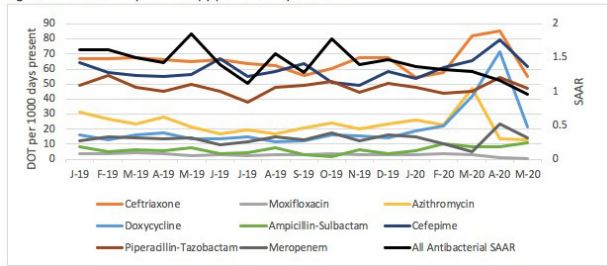


Figure 2

Figure 2. Antibiotic Days of Therapy per 1000 Days Present



Conclusion: We observed increased utilization of multiple antibiotics during the COVID-19 surge, and reduction in the all-antibacterial SAAR after the surge. More robust information is needed to promote optimal antibiotic use for patients with COVID-19 infections.

Disclosures: All Authors: No reported disclosures

210. Vancomycin Infusion Frequency and Intensity: Analysis of Real-World Data Generated from Automated Infusion Devices

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Session: P-8. Antimicrobial Stewardship: Trends in Antimicrobial Prescribing

Background: Automated infusion devices captures actual infused medication administration data in real-time. Vancomycin use is now recommended to be driven by AUC (area under the curve) dosing. We evaluated automated infusion device data to depict vancomycin administration practices in acute care hospitals.

Figure 1. Distribution of vancomycin infusion dosing

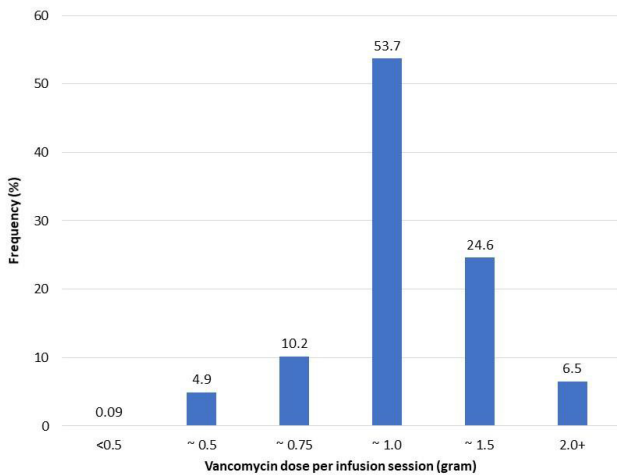
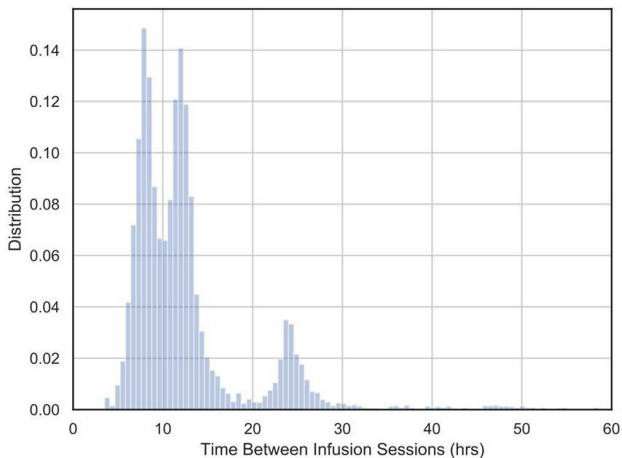


Figure 2. Distribution of time intervals between each vancomycin infusion session (mostly around 8 or 12 hours)



Methods: We analyzed archived vancomycin infusion data from 2,417 patients captured by automated infusion systems from 3 acute care hospitals. The infusion device informatics software recorded a variety of events during infusion – starting and stopping times, alarms and alerts, vancomycin dose, and other forms of timestamped usage information. We evaluated infusion session duration and dosing, using data-driven clustering algorithms.

