Background: The Centers for Disease Control and Prevention's National Healthcare Safety Network (NHSN) has included surveillance of laboratory-identified (LabID) methicillin-resistant *Staphylococcus aureus* (MRSA) bacteremia events since 2009. In 2013, the Centers for Medicare & Medicaid Services (CMS) began requiring acute-care hospitals (ACHs) that participate in the CMS Inpatient Quality Reporting program to report MRSA LabID events to the NHSN and, in 2015, ACHs were required to report MRSA LabID events from emergency departments (EDs) and/or 24-hour observation locations. Prior studies observed a decline in hospital-onset MRSA (HO-MRSA) rates in national studies over shorter periods or other surveillance systems. In this analysis, we review the national reporting trend for HO-MRSA bacteremia LabID events, 2010–2018. **Method:** This analysis was limited to MRSA bacteremia LabID event data reported by ACHs that follow NHSN surveillance protocols. The data were restricted to events reported for overall inpatient facility-wide and, if applicable, EDs and 24-hour observation locations. MRSA events were classified as HO (collected >3 days after admission) or inpatient or outpatient community onset (CO, collected ≤3 days after admission). An interrupted time series random-effects generalized linear model was used to examine the relationship between HO-MRSA incidence rates (per 1,000 patient days) and time (year) while controlling for potential risk factors as fixed effects. The following potential risk factors were evaluated: facility's annual survey data (facility type, medical affiliation, length of facility stay, number of beds, and number of intensive care unit beds) and quarterly summary data (inpatient and outpatient CO prevalence rates). **Result:** The number of reporting ACHs increased during this period, from 473 in 2010 to 3,651 in 2018. The crude HO-MRSA incidence rates (per 1,000 patient days) have declined over time, from a high of 0.067 in 2011 to 0.052 in 2018 (Table 1). Compared to 2014, the adjusted annual incidence rate increased in 2015 by 16.38%, (95% confidence interval [CI], 10.26%–22.84%; $P < .0001$). After controlling for all significant risk factors, the estimated annual HO-MRSA incidence rates declined by 5.98% (95% CI, 5.17%–6.78%; $P < .0001$) (Table 2). **Conclusions:** HO-MRSA bacteremia incidence rates have decreased over the past 9 years, despite a slight increase in 2015. This national trend analysis reviewed a longer period while analyzing potential risk factors. The decline in HO-MRSA incidence rates has been gradual; however, given the current trend, it is not likely to meet the Healthy People 2020 objectives. This analysis suggests the need for hospitals to continue and/or enhance HO-MRSA infection prevention efforts to reduce rates further.

Funding: None
Disclosures: None
Doi:10.1017/ice.2020.556

Table 1. Hospital-onset (HO) MRSA bacteremia LabID events in Acute Care Hospitals, NHSN, 2010 – 2018

Year	No. of hospitals	No. of HO events	No. of patient days	HO Rate / 1,000 patient days
2010	473	1,019	16,945,243	0.060
2011	675	2,011	29,801,411	0.067
2012	1,051	2,612	42,857,046	0.061
2013	3,518	9,360	156,567,134	0.060
2014	3,592	9,160	159,993,159	0.057
2015	3,540	8,694	151,902,151	0.057
2016	3,564	8,421	153,342,316	0.055
2017	3,636	8,025	154,626,791	0.052
2018	3,651	8,136	156,224,325	0.052

HO: Hospital-onset

Fig. 1.

Table 2. Parameter estimates from interrupted time series generalized linear random effect model for Hospital-onset MRSA bacteremia LabID event trends, NHSN, 2010 – 2018

Variables*	Estimate	Standard error	p-value	Rate ratio	Annual percent change of rate ratio, % (95% CI)
Individual year	-0.0617	0.00438	<.0001	0.9401	-5.98 (-6.78, -5.17)
2015 – 2018 vs. 2010 – 2014	0.1517	0.02756	<.0001	1.1638	16.38 (10.26, 22.84)

CI: Confidence Interval

*The model adjusted for the following variables: annual survey variables included facility type, medical affiliation, length of facility stay, number of facility beds, and number of intensive care unit beds; quarterly summary variables included inpatient and outpatient community-onset prevalence rates; and an indicator variable for 2015 to account for the major change in MRSA reporting requirements.

Fig. 2.

