Table 1. Blood Culture Patterns in Different Patient Populations

Unit	No. of Blood Cultures (BC)	BC per 1,000 Patient Days	Positivity Rate, %	Contamination Rate, %	BC Proportion Drawn Through Lines, %
Hospital-wide	35,121	106	10	1.6	23
ICUs	11,315	246	8.8	1.3	30
Hematology-oncology units	6,965	217	10	2	40
General care medical units	5,160	108	10	1.5	2.7
General care surgical units	2,799	45	9	1.4	5
General care pediatrics	603	49	12	2.6	71

culture positivity rate was significantly lower in ICUs (8.8%) compared with hematology-oncology (10%; HR, 0.88; CI, 0.80–0.96; $P =$ .006), general medicine (10%; HR, 0.88; CI, 0.80–0.97; $P =$ .013), and pediatrics (12%; HR, 0.74; CI, 0.59–0.92; $P =$ .008). The ICUs had the lowest rate of BC contamination at 1.3%. **Conclusions:** Blood samples obtained through central lines for culture are more likely to be contaminated than peripherally drawn blood samples. Despite a relatively high rate of line-drawn blood samples for culture, ICUs had the lowest BC contamination rate, possibly reflecting high familiarity of ICU nurses with line draws. Blood samples collected through lines were most frequently performed in pediatrics and hematology-oncology, and these units had correspondingly higher rates of contamination. This information will be used to inform institutional guidelines on blood culturing and to identify ways to minimize blood culture contamination, which often results in additional testing and/or unnecessary antimicrobial use.

Presentation Type:
Poster Presentation
Bloodstream Infections Caused by *S. aureus*: Daptomycin Nonsusceptibility and Clinical Aspects

Simone Nouer, Federal University of Rio de Janeiro; Débora S. Fernandes, Laboratório de Infecção Hospitalar Instituto de Microbiologia Professor Paulo de Góes/ UFRJ; Rennan Les, School of Medicine, UFRJ; Adriana Lucia Pires Ferreira, Laboratório de Bacteriologia HUCFF – UFRJ; Kátia Regina Netto dos Santos , Laboratório de Infecção Hospitalar Instituto de Microbiologia Professor Paulo de Góes/ UFRJ

Background: *Staphylococcus aureus* is one of the leading pathogens isolated from bloodstream infections (BSIs), and vancomycin has been the main choice to treat MRSA (methicillin-resistant *S. aureus*) infections. Vancomycin-intermediate *S. aureus* (VISA) and heteroresistant-VISA (hVISA) have been described, limiting this antibiotic use. We evaluated aspects associated with the resistance and its clonality of the *S. aureus* isolated from BSIs, and we determined their association with clinical aspects of patients attended at Rio de Janeiro between 2016 and 2018. The detection of MRSA and trimethoprim-sulfamethoxazole resistant isolates was performed using the disk diffusion test, while the minimum inhibitory concentrations (MICs) were evaluated for 5 antimicrobials using the broth microdilution method. The MICs for ceftaroline and vancomycin of the MRSA isolates were determined using the E test. The presence of hVISA isolates was evaluated for isolates with vancomycin MICs of 1 and 2 µg/mL by screening on BHI agar added with vancomycin. The population profile was divided by the area under the curve (ie, PAP/AUC test). SCC *mec* was evaluated by PCR and the clonal profile by PFGE method. Among 123 *S. aureus* isolates from BSI, 31% were MRSA. MIC50 and MIC90 were daptomycin 2 and 2 µg/mL; linezolid, 1 and 1 µg/mL; oxacillin 1 and 256 µg mL; teicoplanin, 0.5 and 0.5 µg/mL and vancomycin 1 and 1 µg/ml. MIC values for ceftaroline and vancomycin were 0.75 and 2 µg/mL. The frequency of isolates not susceptible to daptomycin was 75%. The clonal lineages and SCC*mec* types found were USA100/ST5-II (50%), USA800/ST5-IV (22%), USA300/ST8-IV (15.8%), USA1100/ST30-IV (5.3%), BEC/ST239-III (5.3%), and 1 isolate carrying SCC*mec*V/ST1. We found 1 VISA isolate, and the PAP/AUC analysis detected 3 hVISA isolates that were associated with the USA100 and USA300 lineages. Overall, 85% of patients had a vascular catheter. More advanced age was associated with MRSA infection as was higher mortality. Patients with end-stage renal disease were more affected by MSSA infection. Daptomycin nonsusceptibility and VISA and hVISA phenotypes associated with prevalent clonal lineages were described. In addition, MRSA infections presented higher mortality, which emphasizes the importance of epidemiological studies.

