Table 1 – Demographics and comorbidities of patients

	N=250
Age at positive blood culture, median (IQR)	57.5 (42.5-69)
Sex, n (%)	
- Male	128 (51)
- Female	122 (49)
Race, n (%)	
- Caucasian	150 (60.0)
- Black	77 (30.8)
- Hispanic	13 (5.2)
- Other (Arabic, Asian)	4 (1.6)
- Unknown	6 (2.4)
Comorbidities, n (%)	
- Diabetes mellitus	95 (38)
- Chronic kidney disease	58 (23.2)
- Persons with intravenous drug use	32 (12.8)
- Persons with alcohol use disorder	27 (10.8)
- Chronic hepatitis C infection	27 (10.8)
- Persons experiencing homelessness	23 (9.2)
- Prednisone ≥20mg ≥3 weeks	16 (6.4)
- Cirrhotic liver disease	14 (5.6)
- Immunosuppressant drugs	15 (6)
- End stage renal disease	11 (4.4)
- SOT or BMT	6 (2.4)
- HIV with CD4< 200	5 (2)
- Chemotherapy within 30 days	5 (2)
- Hematological malignancy (Leukemia/Lymphoma/multiple myeloma/myelodysplastic syndrome)	5 (2) 4 (1.6)
Infectious syndrome, n (%)	
- Cellulitis	143 (57.2)
- Pneumonia	50 (20)
- Abscess	35 (14)
- Septic arthritis	25 (10)
- Toxic shock syndrome	20 (8)
- Osteomyelitis	21 (8.4)
- Necrotizing Fasciitis/Myositis	18 (7.2)
- Endocarditis	16 (6.4)
- None/unknown	11 (4.4)
- Peritonitis	8 (3.2)
- Otitis	3 (1.2)
- Other	28 (11.2)

Table 2 - Microbiologic characteristics and treatment regimens

	N=250
Clindamycin Susceptibility, n (%)	
- Clindamycin Susceptible[1]	171 (68.4)
- Clindamycin Resistant or inducible resistance	79 (31.6)
Empiric Antimicrobial Therapy Administered, n (%)	
- Vancomycin	202 (80.8)
- Cephalosporins	144 (57.6)
- Beta Lactam/Beta-Lactamase Inhibitors	74 (29.6)
- Clindamycin	20 (8)
- Carbapenems	8 (3.2)
- Penicillins	7 (2.8)
- Fluoroquinolones	5 (2)
- Linezolid	4 (1.6)
- Other[2]	69 (27.6)
Final Antimicrobial Therapy Administered, n (%)	
- Penicillins	96 (38.4)
- Cephalosporins	89 (35.6)
- Beta Lactam/Beta Lactamase Inhibitors	43 (17.2)
- Clindamycin	44 (17.6)
- Linezolid	21 (8.4)
- Vancomycin	18 (7.2)
- Carbapenems	6 (2.4)
- Other[2]	14 (5.6)
Antitoxin Therapy Administered, n (%)	
- Clindamycin	135 (54)
- Linezolid	33 (13.2)
- None	82 (32.8)
Mean Duration of Therapy, days	19.9 (range: 0-70)
Mean Duration of Antitoxin Therapy, days	3.6 (range:0-30)
IVIG administered, n (%)	
- Yes	8 (3.2)
- No	245 (98)

1 Susceptible MIC <0.25, Resistant MIC > 1
2 Macrolide, Trimethoprim-Sulfamethoxazole, Metronidazole, Aminoglycoside, Aztreonam, Tetracyclines

(38%) and chronic kidney disease (23%) were common comorbidities [Table 1]. Persons experiencing homelessness and persons who use injection drugs accounted for 9% and 13% of the cases, respectively. The most common infective syndrome accompanying bacteremia was cellulitis (57%). The majority of patients received vancomycin for empiric therapy (81%) and penicillin (38%) or cephalosporin (36%) for final regimen [Table 2]. A total of 79 GAS isolates (32%) were clindamycin resistant. Clindamycin was included in the empiric regimen of 20 (8%) patients, the final regimen in 44 (18%) of patients, and as antitoxin adjunct therapy in 135 (54%) of patients. A third (33%) of patients received no antitoxin. The average duration of antitoxin therapy was 3.6 days and antimicrobial therapy 19.9 days. The mean LOS was 11.4 days (Table 3). Thirty nine (16%) patients had treatment failure and 8 (3%) experienced C. difficile infection within 30 days of antimicrobial treatment. Thirty-day mortality was 11%; of these, 9% had in-hospital mortality. **Conclusions:** Invasive GAS infection confers significant morbidity and mortality, and ongoing

