Among 128 patients identified during the study period, 98 met inclusion criteria. Of those included, 36 had one set of blood cultures that were positive for CoNS and 62 patients had at least two sets of blood cultures that were positive for CoNS.

Figure 2. Duration of Antibiotic Treatment

We evaluated duration of treatment based on total antibiotic duration and duration from date of 1st negative blood culture. The number of patients is noted above each bar.

Conclusion. Although the majority of patients were treated for ≤14 days for uncomplicated CoNS bacteremia, nearly 1/3 of patients were treated for > 14 days. Recurrent bacteremia was uncommon despite catheter retention in most patients. Relatively high rates of vancomycin-associated nephrotoxicity highlight opportunities for antimicrobial stewardship to limit duration of vancomycin therapy among cancer patients with uncomplicated CoNS bacteremia.

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181. Demographic and Geographic Epidemiology of *Staphylococcus aureus* Bacteremia using Geographic Information Systems Mapping and Spatial Statistics

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Session: P-10. Bacteremia

**Background.** Risk factors for community-associated *Staphylococcus aureus* bacteremia (SAB) are incompletely understood. We used Geographic Information Systems (GIS) and spatial statistics to analyze demographic and geographic epidemiology of SAB in the community.

**Methods.** We used the *S. aureus* Bacteremia Group Prospective Cohort Study (SABG-PCS) at Duke University Medical Center to obtain demographic and clinical data. We used the American Community Survey and U.S. Census to supply neighborhood variables. Secular trends in demographic and clinical characteristics of SAB patients prospectively enrolled between 1995 and 2015 (*n = 2478*) were determined using linear regressions. To characterize spatial patterns in Methicillin-resistant *S. aureus* (MRSA) bacteremia compared to Methicillin-susceptible *S. aureus* (MSSA) bacteremia, we used GIS mapping and selected a subgroup of patients (*n = 667*) living in and around Durham County, North Carolina. We then created generalized additive models (GAMs) using this subgroup to detect geographic heterogeneities in probabilities of MRSA infections compared to MSSA infections.

**Results.** We found evidence of changing demographic and clinical characteristics of SAB patients over the 21-year period. The proportion of infections acquired in the community increased significantly (p < 0.0001). However, we did not detect spatial heterogeneities of MRSA infections in Durham County. Patient location of residence was not significantly associated with antimicrobial-resistant infections. Patient age and year of hospital admission were the only statistically significant covariates in age and year of hospital admission were the only statistically significant covariates in our spatial models.

**Conclusion.** We utilized a novel method to analyze SAB in the community using GIS and spatial statistics. Future research should prioritize community transmission of *S. aureus* to identify robust risk factors for infection.

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182. Clinical Presentation of Patients with *Staphylococcus lugdunensis* Positive Blood Cultures After the Implementation of Rapid Molecular Blood Culture Diagnostics

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Session: P-10. Bacteremia

**Background.** Since the implementation of improved laboratory techniques, coagulase negative *Staphylococcus* (CoNS) have been routinely speciated to screen for *S. lugdunensis* (SL), which has led to increased identification. The objective of this study is to describe the characteristics of patients with SL positive blood cultures after the introduction of Verigene® Gram-Positive Blood Culture Nucleic Acid Test (BC-GP) in two large medical systems.

**Results.** Retrospective review of all blood culture isolates positive for SL from Memorial Hermann Hospital System (14 hospitals) and HarrisHealth System (two acute care hospitals) since implementation of BC-GP.

We found evidence of changing demographic and clinical characteristics of SAB patients over the 21-year period. The proportion of infections acquired in the community increased significantly (p < 0.0001). However, we did not detect spatial heterogeneities of MRSA infections in Durham County. Patient location of residence was not significantly associated with antimicrobial-resistant infections. Patient age and year of hospital admission were the only statistically significant covariates in our spatial models.

**Conclusion.** We utilized a novel method to analyze SAB in the community using GIS and spatial statistics. Future research should prioritize community transmission of *S. aureus* to identify robust risk factors for infection.

