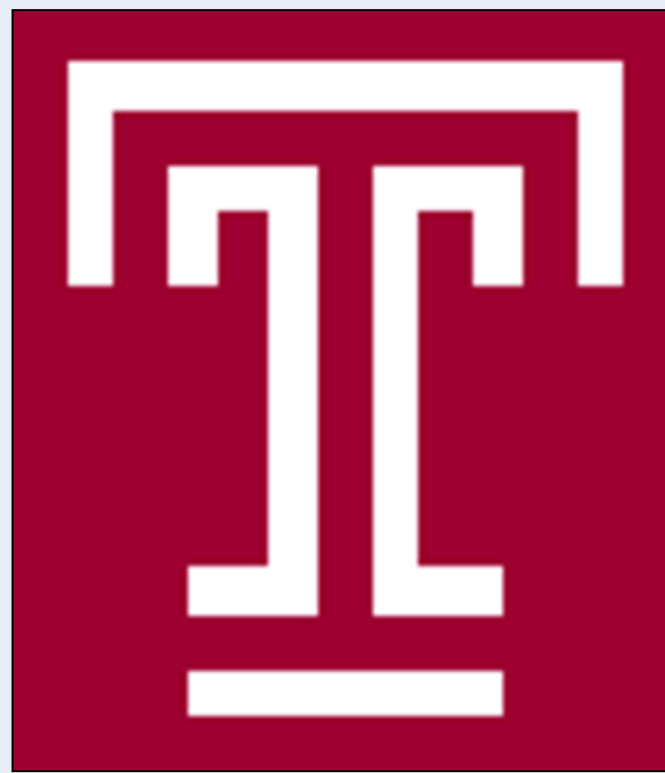


# Single Center Dalbavancin Experience: A cost-savings surprise in people with substance use disorder



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## Background

Dalbavancin is a lipoglycopeptide with use in skin/soft tissue infections targeting common susceptible Gram positive organisms. Due to its long half-life, dalbavancin has been increasingly used for other infections, including osteomyelitis, bacteremia, and endocarditis. This study aimed to evaluate the situations in which dalbavancin was used at our institution.

## Objectives

To evaluate usage of dalbavancin, we performed a retrospective chart review of patients admitted at Temple. We collected information on patient demographics, including any history of substance use disorder, as well as the indications given for usage at the time of dalbavancin order, and if a reason was given why oral or IV therapy was not pursued.

Secondary data points include adherence to second dose (if indicated), as well as alternate therapy and hospital stay, if explicitly discussed in an Infectious Disease consult.

## Methods

This was a single-center retrospective chart review of adult patients who were ordered a dose of dalbavancin any Temple University Hospital campus, from November 1, 2019 to March 31, 2021.

This review included a two-dose indications as one order for dalbavancin. Orders that were entered, but the dose not given, were included in this study.

Chart review was performed in Epic, with data collection in RedCap.

Cost analysis was performed with estimated cost of medical-surgical unit hospital bed as \$3,500 a day, and dalbavancin cost as \$921 for a 500mg vial. Cost savings calculated as averted hospital days + cost of planned IV antibiotics – cost of dalbavancin dose.

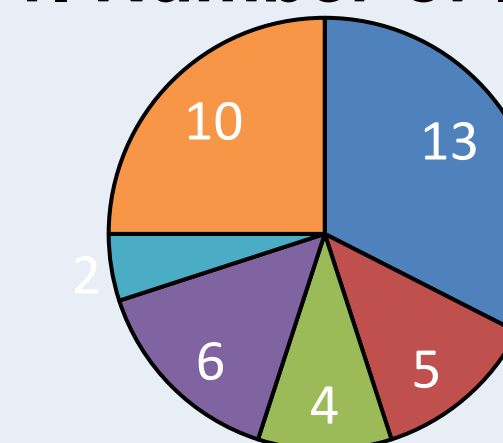
The Institutional Review Board approved the study.

