

**Conclusion.** Our experience suggests that long-acting LGP may be valuable tools to treat serious gram-positive infections by optimizing the duration of hospitalization and preventing unnecessary admissions to acute care and nursing facilities for daily antibiotic infusions. These aspects of LGP use are especially important during the COVID-19 pandemic where nosocomial transmission has been documented.

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619. Current State of Infectious Diseases Pharmacist OPAT/COpAT Practice in the United States

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**Session:** P-27. Clinical Practice Issues

**Background.** Outpatient parenteral antimicrobial therapy (OPAT) is the process of administering intravenous (IV) antimicrobials outside the acute inpatient setting. Oral antimicrobials for complex infections are referred to as complex outpatient antimicrobial therapy (COPAT). OPAT/COPAT programs are expanding, as are the opportunities for clinical Infectious Diseases (ID) pharmacists (RPHs) involvement. The current state of clinical (non-dispensing) role and the functions being performed by RPHs in OPAT/COPAT is unknown.

**Methods.** To define the current state of OPAT/COPAT pharmacy practice across the United States (US), specifically the clinical functions performed by RPHs, design of RPH involved OPAT/COPAT-clinics, and compare training of RPHs who practice in OPAT/COPAT to ID RPHs who do not, a survey of a possible 31 questions was emailed to the American College of Clinical Pharmacists (ACCP) Infectious Diseases Practice and Research Network (PRN) email list. Results were focused on US-based respondents.

**Results.** Eighty-seven RPHs responded with 27 practicing in OPAT/COPAT. Training background did not differ between groups. Programs with an OPAT/COPAT RPH were more likely to have a formal OPAT team compared to those without an OPAT/COPAT RPH (p < 0.001). OPAT/COPAT RPHs were early in their careers, with roughly half practicing < 5 years in ID, and 66.7% practicing < 5 years in OPAT/COPAT. Most OPAT/COPAT RPHs (66.7%) practiced at an academic medical center with a median full-time equivalent (FTE) of 1 RPH. Most (63%) utilized a collaborative practice agreement and 81.5% shared job functions with other ID RPH roles, most commonly antimicrobial stewardship. Few (28%) OPAT/COPAT programs involved a dispensing component. The average daily census was 42 patients followed by an OPAT/COPAT RPH. There was wide variability in the types of tasks ID RPH performed in OPAT/COPAT, the three most important tasks listed in Figure 1.

**Conclusion.** This is the largest known survey of OPAT/COPAT RPHs. RPH involvement in OPAT/COPAT in the US is an emerging trend with wide variability in program structure. Tasks performed by OPAT/COPAT RPHs varied significantly; however, OPAT/COPAT RPH respondents’ functions are largely clinical in nature.

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620. Identifying the Role for a Pharmacist on an Outpatient Parenteral Antimicrobial Therapy (OPAT) Team in an Academic Teaching Hospital

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**Session:** P-27. Clinical Practice Issues

**Background.** Outpatient parenteral antimicrobial therapy (OPAT) is currently an emerging practice to continue effective treatment after hospital discharge for patients requiring parenteral (IV) treatment. Pharmacists can collaborate with outpatient services like home infusion services to allow for safe administration and monitoring of IV antibiotics. The role of pharmacists in an OPAT team has been shown to improve patient outcomes such as optimizing antimicrobial therapy and reducing hospital length of stay and readmissions. We sought to define the utility of an OPAT pharmacist at an academic teaching hospital that currently does not have an OPAT service.

**Methods.** Patients receiving IV therapy via home infusion from 1/4/21 to 3/4/21 were screened for inclusion and excluded if antimicrobials were not prescribed. Infection characteristics and antimicrobial therapy were recorded. Interventions on...
day of and after discharge were noted. Duration of therapy (DOT) was calculated by the difference between start and stop dates of appropriate antibiotics. Discharge delays due to OPAT-related reasons were recorded. Continuous data are expressed as median (IQR). Categorical data are expressed as frequencies (%).

**Results.** Of the patients screened, 77 of 123 patients met inclusion criteria. Most patients were treated for a bone/joint infection (29/77, 38%). Ceftriaxone (18/82, 22%) and vancomycin (13/82, 16%) were the most frequently prescribed agents. The median DOT was 30 days (IQR 15, 42). On day of discharge, 52 opportunities for a pharmacist initiated intervention were identified with majority being clarifying DOT (19/52, 37%), streamlining or escalating antibiotic (8/52, 15%), and optimizing drug dose (8/52, 15%). OPAT-related discharge delays resulted in an excess of 58 hospital days and over 25% of patients (20/77) were readmitted 30 days after discharge. The most common post-discharge issues (n=56) were worsening infection (11/56, 20%), PICC line issues (8/56, 16%), and drug related adverse events (8/56, 14%).

**Conclusion.** A pharmacist on a dedicated OPAT service can assist with antibiotic selection, treatment duration, and drug monitoring to promote patient safety in patients discharged on antimicrobials.

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621. Identifying Quality-Improvement Interventions to Improve Inpatient Intravenous Vancomycin Safety at an Academic Medical Center

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**Session:** P-27 Clinical Practice Issues

**Background.** The reported incidence of intravenous (IV) vancomycin-associated acute kidney injury (AKI) is highly variable. The primary purpose of this study was to determine the baseline rate of IV vancomycin-associated AKI at the University of Utah Hospital (UUH) and Huntsman Cancer Institute (HCI) with the goal of identifying areas of focus for future quality improvement (QI) initiatives.