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### 183. Management of Left Ventricular Assist Device Infections at a Large Academic Medical Center

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**Session:** P-10. Bacteremia

**Background.** Left ventricular assist device infections (LVADIs) contribute significantly to morbidity and mortality. The lack of evidenced-based treatment recommendations may result in substantial variability in clinical practice. The purpose of this study was to evaluate the management of LVADIs at our institution to better assess practice patterns and standardize treatment decisions.

**Methods.** This was a retrospective study including adults diagnosed with an initial LVADI from January 1, 2013 to July 1, 2019. Exclusion criteria included concomitant non-LVADI, patients with other mechanical circulatory systems, or pregnancy.

**Results.** A total of 49 patients were included, 37 of which had at least one recurrence, resulting in 57 recurrent and 106 total LVADIs. The majority of LVADIs were driveline infections (DLIs) (92%). There was an increase in the incidence of deep DLIs (35% vs. 10%) and bloodstream infections (26% vs. 4%) amongst recurrent cases. Careful evaluation is warranted in patients with positive LV blood culture to rule out severe infections and avoid unnecessary courses of antibiotic therapy. This study suggests that increased identification of LV may impact our understanding of its significance and pathogenicity over time.

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

### Table 2: Infectious Source in Patients Considered to Have True S. epidermidis Bacteremia

| Primary Infection Source | True Infection, N = 63 | N (%) |
|--------------------------|------------------------|-------|
| Central line associated blood stream infection (CLABSI) | 16 (25.4%) | |
| Endocarditis | 10 (15.9%) | |
| Implanted material infection | 9 (14.3%) | |
| Skin/facetious infection | 11 (17.5%) | |
| Bacteremia infection | 8 (12.7%) | |
| Pneumonia | 5 (8.0%) | |

Source not identified: 59 (91.8%)

### Table 2: Infectious Source in Patients Considered to Have True S. epidermidis Bacteremia

| Source not identified | N (%) |
|----------------------|-------|
| Central line associated blood stream infection (CLABSI) | 16 (25.4%) |
| Endocarditis | 10 (15.9%) |
| Implanted material infection | 9 (14.3%) |
| Skin/facetious infection | 11 (17.5%) |
| Bacteremia infection | 8 (12.7%) |
| Pneumonia | 5 (8.0%) |

Conclusion. In our study, 29% of patients with positive blood culture for S. I were deemed contaminants. Patients without hardwares or positive concomitant other CoNS species from the same blood culture were often considered as contaminated cases. The incidence of IE remains as high as 10.8% in those patients identified to have true bacteremia (7.6% overall in our cohort), although lower than previously reported cases. Careful evaluation is warranted in patients with positive S. I blood culture to rule out severe infections and avoid unnecessary courses of antibiotic therapy. This study suggests that increased identification of S. I may impact our understanding of its significance and pathogenicity over time.

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### 184. Staphylococcus aureus Bacteremia Management and Outcomes Following Infectious Disease Consult Over Time at a Tertiary Care Center in Canada

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**Session:** P-10. Bacteremia

**Background.** Staphylococcus aureus bacteremia (SAB) is associated with high morbidity and mortality. Infectious disease consultation (IDC) is associated with increased adherence to guideline management and improved patient outcomes. We describe the IDC rate over time and impact of IDC on the management and outcomes of patients with SAB.

**Methods.** This retrospective chart review includes adult patients (≥ 18 years) hospitalized at the University of Alberta Hospital, Edmonton, Canada who had at least 1 blood culture growing S. aureus during two time periods (A: Jan 2010 to Dec 2012; B: Jan to Oct 2020). Patients who died or were made palliative within 48hrs following bacteremia were excluded. Descriptive statistics were used to compare appropriateness of SAB management and outcomes in patients receiving IDC and those who did not (NIDC).