## Results

Table 1. Patient Characteristics

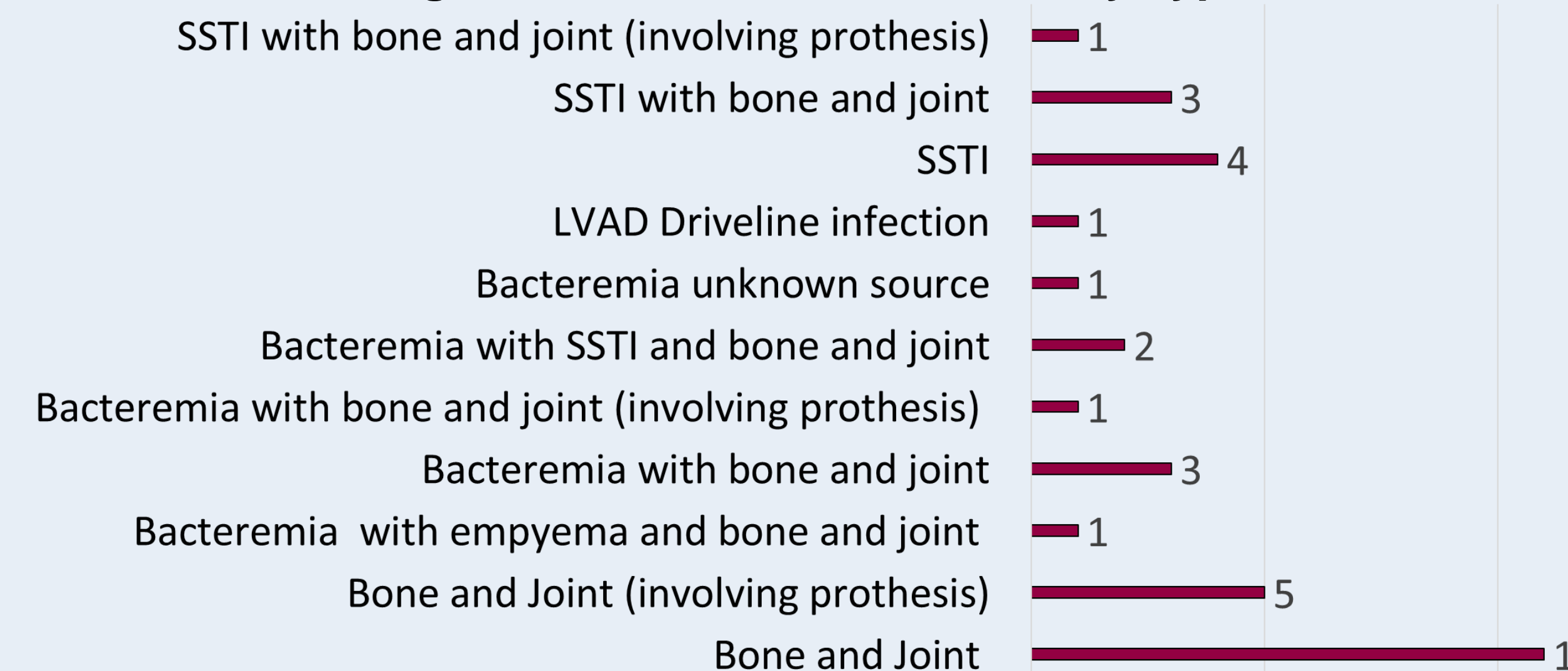
| Characteristic  | N (%) <sup>a</sup> |
|---|--------------------|
| Age (years), median (IQR)   | 43.5 (34.0-52.8)   |
| Male  | 27 (79.4)          |
| Department  |                    |
| Medical   | 26 (76.5)          |
| Surgical  | 8 (23.5)           |
| Social history  |                    |
| Substance use disorder <sup>b</sup>                                 | 30 (88.2)          |
| Person who inject drugs (PWID)                                      | 24 (70.6)          |
| Homelessness  | 12 (35.3)          |
| No social history   | 4 (11.8)           |
| ED visit or hospitalization for the same infection in the past year | 25 (73.5)          |
| 1 visit   | 7                  |
| >1 visit (range)  | 18 (2-39)          |
| Formal ID consultation  | 33 (97.1)          |
| Hospital length of stay (LOS), median (IQR)                         | 8 (5-11)           |
| Discharge disposition   |                    |
| Home  | 20                 |
| Patient directed discharge  | 8                  |
| Facility  | 5                  |
| Hospice   | 1                  |

Figure 1. Number of Infections by Bug



- MRSA
- MSSA
- CoNS
- Group A or B Strep
- Enterococcus spp.
- No organism isolated

Figure 1. Number of Infections by Type



## Results

Table 3. Treatment Characteristics

| Variable   | N (%)         |
|--|---------------|
| Prior antibiotic therapy                                 |               |
| Received antibiotic prior to DBV                         | 32 (94.1)     |
| Days of effective antibiotics prior to DBV, median (IQR) | 4.5 (3.0-7.8) |
| Main reasons for DBV use                                 |               |
| Refusal of IV or SNF                                     | 12            |
| Placement issues due to social history or insurance      | 7             |
| Concern for adherence to prolonged oral regimen          | 17            |
| IV access issues, oral regimen not feasible              | 6             |
| Patient preference                                       | 2             |
| Chronic suppressive therapy                              | 1             |
| Total number of DBV dose administered per patient        |               |
| 0  | 3 (8.8%)      |
| 1  | 13 (38.2)     |
| 2  | 18 (52.9)     |
| Completed recommended DBV course                         | 26 (76.5)     |
| Reason for incomplete DBV course (n=8)                   |               |
| Patient directed discharge                               | 5             |
| Did not follow up with the infusion appointment          | 1             |
| Appointment scheduling issues                            | 2             |
| Adverse events, n=31                                     | 1 (3.2)       |
| pruritis, skin sloughing                                 | 1             |

Table 4. Cost Impact of Dalbavancin Therapy

| Variable   |                    |
|--|--------------------|
| Total hospital days averted, days (n=16)                               | 445                |
| (1) Cost of hospital bed days averted <sup>d</sup>                     | \$1,557,500        |
| (2) Cost of standard IV antibiotic if course completed as inpatient    | \$6578             |
| (3) Cost of DBV used as inpatient                                      | \$37,761           |
| <b>Potential cost savings</b>  | <b>\$1,526,317</b> |
| Cost of DBV used as inpatient among patient LOS was not averted (n=15) | \$55,260           |
| <b>\$1,526,317-\$55,260</b>  | <b>\$1,471,057</b> |

## Conclusions

At our institution, dalbavancin was used to treat patients with substance use disorder, with usages indicated for bone and joint infections, as well as the already indicated skin/soft tissue infections. Patient preference to avoid oral or IV therapy, concerns for adherence to prolonged oral therapy, and issues with placement were cited as leading reasons for dalbavancin. Dalbavancin was well tolerated with minimal reported side effects. In addition to patient-centered treatment, the cost analysis shows that it may potentially have significant cost-savings to the institution. Continued review of dalbavancin usage, and evaluating recurrence of infection at the same site are important future steps for evaluation.