	MIC_{50}	MIC_{90}
DAP	1.5 mg/L	3 mg/L
LZD	4 mg/L	4 mg/L

Conclusion. LNS was common amongst VRE isolates in this cohort. Previous LZD exposure was infrequent and not associated with LNS. LZD susceptibility testing among VRE isolates recovered from patients actively screened for VREC warrants clinical consideration.

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

1226. Can Universal Decolonization Obviate the Need for Screening and Contact Precautions for Carriers of Methicillin-Resistant *Staphylococcus aureus* in a Medical Intensive Care Unit With MRSA Endemicity? An Interrupted Time Series Study

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Background. Universal decolonization of patients in intensive care units (ICUs) has been identified to be an effective infection control strategy of methicillin-resistant *Staphylococcus aureus* (MRSA). However, it remains uncertain whether universal decolonization can obviate the need for active surveillance testing (AST) and contact precautions (CPs) for MRSA carriers.

Methods. We conducted an interrupted time series study to evaluate whether universal decolonization (daily chlorhexidine bathing plus twice-daily intranasal mupirocin ointment for 5 days) without AST and CPs did affect the incidence of MRSA acquisition on clinical specimen and MRSA bacteremia (the first positive blood culture obtained more than 48 hours after ICU admission) in a medical ICU. There was a 12-month control period of universal decolonization combined with AST and CPs, followed by a 12-month intervention period of universal decolonization without AST and CPs for MRSA carriers. Changes in incidence density (new cases of MRSA acquisition on clinical specimen per 1,000 eligible patient-days) of MRSA were evaluated by segmented Poisson regression, and the cox proportional-hazards regression model was used to compare the differences in incidence of MRSA bacteremia between the two periods.

Results. The median overall prevalence of MRSA did not differ between the two periods (25.3% vs. 23.4%, $P = 0.55$), and the segmented Poisson regression analysis revealed that there were no significant differences in both level and trend of MRSA prevalence ($P = 0.43$ and $P = 0.27$, respectively). The incidence density of MRSA acquisition on clinical specimen was lower during the intervention period (5.7 vs. 4.5, $P = 0.039$). However, both level and trend of MRSA incidence density did not differ significantly whether to perform active surveillance and contact precaution or not ($P = 0.94$ and $P = 0.81$, respectively). No patient developed MRSA bacteremia during the control period and there were only two patients of MRSA bacteremia during the intervention period, which showed no significant difference (Log rank test, $P = 0.21$).

Conclusion. Universal decolonization without AST and CPs for MRSA carriers do not increase the incidence of MRSA acquisition on clinical specimen and ICU-attributable MRSA bacteremia in ICU with high prevalence rate of MRSA.

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

1227. Development of a Clinical Prediction Model for Mortality in Methicillin-Resistant *Staphylococcus aureus* Bacteremia

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Background. Methicillin-resistant *Staphylococcus aureus* bloodstream infection (MRSA BSI) is associated with high mortality despite advances in medical care. Mortality prediction may have a profound impact on clinical decision making and risk stratification. Widely used scoring systems such as the Acute Physiology and Chronic Health Evaluation (APACHE) II Score and the Pitt Bacteremia Score were derived in the general critical care and Gram-negative BSI populations, respectively and may be less precise in MRSA BSI. We sought to develop a predictive model (PM) for 30-day mortality in patients with MRSA BSI based on characteristics readily assessable at initial evaluation.

Methods. Retrospective, singe-center, cohort study in adults with MRSA BSI 2008 to 2018. Patients who did not receive active therapy within 72 hours of index culture were excluded. Independent baseline demographic, clinical and infection predictors of 30-day mortality were identified through multivariable logistic regression analysis with bootstrap resampling and coefficient shrinkage. The PM was derived using a regression coefficient-based scoring method. PM discriminatory ability was assessed using the c-statistic. The optimal threshold score was determined using the Youden Index (J).

Results. A total of 455 patients were included and 30-day mortality was 16.3%. The PM consisted of five variables and a potential total score of 33. Points were assigned as follows: age (9 points ≥90 years, 6 points 80–89 years, 5 points 70–79 years, 0 points <70 years); Glasgow Coma Scale (8 points ≤9, 5 points 10–13, 0 points ≥14); 7 points infective endocarditis or pneumonia; 5 points serum creatinine ≥ 3.5 dl/L; and four points respiratory rate <10 or >24. The PM c-statistic was 0.860 (95% CI 0.818, 0.902). The PM score with the maximum J value was 13. Thirty-day mortality was 5.2% vs. 44.5% for PM score <13 vs. ≥13 points, respectively ($P < 0.001$). The sensitivity, specificity, positive predictive value (PV), negative PV, and accuracy using a threshold of 13 points were 77.0%, 81.4%, 44.5%, 94.8%, and 80.7%, respectively.

Conclusion. Our findings demonstrate a weighted combination of five independent variables readily assessable at initial evaluation can be used to predict, with high discrimination, 30-d mortality in MRSA BSI. External validation is required before wide-spread clinical use.

