Table 1. Baseline Characteristics and Outcomes Data (N=7,700)

| Characteristic | Community-Onset SAB | Hospital-Onset SAB | Overall SAB | Rate Difference (HO-CD1) |
|----------------|----------------------|---------------------|-------------|--------------------------|
| Number of patients | 3,615 (6,199) | 4,085 (2,478) | 7,700 | 2.1% |
| Age (years) | 59.8 | 59.7 | 59.8 | 2.1% |
| Male Gender (%) | 62.7% | 57.8% | 61.0% | 2.1% |
| Mortality | 10.3% (249) | 25.7% (217) | 11.9% (522) | 14.8% |
| Complications Rate | 29.3% (707) | 81.6% (3,343) | 39.9 (944) | 53.9% |
| Mean Length-of-Stay | 10.81 (SE 0.10, 11.9) | 21.87 (SE 0.03, 24.5) | 15.97 (SE 0.03, 17.9) | 3.0% |
| Cost (per admission) | $13,564 | $8,549 | $29,134 | 7.0% |

Disclosures. All authors: No reported disclosures.

158. Invasive Group B Streptococcal Diseases in Adults: A Retrospective Study in Thailand (2013–2017)
Naksarn Angkaswim, MD; Nantaporn Pirogad, MD; Pakpoom Phoomoung, MD and Amornrat Leelaporn, PhD, Faculty of Medicine Siriraj Hospital, Mahidol University, Bangkok, Krung Thep, Thailand
Session: 37. Bacteremia, CLABSI, and Endovascular Infections
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Background. Group B Streptococcus (GBS) has been increasingly associated with invasive diseases in nonpregnant adults. This study aims to epidemiology of invasive GBS (GBS) diseases in adult patients.

Methods. A retrospective cohort study was conducted at Siriraj Hospital between January 1, 2013 and December 31, 2017. We included adult patients with a positive culture of GBS isolated from sterile sites.

Results. Among 224 patients recruited to the study, 170 patients (75.9%) had bacteremia. The median age of all patients was 63 years (IQR 53–73 years) and 52.7% were female. Approximately 80% of all patients had comorbid diseases. Diabetes mellitus (38.8%), cancer (18.8%) and heart disease (12.5%) were the three most common comorbidities. Skin and soft-tissue infection (30.8%), septic arthritis (21.4%), primary bacteremia (21%), and meningitis (7.1%) were the four most common presenting syndrome of GBS diseases. Overall mortality within 30 days of infection was 12%. Non-survived patients were older, had chronic kidney disease, bacteremia, pneumonia and had at least one comorbidity than survived patients. However, only pneumonia was found independently associated with the 30-day overall mortality, with adjusted odd ratio (aOR) of 2.49 (95% confidence interval [CI]: 1.55-10.75). Antimicrobial susceptibility testing of 69 isolates demonstrated that 7 (10%) and 13 (18%) were resistant to erythromycin and clindamycin, respectively. All isolates remain susceptible to penicillin.

Conclusion. Invasive GBS is an emerging disease in non-pregnant adults particularly elderly and diabetes mellitus patients. Two-thirds of GBS patients have concomitant bacteremia. Even though the overall mortality was 12% but a significant morbidity was observed.

Disclosures. All authors: No reported disclosures.

159. Comparing Clinical Cure and Patient Outcomes Between Intravenous Therapy and Intravenous (IV)-to-Oral (PO) Step-down Therapy for Treatment of Gram-negative Bloodstream Infections
Kelsey Williams, PharmD;1 Riane Gharnavi, PharmD, BCPS;2 Sheila Takeddine, PharmD, BCPS;3 Peter Grubs, MD;4 Maggie Powers-Fletcher, PharmD 1 and Suyan Liao, PharmD, PhD, BCPS, BCIDP;5 1UC Health, University of Cincinnati Medical Center, Cincinnati, Ohio; 2UC Health, West Chester Hospital, West Chester Township, Ohio; 3UC Health, Cincinnati, Ohio; 4UC Health, West Chester Hospital, West Chester Township, Ohio
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Background. There is a paucity of evidence surrounding optimal prescribing practices for the treatment of Gram-negative bloodstream infections (GNBSI). This study aimed to assess the appropriateness of IV-to-PO step-down therapy in the treatment of GNBSI.

