

it was inoculated onto brain-heart infusion. Next, it was plated on McConkey and Mannitol agar. MALDI-TOF was used for identification. Agar dilution was performed for *Staphylococcus* spp. We selected all *Staphylococcus* spp with MIC ≥ 8 and performed inhibition of efflux pump test. For isolates that showed a decrease of 2 dilutions, we searched the gene *qacA/B* by polymerase chain reaction. **Results:** We obtained 262 samples from HCW hands yielding 428 isolates. The most frequent genera were *Staphylococcus* spp (58%), *Acinetobacter* spp (8%), *Enterobacter* spp (8%), *Stenotrophomonas* spp (5%), *Klebsiella* spp (4%), *Pseudomonas* spp (3%), and others (14%). *Staphylococcus* spp were less frequent in the intervention compared to control group (43% vs 61%; OR, 0.48; 95% CI, 0.29–0.69; $P = .005$). Among all *Staphylococcus* spp, the proportion of chlorhexidine resistance (RCHG; MIC ≥ 8) was 12%. All resistant isolates recovered susceptibility after inoculation with pump-efflux inhibitor. For pump-inhibited isolates, 53% had the gene *qacA/B* amplified by PCR. We did not investigate RCHG among gram-negative isolates. There was a nonsignificant increase in *Staphylococcus* spp RCHG in the intervention group (4% to 6%; $P = .90$). Healthcare-acquired infection rates did not change significantly during the intervention. The consumption of CHG increased from 7.3 to 13.9 mL per patient day. **Conclusions:** We did not detect a significant difference in RCHG during the routine use of CHG for HH, although we observed increasing resistance. Further investigation is needed to clarify other reasons for increasing MIC to CHG.

Funding: None

Disclosures: None

Doi:10.1017/ice.2020.1028

Presentation Type:

Poster Presentation

STOP-BSI: Reducing Methicillin-Resistant *Staphylococcus aureus* Bloodstream Infections in Oncology Patients

Mylinh Yun, Emory Healthcare; Jay Varkey; Renee Spinke, Emory; Marie Ayers, Emory University Hospital; Christina Bell, Emory University Hospital Emily Bracewell, Emory University Hospital; Patricia Crabtree, Emory University Hospital; Carolyn Holder, Emory University Hospital; Roberta Kaplow, Emory University Hospital; Margaret Whitson, Emory Johns Creek Hospital

Background: Hospital-acquired methicillin-resistant *Staphylococcus aureus* bloodstream infections (MRSA BSIs) are associated with serious morbidity and mortality in immunocompromised patients. Of all MRSA BSIs at our academic medical center, 63% occurred in the oncology units. A multidisciplinary team was formed to address the improvement opportunity: the clinical nurse specialist, hospital epidemiologist, unit leaders, nurse champions and representatives from infection prevention, pharmacy and information technology. The goal was to decrease the incidence of hospital-onset MRSA BSI in the oncology wards by 10 infections in 2016 by implementing daily chlorhexidine (CHG) bathing and weekly nasal povidone-iodine antiseptics in July 2016. **Methods:** The strategically targeting oncology with povidone-iodine nasal antiseptics and bathing with CHG *Staph* reduction initiative (STOP-BSI) was a quality improvement project consisting of daily CHG baths for all oncology patients and nasal povidone-iodine on admission and weekly thereafter. Nurses and patient care technicians were trained on how to administer CHG treatments. Education was also provided to patients on how to use CHG bath wipes to self-administer the nasal antiseptics. Education resources were created to help answer concerns of the staff, patient, or family, and an escalation process was developed

for treatment refusal. CHG bath audits were performed to measure compliance and to identify barriers to the process. **Results:** By the end of 2016, the number of infections decreased by 5 on the oncology units. The number of infections continued to decrease each year. The bone marrow transplant (BMT) unit decreased from 8 infections in 2015 to 3 in 2018. The hematology oncology unit infections decreased from 5 infections in 2015 to 0 in 2018. The medical oncology unit infections decreased from 2 infections in 2015 to 0 in 2018. The CLABSI rates per 1,000 line days trended downward after some time. **Conclusions:** Implementing daily CHG baths and weekly povidone-iodine nasal antiseptics reduced the number of MRSA BSI infections in the oncology population. The CLABSI rates decreased after barriers to the process were removed.

