and appropriateness should be a focus in future efforts. Once the link between use and appropriateness is known, interventions can target specific use periods to maximize benefit of the intervention.

1871. Identifying Time Periods of High and Low Vancomycin Use

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Background. Most hospitalized patients with pneumonia receive an excess antibiotic duration. CAP and antibiotics prescribed at discharge are major sources of excess use and thus key targets for stewardship.

Results. Vancomycin use averaged 70.3 AD per 1,000 DP at NM, 89 at UM, and 153.8 at HF. Regression models indicated HF and UM consumption decreased at a monthly rate of 1.2 AD per 1,000 DP and 0.1 AD per 1,000 DP, respectively, whereas NM use increased at a rate of 0.1 AD per 1,000 DP over the study period. Overall, we identified n = 6, n = 5 and n = 6 vancomycin increased use months and n = 7, n = 6 and n = 5 decreased use months at NM, UM and HF, respectively.

Conclusion. Our methodology identified a total of 17 potential instances of increased and decreased use periods for vancomycin. Patient-specific and/or hospital-level factors may contribute to inappropriate vancomycin use and requires further study. The relationship between increased or decreased antibiotic use and appropriateness should be a focus in future efforts. Once the link between use and appropriateness is known, interventions can target specific use periods to maximize benefit of the intervention.

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1872. Antimicrobial Utilization Variability Among Training Services at an Academic Medical Center

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Background. The general medicine (GMed) and hospitalist (Hosp) services use antimicrobials at a relatively high rate among our teaching services. It is currently unknown if there is a difference in antimicrobial prescribing between various learner levels or attending type at our institution.

Methods. We measured antimicrobial utilization between January 1, 2016 to April 22, 2018 (2.25 years) in our GMed services. Services are divided by resident-led and hospitalist only services. The GMed service is staffed by outpatient internists, the GMed2 service is split between gynecologists and hospitalists, and the GMed3 service is only hospitalists. The "A" service is junior residents while the "B" is senior residents. We measured utilization using the WHO defined Days of Therapy (DOT) definition normalized per 1,000 patient-days (PD). Secondary analysis based on antibiotic breadth and route were analyzed by average DOT/1,000 patient-days.

Results. GMed services prescribed at a higher rate of DOT than hospitalist services over the study timeframe (809 vs. 645, p < 0.0001). Junior resident-led services (A) used more antimicrobials than senior resident-led services (B) (894 vs. 606, P < 0.0001). There were no significant prescribing differences between the 1, 2, and 3 services by different attending roles (840 vs. 775 vs. 797). Similar trends continue in secondary analysis with hospitalists prescribing a lower average DOT/1,000 PD of broad-spectrum antibiotics and A services prescribing higher rates of broad-spectrum, anti-MRSA, and anti-Pseudomonal therapy compared with B services (Table 1).

Table 1: Secondary Analysis of Antimicrobial Breadth by Service (Mean Days of Therapy/1,000 PD)

| Service          | Gen Med (All) | Gen Med 1 | Gen Med 2 | Gen Med 3 | Gen Med 4 | Gen Med 5 | Gen Med 6 |
|------------------|---------------|-----------|-----------|-----------|-----------|-----------|-----------|
| Broad spectrum   | 10.9          | 11.5      | 13.4      | 13.0      | 12.0      | 13.5      | 9.8       |
| Narrow spectrum  | 10.1          | 11.7      | 11.9      | 12.2      | 11.5      | 11.8      | 8.8       |
| Anti-MRSA therapy| 9.7           | 12.7      | 13.2      | 12.0      | 14.9      | 14.9      | 9.4       |

Conclusion. Antimicrobials were prescribed at a significantly higher rate in services associated with trainees than those without. Junior resident-led services prescribed at a significantly higher rate than services-led by a senior resident. Interventions to reduce unnecessary antimicrobial exposure should be targeted toward learners, especially junior trainees.