Presentation Type:
Poster Presentation
Boots and Bugs: The Beginning of an Intervention for Firefighters

Christine McGuire-Wolfe, Pasco County Fire Rescue

Background: Multiple studies have demonstrated that pathogens are present in both apparatus and stations within the fire service. Pasco County Fire Rescue's (PCFR's) 500+ firefighters routinely wear boots to trauma scenes and into patient's residences and then into the dormitory and living areas of the fire stations. Pasco County Fire Rescue (PCFR) recently participated in a larger effort to identify the bacteria, yeast, and mold that firefighters, emergency medical technicians, and paramedics are exposed to on apparatuses and the station living environment during a typical shift. During these efforts to swab multiple touch points within apparatus (ambulances and engines) and common areas of the stations, firefighters' boots were identified as a significant source of bacterial contamination. **Methods:** Swabs of 191 surfaces in 23 vehicles and 5 fire stations were collected, including 3 swabs from the bottom of firefighter boots. **Results:** Firefighter boots had the highest bacterial CFUs of all locations swabbed, with >900,000 and 378,000 CFUs per boot. Disinfection with a quaternary

Are you on the right track?
When did you last decon your boots?

Fig. 1.

They are following in your footsteps.
Is it safe? Decon your boots.

Fig. 2.

ammonium product sprayed through an electrostatic sprayer system effectively reduced the bacterial contamination on boots. **Conclusions:** PCFR recognizes firefighter boots as a critical vector of contamination between the environment encountered on emergency medical calls and the fire station environment and, as a result, has started a preliminary education campaign for agency firefighters regarding the need for regular boot disinfection. These efforts include regular submissions to the biweekly employee newsletter, as well as reminders on interoffice mailing envelopes (see example below) in hopes of increasing informal, self-directed boot cleaning and disinfection efforts. The next steps include verifying the effectiveness of specific disinfectant cleaners on boots; addressing logistical and practical barriers to routine cleaning and disinfection of boots; and developing, implementing, and evaluating a protocol for regular boot cleaning and disinfection.
Funding: None
Disclosures: None
Doi:10.1017/ice.2020.659

Presentation Type:
Poster Presentation
Bronchoscope-Related Outbreaks and Pseudo-Outbreaks: CDC Consultations—United States, 2014–2019
Ana Bardossy, Centers for Disease Control and Prevention; Shannon Novosad, CDC; Kiran Perkins, CDC; Heather Adele Moulton-Meissner, Centers for Disease Control; Matthew Arduino, CDC, NCEZID; Isaac Benowitz, Center for Disease Control and Prevention

Background: Exposure to medical devices can be a risk factor for the development of healthcare-associated infections; bronchoscopes are a leading cause of device-associated outbreaks. We describe bronchoscope-related outbreaks and pseudo-outbreaks reported to the Centers for Disease Control and Prevention's Division of Healthcare Quality Promotion (DHQP), and we summarize investigation steps and control measures. **Methods:** We identified bronchoscope-related consultations with state and local health departments between July 1, 2014, and September 30, 2019, in the DHQP database. We abstracted data on patient symptoms, clinical culture results, investigation findings, and subsequent infection prevention and control interventions. **Results:** We identified 15 consultations involving 150 patients (range, 3–31 patients per consultation). Each consultation involved at least 1 cluster of the same organism. Organisms associated with bronchoscope-associated clusters were nontuberculous mycobacteria (n = 7), *Candida* spp (n = 3), *Exophiala* spp (n = 2), *Pseudomonas aeruginosa* (n = 2), *Enterobacter* spp (n = 2), and *Raoultella planticola*, *Stenotrophomonas maltophilia*, *Achromobacter* spp, *Mycobacterium tuberculosis*, and *Aspergillus* spp (1 each; 2 consultations involved multiple pathogens). Procedures from which these patient specimens were collected included bronchoalveolar lavage, bronchial wash, bronchial brushing, sputum swab, and lymph node biopsy. For the 7 outbreaks in which clinical data were available, 5 did not have patients with clinical infections related to the pathogen recovered. Two consultations involved pseudo-outbreaks: one involved contamination of specimen collection tubes and the other involved contamination of cultures within the laboratory. Potential underlying pathogen sources included contaminated bronchoscopes (inadequate reprocessing or device damage) (n = 10, 67%), use of nonsterile ice, water, or saline during the procedure (n = 4, 27%), contaminated specimen collection tubes (n = 1, 7%), contaminated bronchoscope suite (n = 1, 7%), and clinical laboratory contamination (n = 1, 7%). The most common interventions included improvement of reprocessing procedures (n = 5), removal of possibly damaged bronchoscopes (n = 4), and eliminating nonsterile ice and water exposures in bronchoscopy (n = 3). **Conclusions:** Water-related organisms were the most commonly identified pathogens in bronchoscope-related consultations, highlighting the important role that exposure to contaminated water during bronchoscopy and bronchoscope reprocessing might play in bronchoscopy-associated outbreaks and pseudo-outbreaks. During bronchoscope-related outbreaks identifying a common pathogen could indicate problems in bronchoscope handling or reprocessing, device damage, or exposure to nonsterile water.
Funding: None
Disclosures: None
Doi:10.1017/ice.2020.660