2009 Infectious Diseases Society of America (IDSA) management guidelines given the paucity of studies addressing CVC management.

Methods. We conducted a retrospective chart review on 543 patients diagnosed with EB between 2010 and 2018. We excluded patients without an indwelling CVC and those with mucosal barrier injury (MBI). We further evaluated 90 patients with EB that met the CDC definition for CLABSI without MBI or the IDSA definition for catheter-related bloodstream infections (CRBSI) and 90 patients with an indwelling CVC in place with documented non-CLABSI with another source.

Results. Early CVC removal (within 3 days of EB) was significantly higher in the CLABSI without MBI/CRBSI group compared with the non-CLABSI (43% vs. 27%; $P = 0.02$). Microbiological eradication associated with early CVC removal within 3 days of EB was significantly higher in the CLABSI without MBI/CRBSI group compared with the non-CLABSI (78% vs. 48%; $P = 0.016$). Complications were lower in the CLABSI without MBI/CRBSI compared with the non-CLABSI group (0% vs. 18%; $P = 0.017$). Defervescence, mortality (all-cause and infection-related mortality) and relapse were similar in both groups. Within each group, the outcome was similar irrespective of CVC management (removal within 3 days vs. retention).

Conclusion. In cases of EB, early CVC removal within 3 days of bacteremia is associated with a favorable outcome in the CLABSI without MBI/CRBSI group compared with the non-CLABSI group.

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121. Cardiac Implantable Electronic Device-Related Infective Endocarditis (CIED-IE): Clinical Features and Outcomes of Patients with Definite IE Who Fulfill Both Major Duke Criteria

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Background. Cardiac implantable electronic device-related infective endocarditis (CIED-IE) comprises 10–57% of total CIED infections. Patients with definite CIED-IE who fulfill both major modified Duke criteria have not been well characterized.

Methods. Data from the Multicenter Electrophysiologic Device Infection Cohort, a prospective, multinational study of CIED infections were used to describe a subset of patients with CIED-IE who met both major Duke criteria for definite IE (bloodstream infection and intracardiac vegetations [VEG]).

Results. Of 433 patients with CIED infection, 144 (33.3%) had definite CIED-IE. The median age was 68 years and 77.1% were male. Twelve (8.3%) had past CIED infection. Seventy-seven patients (53.5%) had permanent pacemakers, 38 (26.4%) had implantable cardioverter defibrillators, and 29 (20.1%) had combination devices. The median time following the last device procedure was 550 days. CIED-IE was early in 60 patients (41.7%) and late in 84 (58.3%). Most patients presented with fever (77.8%) and sepsis (44.4%) with a median symptom duration of 7 days. On echocardiography, lead VEG was noted in 125 patients (86.8%) and valvular VEG in 54 patients (37.5%) with the tricuspid valve involved in 56.5%. On the basis of VEG location, there were 90 patients (62.5%) with isolated lead-associated IE (LAE), 19 patients (13.2%) with isolated valve-associated IE (VAE), and 35 patients (24.3%) with both (LVAE). All patients had positive blood cultures and 63/119 (52.9%) had positive lead cultures. The predominant organism in blood was *Staphylococcus aureus* (42.4%), followed by coagulase-negative staphylococci (20.1%). CIED removal occurred in 131 patients (91%). There were 25 deaths during the index hospitalization and 34 total deaths (24.3%) by 6 months. Mortality correlated with age >75 ($P = 0.023$) and sepsis on presentation ($P = 0.052$). Infecting organism, site of VEG, and device removal did not impact the risk of death.

Conclusion. Definite CIED-IE is relatively common. The majority of patients tend to have late-onset infection and often present with sepsis. *S. aureus* is the dominant organism causing definite CIED-IE. Isolated LAE occurs in 63% of patients. Older age and sepsis on admission are associated with higher mortality.

