who received VPT to VCT for surgical prophylaxis. Patients receiving other surgical prophylaxis regimens due to allergy or colonization history were excluded. Donor and recipient culture data from bronchoscopy samples were collected to determine the incidence of *Pseudomonas* in the 14-day post-transplant period. The secondary outcome was the incidence of post-transplant CDC-defined pneumonia. Statistical analysis was performed using SAS 9.4 (Cary, NC).

### Results

One hundred patients were included in the pre-program group (VPT), and 65 in the post-program group (VCT). *Pseudomonas* was recovered in recipient BALs on post-op day 2-14 in 8 (8%) patients in the VPT group compared with 5 (7.7%) patients in the VCT group (P = 1.0). Mean time to maximum isolation was 8.4 days in the VPT group compared with 5.4 days in the VCT group. Incidence of pneumonia on post-op day 2-14 was 6% in the VPT group vs. 3% in the VCT group (P = 0.48). Surgical site infections were rare in the VCT group with an incidence of 1.5% (1/65).

### Conclusion

Isolation of *Pseudomonas* was rare in both time periods and an increase was not detected when anti-pseudomonal coverage was removed from the surgical prophylaxis regimen. Safe desescalation of surgical prophylaxis regimens are an important antimicrobial stewardship initiative.

### Disclosures

E. Heil, ALK-Abello; Grant Investigator, Research grant.

### Methods

**NDHHS HAI program and local health department personnel conducted an investigation. Overall SSIs rates were calculated, and seven reported SSIs charts were abstracted using the Centers for Disease Control and Prevention's HAI Outbreak Investigation Form. An additional nine-patient charts with similar characteristics were abstracted and used as the control group. These cases had the same surgical procedures performed at the same hospital, by the same surgeon, and during the same period of time but did not develop infections.**

**Results.** In 2016, of the 452 procedures at this CAH, 17 developed SSIs (rate = 3.8%). SSIs occurred following the most invasive procedures being performed by the same surgeon at the same facility, and were performed by three surgeons. Surgeon A performed 24 procedures with seven SSIs (rate = 29.2%). Surgeon B performed 171 procedures with five SSIs (rate = 2.9%) and Surgeon C performed 13 procedures with three SSIs (rate = 23.1%). The seven SSIs associated with Surgeon A used different operating room (OR) personnel, rooms, anti-biotics, and durations. There were 0 deaths. The seven SSIs and nine controls were evaluated using a stepwise regression model. Using the variables for bone graft, hardware, OR location, and number of people in the OR, the only significant variable was the number of people in the OR. There was an average of 10 people in the OR among seven cases and seven among controls. Logistic regression yielded an odds ratio of 1.8 (95% CI: 0.99 - 3.26).

**Conclusion.** SSIs occurred primarily after orthopedic procedures, and two of the three surgeons were found to have elevated rates. Analysis showed the number of people in the OR was potentially associated with SSIs. Additionally, we outlined our methodology in a publically-available response guideline posted at NDHHS web page.

### Disclosures. All authors: No reported disclosures.

### 2141. Characteristics and Prognosis of Patients with a Prosthetic Vascular Graft Infection (PVGI): A Prospective Cohort of 200 patients

**Armelle Pasquet, MD; Olivier Robertine, MD; Michel Valette, MD; Pier-Vito D’Elia, MD; Sylvie Vandamme, CST; Olivier Leroy, MD, PhD; Barthelemy Lafort-Denavigrette, MD, PhD; and Eric Senneny, MD.**

**Background.** Infection of a prosthetic vascular graft is a serious complication with high mortality among patients admitted for a PVGI. To evaluate the predisposing factors, mortality and outcome of patients admitted for a PVGI, we conducted a prospective cohort study of 200 patients admitted to our ICU from January 1, 2000 and January 1, 2018, for a PVGI. Patients received either a polytetrafluoroethylene (PTFE) or an expanded polytetrafluoroethylene (ePTFE) graft. Demographic data, clinical and surgical characteristics, outcomes and prognostic factors were collected for all patients. Multivariate analysis was performed with OR and 95% CI for each significant factor. The study was approved by the Institutional Ethics Committee.