Funding: None

Disclosures: None

Doi:10.1017/ice.2020.1029

Presentation Type:

Poster Presentation

Strategy for Increasing Alcohol Gel Consumption Based on Realistic Simulation, Opinion of Healthcare Workers, Structure Adequacy and Change in Alcohol Product

Ligia Abraao, Americas Medical Services - United Health Group, Brazil; Sandra Nascimento dos Anjos, Paulistano Hospital; Chayenne Mika Matsumoto Pinto Tonheiro, Paulistano Hospital; Daíla Souza Lima, Paulistano Hospital; Mariana Sarkis Braz, Paulistano Hospital; Sarita Pires, Americas Medical Services - United Health Group, Brazil; Daiane Cais, Americas Medical Services - United Health Group, Brazil; Bianca Miranda, Americas Medical Services - United Health Group, Brazil; Bruno César Batista Cocentino, Paulistano Hospital; Lauro Perdigão-Neto, Hospital das Clínicas, University of São Paulo, São Paulo, Brazil

Background: Healthcare-related infections (HAIs) imply higher morbidity and mortality, length of hospitalization, and costs to institutions and the health system. An important practice for HAI control is hand hygiene. Due to the need for greater adherence to the practice of hand hygiene, as well as understanding about behavior and motivations related to actions associated with infection control, we conducted this study based on inquiry and intervention. **Objectives:** To describe the increase in adherence to hand hygiene through a multimodal strategy based on realistic simulation, inquiry, change of alcohol and training on actions related to infection control. **Methods:** In May 2018, a survey was administered to healthcare workers (HCW) regarding structure, process, and behavior related to hand hygiene. Training was also performed, which simulated a bed marked with GloGerm (later revealed with the application of black light), performing tasks by professionals, and completing a test. In November 2018, the structure of hand hygiene and points at which the alcoholic product was offered were redefined, and the alcohol-based product and its dispensers were exchanged. In December 2018, an educational campaign on hand hygiene and change disclosure was held. In February 2019, a new survey was applied to employees. Alcohol consumption was measured per patient day in the periods and compared with the historical average. **Results:** In the first application of the survey, 263 HCW reported dissatisfaction with hand hygiene structure (46% preferred water and soap). Most reported that training and structure would improve adherence. The training took place for 540 HCWs from many different professional positions. Alcohol gel consumption had a sustained increase from an

average of 37 mL per patient day in the first semester to 49 mL per patient day in the second semester. After the product change and the new hand hygiene campaign, a second relevant and sustained increase has taken place: the first 4-month average in 2019 was 67 mL per patient day. In the second survey, conducted with 187 HCWs, there was an increase in preference for alcohol-based product from a wall dispenser (from 38% to 62%).

Funding: None

Disclosures: None

Doi:10.1017/ice.2020.1030

Presentation Type:

Poster Presentation

Strengthening Adherence to a Central-Line–Associated Bloodstream Infection Prevention Bundle in a Surgical ICU in Vietnam

Thuy Le, Children Hospital; Hung Nguyen Thanh, Children Hospital; Minh Ngo Ngoc Quang, Children Hospital; Chau Nguyen Thi Tran, Children Hospital; Ha Nguyen Thi Thanh, Children Hospital; Tinh Le Quoc, Children Hospital; Tuan Dang Thanh, Children Hospital; Le Nguyen Thi Cam, Children Hospital; Thuy Duong Thi Kim, Children Hospital; Ha Tran Thi Thu, PATH; Lan Nguyen Thi Phong, US Centers for Disease Control and Prevention; Amber Vasquez, US Centers for Disease Control and Prevention