Methods. A retrospective cohort study was conducted at the University of Cincinnati Medical Center and West Chest Hospital and included subjects ≥21 years of age with GNBSI caused by Enterobacteriaceae spp. or Pseudomonas aeruginosa. The primary objective was to compare clinical cure rates between IV-only and IV-to-PO therapy, and to further assess differences in clinical cure rates amongst oral antibioti- cics of high, moderate, and low bioavailability. The study also aimed to identify factors associated with clinical cure, hospital length of stay, and emergence of multi-drug re- sistant organisms (MDRO).

Results. Amongst 215 subjects screened, 99 subjects were included and 64 sub- jects met criteria for clinical cure. In the univariate analysis, the IV-to-PO group had a higher percentage of clinical cure than IV only therapy (82% vs. 48%, P = 0.001). Of note, the two study groups were significantly different in regards to initial cure status, Pitt bacteremia score, and primary site of infection. Upon further analysis, data from the multivariate logistic regression revealed that critical illness was the only sig- nificant factor that negatively impacted clinical cure (OR = 0.20; 95% CI 0.04-0.99; P = 0.049). A total of 49 subjects received oral antibiotics. Majority of patients (82%) in the IV-to-PO group received a moderately bioavailable oral antibiotic. No difference in respect to clinical cure rate was found between the three PO antibiotic bioavailability groups (P = 0.346). The median duration of hospital stay was shorter in the IV-to-PO compared with IV alone group (4 days vs. 9.5 days, respectively, P ≤ 0.001). There was a trend in emergence of MDROs with IV therapy compared with IV-to-PO therapy (10% vs. 2%, P = 0.204).

Conclusion. IV-to-PO stepdown therapy compared with IV therapy alone was noninferior in clinical cure rates in the treatment of GNBSI and may result in fewer hospital days and less emergence of multidrug-resistant organisms. These conclusions are limited by significant differences overall in several aspects between groups in this study.

Disclosures. All authors: No reported disclosures.

160. Could Reducing Time to Bacterial Identification From Positive Blood Cultures Improve Outcomes in Bacteremic Patients?
Jessica D. Forbes, PhD;1 Reem Haj, PharmD;2 Linda R. Taggart, MD, MPH, FRCPC;2 Ramaz Fattouh, PhD, FICM3; Elizabeth Leung, PharmD;4 Jan Friedrich, MD;4 and Larissa M. Matukas, MD, FRCPC;5 University of Toronto, Toronto, ON, Canada; St. Michael’s, Unity Health, Toronto, ON, Canada; St. Michael’s Hospital and University of Toronto, Toronto, ON, Canada; St. Michael’s Hospital and University of Toronto (Dept of Lab Med and Pathobiology and Infectious Diseases), Toronto, ON, Canada
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Background. Survival of patients with septic shock is dependent on the timing of effective antibiotic administration. The initial notification by the microbiology lab of a positive blood culture is a key factor in improving patient outcomes. It can take >2 days to definitively identify from positive blood cultures. Accordingly, we employed rapid organism identification and studied the impact of this on patient management from a quality improvement perspective.

Methods. Rapid organism identification was performed for bacteremic patients admitted to the ICU at St. Michael’s Hospital in Toronto, ON. We created a pool of positive blood culture bottles using a lysing centrifugation technique. MALDI-TOF was then used to obtain an organism identification. The microbiology lab verbally notified the ward clerk of the identification and surveys were conducted with treating physicians within 24–48 hours to evaluate the short-term impact of the rapid identification including changes to antibiotics, diagnostic testing, central line management and requests for specialty consultations.

Results. Between January 28 and April 28, 2019, 17 rapid blood culture results were included for study. When asked how physicians received the result, in 7 cases the physician did not remember; other responses included microbiology report (2), pharmacist (1), antimicrobial stewardship or lab (1), on-call team (1) and residents (1). Antibiotics were adjusted in 13 patients; of which may have changed antibiotics for reasons other than the organism identification. Reasons for not changing therapy include: appropriate empiric treatment, likely contaminants, or physician not being notified of the result. In 5 cases, antibiotics were discontinued, in another 2 cases the antibiotics were broadened and a further 5 narrowed to cover the organism; the remaining 5 continued the same empiric therapy. Repeat blood cultures were obtained for 5 cases, follow-up imaging in 5 cases and-lines were changed/removed in 5 cases. Consultation was requested for 7 cases.