**Methods.** We used a standardized protocol for PVGI. New features were described: aortic graft, aorto-iliac; axillo-femoral and cavitary (aorto-iliac, aorto-femoral, ilio-femoral, aortic); into the venous network. In a PVGI, 104 patients (52%) had vascular graft infection, 87 (43%) had stent infection and 23 (11%) had both. Multifocal infection was observed in 30 patients (15%). The median age of patients at diagnosis was 69 years (IQR: 61-78), mainly of men (86%). One hundred and six-teen patients had an intracavitary PVGI (58%). Enterobacteriaceae and MSSA were the most frequent pathogens (n = 60 and 59), followed by coagulase negative staphylococci (n = 30), Streptococcus (n = 26) and enterococcus (n = 25). Surgery with replacement of the infected prosthesis was performed in 102 patients (53%). Culture of material samples taken during surgery were performed in 67 patients (34%). After surgery, the median follow-up of patients was 7.5 months (IQR: 2-19) during which 30 presented a failure (15%) and 85 patients died, 41 due to the PVGI (21%). Factors independently associated with death and to have an intracavitary PVGI (OR = 9.0; P< 0.01) and to stay in ICU for more than 6 days (OR = 5.9; P< 0.01) and to have an intracavitary PVGI (OR = 9.0; P< 0.02) Antibiotic therapy regimen combining rifampicin to another antibiotic was associated with a decreased mortality (OR = 0.13; P< 0.01).

**Conclusion.** Our results suggest that the prognostic of patients admitted for PVGI depends on the site of infection and the occurrence of a shock after the admission. We found a better prognosis for patients with an extracavitary PVGI, without surgery. Finally, PVGI treated with an antibiotic combination including rifampicin had a better outcome.

### Disclosures. All authors: No reported disclosures.

### 2142. Understanding Errors in Sterile Processing of Surgical Instruments That Lead to Need for Immediate Use Sterilization in the Operating Room

**John Farrell, MD; Medicine and Microbiology, University of Illinois, Peoria, Illinois**

**Session: 235. Healthcare Epidemiology: Surgical Site Infections Saturday, October 6, 2018: 12:30 PM**

### Background

“Flash sterilization”, an outdated term for immediate-use sterilization, is broadly defined as the shortest possible time between a sterilized item's removal from the sterilizer and its aseptic transfer to the sterile field for use in the procedure for which it was sterilized, but at our institution, immediate-use sterilization of individual unwrapped objects has a very specific definition: this is a vacuum sterilization performed in a pre-vacuum sterilizer (as opposed a gravity displacement unit). A complete cycle is composed of a 4-minute exposure.
time at 227°F followed by a 16 minute dry time. This process was initially intended for a single instrument (e.g., a one of a kind item that may have been dropped during the surgical procedure). Although efforts to minimize flash sterilization at our institution have been successful (we saw only 11 instances in February, 2018), immediate-use sterilization remains common in some operating rooms (OR). 

**Methods.** We performed a prospective 30-day study in our sterile processing department (SPD) of the causes of surgical tray errors, which result in need for immediate-use sterilization in the OR. Mistakes were categorized as tray assembly errors, sterilization mistakes, and cart or other errors.

**Results.** Over 17,348 trays were processed in our SPD department for a total of 1,868 surgical procedures. During this time a total of 86 errors were identified, 38 assembly errors (e.g., 10 trays with missing or incorrect instruments and 10 trays with improper filter placement); 30 sterilization errors (17 documentation errors; 10 case cart mistakes (four missing trays); and eight mistakes categorized as other.

**Conclusion.** We have identified two key opportunities for improvement in tray assembly in our SPD to decrease the need for immediate use sterilization. Recognition of the causes of surgical tray defects can help identify opportunities to decrease errors that result in need for immediate use sterilization.

**Disclosures.** All authors: No reported disclosures.

### 2143. Incidence of Infection in Patients Receiving Short vs. Long Duration of Antimicrobial Prophylaxis in Neurosurgery

**Chelsea Bast, PharmD1; Peter Colley, PharmD, BCPS-ASAHP2; Jennifer Roth, PharmD, BCPS, BCCCP3; Hoa Nguyen, MD, MS, PhD1; Richard Nathusius, MBA, MD, FAANS, FACS2 and}  

**Background.** Surgical site infections in neurosurgery occur in up to 10% of procedures. The American Society of Health-System Pharmacists guidelines promote antimicrobial prophylaxis (AP) for up to 24 hours from neurosurgery using cefazolin while the National Institute for Health and Care Excellence guidelines promote single pre-procedural dose of AP for extraventricular drain (EVD) monitoring. Despite these guidelines, practice variation exists with often longer antimicrobial exposure and subsequent complications.

