

## Background

Outpatient parenteral antimicrobial therapy (OPAT) programs are becoming a standard of care, however, program cost justification remains a challenge. One area of focus for institutions is facilitating timely discharge from the inpatient setting, and difficult to discharge patients are a group with which OPAT teams can be particularly impactful.

Other research groups have recently published on this idea, focusing on discharging vulnerable patients for the last week of treatment with a structured dalbavancin regimen to facilitate early discharge.<sup>1</sup>

We developed an approach that included additional antibiotics and discharge as early as clinically appropriate in order to minimize unnecessary inpatient stay and maximize cost savings.

## Methods

Retrospective review of patients intervened upon by the Nebraska Medicine OPAT team during the initial nine months of program implementation (4/1/19-12/31/19):

- » Many who were seen by an ID consult team had already been signed-off with a defined therapy plan, but were being followed daily by the OPAT team to monitor discharge progress.
- » Either the ID consult team or the primary team had determined that an extended inpatient stay would be necessary to complete the full duration of parenteral antibiotic therapy due to discharge challenges given the therapy plan recommended.
- » The OPAT team identified these patients and coordinated between the ID consult team, the primary team, and discharge planners to adjust the treatment plan to successfully facilitate discharge.

Outcomes evaluated included:

- » 30-day, all-cause readmission rate
- » Days of inpatient therapy avoided
- » Inpatient stay cost avoidance
- » Outpatient charge captures

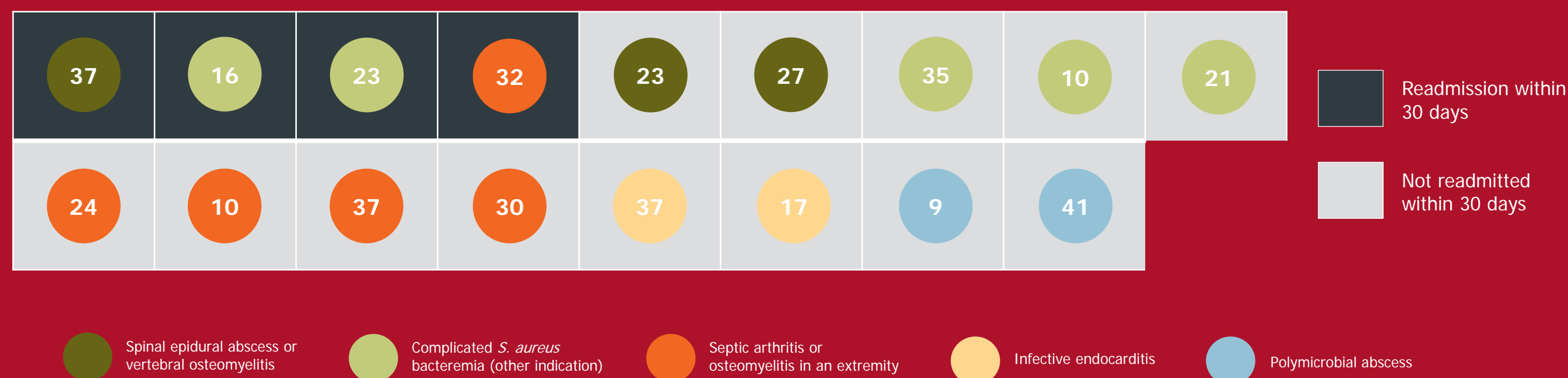
A cohort of recent inpatients was identified with similar lengths-of-stay, ID clinical indications, and lack of major inpatient complications. This was used to calculate an average institutional cost per inpatient day for patients representative of our cohort (\$2200/day).

Patients in our cohort who subsequently received therapy in our outpatient infusion centers were evaluated for financial metrics:

- » For those receiving medication through manufacturer-sponsored patient assistance programs, value of therapy was defined using the hospital's contract cost for medication obtained and administered
- » For those where insurance reimbursement was submitted for medication administered, profit margin was calculated between the hospital's 340b medication cost and actual insurance reimbursements remitted to the hospital

# OPAT focus on the discharge of complex patients, utilizing novel agents and facilitated by manufacturer patient assistance programs, can significantly contribute to program cost justification with similar clinical patient outcomes

Figure. Characteristics of the seventeen patient cases with OPAT-facilitated complex discharge



Numbers within circles represent days of outpatient therapy received

## Results

A total of 17 patients (Figure) were intervened upon by the OPAT team to facilitate discharge, which led to avoidance of 429 planned inpatient days:

- » All-cause 30-day readmission was **24%** (4 of 17)
- » Median days of outpatient therapy received was 24
- » Most common complicating factors leading to patients being initially judged as unable to be discharged: lack of financial resources or insurance (15 cases), active IVDU (7), homelessness or unstable living situation (3)
- » Medications used to facilitate discharge: dalbavancin (8 cases), daptomycin (7), and ertapenem (2)
- » Estimation of institutional cost savings was **\$943,800** for inpatient days of therapy avoided for this cohort
- » Fifteen of these therapy courses were shifted to institution-associated outpatient infusion centers
  - » OPAT facilitated enrollment in pharmaceutical manufacturer patient assistance programs for 11 eligible patients
  - » Follow-through with necessary documentation resulted in replacement of infusion center-administered medication totaling approximately \$28,000 in value
- » Two patients had insurance coverage, which generated approximately \$11,000 in profit margin for the hospital

## Discussion

Implementation of an OPAT program with mandatory consultation prior to discharge developed institutional expertise and personnel able to facilitate discharge for complex patients ID consult teams without OPAT expertise were unable to

- » Championing use of, understanding approval processes for, and ensuring medication delivery from manufacturer patient assistance programs was a core competency that led to success

Significant cost savings associated with this singular set of interventions more than justified OPAT service addition for administration and led to additional approval of an OPAT nurse Treatment success and readmission outcomes were consistent with those for our OPAT program generally, despite the practical challenges, complex infections, and extended durations of outpatient therapy characteristic of this cohort

- » This extends the work of other groups by demonstrating that facilitating discharge even earlier in the treatment course can yield additional cost savings and demonstrate similar clinical success

## Reference

<sup>1</sup> Vazquez Deida AA, et al. Open Forum Inf Dis. 2020 July 13.