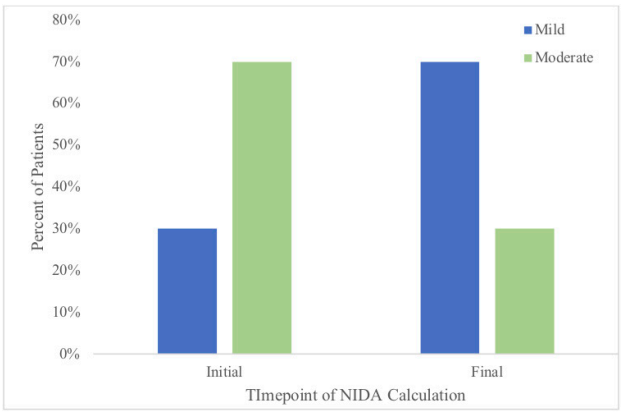
Table 2. Clinical, drug use and psychosocial outcomes among people who use drugs and received S-OPAT (N=10). Addiction severity was defined using the National Institute of Drug Abuse (NIDA) -Modified ASSIST Score.

Figure 1.



Progression of addiction severity before and after completion of self-administered outpatient parenteral antibiotic therapy pilot among patients with a history of drug use (N=10). Addiction severity was defined using the National Institute of Drug Abuse (NIDA) -Modified ASSIST Score.

Conclusion. We demonstrate that PWUD can successfully complete S-OPAT with simultaneous improvement in addiction severity and psychosocial factors. We hope to create a framework for the patient-centered administration of extended courses of antibiotics for PWUD and to advocate for the expansion of individualized approaches to extended courses of IV antibiotics for PWUD.

Disclosures. **All Authors**: No reported disclosures

613. Clinical Outcomes Following Dalbavancin Administration during Outpatient Parenteral Antimicrobial Therapy

Jessica Tuan, MD, MS[1]; Jehanzeb Kayani, MPH[1]; Ann Fisher, MD[2]; Brian Kotansky, PharmD[3]; Louise Dembry, MD, MS, MBA[4]; Louise Dembry, MD, MS, MBA[4]; Rupak Datta, MD, PhD[5]; [1]Yale University School of Medicine, New Haven, CT; [2]Yale University School of Medicine, VA Connecticut Healthcare System, West Haven, CT; [3]VA Connecticut Healthcare System, West Haven, CT; [4]Yale University, New Haven, CT; [5]Yale School of Medicine - Yale New Haven Hospital, West Haven, CT

Session: P-27. Clinical Practice Issues

Background. Dalbavancin, a lipoglycopeptide with prolonged half-life targeting Gram-positive organisms, is approved for treatment of acute bacterial skin and soft tissue infection. It reduces hospital duration in patients with barriers to short-term rehabilitation or outpatient parenteral antimicrobial therapy (OPAT). Increasing evidence supports the off-label use of dalbavancin to treat other types of infection. We conducted a quality improvement study to evaluate outcomes following dalbavancin administration.

Methods. We performed a cohort study of recipients of ≥1 dose of dalbavancin from 1/31/2016-1/31/2021 at the Veterans Affairs Connecticut Healthcare System. Demographic, comorbidity, microbiological, antibiotic duration prior to dalbavancin, indication for dalbavancin, and type of infection data were collected. Outcomes included 1) lab abnormalities: hepatotoxicity within 2 weeks of dalbavancin; 2) clinical cure: resolution of symptoms of infection within 90 days; 3) all-cause readmission within 90 days; and 4) all-cause mortality within 90 days.

Results. 42 patients met criteria. Median age was 69 years (range, 32-91), 100% were male, 55% (n=23) had diabetes, 31% (n=13) had liver disease, 36% (n=15) had other immunosuppressive conditions, and 12% (n=5) had substance use disorder (SUD). All received their first dose as inpatients. Median hospital duration was 8 days (range, 1-32). 4 (10%) required critical care. Median antibiotic duration prior to dalbavancin was 7 days (range, 1-42). Indications included ineligibility for OPAT (n=21, 50%), pharmacologic reasons (n=10, 24%), ineligibility for peripherally inserted central catheter (n=6, 14%), or SUD (n=5, 12%). Common microorganisms were *Staphylococcus* spp. (n=22, 52%), polymicrobial (n=13, 31%), and *Corynebacterium* spp. (n=10, 24%). 93% (n=39) had clinical cure of infection; readmissions and mortality were rare (Table 1).