Conclusion. Based on preliminary data, rapid organism identification shows promise of improved patient management with line removal and antibiotics adjustments occurring 1 day sooner with rapid results.

Disclosures. All authors: No reported disclosures.

161. Evaluating the Predictive Value of Blood Culture Bottle Reporting for Coagulase Negative Staphylococci-Positive Cultures: Assessing Contamination vs. True Bacteremia
Pameela B. Bailey, DO and Christopher Doern, PhD;6 Virginia Commonwealth University Health System, Richmond, Virginia
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Background. Coagulase-negative staphylococci (CoNS) are common blood cul- ture (BC) contaminants, but can also be causes of true blood stream infection (BSI). As a result, the clinical interpretation of CoNS positive BC poses a significant chal- lenge for providers and drives unnecessary antibiotic use, extended lengths of stay, and increased hospital costs. Despite these challenges, little is known about whether the number of positive BC bottles within a set can be used to predict contamination vs. true BSI.

Methods. This study was conducted in an 865-bed tertiary care academic medical center in Richmond, VA. A retrospective chart review of CoNS-positive BCs from October to December 2018 was performed. Data collection included patient demo- graphics, number of positive bottles within a set (i.e., were 1 or 2 bottles positive), care setting, antibiotic use, clinical judgement of contamination, and additional workup findings for positive BCs results. Polymeric BCs were excluded.

Results. 50 patients (mean age 58.2 years, 60% male) with CoNS-positive BCs were included in this study. Forty (80%) of the cultures had only 1 of 2 BCs positive within a set. 10 (20%) were positive from both bottles in the set. All patients were drawn in the Emergency Department and 90% were subsequently admitted to the hospital. Upon chart review, 47 (94%) and 3 (6%) of cultures were considered to be contaminants and
real BSI, respectively. Of those judged to be contaminants, 10 (20%) were positive in both bottles within a set, and thus falsely suggested true BSI. Of the 3 judged to be true BSI, 2 (66%) were positive in 1 out of 2 bottles, and thus falsely suggested contamination.

42 (84%) patients had repeated C/Cx drawn following the initial positive culture, and 26 (52%) were continued on IV antibiotics. Forty (80%) of the cultures were judged contaminants by the primary medical service, and 77% stopped antibiotics (20/26) when CoNS was identified.

Conclusion. These data show that reporting the number of bottles which are positive within a set provides misleading information and should not be used to determine whether a culture result represents contamination or true BSI.

Disclosures. All authors: No reported disclosures.

162. Identifying Determinants of Therapeutic Switch to Linezolid among Patients with Methicillin-Resistant Staphylococcus aureus Bloodstream Infections
Rajeshwari Nair, PhD; Marlin L. Schweizer, PhD; Eli N. Perencovich, MD, MS; Daniel J. Livorsi, MD, MSc; Michiko Goto, MD, MS; Bruce Alexander, PharmD; Bruce Beck, MA; Kelly Richardson, MA, PHD and Mireia Puig-Asemsio, MD, PHD; 1Iowa City VA Health Care System, Iowa City, Iowa; 2University of Iowa Carver College of Medicine, Iowa City, Iowa; 3University of Iowa Carver College of Medicine and Iowa City VA Health Care System, Iowa City, Iowa; 4University of Iowa Hospitals and Clinics, Iowa City, Iowa

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Background. In order to target future randomized controlled trials (RCT) of treatment of methicillin-resistant S. aureus bloodstream infections (MRSA BSI), it will be important to understand the drivers of antibiotic selection. We aimed to determine factors associated with switching from vancomycin to imipenem linezolid administration during the management of MRSA BSI.

Methods. This retrospective cohort included all patients admitted to Veteran Affairs hospitals from 2007 to 2014 and who had received vancomycin for MRSA BSI. Patients were considered to have switched to linezolid from vancomycin if they received at least 2 consecutive days of inpatient treatment and were not on concurrent vancomycin treatment. Cox proportional hazards models were used to identify factors that were associated with switch within 14 days and 30 days. Median with interquartile range (IQR) hazard ratio (HR) and 95% confidence intervals were reported.