Table 3: Clinical outcomes of patients

	N=250
Mean Length of Stay, days	11.4 (range: 3-80)
Antimicrobial-related Adverse Effects, n (%)	
- None	194 (77.6)
- Thrombocytopenia	46 (18.4)
- *Clostridiodes difficilie* Infection	8 (3.2)
- Drug Rash	3 (1.2)
- Acute Kidney Injury	0 (0.0)
Discharge Disposition, n (%)	
- Home	126 (50.4)
- Rehabilitation or Nursing Facility	72 (28.8)
- Expired	22 (8.8)
- Against Medical Advice	14 (5.6)
- Long-Term Acute Care Hospital	8 (3.2)
- Hospice	7 (2.8)
Readmission within 30 days for infection-related complication, n (%)	
- Yes	37 (14.8)
- No	213 (85.2)
Clinical Outcome within 30 days, n (%)	
- Cured	140 (56)
- Relapsed/Treatment Failure	39 (15.6)
- Expired	28 (11.2)
- Unknown	43 (17.2

research is needed to determine the best treatment regimens in the era of increasing clindamycin resistance.

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Presentation Type:
Poster Presentation - Poster Presentation
Subject Category: Antibiotic Stewardship

Identifying Higher-Volume Antibiotic Outpatient Prescribers Using Medicare Part D Prescription Data — Arizona, 2021

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Background: Increased antibiotic resistance is a rising global health problem that can result from overprescribing and misusing antibiotics. The impact of antibiotic overprescribing is significant, particularly among the older adult population due to increased adverse reactions. The objective of this study is to identify higher volume antibiotic outpatient prescribers and their antibiotic prescription rates by region and provider specialties in Arizona. **Methods:** Publicly available data from the Center for Medicare and Medicaid Services Part D Prescriber database during 2021 was analyzed. Those prescribers who had beneficiaries and antibiotic claims of fewer than 11 were excluded from the analysis. Higher-volume prescribers were identified by estimating the providers who prescribed the highest 10th percentile of antibiotic volume. The cumulative percentage of antibiotic prescriptions and prescriber's antibiotic volume per 1000 beneficiaries (prescribing rate) were compared between the higher volume prescribers and lower volume prescribers by the EMS region and specialty. Median prescribing rates among prescribers were compared using the Wilcoxon rank-sum test. All analyses were performed using SAS (version 9.4; SAS Institute, NC). **Results:** The number of Arizona prescribers included in the dataset during 2021 was 27,124. After excluding prescribers with fewer than 11 antibiotic prescriptions, 14,410 prescribers were included in the analysis. These providers prescribed a total of 1,095,559 antibiotic prescriptions, with a median of 45 antibiotic prescriptions per prescriber. Thirty-nine percent of antibiotic prescriptions were written by the higher volume prescribers and prescribed a median of 236 antibiotic prescriptions. Higher-volume prescribers had a 52% higher median antibiotic prescribing rate compared with lower-volume prescribers (600 versus 396 prescriptions per 1,000 beneficiaries) ($p < 0.01$). The median antibiotic prescribing rate among higher volume prescribers was highest in the central region (602 antibiotic prescriptions per 1,000 beneficiaries) compared with other regions (581 prescriptions per 1,000 beneficiaries in the north region) ($p < 0.01$). The top two specialties that higher volume prescribers

practiced were family practice and nurse practitioners. Antibiotic prescribing rates of higher-volume prescribers were highest among dentists (1,118 prescriptions per 1,000 beneficiaries).

