1938. Sustained Reduction in 30-Day Readmission Rates After Implementation of an OPAT Program in an Academic Medical Center

Kathleen Sheridan, DO1; Maighdin Anderson, DNP2; Joshua Wingfield, DNP3 and Lauren McKibbon, PharmD3; 1University of Pittsburgh, School of Medicine, Pittsburgh, Pennsylvania, 2UPMC OPAT Program, Pittsburgh, Pennsylvania, 3Department of Medicine, Division of Infectious Disease, University of Pittsburgh Medical Center, Pittsburgh, Pennsylvania, 4Infectious Disease, University of Pittsburgh Medical Center, Pittsburgh, Pennsylvania

Session: 226. Clinical Practice Issues: OPAT
Saturday, October 6, 2018: 12:30 PM

Background. The Outpatient Parenteral Antibiotic Therapy Program at the University Of Pittsburgh Medical Center began in December 2013. UPMC Presbyterian is a Level I center consisting of 775 beds (150 ICU beds). Prior to program implementation, the 30-day readmission rate for patients discharged from our facility on an IV antibiotic was 32%.

Methods. Our Program is a multidisciplinary team consisting of physicians, advance practice providers, pharmacists, nurses, and coordinators. We use a pharmacist-based monitoring program to review weekly laboratories and adjust dosing through a collaborative practice agreement. ID fellows participate in the management of patients while receiving IV antibiotics. Patients are evaluated one week post discharge and prior to end of therapy in the ID clinic. Weekly laboratories are monitored as per the IDSA Society Guidelines. In addition, all patients all reviewed in our weekly huddle prior to end of therapy. We also conduct a monthly M&M to review readmissions.

Results. Our overall patient population has increased from 847 in 2014 to 1,234 in 2015 to 1,569 in 2016 and 1,512 patients in 2017. Post-implementation, we have demonstrated an ongoing reduction in 30-day readmission rates. In 2014, our rate decreased to 17.2%, in 2015 to 15.6%, in 2016 to 11.5% and in 2017 to 18.5% (see Figure 1). 2.337 (54%) of patients were male; the average age of our patients was 56.4 years. 35% were diabetics; 35% have chronic kidney disease, 25.4% have CAD and 43.7% have HTN. More patients are discharged home (56.4 vs. to a facility (n = 2,246) vs. to a facility (n = 1,583). Over half of our patients receive vancomycin.

Conclusion. A pharmacist managed OPAT Program can successfully reduce and maintain lower 30-day readmission rates in an academic facility.

Figure 1.

1939. Socioeconomic Predictors of Hospital Readmission in Outpatient Parenteral Antimicrobial Therapy (OPAT) Patients

Yasir Hamad, MD1 and Yenne Burnett, PharmD2; 1Department of Medicine, Washington University School of Medicine, St. Louis, Missouri, 2Department of Pharmacy Practice, St. Louis College of Pharmacy, St. Louis, Missouri

Session: 226. Clinical Practice Issues: OPAT
Saturday, October 6, 2018: 12:30 PM

Background. OPAT is a safe and effective treatment strategy, but hospital readmissions remain common. Several studies have identified risk factors for readmission among OPAT patients, including comorbidities and care-related factors; however, no study has described such a relationship with socioeconomic factors. The purpose of this study was to identify socioeconomic predictors of hospital readmission in OPAT patients.

Methods. A retrospective review was conducted of 410 OPAT patients, treated at a major tertiary care medical center, from September 2016 to March 2017. OPAT related demographic, clinical, and laboratory data were collected. Factors found to be significant in univariate analysis were included in a multivariate logistic regression model that adjusted for comorbidities, infection diagnosis, antibiotic type, and duration of therapy to determine socioeconomic factors associated with unplanned OPAT readmission.