Conclusions: HO-MRSA bacteremia incidence rates have decreased over the past 9 years, despite a slight increase in 2015. This national trend analysis reviewed a longer period while analyzing potential risk factors. The decline in HO-MRSA incidence rates has been gradual; however, given the current trend, it is not likely to meet the Healthy People 2020 objectives. This analysis suggests the need for hospitals to continue and/or enhance HO-MRSA infection prevention efforts to reduce rates further.

Presentation Type:
Top Rated Posters

Infection Prevention Time Required for Construction and Design at a Large Tertiary-Care Hospital, 2019

Angie Dains, University of Iowa Hospital and Clinics; Michael Edmond, University of Iowa Hospitals and Clinics; Daniel Diekema, University of Iowa Carver College of Medicine; Stephanie Holley, University of Iowa Hospital & Clinics; Oluchi Abosi, University of Iowa Hospitals & Clinics Holly Meacham, University of Iowa Hospital and Clinics; Mary Kukla, University of Iowa Healthcare; Kyle Jenn, University of Iowa Hospitals & Clinics; Andy Kuse, University of Iowa Hospital and Clinics; Robert Miller, University of Iowa Hospital and Clinics; Luke Leiden, University of Iowa Hospital and Clinics; Jorge Salinas, University of Iowa

Background: Including infection preventionists (IPs) in hospital design, construction, and renovation projects is important. According to the Joint Commission, "Infection control oversights during building design or renovations commonly result in regulatory problems, millions lost and even patient deaths." We evaluated the number of active major construction projects at our 800-bed hospital with 6.0 IP FTEs and the IP time required for oversight. **Methods:** We reviewed construction records from October 2018 through October 2019. We classified projects as active if any construction occurred during the study period. We describe the types of projects: inpatient, outpatient, non–patient care, and the potential impact to patient health through infection control risk assessments (ICRA). ICRAs were classified as class I (non–patient-care area and minimal construction activity), class II (patients are not likely to be in the area and work is small scale), class III (patient care area and work requires demolition that generates dust), and class IV (any area requiring environmental precautions). We calculated the time spent visiting construction sites and in design meetings. **Results:** During October 2018–October 2019, there were 51 active construction projects with an average of 15 active sites per week. These sites included a wide range of projects from a new bone marrow transplant unit, labor and delivery expansion and renovation, space conversion to an inpatient unit to a project for multiple air handler replacements. All 51 projects were classified as class III or class IV. We visited, on average, 4 construction sites each week for 30 minutes per site, leaving 11 sites unobserved due to time constraints. We spent an average of 120

minutes weekly, but 450 minutes would have been required to observe all 15 sites. Yearly, the required hours to observe these active construction sites once weekly would be 390 hours. In addition to the observational hours, 124 hours were spent in design meetings alone, not considering the preparation time and follow-up required for these meetings. **Conclusions:** In a large academic medical center, IPs had time available to visit only a quarter of active projects on an ongoing basis. Increasing dedicated IP time in construction projects is essential to mitigating infection control risks in large hospitals.

Funding: None
Disclosures: None

Doi:10.1017/ice.2020.557

Presentation Type:
Top Rated Posters

Legal Requirements for Infection Prevention and Control Training Among Healthcare Personnel

Lauren Weil, Centers for Disease Control and Prevention; Alexa Limeres, Center for Disease Control and Prevention; Astha KC, Centers for Disease Control and Prevention; Carissa Holmes, Centers for Disease Control and Prevention; Tara Holiday, Centers for Disease Control and Prevention; Melissa K Schaefer, Centers for Disease Control and Prevention; Joseph Perz, Centers for Disease Control and Prevention

