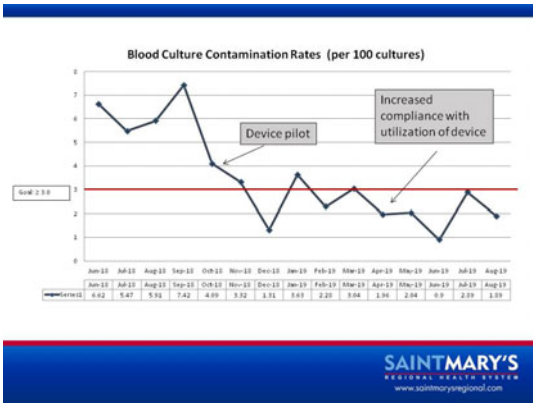

Fig. 2.

foremost, along with other financial benefits for the facility. Several articles have estimated the cost of a contaminated culture to be $3,000–$10,000 per event; SMRMC has adopting an estimated cost of $4,000. The number of cultures at our hospital averages ~4,400 per year, and these results suggest a savings of >$500,000 per year (as contaminations on an annual basis fell from 217 to 73). With this intervention, 144 patients were spared from receiving unnecessary antibiotics as a result of a false-positive blood culture testing. **Conclusions:** We conducted a brief analysis to determine whether there was any obvious change in length of stay for patients with a false-positive blood culture compared to those with true negative results. In analyzing data for 3 different months, patients with contaminated cultures spent an average of 3.97 additional days in the facility. In conclusion, the implementation of this specimen diversion device significantly lowered our contamination rates, was integrated into practice, and has provided clinical and financial benefits.

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Presentation Type:
Poster Presentation

Pathogens Associated With Repeat Versus Single Central-Line–Associated Bloodstream Infections, Acute-Care Hospitals, NHSN

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Background: The NHSN is the nation's largest surveillance system for healthcare-associated infections. Since 2011, acute-care hospitals (ACHs) have been required to report intensive care unit (ICU) central-line–associated bloodstream infections (CLABSIs) to the NHSN pursuant to CMS requirements. In 2015, this requirement included general medical, surgical, and medical-surgical wards. Also in 2015, the NHSN implemented a repeat infection timeframe (RIT) that required repeat CLABSIs, in the same patient and admission, to be excluded if onset was within 14 days. This analysis is the first at the national level to describe repeat CLABSIs. **Methods:** Index CLABSIs reported in ACH ICUs and select wards during 2015–2108 were included, in addition to repeat CLABSIs occurring at any location during the same period. CLABSIs were stratified into 2 groups: single and repeat CLABSIs. The repeat CLABSI group included the index CLABSI and subsequent CLABSI(s) reported for the same patient. Up to 5 CLABSIs were included for a single patient. Pathogen analyses were limited to the first pathogen reported for each CLABSI, which is considered to be the most important cause of the event. Likelihood ratio χ^2 tests were used to determine differences in proportions. **Results:** Of the 70,214 CLABSIs reported, 5,983 (8.5%) were repeat CLABSIs. Of 3,264 nonindex CLABSIs, 425 (13%) were identified in non-ICU or non-select ward locations. *Staphylococcus aureus* was the most common pathogen in both the single and repeat CLABSI groups (14.2% and 12%, respectively) (Fig. 1). Compared to all other pathogens, CLABSIs reported with *Candida* spp were less likely in a repeat CLABSI event than in a single CLABSI event ($P < .0001$). Insertion-related organisms were more likely to be associated with single CLABSIs than repeat CLABSIs ($P < .0001$) (Fig. 2). Alternatively, *Enterococcus* spp or *Klebsiella pneumoniae* and *K. oxytoca* were more likely to be

Figure 1. Pathogen Distribution among Single and Repeat CLABSIs, NHSN, 2015-2018.

	Single CLABSI		Repeat CLABSI	
Pathogen/Pathogen group	Frequency	Percent	Frequency	Percent
Staphylococcus aureus	9,149	14.24	715	11.95
Coagulase-negative staphylococci	8,237	12.82	629	10.51
Candida albicans	5,573	8.68	357	5.97
Klebsiella (pneumoniae/oxytoca)	5,089	7.92	664	11.1
Enterococcus faecalis	5,039	7.85	618	10.33
Escherichia coli	4,145	6.45	331	5.53
Candida spp	4,118	6.41	431	7.2
Enterococcus faecium	3,447	5.37	338	5.65
Candida glabrata	3,240	5.04	226	3.78
Enterobacter spp	2,753	4.29	337	5.63
Pseudomonas aeruginosa	2,337	3.64	221	3.69
Serratia spp	1,441	2.24	188	3.14
Enterococcus spp	958	1.49	95	1.59
Acinetobacter	899	1.4	89	1.49
Bacteroides	619	0.96	34	0.57
Viridans group streptococci	533	0.83	85	1.42
Proteus spp	520	0.81	45	0.75
Citrobacter spp	312	0.49	34	0.57
Morganella spp	136	0.21	9	0.15
All Others	5,686	8.85	537	8.98
TOTAL	64,231	100	5,983	100

Fig. 1.