**Methods.** This retrospective study included patients admitted to Baylor University Medical Center from January 1, 2014 to September 20, 2017 and underwent cranial or spinal neurosurgery requiring AP. This study excluded patients with basilar skull fracture, presence of cerebrospinal fluid leak, penetrating trauma, meningitis, and patients receiving antibiotics for documented or suspected infection unrelated to neurosurgery. Patients who received AP for up to 24H (short course) were compared with patients who received AP for greater than 24H (long course) at 90 days. Data were analyzed using the Fisher exact test, Student's t-test and Wilcoxon rank-sum tests as applicable.

**Results.** A total of 183 patients were included with 90 and 93 patients receiving short or long courses of AP, respectively. Baseline characteristics were similar for the groups. Patients in the short course AP group received a mean antibiotic duration of 16.9 ± 4.3H while those in the long course AP group received 72.2 ± 50.9H (P < 0.001). The mean number of antimicrobials prescribed was 1.1 vs. 1.8 (P < 0.001) in the short vs. long groups, respectively. At 90 days, there were no significant differences in the rate of surgical site infections (1.1% vs. 2.1%, P = 0.99), development of multi-resistant infections (2.2% vs. 2.2%, P = 0.99), and *Clostridium difficile* infection (0% vs. 1.1%, P = 0.99) in the short vs. long groups, respectively.

**Conclusion.** The rate of surgical site infections was not significantly different in patients receiving long or short durations of antimicrobial prophylaxis. These results highlight an opportunity to improve antibiotic use and promote principles of antimicrobial stewardship in neurosurgery.

**Disclosures.** All authors: No reported disclosures.

### 2144. Vital Signs Are Vital in Identifying High-Risk Postoperative Patients

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**Background.** Changes in vital signs are frequently the first sign to point to pathology in the postoperative setting. There is no prediction model that exists that evaluates risk of postoperative complication in real-time. We are interested in understanding if we are able to risk stratify patients after surgery using novel predictors, trajectories of the various vital signs and evaluating their ability to risk stratify their patients.

**Methods.** We reviewed patients who underwent pancreatectomy at an academic health system from January 2015 to February 2018. Postoperative complications were abstracted using definitions set by the National Surgical Quality Improvement Program (NSQIP) and vital signs, including pain score, were extracted from the Data Warehouse. Group-based trajectory modeling, a technique used to identify distinct clusters of patients with similar trajectories, was used to group patients with similar temperature, heart rate, blood pressure and pain scores. Postoperative complications were tabulated for each risk group and chi-square test was used to compare categorical variables.

**Results.** A total of 195 patients with pancreatectomy were evaluated and the rate of NSQIP complications was 35.4%. Pancreatectomy patients clustered into two distinct clusters for temperature, heart rate, systolic blood pressure and pain score. All four of these vital signs were able to stratify infections and inflammatory complications between low- and high-risk groups but only systolic blood pressure was significant in stratifying readmission risk and heart rate and pain score for stratifying sepsis risk (Table 1).

**Conclusion.** Trends of vital signs may be important predictors of complications. Some vital signs may be better at predicting distinct complications. More work is required to understand if different covariates within trajectory analysis can be combined to further enhance risk stratification for any and specific postoperative complications.

**Disclosures.** All authors: No reported disclosures.

**Table 1:** Rates of Complications by Trajectory Analyses

| Sepsis % | Any Complication % | Readmission % |
|---------|--------------------|---------------|
| Temperature high | 6.1 | 270* | 14.8 |
| Temperature low | 6.8 | 419* | 16.2 |
| HR high | 2.8* | 25.7* | 13.8 |
| HR low | 11.3* | 42.5* | 17.5 |
| SBP high | 6.9 | 23.0* | 9.2* |
| SBP low | 5.9 | 41.2* | 20.8* |
| Pain score high | 3.5* | 270* | 15.7 |
| Pain score low | 10.8* | 41.2* | 14.9 |

* Significant at P < 0.05.