Table 1. Clinical Outcomes for Recipients of Dalbavancin according to Type of Infection

Type of Infection	Patients	Laboratory Abnormalities	Clinical Cure	Readmission[a]	Mortality
	N (%)	N (%)	N (%)	N (%)	N (%)
Endocarditis	9 (21)	2 (22)	9 (100)	2 (22)	0 (0)
Septic Arthritis	2 (5)	0 (0)	1 (50)	1 (50)	0 (0)
Osteomyelitis	21 (50)	1 (5)	20 (95)	2 (10)	1[b] (5)
Skin and Soft Tissue Infection	10 (24)	2 (20)	9 (90)	0 (0)	1[c] (10)

[a] Includes 5 cases of readmission associated with recurrent infection
[b] Mortality associated with osteomyelitis
[c] Mortality not associated with skin and soft tissue infection

Conclusion. Dalbavancin was associated with clinical cure for diverse infections with low rates of adverse events, readmission and mortality in patients ineligible for traditional OPAT. Although confirmatory data are needed from larger studies, dalbavancin appears to be a versatile therapeutic agent for Gram-positive infections.

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614. Evaluating the Use of Dalbavancin for Off-Label Indications

Katherine Taylor, PharmD[1]; John Williamson, PharmD[1]; Tyler Stone, PharmD[1]; James Johnson, PharmD[1]; Zachary Gruss, PharmD[1]; Vera Luther, MD[2]; Vera Luther, MD[2]; Courtney Russ-Friedman, MSN, FNP-BC[1]; Chris Ohl, MD[2]; James Beardsley, PharmD[1]; [1]Wake Forest Baptist Health System, Winston Salem, NC; [2]Wake Forest School of Medicine, Winston Salem, NC

Session: P-27. Clinical Practice Issues

Background. Dalbavancin (dalba) is a long-acting antibiotic (ABX) approved for skin and soft tissue infections. Post-marketing data suggests dalba is being used for off-label indications that require long term IV ABX; however, data assessing this off-label usage is limited. The purpose of this study was to evaluate the real-world efficacy, safety, and financial impact of off-label dalba use.

Methods. Setting: 4-hospital health system. Design: retrospective, observational study. Adult patients (pts) who received dalba from Jan 2018 to Jan 2021 for an off-label indication were included. Pts who were pregnant or had an infection caused by a pathogen outside dalba's antimicrobial spectrum were excluded. Primary outcome was clinical success at 90 days defined as no need for additional ABX (excluding suppression therapy) or surgical intervention following dalba therapy and no positive cultures post treatment associated with the dalba-targeted infection. Secondary outcomes included safety (nephrotoxicity and hepatotoxicity). A financial analysis was performed by subtracting the cost of dalba from the anticipated cost of pt stay [$427/day for hospital; $262/day for skilled nursing facility (SNF)] if standard IV therapy was given.

Results. 50 pts met study criteria; 42% were IV drug users; 14% were self-pay. Indications included osteomyelitis (54%), endocarditis (22%), bacteremia (16%), and prosthetic joint infection (PJI) (8%). The predominant organism was *S. aureus* (60%), with 42% caused by MRSA. All but 1 pt received 1.5 g of dalba. 20 (40%) pts received 1 dose; 26 (52%) received 2. Overall, 43 (86%) pts achieved clinical success at 90 days, including 87% of osteomyelitis/PJI pts, 82% of endocarditis pts, and 100% of pts with bacteremia. There were no instances of nephrotoxicity or hepatotoxicity. Estimated cost avoidance per pt was $5210 and $1652 if traditional IV therapy was completed in the hospital and SNF, respectively. Because the alternative therapy to dalba could not be predicted, these costs were not included in analysis but likely would have increased calculated cost avoidance.

Conclusion. Dalba was associated with a relatively high success rate for the treatment of off-label indications and may have less total costs than traditional IV ABX.

Disclosures. **James Johnson, PharmD**, **FLGT** (Shareholder) **Vera Luther, MD**, Nothing to disclose

615. A Year with COVID19 – Experience from the Front Line in a Large Infectious Disease (ID) Clinical Practice

Ronald G. Nahass, MD[1]; Angelo Giordano, MBA[1]; Edward J. McManus, MD[2]; [1]ID Care, Hillsborough, New Jersey; [2]IDCare, Randolph, New Jersey

Session: P-27. Clinical Practice Issues

Background. ID Care (IDC) is a large, 43 physician, 74 provider, practice that treats patients in 16 acute care hospitals (ACH) and 120 skilled nursing facilities (SNF) in NJ. March 4, 2021 was the first day a patient with COVID19 seen by IDC. Over the subsequent year IDC evaluated, treated, and tested over 23,000 persons for COVID19. Patients were seen in 2 distinct times - wave 1 (W1) March 5-August 31 and wave 2 (W2) September 1 to March 4. We compare the experience of these 2 waves and report on the year of COVID19 at IDC.

