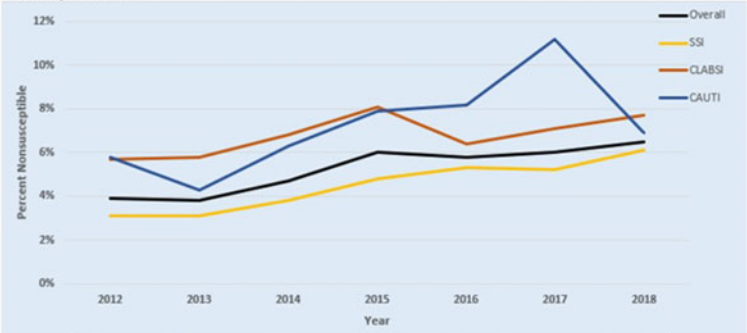
Figure: Percent of Isolates Nonsusceptible to Trimethoprim-Sulfamethoxazole Among Methicillin-resistant *Staphylococcus aureus* Associated with Surgical Site Infections (SSIs), Central Line-Associated Bloodstream Infections (CLABSIs), and Catheter-Associated Urinary Tract Infections (CAUTIs)—National Healthcare Safety Network, 2012-2018



Type	Number with Trimethoprim-Sulfamethoxazole Susceptibility Testing (% Nonsusceptible), by Year							p-value 2012 vs. 2018
	2012	2013	2014	2015	2016	2017	2018	
Overall	4,199 (3.9)	4,389 (3.8)	4,275 (4.7)	4,859 (6.0)	4,734 (5.8)	4,527 (6.0)	4,296 (6.5)	<0.001
CAUTI	240 (5.8)	257 (4.3)	268 (6.3)	280 (7.9)	256 (8.2)	214 (11.2)	188 (6.9)	0.648
CLABSI	1,012 (5.7)	1,041 (5.8)	1,012 (6.8)	1,504 (8.1)	1,368 (6.4)	1,154 (7.1)	996 (7.7)	0.074
SSI	2,947 (3.1)	3,091 (3.1)	2,995 (3.8)	3,075 (4.8)	3,110 (5.3)	3,159 (5.2)	3,112 (6.1)	<0.001

Fig. 1.

Presentation Type:
Poster Presentation

Tuberculosis Exposure and Conversion Rates Can Guide Deimplementation of Annual Tuberculosis Screening

Holly Meacham, University of Iowa Hospital and Clinics; Takaaki Kobayashi, University of Iowa Hospitals and Clinics; Mohammed Alsuhaibani, University of Iowa health care; Stephanie Holley, University of Iowa Hospital & Clinics; Michael Edmond, University of Iowa Hospitals and Clinics; Daniel Diekema, University of Iowa Carver College of Medicine; Angie Dains, University of Iowa Hospital and Clinics; Oluchi Abosi, University of Iowa Hospitals & Clinics; Mary Kukla, University of Iowa Healthcare; Kyle Jenn, University of Iowa Hospitals & Clinics; Patrick Hartely; Jorge Salinas, University of Iowa