Background: Central-line–associated bloodstream infections (CLABSIs) increase the length of hospital stay, healthcare costs, and patient mortality. **Objective:** We conducted a quality improvement (QI) approach with plan-do-study-act (PDSA) cycle to strengthen adherence to a central-line (CL) maintenance bundle and to reduce CLABSI rate in a surgical intensive care unit (ICU) of children's hospital 1 (CH1). **Methods:** The baseline CLABSI rate per 1,000 CL days and the ratio of CL days to patient days (device utilization ratio; DUR) were captured for 12 months preceding the intervention. Baseline process indicators were captured for 2 months preceding implementation, including hand hygiene adherence, sterile technique for dressing change and CL access, CL hub cleaning, dating of CL components and daily chlorhexidine bathing. A multimodal intervention of clinician training, bedside checklist, and poster reminders of best practices was implemented. Process and outcome measures were monitored over 12 months of implementation. Z-test was used to calculate statistical significance before and after intervention. **Results:** Among 46 clinical ICU staff trained on a CLABSI maintenance bundle, mean pre- and posttest knowledge scores increased from 63% to 86%. Staff adherence to each CL care bundle element improved significantly ($P < .001$) and sustainably over the intervention period: hand hygiene adherence increased from 54% to 82%; sterile technique for dressing increased from 60% to 94%; sterile technique for CL access increased from 51% to 97%; hub scrubbing increased from 52% to 93%; dating of CL elements increased from 63% to 85%; daily chlorhexidine bathing increased from 52% to 87%. During the first 9 months, the CLABSI rate and the DUR decreased from 5.8 to 3.7 and from 0.43 to 0.41, respectively. In the following 2 months, the CLABSI rate increased to 12.7 while bundle adherence remained high. A root-cause analysis identified inadequate environmental hygiene and use of multidose saline bottles for multiple patients as potential factors. A PDSA cycle to improve these elements (enhanced cleaning; single-patient saline bottles) led to a decrease in the CLABSI rate from 12.7 to 3.0 after these efforts. **Conclusions:** This is the first time

CH1 has used quality improvement methodology to implement an HAI prevention enhancement, which proved effective at creating and sustaining adherence to a multimodal CL maintenance bundle and an overall decrease in CLABSI rates. A 2-month increase in CLABSI rates highlights the unique challenges faced in low-resource settings and demonstrates the need for IPC elements not captured in a typical CLABSI prevention bundle. The quality improvement methodology provided a structured approach to implementing change. This methodology will be used for additional patient safety improvements at CH1 and other Viet Nam hospitals interested in CLABSI prevention.

Funding: None

Disclosures: None

Doi:10.1017/ice.2020.1031

Presentation Type:

Poster Presentation

Substance Use Diagnoses Among Persons with Community-Onset Methicillin-Resistant *Staphylococcus aureus* Bloodstream Infections

Natalie McCarthy, Centers for Disease Control and Prevention; James Baggs, Centers for Disease Control and Prevention; John Jernigan, Centers for Disease Control and Prevention; Isaac See, Centers for Disease Control and Prevention; Kelly Hatfield, Centers for Disease Control and Prevention; Sujan Reddy, Centers for Disease Control and Prevention; Runa Gokhale, Centers for Disease Control and Prevention; Hannah Wolford, Centers for Disease Control and Prevention; Anthony Fiore, Centers for Disease Control and Prevention

Background: In recent years, the historic declines in the incidence of methicillin-resistant *Staphylococcus aureus* (MRSA) bloodstream infections (BSIs) in the United States have slowed. We examined trends in the incidence of community-onset (CO) MRSA BSIs among hospitalized persons with and without substance-use diagnoses. **Methods:** Using data from >200 US hospitals reporting to the Premier Healthcare Database (PHD) during 2012–2017, we conducted a retrospective study among hospitalized persons aged ≥ 18 years. MRSA BSIs with substance use were defined as hospitalizations having both a blood culture positive for MRSA and at least 1 *International Classification of Disease, Ninth Revision, Clinical Modification* (ICD-9-CM) or ICD-10-CM diagnostic code for substance use including opioids, cocaine, amphetamines, or other substances (excluding cannabis, alcohol, and nicotine). MRSA BSIs were considered community onset when a positive blood culture was collected within 3 days of admission. We assessed annual trends and described characteristics of CO MRSA BSI hospitalizations, stratified by substance use. **Results:** Of 20,049 MRSA BSIs from 2012 to 2017, 17,634 (88%) were CO. Overall, MRSA BSI incidence decreased 7%, from 178.5 to 166.2 per 100,000 hospitalizations during the study period; However, CO MRSA BSI rates remained stable (152.7 to 149.9 per 100,000 hospitalizations). Among CO MRSA BSIs, 1,838 (10%) were BSIs with substance-use diagnoses; the incidence of CO MRSA BSIs with substance use increased 236% (from 8.2 to 27.6 per 100,000 hospitalizations) and represented a greater proportion of the CO MRSA rate over the study period (Fig. 1). The incidence of CO MRSA BSIs without substance use decreased 15% (from 144.5 to 122.4 per 100,000 hospitalizations). Patients with CO MRSA BSIs with substance use were younger (median, 40 vs 65 years), more likely to be female (50% vs 40%), white (79% vs 69%), and to leave against medical advice (15% vs 1%).