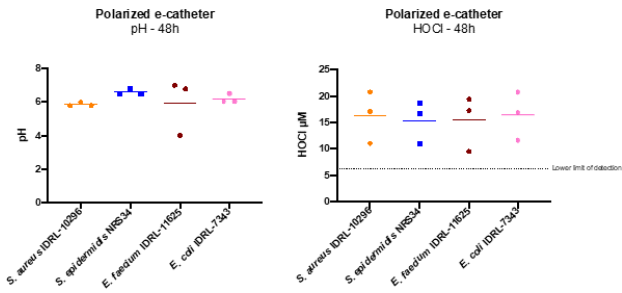
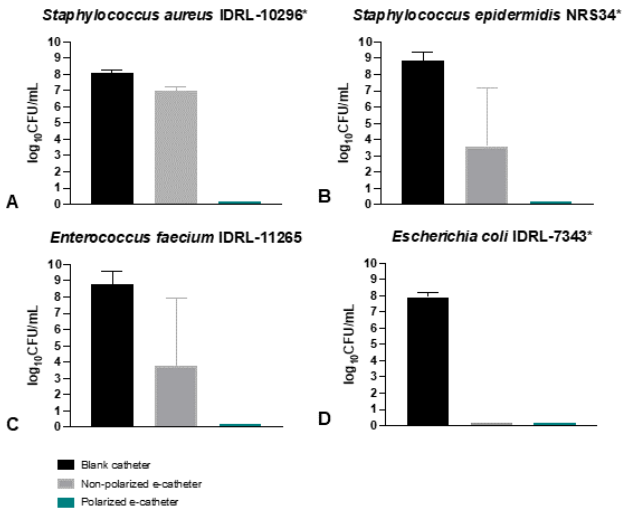


Figure 3. Measurement of pH and HOCl at 48 hours in polarized e-catheters.



Each dot represents a replicate; bars represent means.

Figure 4. Prevention of infection after 48 hours of polarization (24 hours of infections) using e-catheters (polarized and non-polarized) compared to blank catheters.



* indicates statistically significant reduction of cell counts in polarized e-catheter compared to blank catheter ($p < 0.05$).

Conclusion. Polarized e-catheters which generate low amounts of HOCl continuously should be further developed to prevent intraluminal infection.

Disclosures. Haluk Beyenal, Ph.D. patent (Other Financial or Material Support, HB holds a patent: Beyenal H CD, Fransson BA, Sultana ST. . 2018. Electrochemical reduction or prevention of infections. U.S. patent 20180207301A1, international patent WO/2017/011635.) Robin Patel, MD, 1928 Diagnostics (Consultant)BioFire Diagnostics (Grant/Research Support)ContraFect Corporation (Grant/Research Support)Curetis (Consultant)Hylomorph AG (Grant/Research Support)IDSA (Other Financial or Material Support, Editor's Stipend)Infectious Diseases Board Review Course (Other Financial or Material Support, Honoraria)Mammoth Biosciences (Consultant)NBME (Other Financial or Material Support, Honoraria)Netflix (Consultant)Next Gen Diagnostics (Consultant)PathoQuest (Consultant)PhAST (Consultant)Qvella (Consultant)Samsung (Other Financial or Material Support, Patent Royalties)Selux Diagnostics (Consultant)Shionigi & Co., Ltd. (Grant/Research Support)Specific Technologies (Consultant)TenNor Therapeutics Limited (Grant/Research Support)Torus Biosystems (Consultant)Up-to-Date (Other Financial or Material Support, Honoraria) Robin Patel, MD, BioFire (Individual(s) Involved: Self; Grant/Research Support; Contrafect (Individual(s) Involved: Self; Grant/Research Support; IDSA (Individual(s) Involved: Self; Editor's stipend; NBME, Up-to-Date and the Infectious Diseases Board Review Course (Individual(s) Involved: Self; Honoraria; Netflix (Individual(s) Involved: Self; Consultant; TenNor Therapeutics Limited (Individual(s) Involved: Self; Grant/Research Support; to Curetis, Specific Technologies, Next Gen Diagnostics, PathoQuest, Selux Diagnostics, 1928 Diagnostics, PhAST, Torus Biosystems, Mammoth Biosciences and Qvella (Individual(s) Involved: Self; Consultant