Results. Of the 410 patients, 101 (25%) experienced an unplanned readmission during the at risk period (41% females, mean age 56). OPAT-related admissions were primarily due to worsening infection (n = 36), or adverse drug reactions (n = 16), but 41% of readmissions were unrelated to OPAT or underlying infection, see figure. In an unadjusted analysis, factors associated with readmission were age, black race, CHF, valvular heart disease, PVD, length of hospital stay, ICU admission, and >1 hospitalization in the past year. Significant socioeconomic factors included living in an urban setting, lower income, and not having Medicare with secondary private insurance. In a multivariate logistic regression model, factors that remained significant included black race (OR 2, 95% CI 1.1–3.7), age 18–30 (OR 3.7, 95% CI 1.6–8.6), age 60–70 (OR 2, 95% CI 1.1–3.5), PVD (OR 2.3, 95% CI 1.1–5), and >1 hospitalization in the past year (OR 2.2, 95% CI 1.3–3.9), while having Medicare with private insurance was protective (OR 0.3, 95% CI 0.1–0.7).

Conclusion. Socioeconomic factors are significant contributors for unplanned hospital readmission among OPAT patients and should be included when identifying high-risk patients for targeted risk reduction interventions.

Disclosures. All authors: No reported disclosures.

1940. Outcomes Among Patients Enrolled in an Outpatient Parenteral Antibiotic Therapy Program at an Academic Medical Center

Deborah Theodore, MD1; E. Yoko Furuya, MD, MS2 and William Greendyke, MD3, 1Medicine, Columbia University Medical Center, New York, New York, 2Infection Prevention and Control, NewYork-Presbyterian Hospital, New York, New York

Session: 226. Clinical Practice Issues: OPAT
Saturday, October 6, 2018: 12:30 PM

Background. Outpatient parenteral antibiotic therapy (OPAT) is a key part of the treatment of severe infection. One indication for OPAT is methicillin-resistant Staphylococcus aureus (MRSA) bacteremia. Few data have been published regarding long-term follow-up and outcomes among patients in an OPAT program (OPAT-P). We describe OPAT-P outcomes at an academic medical center with a focus on MRSA bacteremia (MRSA-B).

Methods. A retrospective chart review was performed. Two cohorts of patients were studied. The first comprised all adult inpatients enrolled in OPAT-P at discharge from July 2016 to December 2017. The second cohort was a subset of these patients treated for MRSA-B. Outcomes (including readmissions, emergency room [ER] visits, microbiological recurrences, and death) were compared with outcomes among non-OPAT-P patients discharged on IV antibiotics for MRSA-B between January 2015 and December 2017. Statistical measures including chi squared tests or Fisher’s exact tests were used.

Results. Of the five hundred sixty-one patients were enrolled in OPAT-P from July 2016 to December 2017. Common indications were osteomyelitis (n = 219, 39%), bacteremia (n = 73, 13%), and endocarditis (n = 73, 13%); 22% had polymicrobial infection. Sixty-one (11%) were rehospitalized and 24 (4%) had an ER visit for an infectious or OPAT issue while on therapy. Fifty-one adverse events occurred that did not result in ER visit or a readmission. Ninety-three (17%) required antibiotic dose changes.

Disclosures. All authors: No reported disclosures.
Twenty-five patients were treated for MRSA-B; 83 additional non-OPAT-P patients were discharged on IV therapy for MRSA-B from January 2015 to December 2017. Common sources of bacteria included central line (n = 24, 22%), cellulitis (n = 18, 16%), and osteomyelitis (n = 9, 8%). No MRSA-B patients died within 30 days of discharge. Overall 6-month readmission and ER visit rates did not differ based on OPAT-P enrollment (54%, P = 0.46 and 57%, P = 0.43, respectively). Three of 25 (12%) MRSA-B OPAT-P patients and 9/83 (74%) MRSA-B non-OPAT-P patients were readmitted for OPAT or infectious complications (P = NS). Microbiological recrudescence was rare. **Conclusion.** Adverse events in OPAT are common and antibiotic monitoring is crucial for OPAT safety. A dedicated OPAT-P has the potential to proactively identify adverse events and change therapy to prevent unplanned admission or ER visit. Further data are needed to clarify whether an OPAT-P may improve MRSA-B post-discharge outcomes.

