respectively. Vancomycin-nonsusceptibility (VRE) rates in the US, W-EU, E-EU were 3.2%, 0.9%, and 2.7% among *E. faecalis*, and 64.6%, 18.2%, and 30.6% among *E. faecium*, respectively.

Table 1

Rank	Frequency of organisms isolated from bloodstream infections		
	United States (n=12,748)	Western Europe (n=12,198)	Eastern Europe (n=3,297)
1	*S. aureus* (24.3%)	*E. coli* (30.3%)	*E. coli* (22.0%)
2	*E. coli* (20.8%)	*S. aureus* (15.7%)	*K. pneumoniae* (17.1%)
3	*K. pneumoniae* (8.8%)	*K. pneumoniae* (8.8%)	*S. aureus* (14.9%)
4	*E. faecalis* (5.5%)	*E. faecalis* (5.5%)	*P. aeruginosa* (8.2%)
5	BHS (4.5%)	*P. aeruginosa* (4.7%)	*A. baumannii* (6.0%)
6	*P. aeruginosa* (4.4%)	*S. epidermidis* (4.1%)	*S. pneumoniae* (4.2%)
7	*S. epidermidis* (4.1%)	*E. faecium* (3.9%)	*E. faecalis* (3.4%)
8	*E. cloacae* (3.1%)	*E. cloacae* (3.0%)	*E. faecium* (3.0%)
9	*E. faecium* (2.9%)	BHS (2.7%)	*E. cloacae* (2.9%)
10	VGS (2.8%)	*P. mirabilis* (2.7%)	BHS (2.5%)

BHS, β-hemolytic streptococci; VGS, viridans group streptococci

Conclusion. The frequency of GNB was lower in the US compared to W-EU and E-EU. Antimicrobial resistance rates among Gram-positive cocci were higher in the US compared to W-EU and E-EU; whereas, among GNB, resistance rates generally were higher in E-EU compared to W-EU and the US.

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38. Predicting stenotrophomonas Maltophilia bloodstream Infections (BSI) in the Hematologic Malignancy Population

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Session: O-8. Bacteremia and Endocardits

Background. Trimethoprim-sulfamethoxazole (TMP-SMX) is the preferred treatment for *S. maltophilia* BSI. Hematologic malignancy patients are at increased risk of *S. maltophilia* BSI but because of the TMP-SMX adverse event profile, this agent is not routinely included in empiric treatment regimens. We sought to identify risk factors for *S. maltophilia* BSI in hematologic malignancy patients to guide empiric treatment decisions in this population.

Methods. Inpatients ≥ 12 years at Johns Hopkins Health System hospitals between 7/1/16-12/1/19 with a hematologic malignancy and/or stem cell transplant (SCT) within 12 months were included. Cases were patients with *S. maltophilia* BSI and controls were patients with BSI from Gram-negative organisms other than *S. maltophilia*. Demographics, pre-existing medical conditions, antibiotic use (including prophylaxis) in the previous 3 months, and hospitalization in the previous 3 months were compared between cases and controls using non-parametric methods and multivariable logistic regression.

Results. There were 20 cases and 105 controls. Cases and controls were similar in terms of age, sex, type of underlying malignancy, proportion with recent SCT, absolute neutrophil count, (ANC), central venous catheter, and severity of illness. Cases were more likely to have received ≥ 72 hours of a carbapenem within the preceding 3 months, controlling for age, recent SCT, ANC, and central venous catheter (OR=3.11, 95% 1.05–9.16, p=0.04). There were no significant differences in prior cefepime or piperacillin/tazobactam use in the preceding 3 months between cases and controls.

Conclusion. Hematologic malignancy patients who received ≥ 72 hours of carbapenem therapy, but not other broad spectrum antibiotic use within the previous 3 months were more likely to be infected with *S. maltophilia* BSI. Identifying patients at high risk for *S. maltophilia* BSI can ensure early, appropriate empiric therapy – ultimately improving clinical outcomes.

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39. Comparative One-year Outcomes of Invasive staphylococcus Aureus infections Among Persons with and Without Drug Use in an Urban West Coast Cohort

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Session: O-8. Bacteremia and Endocardits

Background. Persons who use drugs (PWUD) face substantial risk from invasive *Staphylococcus aureus* infections but have important demographic and clinical differences from persons without drug use (non-PWUD). Despite this, limited data exist comparing *S. aureus* infection outcomes in PWUD vs. non-PWUD; these data are needed to inform interventions to optimize care for this vulnerable population.