774. Outbreak of Central-Line-Associated Bloodstream Infections (CLABSI) amid the COVID-19 Pandemic Associated with Changes in Central Line Dressing Care Accompanying Changes in Nursing Education, Nursing Documentation, and Dressing Supply Kits

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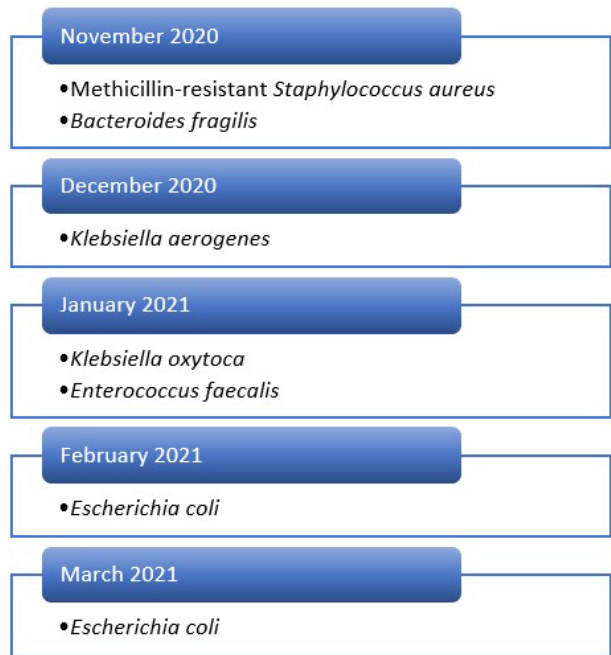
Session: P-37. HAI: Device-Associated (CLABSI, CAUTI, VAP)

Background. National Healthcare Safety Network (NHSN) data have revealed an increase in CLABSI associated with the COVID-19 pandemic, but data on factors mediating the increase are limited. Our hospital had been free of CLABSI for 18 months, but we encountered an outbreak of 7 CLABSI over a 5-month period beginning in November 2020. This led to an investigation that revealed that some underlying issues were related to COVID-19.

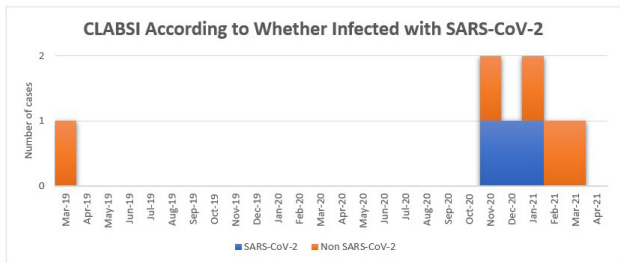
Methods. Infection prevention staff at Omaha's Veterans Affairs Medical Center interviewed hospital staff and performed a retrospective chart review of patients with CLABSI (based on the NHSN definition) amid the COVID-19 pandemic.

Results. The first case of CLABSI in the outbreak was detected in November 2020. Prior to that, there was no case of CLABSI since April 2019, as shown in the graph. Each case of CLABSI was associated with a different microorganism. Further investigation revealed deviations from our usual practices in central line dressing care. Our response to COVID-19 had included alterations in periodic competency training (including dressing care) for nursing staff as well as the rapid introduction of streamlined inpatient nursing documentation. Previously, dressing kits included chlorhexidine-impregnated dressings; in November, a kit without these dressings was introduced. A weekly audit of dressing care was begun in March 2021. No CLABSI was identified in April 2021.

Types of Microorganisms identified



Different types of microorganisms isolated during the CLABSI outbreak each month.