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Presentation Type:
Poster Presentation - Poster Presentation
Subject Category: Antibiotic Stewardship
Evaluation of a Sepsis Alert System at a Veterans Affairs Medical Center
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Background: Automated sepsis alerts have become a widely implemented screening tool aimed at early detection of clinically unstable patients. Prior research has shown mixed results depending on the type of screening tools used and the patient population studied. This study aimed to evaluate the predictive value of an alert system created for identifying patients with sepsis to determine utility in clinical practice prior to implementation. Additionally, clinical management of those with and without sepsis was compared to measure potential added benefit of this system in clinical decision making. **Methods:** A TheraDoc® software sepsis alert was generated for non-ICU patients meeting >2 SIRS criteria within a 24-hour time period (temperature >38°C or 90, respiratory rate >20 or partial pressure CO2 12,000 or 10% bands/immature cells) during March 2023. Alerts were excluded if they were duplicates (using identical criteria or a second alert within 24 hours), triggered by labs collected >48 hours prior, or death or discharge occurred before the time of alert. The primary outcome was positive predictive value (PPV) of sepsis identification, confirmed by ICD-10 codes and diagnostic studies (cultures, imaging). Secondary outcomes included clinical management (antibiotic utilization [AU] and choice, infectious disease [ID] consultations and culture collection). Antibiotics were categorized as broad-spectrum using National Healthcare Safety Network (NSHN) criteria. Secondary outcomes were compared between sepsis and SIRS without infection groups (SIRS) by chi-square analysis. **Results:** After applying exclusion criteria, 116 of 166 alerts were analyzed; 55 of 116 alerts had confirmed sepsis (PPV 47.4%). Patients with sepsis were more likely to have an ID consult (16% [9/55] vs 7% [4/61]) and cultures collected (70.9% [39/55] vs 39.3% [24/61]) compared to SIRS patients, however these differences were not statistically significant. AU was higher with confirmed infections compared to SIRS patients (94.5% [52/55] vs 32.8% [20/61], $p < 0.05$) along with use of broad-spectrum antibiotics (73% [38/52] vs 40% [8/20] $p < 0.05$). **Conclusions:** While automated alerts may enable early identification of sepsis, use of SIRS criteria alone has poor specificity, which was borne out by the low PPV in this study. Our study found that management of sepsis patients (as measured by AU and culture ordering) was better than expected and combined with the low PPV of this alert system resulted in our team rejecting widespread adoption of SIRS-based sepsis alerts.

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Presentation Type:
Poster Presentation - Poster Presentation
Subject Category: Antibiotic Stewardship
Timing Is Everything: Recognizing the Importance of Infusion Duration in Preoperative Antimicrobial Prophylaxis
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Background: For preoperative antimicrobials to be most effective in preventing surgical site infection, they must be administered early enough to reach a minimum tissue concentration that is specific to each drug. However, antibiotics have widely ranging infusion durations, from intravenous push over a few minutes to slow infusion over two hours. Heterogeneity in recommended infusion administration instructions, importance of infusion completion prior to incision, and complexity of healthcare systems present just some of the barriers to achieving appropriate preoperative antibiotic prophylaxis. We compared the percentage of infusion completion prior to case start before and after a multidisciplinary intervention. **Methods:** We performed a retrospective analysis of all patients undergoing a colorectal surgical procedure as defined by the National Healthcare Safety Network at a single university hospital from 10/19/22-10/18/23. A recognition that some antimicrobials were not finished infusing prior to surgery start prompted a multidisciplinary group including antibiotic stewardship, colorectal surgery, perioperative nursing, and anesthesiology to create and deploy an order set shortening metronidazole infusion duration from 60 to 30 minutes and initiating infusion in the preoperative area instead of the operating room. No change to the cefazolin intravenous push over 3-5 minutes was made. Goal antimicrobial infusion was defined as completed infusion within 120 minutes prior to incision, and calculations were made based on infusion start time and case start times. Rate of infusion completion was compared from the pre-intervention period to a post-intervention period from 10/19/23 through the end of the year. **Results:** For all colorectal surgeries in the pre-intervention period, 95% (n=418/440) of cefazolin doses and 0.002% (n=1/427) doses of metronidazole met goal infusion timing. At-goal infusion timing increased to 99% (n=84/85) of cefazolin doses and 68% (n=56/82) of metronidazole doses in the post-intervention period, resulting in a statistically significant improvement for metronidazole (Fischer's exact test $p < 0.00001$). The average time to metronidazole infusion completion changed from 45 minutes after procedure start to 58 minutes before procedure start. **Conclusions:** Multidisciplinary team engagement and deployment of an order set incorporating changes in duration and workflow for metronidazole infusion improved all antimicrobial preoperative infusions for colorectal procedures. Increased awareness of completing antimicrobial infusion prior to the incision may improve preoperative antimicrobial administration.
Disclosure: Lindsay Donohue: Advisor - Abbvie

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Subject Category: C. difficile
Comparison of Medicare Claims-based Clostridioides difficile infection classification to chart review using a linked cohort
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Background: Medicare claims are frequently used to study Clostridioides difficile infection (CDI) epidemiology. Categorizing CDI based on location of onset and potential exposure is critical in understanding transmission patterns and prevention strategies. While claims data are well-suited for identifying prior healthcare utilization exposures, they lack specimen collection and diagnosis dates to assign likely location of onset. Algorithms to