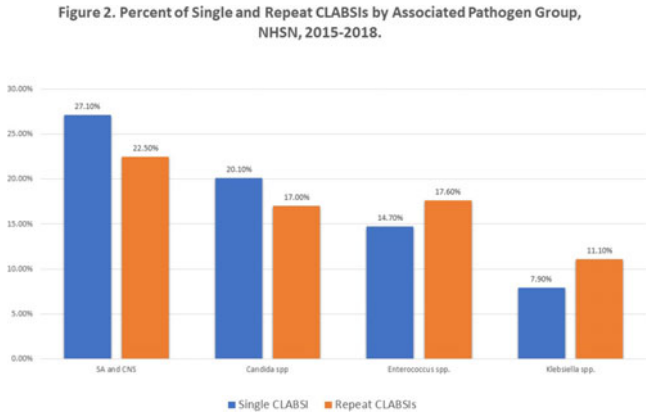

Fig. 2.

associated with repeat CLABSIs than single CLABSIs ($P < .0001$). **Conclusions:** This analysis highlights differences in the aggregate pathogen distributions comparing single versus repeat CLABSIs. Assessing the pathogens associated with repeat CLABSIs may offer another way to assess the success of CLABSI prevention efforts (eg, clean insertion practices). Pathogens such as *Enterococcus* spp and *Klebsiella* spp demonstrate a greater association with repeat CLABSIs. Thus, instituting prevention efforts focused on these organisms may warrant greater attention and could impact the likelihood of repeat CLABSIs. Additional analysis of patient-specific pathogens identified in the repeat CLABSI group may yield further clarification.

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Poster Presentation

Patients with Positive Glutamine Dehydrogenase (GDH) Antigen/Toxin and Toxin Negative/PCR Positive Patients: A Comparison

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Background: A multistep algorithm using GDH antigen plus toxin with a reflex PCR is an acceptable method for detecting CDI. The use of the PCR in discordant cases can identify those patients who are colonized from those patients who have nontoxogenic strains of *C. difficile*. Identification of discordant patients has infection prevention implications. Treatment is not recommended for patients colonized with *C. difficile*. **Methods:** A line listing of patients with positive hospital-onset antigen/toxin positive and discordant PCR positive was created. Demographic information was extracted from medical records and the 2 cohorts were compared. **Results:** There were 59 discordant and 44 positive cases HO CDI cases from October 2017 through September 2019: (1) There was no difference in age and sex between the 2 groups. (2) Positive patients tended to have 3 loose stools before and after testing (57% vs 27%; $P = .026$). (3) Overall, 82% of positive patients had 1 of 3 signs or symptoms (leukocytosis, abdominal pain, and temperature >38°C) consistent with CDI compared to 66% of discordant patients ($P = .038$), and 55% of positive patients were more likely to have 2 of 3 signs or symptoms of CDI compared to 17% of discordant patients ($P = .00003$). (4) Also, 46% of discordant patients were either on the oncology ward or ICU compared to 32% of positive patients ($P = .764$). (5) There was no difference between in discordant compared to positive patients in non-CDI antimicrobial therapy within 7 days of CDI test submission (81% vs 84%, respectively). **Conclusions:** (1) Screening for CDI testing should include 3 loose stools and at least 2 of 3 signs or symptoms of CDI. (2) Discordant cases most likely represents colonization because only 17% of discordant patients had 2 of 3 CDI signs or symptoms at presentation. (3) Discordant cases without clinical features of CDI should not receive treatment to minimize antibiotic exposure. (4) Identification of discordant patients have infection prevention ramifications because CD can be indirectly transmitted by colonized patients; therefore, using PCR in addition to toxin testing is favored. (5) Antimicrobial therapy highly associated with CDI should be avoided, should antimicrobial therapy be necessary in PCR-positive discordant patients.

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Disclosures: None

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	Num	Dem	PCR + %		Num	Dem	AgTx %
Laxative/Bowel stimulant?	14	59	24%		14	44	32%
Co-morbidity present?	55	59	93%		39	44	89%
Male	30	59	51%		24	44	55%
Female	29	59	49%		20	44	45%
Age (65 and up)	29	59	49%		22	44	50%
Age (under 65)	30	59	51%		22	44	50%
At least 3 stools 24 hours before or after collection	45	59	76%		40	44	91%
3 loose stools before AND after collection	16	59	27%		25	44	57%
At least 1 S/S (elevated WBC, elevated temp, abd pain)	39	59	66%		36	44	82%
At least 2 S/S (elevated WBC, elevated temp, abd pain)	10	59	17%		24	44	55%
All 3 S/S (elevated WBC, elevated temp, abd pain)	1	59	2%		3	44	7%
Discharged within 5 days of positive test result	6	59	10%		17	44	39%
Treated with PO Vanco or Dificid	33	59	56%		40	44	91%
Treated with PO Vanco, dificid, OR PO flagyl	42	59	71%		44	44	100%
On Oncology or ICU on the day of specimen collection	27	59	46%		14	44	32%
Any antibiotics within 7 days of loose stool	48	59	81%		37	44	84%

Fig. 1.

Presentation Type:
Poster Presentation

Pattern Recognition Algorithms for Predicting Surgical Site Infection in Abdominal Hysterectomy

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Background: This research represents an experiment based in surgical site infection (SSI) to patients undergoing abdominal hysterectomy surgery procedures in hospitals in Belo Horizonte, (population, 3 million). We statistically evaluated such incidences and studied the SSI prediction power of pattern recognition algorithms, the artificial neural networks based in multilayer perceptron (MLP). **Methods:** Between July 2016 and June 2018, data on SSI were collected by the hospital infection control committees (CCIH) of the 3 hospitals involved in the research. They collected all data used in the analysis during their routine SSI surveillance procedures. The information was forwarded to the NOIS (Nosocomial Infection Study) Project, which used SACIH (ie, automated hospital infection control system software) to collect data from a sample of hospitals participating voluntarily in the project. After data collection, 3 procedures were performed for SSI prediction: (1) a treatment of the database collected for the