Methods. We identified adults hospitalized from 2013–2018 at two academic hospitals in San Francisco with *S. aureus* bacteremia or ICD-coded diagnoses of endocarditis, epidural abscess, or vertebral osteomyelitis with compatible *S. aureus* culture. Via structured chart review, we compared the following among PWUD vs. non-PWUD: clinical and substance use features, adjusted odds of antibiotic completion, and one-year infection-free survival using a multivariate Cox proportional hazards model adjusted for age/race, housing, comorbidities, and MRSA.

Results. Of 963 hospitalizations for invasive *S. aureus* infections in 946 patients, 372/963 (39%) occurred in PWUD. Among PWUD, heroin (198/372, 53%) and methamphetamine use (185/372, 50%) were common (Table 1). Bacteremia occurred in 82% of hospitalizations. PWUD vs. non-PWUD had higher proportions of MRSA (48% vs. 31%) and invasive infections: 20% vs. 12% with endocarditis, 25% vs. 11% with epidural abscess, and 28% vs. 13% with vertebral osteomyelitis (all p< 0.001). PWUD had more self-directed ("AMA") discharges, and most using opioids did not receive methadone or buprenorphine (Table 2). PWUD completed antibiotic courses less often (70% vs. 87%; p< 0.001) and had 2.9-fold higher adjusted odds of incomplete treatment (95% CI:1.7–5.0). One-year mortality was lower in PWUD (18% vs. 30%), but one-year readmission for ongoing/recurrent infection was far higher (28% vs. 14%; HR 1.9 [95% CI:1.3–2.9], Figure 1).

Table 1: Demographic, Clinical, and Substance Use Characteristics

Table 1: Demographic, Clinical, and Substance Use Characteristics	PWUD n=372	No history drug use n=591
Demographic & Clinical		
Age (median, IQR)	50 (40-57)	60 (50-71)
Male sex (%, n)	71% (264)	69% (407)
Race/ethnicity		
White	59% (226)	43% (257)
Black/African American	21% (79)	14% (83)
Hispanic/Latinx	13% (49)	14% (86)
Asian/Pacific Islander	2% (8)	21% (127)
Other	6% (23)	8% (47)
Experiencing homelessness (%, n)	37% (136)	5% (27)
Charleston comorbidity score (median, IQR)	2 (0-4)	4 (2-7)
HIV positive (%, n)	18% (68)	4% (22)
Any mental health condition (%, n)	35% (129)	25% (148)
Substance Use		
Injection route described (%, n)	69% (258)	N/A
Recent drug use (<1 mo) (%, n)	71% (264)	N/A
Drug type: heroin (%, n)	53% (198)	N/A
Drug type: any opioid (%, n)	58% (214)	N/A
Drug type: methamphetamines (%, n)	50% (185)	N/A
Drug type: cocaine/crack (%, n)	37% (139)	N/A
Drug type: other (%, n)	5% (17)	N/A
On treatment for opioid use disorder prior to admission (%, n)	32% (70/214)	N/A

Table 2: Care Delivery, PWUD vs. non-PWUD

Table 2: Care Delivery	PWUD n=372	No history drug use n=591	P value
In-hospital treatment of opioid withdrawal or use disorder			
New start methadone ≤ 40mg	25% (36/144)	N/A	
New start methadone >40mg	8% (11/144)	N/A	
New start buprenorphine	4% (6/144)	N/A	
No new start treatment	67% (97/144)	N/A	
Prior methadone or buprenorphine continued	90% (63/70)	N/A	
PICC placed*	61% (130/337)	73% (142/522)	*0.003*
Discharge Setting			*<0.001*
Remained inpatient or left from hospital	30% (111)	12% (71)	
Skilled nursing facility	42% (157)	33% (194)	
Home	13% (48)	35% (208)	
*Other***	9% (34)	4% (23)	
Died or transitioned to hospice	7% (27)	14% (80)	
Patient-directed ("AMA") discharge anytime during course***	24% (80/340)	2% (12/496)	*<0.001*

*Not including those with pre-existing central access.
**Includes medical respite, transfer back to referring hospital, etc.
***Denominator those who survived to hospital discharge, not on hospice.