Methods. The administrative data base for IDC was queried for demographic, visit and testing information. A survey of providers was performed to capture incidence of COVID19 and vaccination rates. Daily census logs were used to create epi curves. Comparisons between waves were performed using student T Test or X^2.

Results. Table 1 provides the comparisons between waves. More patients were seen in W2, however, the number of visits per patient was less, consistent with a shorter length of stay. Fewer patients were seen in SNF in W2 compared to W1. The age and sex distribution between the waves were the same. A total of 8741 molecular tests were performed. Test positivity peaked the week of December 31 at 6.99% and dropped to 0% by May 1 consistent with vaccination and the NJ epidemic curve. During the year of COVID19, 6/74 (8%) clinicians were infected with SARSCoV2. All recovered. Infections in providers were not clearly work-related exposures. 73/74 clinicians were vaccinated.

Feature	Wave 1	Wave 2	Delta	% Change	p (0.05)
Patients (n)	4,634	7,056	2,422	52.3%	
Visit Counts (N)	39,541	49,260	9,719	24.6%	
Hospital Visits	33,371	44,909	11,538	34.6%	
SNF Visits	3,763	2,839	(924)	-24.6%	<0.0001
Patient with > 20 Visits	405	345	(60)	-14.8%	<0.0001
Visits Per Patient	8.5	7.0	(2)	-18.2%	<0.0001
Age ≥ 60 (%)	65.5	65.4	(0)	-0.2%	
Mean Age	66.1	65.5	(1)	-1.0%	
Median Age	67.0	67.0	0	0.0%	
Female (%)	46.6	46.6	0	0.1%	

Table 1. Demographics For the Year in COVID19 at ID Care

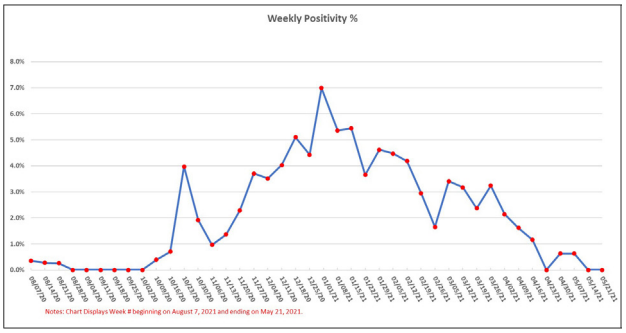

Figure 1. Test Positivity Rate for ID Care

Conclusion. The year of COVID19 occurred in 2 distinct waves. W1 was short and intense. The age and gender distributions were the same between the waves. Even though wave 2 was numerically greater, the cases in SNF were statistically less than the first wave likely from improved IP practice initiated in W1. The numbers of visits per patient, a surrogate for LOS, was statistically less in W2. The decline in test positivity paralleled deployment of vaccination. Despite an intensity of exposure of 158 patients/provider or 1198 visits/provider to SARSCoV2 infected persons only 8% of the clinician staff were infected. ID clinical practice can use electronic databases to help describe regional outbreaks of transmissible disease giving additional perspective across the care continuum. A more usable standard tool would enhance this capacity.

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616. Predicting Misdiagnoses of Infectious Disease in Emergency Department Visits

Alec B. Chapman, MS[1]; Kelly Peterson, M.S. Computational Linguistics[2]; Wathsala Widanagamaachchi, PhD[1]; Makoto M. Jones, MD[3]; [1]University of Utah, Salt Lake City, Utah; [2]University of Washington, Salt Lake City, Utah; [3]IDEAS Center of Innovation, VA Salt Lake City Health Care System, Salt Lake City, Utah

Session: P-27. Clinical Practice Issues

Background. Diagnostic error leads to delays of care and mistaken therapeutic decisions that can cascade in a downward spiral. Thus, it is important to make accurate diagnostic decisions early on in the clinical care process, such as in the emergency department (ED). Clinical data from the Electronic Health Record (EHR) could identify cases where an initial diagnosis appears unusual in context. This capability could be developed into a quality measure for feedback. To that end, we trained a multiclass machine learning classifier to predict infectious disease diagnoses following an ED visit.

Methods. To train and evaluate our classifier, we sampled ED visits between December 31, 2016, and December 31, 2019, from Veterans Affairs (VA) Corporate Data Warehouse (CDW). Data elements used for prediction included lab orders and results, medication orders, radiology procedures, and vital signs. A multiclass XGBoost classifier was trained to predict one of five infectious disease classes for each ED visit based on the clinical variables extracted from CDW. Our model was trained on an enriched sample of 916,562 ED visits and evaluated on a non-enriched blind testing set of 356,549 visits. We compared our model against an ensemble of univariate Logistic Regression models as a baseline. Our model was trained to predict for an ED visit one of five infectious disease classes or "No Infection". Labels were assigned to each ED visit based on ICD-9/10-CM diagnosis codes used elsewhere and other structured EHR data associated with a patient between 24 hours prior to an ED visit and 48 hours after.