**Methods.** This was a retrospective descriptive study of patients ≥ 18 years old, hospitalized at UUH or HCI, who received at least daily scheduled doses of IV vancomycin for ≥ 72 hours between November 1, 2018 and October 31, 2019. AKI was defined using the serum creatinine (SCR) aspect of the AKIN criteria. Variables assessed for association with AKI included demographic characteristics, hospital and unit where vancomycin was initiated, duration of therapy, administration method, and concomitant nephrotoxic medications. Multivariable logistic regression was used to identify variables independently associated with AKI as potential QI interventions.

**Results.** One thousand eight hundred six patients were included. Baseline patient characteristics are listed in Table 1. Throughout our system, 19.7% of patients experienced an AKI while receiving vancomycin. Univariable comparisons are listed in Table 1. Variables independently associated with AKI on univariable analysis included total body weight (HR 1.02, 95% CI [1.01-1.03]), concomitant administration of calcium channel inhibitors or vasopressors (HR 1.97, 95% CI [1.18-3.29] and HR 1.68, 85% CI [1.07-2.64] respectively), duration of vancomycin therapy (HR, 1.04, 95% CI [1.02-1.06]), and administration in specific units (see Table 1). Administration of vancomycin by continuous infusion showed a protective effect (HR 0.13, 95% CI [0.02-1.12]) and unit where vancomycin was initiated, duration of therapy, administration method, and concomitant nephrotoxic medications. Multivariable logistic regression was used to identify variables independently associated with AKI as potential QI interventions.

**Table 1. (Continued) Univariate and Multivariate Associations with Vancomycin-Associated Acute Kidney Injury**

| Variable                        | Total (n=186) | AKI (n=26) | n (%) | OR (95% CI) | Adjusted OR (95% CI) |
|---------------------------------|---------------|------------|-------|-------------|---------------------|
| Hospital stay in Days           | 12-71         | 16-71      |       |             |                     |
| Exercise                        | Yes           | No         | 1     | HR 1.60 (1.03-2.48) | HR 1.05 (0.63-1.75) |
| Race                            | White         | Black/Other| 1     | HR 0.84 (0.58-1.23) | HR 1.00 (0.68-1.44) |
| Ethnicity                       | Hispanic      | Non-Hispanic| 1     | HR 0.92 (0.58-1.45) | HR 0.90 (0.55-1.47) |
| Comorbidities                   | Hypertension  | Yes        | 1     | HR 1.55 (0.98-2.47) | HR 1.02 (0.63-1.65) |
|                                | Diabetes      | Yes        | 1     | HR 2.71 (1.53-4.83) | HR 1.51 (0.85-2.68) |
|                                | Obesity       | Yes        | 1     | HR 2.73 (1.52-4.94) | HR 2.15 (1.20-3.84) |
|                                | Hyposthenia   | Yes        | 1     | HR 1.60 (1.00-2.58) | HR 1.02 (0.63-1.65) |
|                                | Arrive in-hospital |   |       |             |                     |
|                                | Yes           | No         | 1     | HR 1.91 (1.21-3.11) | HR 1.02 (0.63-1.65) |
|                                | No            | Yes        | 1     | HR 0.54 (0.33-0.88) | HR 1.02 (0.63-1.65) |
|                                | No            | No         | 1     | HR 1.00 (0.63-1.65) | HR 1.02 (0.63-1.65) |

For continuous variables, the HR reported is for each unit increase.

**Conclusion.** Several variables associated with vancomycin-associated AKI within our health system were identified. Future QI interventions to improve vancomycin safety will be pursued.

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622. Evaluation of Vascular Access Device Selection in Patients Discharged on Outpatient Parenteral Antimicrobial Therapy

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**Session:** P-27 Clinical Practice Issues

**Background.** Selection of a vascular access device (VAD) is an important consideration for patients receiving outpatient parenteral antimicrobial therapy (OPAT). Midline catheters (MC) and peripherally inserted central catheters (PICC) are the most commonly placed VADs, with the former recommended by national guidelines to be used for durations no longer than two weeks. These recommendations, however, are based on limited data from heterogeneous populations. As such, we aim to further characterize VAD-associated complications specifically in patients receiving antimicrobials.

**Methods.** We conducted a retrospective cohort study that included adult patients discharged on OPAT with a newly inserted MC or PICC between January 2020 and August 2020. Patients with non-OPAT VAD indications were excluded. The primary outcome was the incidence of VAD-associated complications, which was further assessed by type and severity. The secondary outcome was time to complication.

**Multivariable Poisson regression was used to assess the association between VAD type and incidence of VAD-associated complications.

**Results.** A total of 190 encounters from 181 patients were included for analysis. Baseline demographics are detailed in Table 1. Despite a higher number of complications in the PICC group, rates per 1000 VAD days were not significantly different between VAD types (Table 2). Median time to first complication was 17 days in the overall cohort. Multivariable regression analysis showed those with a dermatologic history had a four-fold increased risk for VAD-associated complications (Table 3). VAD type was not independently associated with the risk of developing a complication.

**Table 1. Patient demographics**

| Variable                        | PICC (N=3) | MC (N=4) |
|---------------------------------|------------|----------|
| Age (years, median (IQR))       | 60 (49-70) | 63 (59-71) |
| Sex, male - n (%)               | 57 (61)    | 56 (64)  |
| BMI (kg/m2, median (IQR))       | 25.9 (23-31) | 25.6 (22-30) |
| Race – n (%)                    | 2 (2)      | 4 (4)   |
| Hispanic, Non-Hispanic          | 3 (3)      | 4 (4)   |
| Non-Hispanic, Non-Hispanic      | 56 (92)    | 82 (93)  |
| Comorbidities – n (%)           |            |         |
| Hypertension                    | 5 (55)     | 3 (3)   |
| Diabetes                        | 14 (27)    | 24 (28)  |
| Obesity                         | 25 (57)    | 22 (25)  |

For continuous variables, the HR reported is for each unit increase.