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

### 1941. Comparison of Patient Outcomes in a Pharmacist-Led Outpatient Parenteral Antimicrobial Therapy (OPAT) Program

Zachary Howe, PharmD Candidate 2019 and Jennifer McCann, PharmD, BCCCP; Butler University College of Pharmacy and Health Sciences, Indianapolis, Indiana

**Session:** 226. Clinical Practice Issues: OPAT Saturday, October 6, 2018: 12:30 PM

**Background.** Despite the benefits of OPAT programs, readmission rates of up to 20% have been reported. In November 2016 at Franciscan Alliance Indianapolis, a dedicated pharmacist was assigned to build a formal OPAT program for all patients discharged on IV antimicrobials under the care of the infectious disease physician group. This study juxtaposed 30-day readmission rates and other patient outcomes for patients with and without an OPAT consult in order to assess how the program impacted patient care.

**Methods.** This was a retrospective cohort study comparing patients discharged on IV antimicrobials between December 1, 2016 and May 31, 2017. These patients were grouped based on whether they had a consult from the OPAT program. Thirty-day readmission rate, antimicrobial selection, discharge disposition, and treatment duration were collected and compared between groups. For the primary objective, at least 87 patients were needed based on whether they had a consult from the OPAT program. Thirty-day readmission rates were compared between groups. For the primary objective, at least 87 patients were needed to attain a power of 80% and detect a 30% difference between treatment groups.

**Results.** Out of 1,502 patients screened, 117 were deemed eligible and included (95 patients with a consult and 22 patients without). No statistically significant difference was found between the readmission rates of the consult group and the nonconsult group was observed (14.74% vs. 31.80%, P = 0.07). However, the consult group exhibited lower utilization of antipseudomonal coverage (38.95% vs. 86.40%, P < 0.0001) and ceftriaxone (9.47% vs. 45.45%, P < 0.001). Use of agents requiring close therapeutic drug monitoring was higher in the nonconsult group, specifically vancomycin (86.36% vs. 41.05%, P < 0.001) and gentamicin (6.32% vs. 22.73%, P < 0.05), despite the diminished intensity of follow-up for patients not followed by the service.

**Conclusion.** The OPAT service did not show a statistically significant reduction in 30-day readmission rate during the first 6 months of the program. However, this may have been due to insufficient power to detect the true difference between treatment arms. Additionally, use of the program was associated with improved antimicrobial stewardship through reduced use of antipseudomonal coverage and ceftriaxone.

**Figure 1: Demographics**

| OPAT Consult (N=95) | No OPAT Consult (N=22) |
|---------------------|------------------------|
| Median Age (IQR)    | 61 (21)                |
| Median Index Length of Stay (IQR) | 65 (7.3) |

**Figure 2: Results**

| OPAT Consult (N=95) | No OPAT Consult (N=22) |
|---------------------|------------------------|
| Re-admissions within 30 Days | 14 (14.74%) |
| Disposition Change | 38 (30%)  |

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

### 1942. Expansion of Outpatient Parenteral Therapy Program with Addition of Advanced Practice Providers Can Lead to Reduced Readmission Rates

Joshua Wingfield, DNP1; Maighdin Anderson, DNP1 and Kathleen Sheridan, DO2; 1Department of Medicine, Division of Infectious Disease, University of Pittsburgh Medical Center, Pittsburgh, Pennsylvania; 2University of Pittsburgh, School of Medicine, Pittsburgh, Pennsylvania

**Session:** 226. Clinical Practice Issues: OPAT Saturday, October 6, 2018: 12:30 PM

**Background.** The addition of Advanced Practice Providers (APPs) such as Nurse Practitioners or Physician Assistants as hospital-based service providers has been shown to increase efficiency of care, provide for better continuity of care across the inpatient and outpatient settings, and facilitate interdisciplinary collaboration. As healthcare systems attempt to not only increase access to care but also improve quality, the addition of APPs is becoming an option to meet division-specific goals. To decrease readmissions and increase access to care for patients discharged on intravenous (IV) antibiotics and in the Outpatient Parenteral Antibiotic Therapy (OPAT) Program, the Division of Infectious Diseases at UPMC Presbyterian hired two APPs in early 2017. Our aim was to compare readmission and follow-up rates from the time before expansion of the program with APPs to after expansion.