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122. Evaluation of Early Clinical Failure Criteria in Patients with Enterococcus Species Bloodstream Infection

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Background. Early clinical failure criteria (ECFC) were recently proposed to predict poor clinical outcomes in patients with Gram-negative bloodstream infections (BSI). ECFC are measured between 72 and 96 hours from collection of index blood culture (Table 1). The objective of this study was to evaluate the performance of ECFC in predicting 28-day mortality in patients with *Enterococcus* spp. BSI.

Methods. This IRB-approved, retrospective, observational cohort study included adult patients hospitalized at Prisma Health–Midlands hospitals from January 1, 2015 to July 31, 2018 with a monomicrobial BSI due to *Enterococcus* spp. Patients with a previous episode of *Enterococcus* spp. BSI within one year prior to index culture or those who died within 72 hours were excluded. Multivariate logistic regression was used to examine the association between ECFC and 28-day all-cause mortality. The area under the receiver operating characteristic (ROC) curve was used to measure model discrimination.

Results. A total of 157 patients with *Enterococcus* spp. BSI were included. Overall, the median age was 66 years, 96 (61%) were men, and 106 (68%) had community-onset BSI. The urinary tract was the most common source of infection (45; 29%), followed by intraabdominal infections (34; 22%). Twenty-eight patients (18%) died within 28 days of BSI. After adjustments for age and Charlson Comorbidity Index, every one-point increase in the ECFC was associated with an 80% increase in the odds of 28-day mortality (OR 1.8, 95% CI 1.3–2.4, $P < 0.001$). Mortality increased from 4% in patients with ECFC of 0 to 11%, 28%, and 38% as ECFC increased to 1, 2, and ≥3, respectively. The area under ROC curve of ECFC model in predicting 28-day mortality was 0.74 with ECFC of 2 identified as the best cutoff point. Mortality was 8% in patients with ECFC < 2 compared with 33% in those with ECFC ≥2 ($P < 0.001$).

Conclusion. ECFC demonstrated good discrimination to predict 28-day mortality in hospitalized adult patients with *Enterococcus* spp. BSI. These criteria may have utility as a stratification or randomization tool in future clinical investigations evaluating optimal antimicrobial treatment duration or effectiveness of intravenous to oral switch therapy in uncomplicated *Enterococcus* spp. BSI.

Table 1: Early clinical failure criteria between 72 and 96 hours of onset of bloodstream infection

Early Clinical Failure Criteria	Point Allocation
Systolic blood pressure < 100 mmHg or vasopressor use	1
Heart rate > 100 beats/minute	1
Respiratory rate ≥ 22 breaths/minute or mechanical ventilation	1
Altered mental status	1
Peripheral white blood cell count > 12,000/mm^3	1

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123. Impact of Enterococcal Bacteremia on Clinical Outcomes in Patients with Liver Cirrhosis

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Background. Patients with liver cirrhosis are at an increased risk for bacterial infections due to bacteria overgrowth and dysregulation of the intestinal barrier function. These infectious complications are associated with significant morbidity and mortality. Currently, there is a paucity of literature evaluating the clinical outcomes of patients with enterococcal bacteremia and cirrhosis. We hypothesized that patients with cirrhosis and subsequent enterococcal bacteremia would have a higher odds of mortality.

Methods. This was a retrospective, case–control study including adult patients (>18 years) with liver cirrhosis and >1 positive blood culture with Enterococcus species (ENT) admitted from June 2013 through August 2018. These cases were then matched with cirrhotic patients without enterococcal bacteremia (NO ENT) in a 1:1 ratio based on the Model for End-Stage Liver Disease (MELD) score. The primary endpoint was all-cause inpatient mortality. Multivariable logistic regression was used to control for other patient covariates.

Results. A total of 136 patients were identified during the study period (68 ENT and 68 NO ENT). The median length of stay was significantly longer in ENT patients (24.5 vs. 9 days, $P < 0.001$), while NO ENT patients were more likely to have renal dysfunction (55.9% vs. 83.8%, $P < 0.001$). All other baseline characteristics between