Results: A total of 13,339 vancomycin infusion sessions from 2,417 unique adult patients were analyzed. Approximately 26.1% of patients had just one infusion of vancomycin. For the rest of the patients, the median number of infusion sessions per patient was 4; the interquartile range was 3 and 8. The most common dose was 1.0 gram (53.7%) or 1.5 gram (24.6%) (see Figure 1). The distribution of infusion session duration (hours) was 4.2% (≤ 1.0 hh); 40.1% (1.01–1.5 hh); 29.1% (1.51–2.0 hh); and 26.6% (> 2.0 hh). The dosing frequency was 39.5% (q8 hh), 42.9% (q12 hh), 11.1% (q24 hh), and 6.5% ($> q24$ hh) (Figure 2), demonstrating clinical intertreatability.

Conclusion: A considerable number of patients received just one vancomycin infusion during their hospital stay, suggesting a potential overuse of empiric vancomycin. The majority of infusion doses were between 1 to 1.5 grams and most infusion sessions were administered every 8 or 12 hours. The actual infusion duration for each dose often exceeds the prescribed 1- or 2-hour infusion orders, which may be due to known instances of infusion interruptions due to patient movement, procedures or IV access compromise. The data generated by infusion devices can augment insights on actual antimicrobial administration practices and duration. As vancomycin AUC dosing becomes more prevalent, real world infusion data may aid timely data-driven antimicrobial stewardship and patient safety interventions for vancomycin and other AUC dosed drugs.

Disclosures: Cynthia Yamaga, PharmD, BD (Employee) David L. Bostick, PhD, Becton, Dickinson and Co. (Employee) Ying P. Tabak, PhD, Becton, Dickinson and Co. (Employee) Ann Liu-Ferrara, PhD, Becton, Dickinson and Co. (Employee) Didier Morel, PhD, Becton, Dickinson and Co. (Employee) Kalvin Yu, MD, Becton, Dickinson and Company (Employee) GlaxoSmithKline plc. (Other Financial or Material Support, Funding)

211. A Comprehensive Assessment of Carbapenem Use across 90 Veterans Health Administration Hospitals with Defined Stewardship Strategies for Carbapenems

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Session: P-8. Antimicrobial Stewardship: Trends in Antimicrobial Prescribing

Background: Carbapenems are an important target for antimicrobial stewardship (AS) efforts. In this study, we sought to compare different hospital-based strategies for improving carbapenem use.

Methods: We analyzed a cohort of all patients hospitalized at Veterans Health Administration (VHA) acute-care hospitals during 2016 and mandatory survey data that characterized each hospital's carbapenem-specific AS strategy into one of three types: no strategy (NS), prospective audit-and feedback (PAF), or restrictive policies (RP). Sites that could not be classified were excluded. Inpatient carbapenem use was compared across strategies using risk-adjusted generalized estimating equations that accounted for clustering within hospitals. Two Infectious Disease (ID) physicians independently performed manual chart reviews in 425 randomly-selected carbapenem-treated cases (100 for PAF/NS and 225 for RP). Auditors assessed for the presence of ID consultation and carbapenem appropriateness on day 4 of therapy. Assessments were categorized as follows: appropriate (1), acceptable (2), suboptimal (3), unnecessary (4) and inappropriate (5). Assessment scores across strategies were compared with the Kruskal-Wallis test.

Results: There were 429,602 admissions in 90 sites (8 PAF, 24 NS, 58 RP). Median carbapenem use across sites was 17.4 (IQR 8.6–28.4) days of therapy/1,000 days-present. Inpatient carbapenem use was lower at PAF than NS sites [RR 0.67 (95% CI, 0.46–0.98); $p=0.04$] but similar between RP and NS sites [RR 0.86 (95% CI, 0.61–1.22); $p=0.41$].

Carbapenem use was considered appropriate or acceptable in 215 (50.6%) of the reviewed cases. Assessment scores were higher (i.e. worse) at NS than RP sites (mean 2.7 vs 2.3; $p<0.01$) but did not differ significantly between NS and PAF sites (mean 2.7 vs 2.5; $p=0.14$).

ID consultations were more common at PAF/RP than NS sites (51% vs 29%; $p<0.01$). ID consultations were associated with lower (i.e. better) assessment scores (2.3 vs. 2.6; $p<0.01$).

Conclusion: In this VHA cohort, AS strategies and ID consultations were associated with either less or more appropriate carbapenem-prescribing. The use of AS and ID consultations may be complementary, and hospitals could leverage both to optimize carbapenem use.

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