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1873. Next Steps in Predicting Anti-MRSA Antibiotic Prescribing

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1875. Many Different Antibiotic Regimens Are There and Which Are Emerging and Declining?

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Background. Antibiotic use metrics are utilized by antimicrobial stewardship programs to benchmark performance against peer institutions and inform stewardship efforts. Benchmarking requires risk adjustment for patient- and facility-level factors so that remaining differences are attributable only to prescribing practices. Antibiotics for the treatment of methicillin-resistant Staphylococcus aureus (MRSA) are one of the most frequently used drug classes. Our objective was to identify predictors of anti-MRSA antibiotic use in a nationwide network of hospitals.

Methods. We used data from inpatient encounters at facilities participating in the Vizient database between January 1, 2016 and December 31, 2016. The outcome, anti-MRSA antibiotic use, was calculated as days of therapy per patient-days present for each encounter. We constructed a multivariable negative binomial regression model and assessed the following predictors for inclusion: age, sex, race, ethnicity, diagnosis related groups (DRGs), ICU days, admit month, facility bed size, facility teaching status, and region. A clinical framework was used to categorize DRGs based on risk of anti-MRSA antibiotic use. A backwards stepwise approach was used to identify the final model. We evaluated predictor effect size and significance, and assessed model fit using a deviance-based pseudo-R².

Results. Our final forty-five facilities representing 3,608,711 encounters met inclusion criteria. All predictors considered in our model were significant. Predictors with the greatest magnitude of association included DRG categories and patient age. The DRGs with the strongest associations were DRGs for infections likely due to Staphylococcus aureus (RR = 1.66, P < 0.0001) or for diabetes likely to require long-term MRSA coverage (RR = 1.49, P < 0.0001). The age group with the strongest association was age 2–10 years (RR = 1.64; P < 0.001). The deviance-based pseudo-R² of the final model was 0.19, indicating good model fit.

Conclusion. DRGs and patient-level characteristics can be utilized to account for variability in anti-MRSA antibiotic use beyond what is explained through facility-level characteristics. Incorporation of the significant predictors identified in this study may aid in more meaningful interhospital comparisons of anti-MRSA antibiotic use in both adults and pediatrics.

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1874. Adherence to Practice Guidelines for Treating Diabetic Foot Infections: An Opportunity for Syndromic Stewardship

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Background. Adherence to the Infectious Diseases Society of America (IDSA) guidelines for the treatment of diabetic foot infections (DFIs) has been associated with improved outcomes. However, compliance with these guidelines has been reported to be low. We initiated a quality improvement project aimed at improving guideline adherence for DFI management. Baseline results are reported here.

Methods. We reviewed all hospitalized primary DFIs newly initiated on antibiotics from July 2014–June 2015. We collected demographics, DFI severity per IDSA guidelines, antibiotic use, and microbiology data. Guideline adherence for culture and empiric antibiotic choice (based on severity) was assessed per IDSA guidelines. We then created an institutional guideline and electronic order set with built-in IDSA guidelines for the treatment of diabetic foot infections (DFIs) has been associated with.

We initiated a quality improvement project aimed at improving guideline adherence for culture and empiric antibiotic choice (based on severity) was assessed per IDSA guidelines. We then created an institutional guideline and electronic order set with built-in IDSA guidelines for the treatment of diabetic foot infections (DFIs) has been associated with.

Conclusion. While there was a large number of distinct regimens, there was a relative handful of antimicrobial regimens that were shared between VAMCs. Approximately 20% of the inequality present can be accounted for by variation between VAMCs. Table 2 describes the top 10 rising and the top 10 declining regimens.

Table 2. Top 10 rising and declining antibiotic changes by percentage in higher (p<0.05)

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1876. Patient- and Hospital-Level Factors and Outcomes Associated With Treatment of Asymptomatic Bacteriuria in Hospitalized Patients: A Multi-Hospital Cohort Study

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