Background: The CDC recently updated recommendations on tuberculosis (TB) screening in healthcare facilities, suggesting the discontinuation of annual TB screening. However, hospitals may opt to continue based on their local TB epidemiology. We assessed TB infection control parameters in our facility to guide the implementation of the new CDC recommendations. **Methods:** We retrieved data for patients with an *International Classification of Disease, Tenth Revision* (ICD-10) code for TB treated at the University of Iowa Hospitals and Clinics during 2016–2019. We supplemented our search with microbiology data: culture or PCR for *Mycobacterium tuberculosis*. Based on manual chart review, we adjudicated each patient as active TB, latent TB, previously treated TB, unclear history, or no TB. We further labeled active TB cases based on their risk of transmission (pulmonary or extrapulmonary cases that underwent an aerosol generating procedure). We then calculated the number of exposure events associated with those patients and tuberculin skin test (TST) conversion rates among the exposed. **Results:** During 2016–2019, we identified 197 patients based on ICD-10 codes. In total, 10 additional patients were detected by microbiology data review. Of these 207 patients, 48 (23.2%) had active TB: lung, n = 24 (50%); lymph node, n = 9 (19%); bone or spine, n = 5 (10%); eye, n = 3 (6%); disseminated, n = 2 (4%); pleura, n = 2 (4%); skin abscess, n = 2 (4%); and meningitis, n = 1 (2%). Of the 24 pulmonary patients, 6 (25%) had either a positive smear or a cavity on imaging. In total, 159 patients were excluded: no TB, n = 22 (14%); latent TB, n = 27 (17%); old or treated TB, n = 93 (58%); and unclear history, n = 9 (6%). Of the 48 cases with active TB, 31 (65%) were deemed potentially infectious. Also, 10 cases (32%) led to the exposure of 204 healthcare workers (HCWs). Baseline and postexposure TST were available for 179 HCWs (88%); 72 (35%) followed up in the employee health clinic within the 8–12 weeks after exposure. Of 161 HCWs with a negative TST at baseline, no conversions occurred. Of 18 HCWs with positive TST at baseline, no HCW developed symptoms during the observation period. **Conclusions:** Nearly one-third of infectious TB cases led to HCW exposures in a low-incidence setting. However, no TST conversions or active TB infections were seen. Exposure and conversion rates are useful indicators of TB infection control in healthcare facilities and may help guide implementation of the new CDC TB control recommendations.

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Two-Year Surveillance of Central-Line–Associated Bloodstream Infections in Non-ICU Wards in a Dutch Teaching Hospital

Veronica Weterings, Amphia hospital; Rinske Boersma, Amphia hospital; Breda Miranda van Rijen, Amphia hospital; Tom Rijpstra, Amphia ziekenhuis Breda Jop Zuidervaart, Amphia hospital; Jan Kluytmans, Amphia Hospital Breda

Background: Central-line–associated bloodstream infections (CLABSIs) are serious complications of modern health care, leading to increased morbidity, mortality, and costs. Since 2012, a multimodal insertion and care bundle for central venous catheters (CVCs) has been implemented in the intensive care

unit (ICU) of the Amphia Hospital Breda, The Netherlands. The implementation of this bundle was associated with sustainable low CLABSI rates (1 per 1,000 CVC days). There was no surveillance of CLABSI in the other departments of the hospital. **Objectives:** We implemented semiautomated surveillance for CLABSI in non-ICU inpatients. **Methods:** A single-center, retrospective study was conducted in a 1,370-bed teaching hospital in The Netherlands between January 2017 and December 2018. All hospitalized patients (aged ≥18 years) in non-ICU wards, with a CVC inserted, were screened for CLABSI. CLABSIs were diagnosed using the definitions of the national nosocomial surveillance network PREZIES, excluding infections already present on admission and secondary bloodstream infection. CLABSI rates were calculated as cases per 1,000 CVC days with 95% CIs. **Results:** In 2017, 14 CLABSI were reported during 4,656 CVC days (3.0 per 1,000 CVC days; 95% CI, 1.8–5.1). In 2018, 13 CLABSIs were reported during 4,995 catheter days (2.6 per 1,000 CVC days; 95% CI, 1.5–4.5). The mean duration of CVC days prior to CLABSI in 2017 and 2018 were 20 days (range, 4–28) and 14 days (range, 4–25), respectively. Most CLABSI events occurred in patients admitted to the hematology ward (13 of 27, 48.1%). Of those, 11 of 13 (84,6%) were patients with an acute myeloid leukemia (AML) and severe mucositis due to the intensive chemotherapy at the time of CLABSI. The remaining cases occurred in patients of 4 different surgical departments. Coagulase-negative staphylococci were the most common organisms recovered (25 of 27, 92.6%). **Conclusions:** To our knowledge, this is the first report of CLABSI-rates in non-ICU wards in the Netherlands. The CLABSI rates were higher in non-ICU wards compared to the ICU of our hospital. This difference was mainly because of the high CLABSI rate in the patients with AML.

