

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

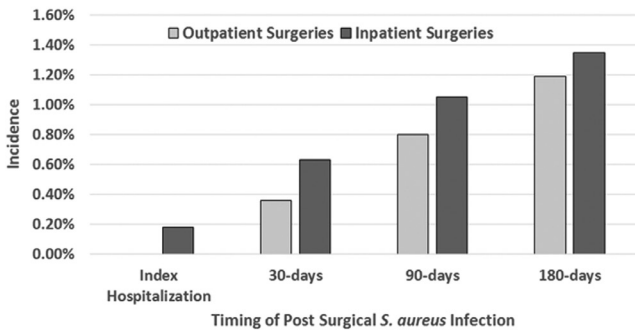
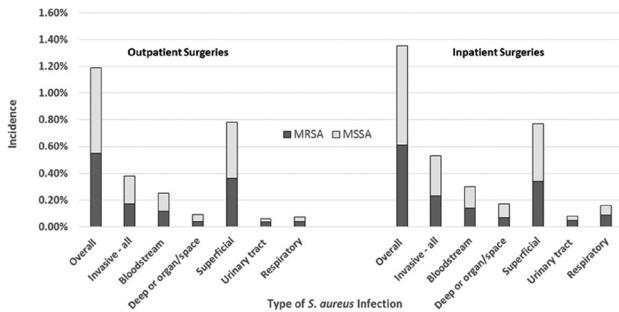


Figure 2. Incidence by Type of *S. aureus* Infection at 180-Days after Elective Surgeries among Adults 18+ Years*



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

Disclosures. J. Dreyfus, Premier, Inc.: Employee and Shareholder, Salary. E. Begier, Pfizer, Inc.: Employee and Shareholder, Salary. H. Yu, Pfizer, Inc.: Employee and Shareholder, Salary. A. Quintana, Pfizer, Inc.: Employee and Shareholder, Salary. J. Gayle, Premier, Inc.: Employee, Salary. M. A. Olsen, Pfizer: Consultant, Consulting fee.

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

Kyle J. Popovich, MD MS FIDSA^{1,2}; Chad Zawitz, MD^{1,2,3}; Alla Aroutcheva, MD, PhD⁴; Darjai Payne, BS, MPH²; Michael Schoeny, PhD⁵; Lisa Diep, MPH¹; Bala Hota, MD, MPH¹; Mary K. Hayden, MD, FIDSA, FSHEA² and Robert A. Weinstein, MD^{1,2}; ¹Stroger Hospital of Cook County, Chicago, Illinois; ²Rush University Medical Center, Chicago, Illinois; ³Cermak Health Services, Chicago, Illinois; ⁴Department of Nursing, Rush University Medical Center, Chicago, Illinois

Session: 137. Healthcare Epidemiology: MSSA, MRSA and Other Gram Positive Infections

Friday, October 5, 2018: 12:30 PM

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

Epidemiologic Factor	Univariate			Multivariate		
	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 Gonorrhoea	1.88	(0.88-4.04)	0.104	2.01	(0.90-4.46)	0.087

Disclosures. All authors: No reported disclosures.

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

Ian Krcalick, PhD, MPH¹; Kelly Jackson, MPH¹; Joelle Nadle, MPH²; Wendy Bamberg, MD³; Susan Petit, MPH⁴; Susan M. Ray, MD⁵; Ruth Lynfield, MD, FIDSA⁶; Lee H. Harrison, MD⁷; John M. Townes, MD⁸; Ghinwa Dumyati, MD, FSHEA⁹; William Schaffner, MD, FIDSA, FSHEA¹⁰; Jason Lake, MD¹¹ and Isaac See, MD¹; ¹Division of Healthcare Quality Promotion, Centers for Disease Control and Prevention, Atlanta, Georgia; ²California Emerging Infections Program, Oakland, California; ³Colorado Department of Public Health and Environment, Denver, Colorado; ⁴Connecticut Department of Public Health, New Haven, Connecticut; ⁵Emory University School of Medicine, Atlanta, Georgia; ⁶State Epidemiologist and Medical Director for Infectious Diseases, Epidemiology and Community Health, Minnesota Department of Health, St. Paul, Minnesota; ⁷University of Pittsburgh, Pittsburgh, Pennsylvania; ⁸Infectious Diseases, Oregon Health and Science University, Portland, Oregon; ⁹NY Emerging Infections Program, Center for Community Health and Prevention, University of Rochester Medical Center, Rochester, New York; ¹⁰Vanderbilt University School of Medicine, Nashville, Tennessee; ¹¹Centers For Disease Control and Prevention, Atlanta, Georgia

Session: 137. Healthcare Epidemiology: MSSA, MRSA and Other Gram Positive Infections

Friday, October 5, 2018: 12:30 PM

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.