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Theravance: Consultant, Grant Investigator and Speaker's Bureau, Consulting fee, Research grant and Research support. Sunovian: Consultant, Grant Investigator and Speaker's Bureau, Consulting fee, Research grant and Research support. Zavante: Consultant, Grant Investigator and Speaker's Bureau, Consulting fee, Research grant and Research support. NIAID: Consultant, Grant Investigator and Speaker's Bureau, Consulting fee, Research grant and Research support.

1228. Incidence of *Staphylococcus aureus* Infection after Elective Surgeries Among Adults in US Hospitals

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Background. *Staphylococcus aureus* is a leading cause of postsurgical infections. National estimates of these infections after elective surgeries based on microbiology data are limited. This study assessed 180-day postsurgical *S. aureus* incidence in real-world hospital settings.

Methods. Adults (≥18 years) who underwent elective surgery during a hospital-based outpatient or inpatient encounter from July 1, 2010–June 30, 2015 at one of 181 hospitals reporting microbiology results in the Premier Healthcare Database (PHD). Eighty-seven surgical categories were defined using ICD-9-CM and CPT procedure codes according to National Hospital Surveillance Network groupings plus additional categories. Microbiology results and ICD-9-CM diagnosis codes were used to identify invasive (e.g., deep incisional and organ-space SSI, bloodstream) and overall (i.e., invasive, superficial incisional, urinary tract, respiratory) *S. aureus* infections. Cumulative 180-day *S. aureus* infection rates were calculated as number of infections divided by number of discharges with elective surgeries. National infection volumes were calculated by multiplying infection rates by national inpatient elective surgery estimates using surgery counts in the entire PHD (665 hospitals) and weights based on hospital characteristics.

Results. Following 1,116,994 hospital-based outpatient elective surgeries, 180-day *S. aureus* incidence was 1.19% overall, with 0.38% complicated by invasive *S. aureus* infections. Among 884,803 inpatient elective surgeries, overall and invasive 180-day *S. aureus* infection incidence was 1.35% and 0.53%, respectively. This translated to an estimated 57,200 *S. aureus* infections (22,400 invasive) among an estimated 4.2 million elective inpatient surgeries annually in the US methicillin-resistance (MRSA) was observed in 45% and 46% of *S. aureus* infections after inpatient and outpatient surgeries, respectively. Figure 1 shows cumulative *S. aureus* incidence rates at each time point after outpatient and inpatient elective surgeries. Figure 2 delineates the incidence rates for each type of *S. aureus* infection.

Conclusion. Our study indicated similar *S. aureus* infection rates after inpatient and outpatient elective surgeries. The results highlight the much larger burden of disease of *S. aureus* infection in the United States beyond inpatient surgeries.

Figure 1. Overall *S. aureus* Incidence Rates After Elective Surgeries by Infection Timing among Adults 18+ Years

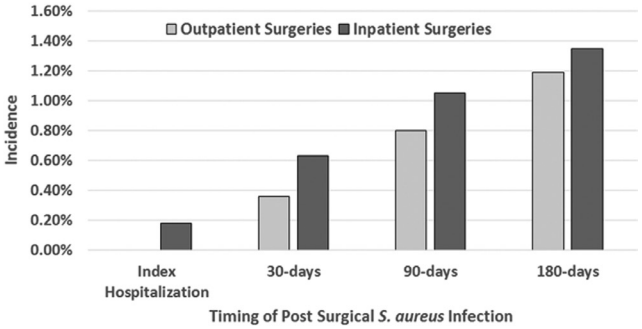
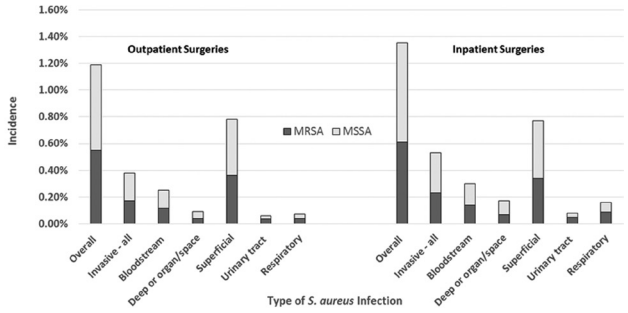


Figure 2. Incidence by Type of *S. aureus* Infection at 180-Days after Elective Surgeries among Adults 18+ Years*



*Not mutually exclusive categories (patients might have more than one type of infection)

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1229. Prevalence and Acquisition of MRSA in Females During Incarceration at a Large Inner-City Jail

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Background. USA300 MRSA is endemic in the community, with congregate settings such as urban jails potentially facilitating spread. It has been reported previously that males have a higher risk for MRSA carriage and bacteremia than females. However, it is unclear if there is differential risk for MRSA based on gender in high-risk populations. We determined the prevalence of MRSA colonization at jail entrance in females and defined an acquisition rate during incarceration.

Methods. Females incarcerated at the Cook County Jail, one of the largest US single-site jails, were enrolled within 72 hours of intake. Surveillance cultures (nares, throat, groin) were collected to determine prevalence of MRSA colonization. A survey was administered to identify predictors of colonization. Detainees in jail at Day30 had cultures repeated to determine MRSA acquisition. Univariate and multivariate analyses were performed to identify predictors of MRSA colonization.