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Understanding the Short-Term Dynamics of MRSA Between Patients and Their Immediate Environment

Kristen Gibson, University of Michigan; Lona Mody, University of Michigan; Hugo Sax, University Hospital Zurich; Kyle Gontjes, Michigan Medicine; Marco Cassone, University of Michigan; Nora Mang, University Hospital Zurich; Aline Wolfensberger, University Hospital Zurich

Background: Methicillin-resistant *Staphylococcus aureus* (MRSA) colonization of patients and contamination of their immediate environmental surfaces is common in the acute care setting, but there is much to be learned about the dynamics of MRSA transmission over a short period of time. **Methods:** A prospective, observational time-motion qualitative study was conducted at 2 hospitals: 1 in Michigan (hospital 1) and 1 in Zurich, Switzerland (hospital 2)—between November 2018 and July 2019. Hospitalized patients with a MRSA infection or colonization were enrolled. Microbiologic cultures for MRSA were collected from patient nares, axilla, groin and hands and several high-touch surfaces in their room (bed controls, call button, tray table, etc) at the first visit, and patient hands and high-touch surfaces continued to be swabbed every 90 minutes over the course of 5 hours. Patient hands and environment were disinfected after each swabbing. Clinical data were collected from patient's medical chart. **Results:** We recruited 10 MRSA colonized or infected patients for the study with 50 hours of observation and obtained 360 patient and environmental swabs. Most were women (7 of 10); the average age was 52.8 years (Table 1). At the first visit, 8 (80%) patients were MRSA-colonized (at 1 or more body sites) and 5 (50%) rooms were MRSA-contaminated (at 1 or more surfaces). Also, 6 patients (60%) had an active MRSA infection and were actively receiving an anti-MRSA agent (eg, Vancomycin). Among those 6 patients receiving an anti-MRSA agent, 4 patients (67%) and 2 rooms (33%) were contaminated at the first visit. Among those 4 patients not receiving an anti-MRSA agent, all 4 patients (100%) and 3 rooms (75%) were contaminated at the baseline visit. Acquisitions (ie, MRSA recovered from a site it was not previously recovered from) occurred on 3 of 7 patient hands (43%) and on 6 occasions in the room (among 5 patients), most commonly at the toilet seat (2 of 6 times). MRSA prevalence on patient and room surfaces for the 5 patients enrolled at hospital 2 are illustrated in Figure 1, which shows colonization of patient and contamination of environment as well as activities performed by the patient in between culturing. **Conclusions:** We evaluated transmission of MRSA over brief periods of time; our results show that transmission of MRSA depended on patient activity in the room. Furthermore, degree of patient colonization is reflected by environmental contamination and supports the notion of constant transmission of MRSA from patients to environment.

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Table 1.

Table 1. Baseline demographics

Characteristics	Hospital 1 n = 5	Hospital 2 n = 5	Total N = 10
Age, mean (standard deviation)	49.8 (23.0)	55.8 (22.5)	52.8 (21.7)
Male	2 (40)	1 (20)	3 (30)
Active MRSA infection	4 (80)	2 (40)	6 (60)
Receiving antibiotics	5 (100)	4 (80)	9 (90)
Anti-MRSA agent	4 (80)	2 (40)	6 (60)
Some ADL impairment	2 (40)	2 (40)	4 (40)
Indwelling device(s)	3 (60)	4 (80)	7 (70)
Open wound(s)	4 (80)	1 (20)	5 (50)
MRSA-positive patient cultures (at anytime)	4 (80)	5 (100)	9 (90)
Hands	2 (40)	3 (60)	5 (50)
Nares	1 (20)	3 (60)	4 (40)
Groin	2 (40)	4 (80)	6 (60)
Axilla	0 (0)	2 (40)	2 (20)

Data are No. (%) unless otherwise specified.