**Results.** 325 patients in period A and 129 in period B were included. Baseline demographics were similar. IDC rate increased from 63% to 88% (p < 0.001) between the study periods. IDC was associated with increased odds of receiving an echocardiogram (OR=3.56, 95% CI 2.22 – 5.57; OR=20.4, 95% CI 11.63 – 0.001) and appropriate duration of antimicrobial therapy (OR=11.7, 95% CI 3.93 – 39.95; OR=43.2, 95% CI 5.72 – 292.5; p < 0.001) between study periods. Mean length of stay decreased in patients receiving IDC (44.8 vs 28.1 days, p=0.005) and increased in NIDC patients (19.9 vs 28.7 days, p=0.216). IDC was associated with lower 30-day mortality in period A (OR=3.53, 95% CI 1.95 – 6.36), however this association was not observed in period B (OR=1.43, 95% CI 0.40 – 5.56). There was a trend towards decreased odds of mortality in patients receiving early IDC (≤ 2 days from bacteremia, n=65) compared to late IDC (≥ 3 days from bacteremia, n=45) (OR=2.59, 95% CI 0.95 – 7.10, p=0.077).

**Conclusion.** This study offers unique insight into initial vs. recurrent LVADIs as well as infection characteristics and clinical outcomes at a large academic medical center. Future studies with additional focus on risk factors for recurrence would be beneficial for drawing conclusions on the efficacy of current practices and shaping future treatment guidelines.

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

### Table 5: Clinical Data and Outcomes

| Variable | Initial (n=49) | Recurrent (n=57) |
|----------|---------------|-----------------|
| Time to initial LVADI from implant, days (median [IQR]) | 293 (183, 629) | 24 (48.9) |
| LOS, days (median [IQR]) | 9 (5.8, 12.5) | 10 (6, 13) |
| 1st consulted (n [%]) | 43 (87.8) | 30 (53) |
| LVAD-related (re)admission* (n [%]) | 34 (69.4) | 30 (53) |
| 1 readmission | 19 (55.9) | 21 (38) |
| ≥2 readmissions | 15 (44.1) | 19 (33) |
| Recurrent LVAD* (n [%]) | 37 (75.5) | 26 (45) |
| Recurrence | 21 (56.8) | 19 (33) |
| ≥2 recurrences | 16 (43.2) | 19 (33) |
| Time to first recurrence, days (median [IQR]) | 102 (67, 151) | 30 (35, 45) |
| Same causative pathogen as initial LVADI (n [%]) | 24 (46.9) | 25 (43.7) |
| Recurrence suppression prior to first recurrence (n [%]) | 16 (43.2) | 19 (33) |
| Recurrent pathogen susceptible to suppression (n [%]) | 13 (81) | 16 (43.2) |
| Progression of initial LVAD* (n [%]) | 24 (49.0) | 19 (33) |
| Mortality at one year of initial LVADI (n [%]) | 8 (16.3) | 9 (16) |
| Time from initial infection, days (median [IQR]) | 255 (144, 309) | 24 (14) |

*within one year of antibiotic start for first LVAD

**Conclusion.** This was a retrospective study including adults diagnosed with an initial LVADI from January 1, 2013 to July 1, 2019. Exclusion criteria included concomitant non-LVADI, patients with other mechanical circulatory systems, or pregnancy. Pertinent patient, LVAD, infection, management, and clinical outcome data was collected and described with descriptive statistics.

**Results.** A total of 49 patients were included, 37 of which had at least one recurrence, resulting in 57 recurrent and 106 total LVADIs. The majority of LVADIs were driveline infections (DLIs) (92%). There was an increase in the incidence of deep DLIs (35% vs. 10%) and bloodstream infections (26% vs. 4%) amongst recurrent vs. initial LVADIs. Staphylococcus aureus (51%) and nosocomial gram-negative (22%) were the most common causative pathogens. Surgical interventions were common (55%). LVADIs treated predominately with oral antibiotics (54%) and anti-pseudomonal coverage in 49% and 22% of total cases, respectively. Suppressive antibiotics were the most common causative pathogens. Surgical interventions were common (55%). LVADIs treated predominately with oral antibiotics (54%) and anti-pseudomonal coverage in 49% and 22% of total cases, respectively. Suppressive antibiotics were the most common causative pathogens.