Results. 250 women were enrolled (70% AA, 15% Hispanic) with 70% previously in jail (21% in the past 6 months). The prevalence of MRSA colonization at intake was 20% (50/250), with 42% of those colonized solely in the throat or groin. This intake prevalence is comparable to the 19% for male detainees in a parallel study. 9% (2/23) of initially negative women who remained in jail for 30 days acquired MRSA; five remained colonized and no one lost colonization. Univariate predictors (table) of MRSA at entrance to the jail were: illicit drug use (including using needles), unstable housing, engaging in anal sex, and recent exchange of sex for drugs/money. Women who exchange sex for drugs/money (vs. not) reported higher rates of needle use (35% vs. 4%, $P < 0.001$) and unstable housing (80% vs. 20%, $P < 0.001$). With multivariate adjustment for race/ethnicity, needles for illicit drugs was a significant predictor of MRSA (OR 5.89, 95% CI, 1.66, 20.94, $P = 0.006$).

Conclusion. We found that a high proportion (20%) of females entered jail colonized with MRSA, comparable to rates in males, suggesting that previously reported gender disparities in MRSA may not exist in high-risk populations. Entrance colonization risk factors suggest high-risk activities or venues in the community, with potential for directing gender-specific interventions.

Table. Predictors of MRSA Colonization in Females at Entrance to a Large Inner-City Jail

	Univariate			Multivariate		
Epidemiologic Factor						
	OR	**95% CI**	**p value**	**OR**	**95% CI**	**p value**
Race/Ethnicity						
Black/African-American	0.79	(0.51-1.23)	0.293	1.01	(0.60-1.69)	0.981
Latino	0.99	(0.55-1.78)	0.968	1.27	(0.66-2.45)	0.467
Non-Hispanic White	reference					
Cocaine use in past year	1.93	(1.01-3.71)	0.047			
Heroin use in past year	2.18	(1.07-4.46)	0.032			
Other Narcotic use in past year	2.30	(0.96-5.52)	0.063			
Benzodiazepine past year	2.79	(1.34-5.79)	0.006			
Prescription drugs to get high in past year	2.82	(0.95-8.33)	0.061			
Used needle for illicit drugs in past year	5.13	(1.87-14.10)	0.002	5.89	(1.66-20.94)	0.006
Released from jail in past 6 months	1.89	(0.94-3.83)	0.076			
Homeless or unstable housing in past year	2.11	(1.11-4.00)	0.023			
Substance abuse center in past year	2.72	(1.00-7.43)	0.051			
Ever diagnosed with Gonorrhea	1.88	(0.88-4.04)	0.104	2.01	(0.90-4.46)	0.087

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1230. Epidemiology and Risk Factors for Recurrent Invasive Methicillin-Resistant *Staphylococcus aureus* Infection: nine US States, 2006–2013

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Background. Methicillin-resistant *Staphylococcus aureus* (MRSA) causes >70,000 invasive infections annually in the United States, and recurrent infections pose a major clinical challenge. We examined risk factors for recurrent MRSA infections.

Methods. We identified patients with an initial invasive MRSA infection (isolation from a normally sterile body site) from 2006 to 2013, through active, population-based surveillance in selected counties in nine states through the Emerging Infections Program. Recurrence was defined as invasive MRSA isolation >30 days after initial isolation. We used logistic regression with backwards selection to evaluate adjusted odds ratios (aOR) associated with recurrence within 180 days, prior healthcare exposures, and initial infection type, controlling for patient demographics and comorbidities.

Results. Among 24,478 patients with invasive MRSA, 3,976 (16%) experienced a recurrence, including 61% (2,438) within 180 days. Risk factors for recurrence were: injection drug use (IDU) (aOR; 1.38, 95% confidence interval [CI]: 1.15–1.65), central venous catheters (aOR; 1.35, 95% CI: 1.22–1.51), dialysis (aOR; 2.00, 95% CI: 1.74–2.31), and history of MRSA colonization (aOR; 1.35, 95% CI: 1.22–1.51) (figure). Recurrence was more likely for bloodstream infections (BSI) without another infection (aOR; 2.08, 95% CI: 1.74–2.48), endocarditis (aOR; 1.46, 95% CI: 1.16–1.55), and bone/joint infections (aOR; 1.38, 95% CI: 1.20–1.59), and less likely for pneumonia (aOR: 0.75, 95% CI: 0.64–0.89), compared with other initial infection types. When assessed separately, the presence of a secondary BSI with another infection increased the odds of recurrence over that infection without a BSI (aOR: 1.96, 95% CI: 1.68–2.30).

Conclusion. Approximately one in six persons with invasive MRSA infection had recurrence. We identified potential opportunities to prevent recurrence through infection control (e.g., management and early removal of central catheters). Other possible areas for preventing recurrence include improving the management of patients with BSI and bone/joint infections (including both during and after antibiotic treatment) and mitigating risk of infection from IDU.