The trend of CLABSI in VA Nebraska-Western Iowa Health Care System

Conclusion. We encountered a CLABSI outbreak associated with deviations from usual central line dressing care. Using the concept of the Swiss cheese model of error prevention, we recognized alterations in three barriers: competency training; thorough documentation; and complete supply kits. The first two of these factors were directly related to our COVID-19 response. Our findings illustrate the relevance of the Swiss cheese model for maintaining a safe healthcare environment.

Disclosures. Marvin J. Bittner, MD, Merck (Advisor or Review Panel member)Sanofi Pasteur (Speaker's Bureau)

775. Risk Factors for Healthcare Associated Central Line-Associated Bloodstream Infection (CLABSI) to Identify Novel Infection Prevention Areas - A Case-Control Study

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Session: P-37. HAI: Device-Associated (CLABSI, CAUTI, VAP)

Background. The International Nosocomial Infection Control Consortium surveillance reported Central line-associated bloodstream infection (CLABSI) rate of 4.1 per 1000 central-line days in 703 ICUs in 50 countries.

Methods. At the Singapore General Hospital (SGH) a 1,700-bed tertiary care hospital, we conducted a retrospective matched case control study over a 3-year period from 2018 to 2020, to identify risk-factors associated with the development of healthcare associated CLABSI in adult inpatients. Cases and controls were patients ≥18 years of age with central lines in situ for at least 48hrs from date of admission. Case definition was based on National Healthcare Safety Network (NHSN) framework to diagnose Bloodstream Infection (BSI) and CLABSI events. Controls had to be admitted within 30 days of the date of admission of the case patients and should not have developed CLABSI. Cases were matched to controls on a 1:2 ratio.

Results. 127 cases and 252 controls were included in the analysis. Cases and controls did not differ in age, gender, BMI, presence of diabetes mellitus or presently enforced infection prevention measures (e.g. Central line bundle care). More cases were receiving chemotherapy (10.2% versus 0.8%, p< 0.001), were on TPN (17.3% versus 8.3%, p=0.015) and had been admitted to critical care (73.2% versus 60.7%, p=0.017). Cases were also more likely to have peripherally inserted central venous catheters (37% versus 25%, p=0.017) and have the insertion done in the radiology department under radiological guidance (69.3% versus 55.2%, p=0.011). The median length of stay (LOS) was 44 days (IQR: 0 – 86.8) for cases and 19 days (IQR: 0 - 66.6) for controls (p< 0.001). Inpatient mortality was 25.2% (n=32) for cases 13.9% (n=35) for controls (p-value < 0.010). In multivariate analysis, receiving chemotherapy (OR 11.1, 95%CI: 2.2 – 54.3, p=0.003), being admitted to intensive care unit (ICU) (OR 2.0, 95%CI: 1.1 – 3.8, p=0.019), having a Peripherally Inserted Central Catheter (OR 1.8, 95% CI 1.0-3.4, p=0.045), and being colonized with MRSA (OR 1.9, 95%CI: 1.2 – 3.2, p=0.013) were associated with healthcare associated CLABSI.

Conclusion. Novel approaches are required to reduce risk of healthcare associated CLABSI, focusing on interventions for chemotherapy administration, care within ICUs and PICC lines.

Disclosures. All Authors: No reported disclosures

776. Reducing Central Line Associated Bloodstream Infections (CLABSI) in a High-Risk Cohort of Patients by Standardizing Skin Preparation Prior to Pulmonary Artery Catheter Insertion

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Session: P-37. HAI: Device-Associated (CLABSI, CAUTI, VAP)

Background. Central line associated bloodstream infections (CLABSI) are a recognized complication of all central venous access devices including pulmonary artery catheters (PAC). At our institution, PACs are utilized frequently, often for prolonged durations, for patients with advanced heart failure in the cardiac care unit (CCU) who are awaiting heart transplant. In early summer 2018, our hospital infection prevention (IP) department detected an uptick in CLABSI attributable to the CCU. After 9 months of zero CLABSI, two CLABSIs attributable to the CCU were identified during a 3 month period from November 2017-January 2018. Four additional CLABSIs were identified between May-July 2018 prompting an investigation by IP. Review of the 9 CLABSIs attributed to the CCU from May 2018 – June 2019 led IP to prioritize improving PAC insertion practices in our cardiac catheterization lab as a mean to reducing CLABSI (see table 1).