Results. Among 7289 patients diagnosed with MRSA BSI during their index admission, 474 (6.5%) switched to linezolid during the admission. The median inpatient duration of vancomycin treatment among all patients was 13 (IQR: 5–34) and among patients who switched was 16 days (IQR: 6–52). The median inpatient duration of linezolid treatment was 5 days (IQR: 1–13 days). Patients who switched to linezolid were more likely to have a MRSA isolate with MIC >2 µg/mL (6.8% vs. 4.9%), diagnosis of respiratory tract infection (36.7% vs. 32.9%), or be obese (16.5% vs. 13.6%) than those who continued on vancomycin (P < 0.10). In risk-adjusted models, presence of a respiratory tract infection diagnosis was associated with greater likelihood of being switched to linezolid within 14- and 30-days (HR=1.29, 95% CI 1.01–1.64; HR=1.32, 95% CI 1.06–1.65).

Conclusion. Less than 10% of patients initially treated with vancomycin for MRSA BSI were switched to linezolid in this real-world study. A diagnosis of respiratory tract infection was a major determinant of switching to linezolid. It is important to identify potential subsets of MRSA BSI patients so that future comparative effectiveness RCTs can be targeted to interventions with clinical equipoise in real-world practice settings.

Disclosures. All authors: No reported disclosures.

163. Infective Endocarditis in Qatar: Risk Factors, Clinical Characteristics, and Outcomes
Ahmed Azqout, MD; Shaban Mohammed, BSc Pharm (Hons), BCPS,Added Qualifying Board (Infectious Diseases); Malha Thapur, MD; Hussam Al Souib, MD; Muna Almaslamani, MBBS, CABMS, MSc-HCM-RCSCI; Abdullatif Al Khal, MD and Ali S. Omran, MBChB, MSc; FRCP, FRCPath; hamad medical corporation, Doha, Al Khawar, Qatar; Hamad Bin Khalifa Medical City, Doha, Ad Dawhah, Qatar; Hamad General Hospital, Doha, Ad Dawhah, Qatar; Communicable Disease Center, Doha, Ad Dawhah, Qatar

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Background. Infective endocarditis (IE) is a serious and life-threatening disease. The aim of the study is to describe the epidemiology, clinical characteristics and outcomes of patients with IE in Qatar.

Methods. Patients were identified from the electronic records of Hamad Medical Corporation hospitals, the national referral center for the State of Qatar. Those aged ≥18 years with Duke Criteria-based diagnosis of IE during the period from January 2015 to September 2017 were included. Data were analyzed using STATA software Version 15.

Results. Fifty-seven cases were included, of which 70% were males. Mean age was 51 years (± 16.8). Eleven (19%) were in association with prosthetic valves and 6 (11%) with implantable cardiac devices (Table 1). Fever (84%), dyspnea (46%) and heart failure (11%) were the commonest presentations. The majority of patients had preexisting valvular heart disease or intra-cardiac devices (Table 1). Skin infections (10, 18%) were the most prevalent portals of infection, followed by venous catheters, recent valve surgery and implantable cardiac devices (Table 1). Staphylococcus species were implicated in 19 (34%) and Streptococccae in 9 (16%); whereas 21 (37%) were culture-negative (Table 2). Left-side IE (49, 86%) was predominant. Acute kidney injury (AKI) (17, 30%) and heart failure (11, 19%) were common complications. The most frequently used treatment regimens included glycopeptides or B-lactams (Table 2). Of those (26, 46%) patients underwent surgical intervention. Seventeen (25%) patients died of any cause before hospital discharge. Logistic regression analysis identified septic shock and AKI as the only risk factors independently associated with in-hospital mortality (Table 3).

Conclusion. Skin infections are a common risk for IE in Qatar. Majority of patients with IE have preexisting cardiac conditions. Staphylococci are the commonest confirmed bacterial etiology of IE in Qatar, but nearly one-third of cases are culture-negative. Only a small proportion of patients with IE undergo surgical intervention and overall mortality is high. The findings suggest that efforts should be directed toward improving IE prevention strategies in high-risk patients, encourage early microbiological investigations and improved medical and surgical management.