Conclusion. Pharmacist involvement in OPAT significantly increased IDSA guideline adherence to lab monitoring and follow-up visits, and clinical cure rates. Identification of adverse drug reactions prompting pharmacist intervention further highlights the importance of follow-up in OPAT patients.

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137. Risk Factors of B-lactams Associated Cytopenias during Outpatient Parenteral Antimicrobial Therapy: Results from a Large National Sample

Yasir Hamad, MD[1]; Katelin B. Nickel, MPH[2]; Ige George, M.D.[1]; Yvonne J. Burnett, PharmD[3]; Margaret A. Olsen, PhD, MPH[2]; [1]Washington University, St. Louis, Missouri; [2]Washington University in St. Louis, Saint Louis, Missouri; [3]University of Health Sciences and Pharmacy in St. Louis, St. Louis, Missouri

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Background. Cytopenias are rare complications of prolonged beta-lactam use; however, incidence and associated risk factors are not well described.

Methods. Patients aged 18-64 years in the 2010-2016 IBM MarketScan Commercial Database discharged from the hospital on cephalosporin, penicillin, or carbapenem outpatient Parenteral Antimicrobial Therapy (OPAT) were included. The primary endpoint was hospital admission coded for neutropenia, leukopenia, or thrombocytopenia within the first 6 weeks post index discharge and within 7 days of beta-lactam discontinuation. Patients with history of malignancy and those who are on chemotherapy were excluded. Significant factors in univariate analysis were incorporated into a multivariable logistic regression model with sequential exclusion of variables with $p > 0.1$.

Results. A total of 35,102 patients received beta-lactam OPAT; median age was 52 years and 53.6% were male. The primary outcome occurred in 150 (0.43%) patients at a median of 19 days (IQR 10-28 days after index discharge), which included 63 (0.18%) neutropenia, 85 (0.24%) thrombocytopenia, and 23 (0.07%) leukopenia admissions. Factors independently associated with readmission cytopenias included chronic liver disease (OR 4.61 [CI 2.93-7.25]), valvular heart disease (2.69 [1.71-4.24]), receipt of vancomycin (2.10 [1.42-3.12]), or antifungal therapy (4.42 [2.01-9.68]); lower risk was associated with carbapenem therapy (0.49 [0.32-0.75]) and diabetes (0.48 [0.31-0.74]) (Table 1).

Conclusion. Readmissions with cytopenias during beta-lactam OPAT were rare and carbapenem use was associated with lower risk compared to other classes of beta-lactams. Combination of beta-lactam with vancomycin was associated with an increased risk of cytopenias, and those patients might benefit from closer monitoring.

Table 1. Factors Associated with Cytopenias during Beta-Lactams Outpatient Parenteral Antimicrobial Therapy (OPAT)

Variable n (%)	Readmission with Cytopenias N=150 (0.43)	No readmission with cytopenias N=34,952 (99.57)	P value (Univariate)	Multivariable analysis Odds ratio (95% CI)
Age (in years) 18-40	43 (28.5)	7,824 (22.4)	0.095	
41-50	35 (23.2)	7,905 (22.6)		
51-60	51 (33.8)	11,795 (33.8)		
61-64	21 (14.6)	7,428 (21.3)		
Sex (Male)	81 (54.0)	19,685 (56.3)	0.568	
ID consultation	82 (54.7)	19,671 (56.3)	0.691	
Home therapy vs infusion center	127 (84.7)	28,302 (81.0)	0.250	
Comorbidities				
CHF	10 (6.7)	1,896 (5.4)	0.503	
CKD	8 (5.3)	1,715 (4.9)	0.809	
Alcohol abuse	12 (8.0)	1,211 (3.5)	**0.003**	1.73 (0.94-3.21)
Drug abuse	4 (2.7)	1,221 (3.5)	0.582	
Liver disease	22 (14.7)	1,334 (3.8)	**<0.001**	**4.04 (2.51-6.50)**
Diabetes mellitus	25 (16.7)	10,491 (30.0)	**<0.001**	**0.47 (0.30-0.73)**
Obesity	39 (26.0)	7,991 (22.9)	0.361	
Valvular heart disease	23 (15.3)	1,857 (5.3)	**<0.001**	**2.75 (1.75-4.33)**
Type of Infection				
Bone and Joint infection	29 (19.3)	9,663 (27.7)	**0.023**	0.70 (0.46-1.07)
Septicemia	65 (43.3)	12,027 (34.4)	**0.022**	
Intra-abdominal	29 (19.3)	6,164 (17.6)	0.586	
Skin and soft tissue	62 (41.3)	15,176 (43.4)	0.607	
Urinary tract infection	12 (8.0)	4,745 (13.6)	**0.047**	0.60 (0.33-1.09)
Primary Antibiotics				
Penicillins	32 (21.3)	5,985 (17.1)	0.172	
Cephalosporins	93 (62.0)	18,923 (54.1)	0.054	
Carbapenems	27 (18.0)	10,526 (30.1)	**0.001**	**0.50 (0.32-0.76)**
Concomitant Antibiotics				
Aminoglycosides	2 (1.3)	946 (2.7)	0.301	
Antifungals	7 (4.7)	406 (1.2)	**<0.001**	**4.51 (2.06-9.90)**
Vancomycin	31 (20.7)	4,255 (12.2)	**0.002**	**2.05 (1.37-3.06)**
Daptomycin	11 (7.3)	18,54 (5.3)	0.269	