	9 CLABSI May 2018 – June 2019
Patients with a PAC inserted in cath lab	8/9 (88.9%)
CLABSI with <i>Staphylococcus epidermidis</i>	7/9 (77.8%)
PAC with dwell time ≤10 days	6/9 (66.7%)

Table 1

Methods. IP performed 5 observations of PAC insertion in the cath lab. During the observations of skin preparation, the prep time was performed correctly 40% of the time, correct application 60% of the time and dry time 60% of the time (see table 2, Figure1). Interventions included scheduling a training day for all cath lab staff with the skin prep vendor, performing competency check-offs, and identifying super-users to train future staff. Furthermore, skin antiseptic utilization according the manufacturer's instructions for use was implemented, the coverage area for the applicator was reviewed and a chart for reference was provided. The staff was provided with posters on correct skin prep technique as a visual cue in the procedure room.

Percent compliance of elements for PAC insertion skin prep in the Cath lab	
Prep time at least 30 seconds	2/5 (40%)
Application technique with back and forth strokes	3/5 (60%)
Area of prep dried completely	3/5 (60%)

Table 2



Figure 1

Results. Since the project was implemented in September 2019, there has been 1 CLABSI identified that was possibly related to a PAC inserted in the cath lab. During this time 3 CLABSIs were identified in the CCU but were felt to be unrelated to cath lab insertion.

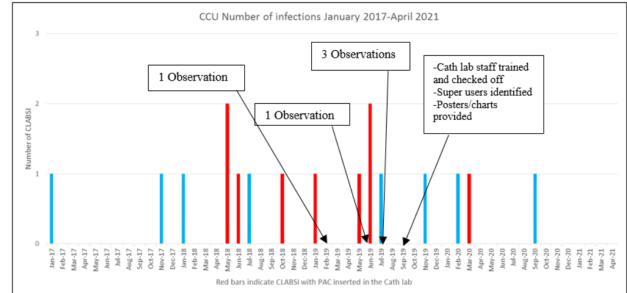


Figure 2: Number of CLABSI, CCU January 2017 – April 2021

Conclusion. Since the project was implemented in September 2019, there has been 1 CLABSI identified that was possibly related to a PAC inserted in the cath lab. During this time 3 CLABSIs were identified in the CCU but were felt to be unrelated to cath lab insertion.

Disclosures. All Authors: No reported disclosures

777. Implementation of Antimicrobial Impregnated Catheters to Reduce Central Line Associated Bloodstream Infections (CLABSI) in a Pediatric Setting

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Session: P-37. HAI: Device-Associated (CLABSI, CAUTI, VAP)

Background. Antimicrobial impregnated catheters (AIC) are one strategy to prevent CLABSI with existing data for central lines required for short duration, however, the strength of evidence, particularly for children, is lacking. Recent 3-year CLABSI data at our institution show 60 (51%) infections occurred in central lines within 8 weeks of insertion, suggesting an opportunity for evaluation of an intervention targeting this time frame. We implemented AIC to evaluate their effectiveness in reducing CLABSI standardized infection ratio (SIR) in patients requiring central venous access for less than 8 weeks. We also monitored for complications (malfunction, line exchange, fungal infection).

Methods. A stepped wedge observational design was used to implement Minocycline + Rifampin impregnated catheters in a rolling fashion across the institution. Children > 3kg were eligible if admitted to a participating unit and required central venous access through a peripherally inserted central catheter (PICC), non-tunneled catheter, or tunneled non-cuffed femoral catheter for < 8 weeks. Units, prioritized based on CLABSI SIR, were added to the intervention monthly until AIC were used throughout the institution. A multidisciplinary team (infectious diseases and infection control experts, CLABSI leaders, unit-based physicians and nurses, proceduralists, supply chain) met weekly to facilitate implementation, assess for CLABSI and monitor for complications.