Conclusions: Findings suggest that patients with certain easily assessed characteristics, such as mechanical ventilation, tracheostomy, or stool incontinence or who require bathing assistance, may be associated with CPO positivity during screening. Further data collection and analysis of such risk factors may provide insight for the development of more targeted admission and contact screening strategies.
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Presentation Type:
Poster Presentation
Evaluation of Sampling Methods for Detection of Pathogens from Steel Surfaces; Contact Plates, Foam Swabs, and Flocked Swabs
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Background: Contaminated healthcare surfaces can serve as reservoirs for the transmission of pathogens. Sensitive sampling methods are needed to investigate sources of pathogens for implementing effective disinfection strategies and thereby preventing environmental transmission. Conventional approaches employ swabs to sample environmental surfaces. Contact plates represent an alternative approach for sampling healthcare surfaces that does not require lab processing, though little is known about their performance. A contact plate is an agar plate that is overfilled with selective or nonselective media. It can be gently applied to the surface, then simply incubated at a temperature optimal for target organism (s), thus saving time and resources. **Methods:** In this study, contact plates containing trypticase soy agar with 5% sheep blood (TSAII), foam swabs, and flocked swabs were evaluated for their ability to recover 4 pathogens that persist on healthcare surfaces. Stainless-steel coupons (4 in^2) were inoculated with the following pathogens (10^2 CFU): *Acinetobacter baumannii* (AB, strain type 12), carbapenemase-producing *KPC+ Klebsiella pneumoniae* (KP; ATCC BAA-1705); methicillin-resistant *Staphylococcus aureus* (MRSA; ATCC 43300); and vancomycin-resistant *Enterococcus faecalis* (VRE; Van A + 256). The plates were allowed to dry 1 hour. Sampling with CPs was performed in 2 ways; (1) a single contact plate was used to sample 1 stainless-steel surface and (2) a composite was collected by 3 sequential contact-plate samplings of the same stainless-steel surface. The contact plates were then incubated at 35±1°C. Foam and flocked swabs were premoistened with phosphate-buffered saline + 0.02% polysorbate 80 (PBST) and were used to sample the stainless-steel coupons. Swabs were held for 1 hour and processed by sonication and vortexing in 5 mL of PBST, then the eluent was cultured and CFU counted. Mean percentage recoveries (%R) relative to the inoculum were calculated and compared. **Results:** When the %R for all 4 pathogens were pooled, the composite contact-plate sampling method yielded the highest, ($P < .05$) (66.0%; SD, 0.22), followed by the single contact plate method (39.7%; SD, 0.12), foam swab (32.9%; SD, 0.18), and flocked swab (20.3%; SD, 0.20). The composite contact plate method yielded the highest %R for VRE (102.1 %; SD, 0.17), and the lowest %R was observed when using flocked swabs to recover KP (6.3%; SD, 0.05). **Conclusions:** The contact-plate composite method may provide investigators with minimal environmental microbiology capacity an alternative method for environmental sampling and detection of organisms from surface areas (≤4 in 2) with low bioburden.
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Presentation Type:
Poster Presentation
Evaluation of Surgical Site Infections After Change in Surgical Prophylaxis in VAD Patients
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Background: In October 2013, the University of Maryland Medical Center established a formal antibiotic prophylaxis protocol for patients undergoing ventricular assist device (VAD) placement, replacing a previous system of various broad-spectrum antibiotic combinations typically for prolonged durations based on surgeon preference. This new protocol consisted of a standardized regimen of 72 hours of vancomycin and ceftriaxone after the procedure. The objective of this project was to evaluate the rate of surgical site infection (SSI) related to VAD placement to ensure that implementing the new protocol did not cause an increase in SSI rates. **Methods:** The study was a retrospective cohort study of patients who had undergone VAD placement before the protocol change (January 1, 2011, to October 1, 2013) and after the change (October 1, 2013, to November 15, 2015). The primary outcomes was the difference in SSI rate before and after the protocol change using CDC NHSN definitions. Pertinent data points of interest included reason for VAD placement, duration/type of antibiotics used, delayed sternal closure, SSI, characterization of infection (bloodstream, driveline, or pocket), organism identified on culture and mortality at 30 days and 1 year. SSI rates were assessed using the Fischer exact test, and descriptive statistics were used for other outcome variables. **Results:** In total, 75 patients were included before the protocol and 46 after the protocol change. Overall, 27% and 17% of patients were on therapeutic antibiotics prior to the VAD placement, respectively ($P = 0.23$). Also, 8 (6.6%) patients in the preintervention group had an SSI compared to 1 patient (0.8%) in the postintervention group ($P = .15$). Adherence to the protocol was suboptimal, with 27% of patients in the postintervention group receiving non–protocol-adherent antibiotics and 65% of patients receiving antibiotics >96 hours postoperatively. When evaluating the patients collectively, SSI rates were the same when antibiotics were discontinued <72 hours postoperatively versus when antibiotics were continued beyond 72 hours postoperatively or were not given at all postoperatively (3.1% vs 10.7% vs 0%; $P = .24$). SSI rates were also no different among patients who received cefazolin monotherapy (0%), vancomycin and ceftriaxone (2.7%), vancomycin and piperacillin tazobactam (2%), and other antibiotic combinations (7.7%) for surgical prophylaxis ($P = 0.1$). **Conclusions:** No change in SSI rates was noted after a protocol change narrowing the spectrum and duration of antibiotic prophylaxis was implemented. Evaluation of optimal surgical prophylaxis in this patient population is difficult due to low event rates and frequent therapeutic indications for antibiotics outside the standard prophylaxis. Despite these challenges, this study supports the safety of studying SSI prophylaxis reduction

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