**Methods.** We completed a retrospective study of all OPAT patients seen by any Infectious Diseases (ID) provider (MD or APP) n the period from January to May 2017 (prior to APP outpatient clinics with OPAT patients) and in the period from January to February 2018. The total number of patients seen by an ID provider and the 30-day readmission rates were collected and evaluated. A comparison of proportions was done with a two-tailed z-test for the percentage of readmissions prior to program expansion compared with the percentage of readmissions after program expansion.

**Results.** Following the expansion of the OPAT program with the addition of two APPs in 2017, there was a decrease, from 14.7% to 9.6%, in 30-day readmissions for all patients who were seen for follow-up (P = 0.0461, 95% CI 0.0672–0.9316). The percent-age of patients who were seen for follow-up increased after expansion of the program from 29.5% to 39.3% (P = 0.0051, 95% CI 2.8714–16.9153).

**Conclusion.** Expansion of the OPAT program within the Division of Infectious Diseases at UPMC with the addition of two APPs has significantly increased access to care and significantly decreased 30-day readmissions when the patient was seen for follow-up by an ID provider (MD or APP).

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

### 1943. Collateral Benefits of Diabetes Management Associated With Self-administered Outpatient Parenteral Antimicrobial Therapy

Kavita Bhavan, MD1; Anisha Ganguly, BS, BA1 and Deepak Agrawal, MD1; 1Infectious Disease, UT Southwestern Medical Center, Dallas, Texas, UT Southwestern Medical Center, Dallas, Texas

**Session:** 226. Clinical Practice Issues: OPAT Saturday, October 6, 2018: 12:30 PM

**Background.** Self-administered outpatient parenteral antimicrobial therapy (S-OPAT) is a self-care treatment modality in which patients requiring extended courses of intravenous antibiotics are trained to safely self-administer treatment via indwelling catheter in their own homes. A large proportion of S-OPAT patients are baseline diabetics who present with osteomyelitis and soft-tissue infections associated with poor glycemic control. We completed a retrospective study of all OPAT patients seen by any infectious disease physician. OPAT-P patients and non-OPAT-P patients were readmitted for diabetes mellitus. The S-OPAT program, we hypothesized that S-OPAT may benefit patients in other self-care modalities, including diabetes self-management.

**Methods.** We conducted a before-after retrospective analysis of diabetic patients receiving S-OPAT. Outcomes were compared between the 6-month period prior to and the 6-month period following initiation of S-OPAT. Outcomes of diabetes self-management included HgbA1c, diabetes medication adherence (as measured by proportion of days covered, or PDC), and use of any diabetes medication. A subgroup analysis showed that S-OPAT was associated with a significant reduction in HgbA1c among insulin users (P = 0.002). We then compared adherence rates to diabetes medications or initiation of medications pre and post-initiation of S-OPAT (P > 0.05).

**Conclusion.** Initiation of S-OPAT was associated with a significant reduction in HgbA1c among diabetic patients. A similar reduction was noted among insulin users, a group requiring a higher level of self-care. Reduction in HgbA1c was not attributable to changes in medication regimens or adherence. Resolution of infection alone is not sufficient to explain the marked reduction in HgbA1c demonstrated pre- and post-initiation of S-OPAT. We hypothesize that the degree of patient activation obtained through the S-OPAT model yields collateral benefits in other aspects of self-care, including glycemic control.

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

### 1944. Patients With Prosthetic Joint Infections Receiving Outpatient Parenteral Antimicrobial Therapy: Characteristics and Readmission Rates

Sara Gore, MD1; Pirza Gillani, PhD2; Erika M D’Agata, MD, MPH1; Jennifer Adelson-Nettis, MD, MPH1; and Cale Beckwood, MD3; 1Alpert Medical School of Brown University/Rhode Island Hospital, Providence, Rhode Island; 2The Warren Alpert

OFID 2018:5 (Suppl 1) • Poster Abstracts