Background: When healthcare providers lack infection prevention and control (IPC) knowledge and skills, patient safety and quality of care can suffer. For this reason, state laws sometimes dictate IPC training; these requirements can be expressed as applying to various categories of healthcare personnel (HCP). We performed a preliminary assessment of the laws requiring IPC training across the United States. **Methods:** During February–July 2018, we searched WestlawNext, a legal database, for IPC training laws in 51 jurisdictions (50 states and Washington, DC). We used standard legal epidemiology methods, including an iterative search strategy to minimize results that were outside the scope of the coding criteria by reviewing results and refining search terms. A law was defined as a regulation or statute. Laws that include IPC training for healthcare personnel were collected for coding. Laws were coded to reflect applicable HCP categories and specific IPC training content areas. **Results:** A total of 278 laws requiring IPC training for HCP were identified (range, 1–19 per jurisdiction); 157 (56%) did not specify IPC training content areas. Among the 121 (44%) laws that did specify IPC content, 39 (32%) included training requirements that focused solely on worker protections (eg, sharps injury prevention and bloodborne pathogen protections for the healthcare provider). Among the 51 jurisdictions, dental professionals were the predominant targets: dental hygienists (n = 22; 43%), dentists (n = 20; 39%), and dental assistants (n = 18; 35%). The number of jurisdictions with laws requiring training for other HCP categories included the following: nursing assistants (n = 25; 49%), massage therapists (n = 11; 22%), registered nurses (n = 10; 20%), licensed practical nurses (n = 10; 20%), emergency medical technicians and paramedics (n = 9; 18%), dialysis technicians (n = 8; 18%), home health aides (n = 8;16%), nurse midwives (n = 7; 14%), pharmacy technicians (n = 7; 14%), pharmacists (n = 6; 12%), physician assistants (n = 4; 8%), podiatrists (n = 3; 6%), and physicians (n = 2; 4%). **Conclusions:** Although all jurisdictions had at least 1 healthcare personnel IPC training requirement, many of the laws lack specificity and some focus only on worker protections, rather than patient safety or quality of care. In addition, the categories of healthcare personnel regulated among jurisdictions varied widely, with dental professionals having the most training requirements. Additional IPC training requirements exist at the facility level, but this information was not analyzed as a part of this project. Further analysis is needed to inform our assessment and identify opportunities for improving IPC training requirements, such as requiring IPC training that more fully addresses patient protections.

Funding: None
Disclosures: None

Doi:10.1017/ice.2020.558

Presentation Type:
Top Rated Posters

Molecular Epidemiology of Community-Onset (CO), Community-Onset Healthcare-Associated (CO-HA) and Hospital-Onset (HO) Methicillin-Resistant *Staphylococcus aureus* (MRSA)

Stephanie Thiede, University of Michigan; Darjai Payne, Rush University Medical Center; Alla Aroutcheva, Rush University Medical Center/Cook County Health; Michael Schoeny, Rush University Medical Center; Robert Weinstein, Rush University Medical Center; Evan Snitkin, University of Michigan; Kyle Popovich, Rush University Medical Center

Background: Previous work suggests an intermingling of community and hospital transmission networks driving the MRSA epidemic, but how those with CO-HA infections fit into the network remains unclear. We integrated epidemiologic data and whole-genome sequencing (WGS) from existing MRSA clinical isolates to determine whether there were distinguishable features of CO-HA MRSA infections that could guide interventions. **Methods:** We examined 955 existing clinical MRSA isolates from 2011 to 2013 from patients at Cook County Health, the major public healthcare network in Chicago, Illinois. We performed electronic and manual chart review to ascertain community (eg, illicit drug use, incarceration history) and healthcare exposures and comorbidities. WGS was performed on all sequences, and sequences were typed with multilocus sequence typing (MLST). We assessed the distribution of epidemiological factors and sequence type (ST) across onset type. **Results:** Infections were more frequent in males (70%); 61% of individuals with infection were African American and 21% were Hispanic. Overall, wound infections were the most common (81%) followed by blood (7%) and respiratory (6%). 82% of infections were ST8 (most USA300), 8% were ST5 (USA100) and 10% were other STs (Fig. 1a). Using standard epidemiologic definitions, we identified 523 CO, 295 CO-HA, and 137 HO infections. USA300 infections were common across CO, CO-HA, and HO categories, whereas USA100 was more frequently observed among CO-HA and HO. Current illicit drug use and history of incarceration—factors typically associated with CO-MRSA—were observed among both CO-HA and HO infections. 38% of CO-HA and 36% of HO had a history of MRSA infection or nasal colonization in the prior 6 months. As expected, 73% of CO-HA had a history of recent hospitalization, but this was also true for 44% of HO cases; points for intervention for both groups, especially CO-HA patients, include outpatient, inpatient, and ER care. Diabetes was common across categories, and HIV was more commonly observed among CO-HA cases (Fig. 1b). **Conclusions:** We characterized the genomic and epidemiologic features of CO-HA MRSA infections relative to CO and HO. By MLST and epidemiological analysis, CO-HA infections share similarities to both CO and HO. Although USA300 infections