CHF, congestive heart failure; CI, confidence interval; CKD, chronic kidney disease; ID, infectious diseases

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138. Tele-COVID Rounds and Tele-Stewardship Surveillance Reduces Antibiotic Use in COVID-19 Patients Admitted to 17 Small Community Hospitals

John J. Veillette, PharmD[1]; Stephanie C. Shealy, PharmD[1]; Stephanie Gelman, MD[1]; Edward A. Stenehjem, MD, MSc[1]; Steven K. Throneberry, MD[1]; Michael Pirozzi, MD[1]; Brandon J. Webb, MD[1]; Dustin Waters, PharmD[2]; Valoree K. Stanfield, MS[1]; Nancy A. Grisel, Master of Public Administration[1]; Todd J. Vento, MD, MPH[1]; [1]Intermountain Healthcare, Murray, UT; [2]McKay-Dee Hospital - Intermountain Healthcare, West Haven, Utah

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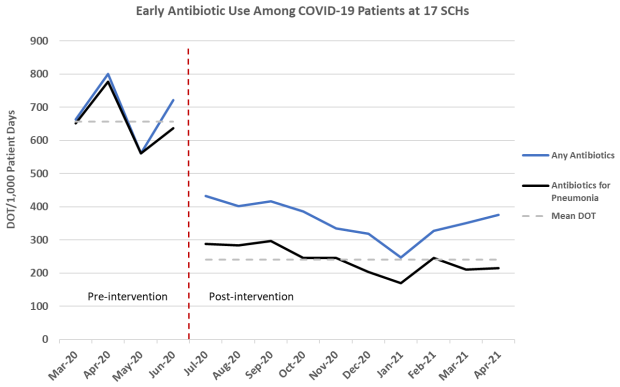
Background. Early bacterial co-infection is rare in hospitalized COVID-19 patients, yet antibiotics are commonly prescribed. Antibiotic stewardship (AS) intervention is needed, especially in small community hospitals (SCHs), which often lack access to AS expertise.

Methods. We implemented daily remote multidisciplinary tele-COVID rounds (synchronous case review between SCH providers and ID clinicians) and tele-stewardship surveillance (ID pharmacist review of COVID patients on antibiotics) on 6/24/2020 in 17 SCHs. We retrospectively included adult symptomatic COVID-19 admissions between 3/2020 and 4/2021. The primary outcome was early use of antibiotics for pneumonia (started within 48 hours of admission); mean monthly days of therapy per 1,000 patient days (DOT) were compared pre- (3/2020-6/2020) and post-intervention (7/2020-4/2021). Secondary outcomes were early use of antibiotics for any indication, estimated days of antibiotics avoided (comparing pre- and post-intervention DOT), and in-hospital mortality. Analyses were conducted using a two-tailed unpaired t-test (antibiotic use) or Fisher's exact test (mortality).

Results. Of the 1,976 patients included (124 pre- vs. 1852 post-intervention), 55.4% were male and 85.5% were white. Patients in the pre-intervention group were more likely to require hospital transfer [21.8% vs 8.8% ($p< 0.001$)] and ICU admission [18.5% vs. 9.7% ($p=0.003$)]. We observed a significant decrease in mean use of early antibiotics for pneumonia [656.9 vs. 240.1 DOT ($p< 0.001$)], including among non-ICU patients only [603.6 vs 240.2 DOT ($p< 0.001$)]. Early antibiotic use for any indication also decreased [686.2 vs. 359.3 DOT ($p< 0.001$)]. An estimated 3,697 days of unnecessary antibiotics for pneumonia were avoided in the 10-months post-intervention [370 days per month (95% CI 304 – 435)]. Unadjusted in-hospital mortality was not different pre- vs post-intervention (0.8% vs. 2.0%, $p=0.511$), but was higher among those prescribed early antibiotics (4.4% vs 0.5%, $p< 0.001$).



Conclusion. A significant, sustained reduction in antibiotic use among COVID-19 patients at 17 SCHs was observed after implementation of tele-COVID rounds and tele-stewardship surveillance without an observed difference in mortality.

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139. Social Support Decreases No-Show Rates Among Patients with Injection-Drug-Use-Related Infections and Opioid Use Disorder

James A. Grubbs, MD[1]; Sarah R. Blevins, PharmD[2]; Ryan Weeks, BS[2]; Tiffany Stivers, MSN, APRN[1]; Kathryn Sabitus, MS[2]; Alice Thornton, MD[1]; [1]University of Kentucky, Lexington, Kentucky; [2]University of Kentucky HealthCare, Lexington, Kentucky

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Background. Opioid overdose is the leading cause of injury-related death in the United States. Kentucky ranks in the top 5 states for overdose death and has one of the highest rates of acute hepatitis C (HCV). Fifty-four of Kentucky's counties are among the 220 U.S. counties identified as high risk for rapid dissemination of HIV and HCV. Poverty, legal issues, and transportation are barriers to effective treatment of opioid use disorder (OUD) and related infections. The WRAP project (Wrap-around Recovery for Addiction and infectious Diseases project) is an ongoing multi-disciplinary program to expand access to OUD treatment at University of Kentucky HealthCare. This program provides social support including transportation assistance, case management, and counseling. Missed visits have been associated with multiple adverse outcomes.

Methods. We compared missed infectious diseases clinic visits (n=620) of patients enrolled in WRAP to those of patients who were referred and eligible, but not enrolled using chi-square tests for odds ratios.