Results. Classifier performance varied across each of the five disease classes (Table 1). The classifier achieved the highest F1 and AUC for UTI, the lowest F1 for Sepsis, and the lowest AUC for URI. We compared the average precision, recall and F1 scores of the multiclass XGBoost with the ensemble of Logistic Regression models (Table 2). XGBoost achieved higher scores in all three metrics.

Table 1. Classification performance

	Precision	Recall	F1	AUC	Count
Pneumonia	58.8	43.1	49.7	**93.5**	14,716
UTI	**63.6**	**61.0**	**62.3**	93.1	29,831
Sepsis	63.3	15.6	25.0	93.4	10,522
SSTI	37.8	24.0	29.4	83.1	11,038
URI	41.3	35.5	38.2	84.7	16,509
No Infection	89.0	91.1	90.1	85.1	286,474
Macro Average	*59.1*	*46.3*	*50.2*	--	*356,549*

XGBoost testing set performance in each disease class, visits with no labels, and macro average. The infectious disease classes with the highest score in each metric are shown in bold.

Table 2. Baseline comparison

	Precision	Recall	F1
XGBoost	**59.1**	**46.3**	**50.2**
Logistic Regression	57.8	41.6	46.3

Macro average scores for XGBoost and baseline classifiers.

Conclusion. We trained a model to predict infectious disease diagnoses in the Emergency Department setting. Future work will further explore this technique and combine our supervised classifier with additional signs of medical error such as increased mortality or anomalous treatment patterns in order to study medical misdiagnosis.

Disclosures. **All Authors**: No reported disclosures

617. Long Acting Lipoglycopeptide Use in Veterans for Serious Gram-Positive Infections in the COVID Era

Carlos S. Saldana, MD[1]; Tiffany Goolsby, PharmD[2]; Lauren H. Epstein, MD[3]; Nora Oliver, MD[4]; [1]Emory University School of Medicine, Atlanta, Georgia; [2]Atlanta VA Health Care System, Atlanta, Georgia; [3]Veterans Administration Hospital, Decatur, Georgia; [4]Emory University School of Medicine, Atlanta VAMC, and Georgia Emerging Infections Program, Atlanta, Georgia

Session: P-27. Clinical Practice Issues

Background. Dalbavancin and Oritavancin are semisynthetic lipoglycopeptides (LGP) that are FDA-approved for treatment of skin and soft tissue infections, but emerging data supports LGP use for other serious gram positive (GP) infections. We describe our experience with LGP during the COVID-19 pandemic.

Methods. We initiated a quality improvement project to assess the use of LGP for label and off-label indications at the Atlanta Veterans Affairs Health Care System. We define serious GP infections as infective endocarditis, osteomyelitis, joint infections, or bacteremia. Patients with serious GP infections that receivedLGP were selected at the treating physician's discretion. We reviewed medical records of all patients receiving at least one dose of long-acting LGP from March 1, 2020 - May 31, 2021. We described patient demographics, clinical information,and outcomes (90-day readmission).

Results. Nineteen patients with GP infections received LGP (table). Overall, the most common infection was cellulitis 7 (35%); 14 patients received LGPs for serious GP infections. All patients received at least one other non-LGP antibiotic for at least 2 days, majority vancomycin (60%) and cefazolin (30%). Overall, the median hospital stay among patients who received LGP was 8.5 days (range: 2-45 days), for those with serious GP infections the median hospital stay was 15 days (range: 4-45). 90% of patientswho received LGP were discharged home. Number of LGP doses ranged from 1 to 6 doses total, based on type of infection. Sixteen veterans (80%) followed up in outpatient clinicfollowing discharge within 2 weeks, two patients were discharged to home hospice due to complications of underlying malignancies and two patients were lost to follow up. Noadverse drug events were reported, and none with serious GP infections required rehospitalization at 90 days.

Table
Baseline Patient Characteristics, N= 20

Characteristic	n (%)
Age, years, median [range]	64.2 [32–81]
Male sex	19 (95%)
Charlson Comorbidity Index, median [range]	7 [0-19]
Type of Infection	
Cellulitis	7 (35%)
Osteomyelitis	6 (30%)
Bacteremia	4 (15%)
Endocarditis	2 (10%)
Urinary tract infection	1 (5%)
Septic arthritis	1 (5%)
Organism	
Methicillin resistant *S. aureus*	8 (40%)
Methicillin susceptible *S. aureus*	7 (35%)
Polymicrobial	4 (20%)
Coagulase negative staphylococci	1 (5%)
No culture	5 (25%)