cleaning achieved significant effects in the efforts to decrease HAIs and MDROs in the ICUs of Cho Ray Hospital.

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Subject Category: Healthcare-Associated Infection (HAI) Surveillance
Abstract Number: SG-APSIC1086
Case series: Examining healthcare-associated infection cases caused by *Candida auris* at Cho Ray Hospital, Vietnam
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Objectives: *Candida auris* was first detected in Japan in 2009 and has been reported in >47 countries, typically causing outbreaks in healthcare settings. According to the US Centers for Disease Control and Prevention, this pathogen causes death in more than one-third of infected patients. This study describes characteristics of healthcare-associated infections (HAIs) related to *C. auris* and infection prevention and control (IPC) measures applied to control transmission in Cho Ray Hospital, a tertiary-care, referral, general hospital in southern Vietnam. **Methods:** We reviewed medical records of all patients with HAIs caused by *C. auris* at Cho Ray Hospital between April 2020 and March 2021, as well as the IPC measures applied for these patients. **Results:** Overall, 5 HAI cases caused by *C. auris* were identified in 5 patients, including 2 catheter-associated urinary tract infections, 2 ventilator-associated pneumonia cases, and 1 surgical site infection. These cases were sporadically detected in 4 different clinical departments; 2 cases occurred in the respiratory department in April and August 2020. The average age of the patients was 63, and 4 of 5 patients were male. The average hospital stay was 27.2 days; 4 patients died and 1 was discharged. IPC interventions were implemented to immediately respond to *C. auris* infection cases, including isolating the patients, applying standard and transmission-based precautions, supplying adequate personal protective equipment, cleaning environment surfaces and medical equipment in the patient's room, and marking isolation areas with signage. No additional cases of *C. auris* infection were detected in the affected units. **Conclusions:** *C. auris* can spread in healthcare settings via contact with contaminated equipment and surfaces or from person to person, causing outbreaks in hospitals and leading to severe illness and high mortality for patients. Prompt application of appropriate IPC measures effectively helped prevent additional cases of *C. auris* in our hospital.

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Subject Category: Healthcare-Associated Infection (HAI) Surveillance
Abstract Number: SG-APSIC1170
Reduction of hospital-onset MRSA bacteremia with chlorhexidine baths among MRSA-colonized patients
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Objectives: Methicillin-resistant *Staphylococcus aureus* (MRSA) is a major concern for hospitalized patients in Singapore. Hospital-onset (HO) MRSA bacteremia is monitored at the national level as an indicator of hospital quality. Patients who have colonized with methicillin-resistant *Staphylococcus aureus* (MRSA) are more likely to develop an MRSA infection in the future. A topical antiseptic solution or cloth called chlorhexidine gluconate (CHG) is effective against several gram-positive and gram-negative bacteria, including MRSA. **Methods:** The following control measures were present before and throughout the study period: (1) active screening of MRSA upon admission; (2) initiation of contact precaution once MRSA is detected; and (3) emphasis on strict hand hygiene. In January 2021, an intervention was for routine application of CHG bathing as follows: (1) training materials were developed; (2) train-the-trainer sessions were organized; (3) compliance regarding the application of CHG baths was monitored; and (4) the postimplementation process was reviewed. **Results:** There was no change of hand hygiene rate before and after implementation. In 2020, 17 cases of MRSA bacteremia occurred in the hospital, with an infection incidence of 0.54 per 10,000 patient days. In 2021, there were 10 cases of HO-MRSA bacteremia infection, with an overall rate of was 0.30 per 10,000 patient days. **Conclusions:** Daily bathing with chlorhexidine reduced the risk of MRSA acquisition and of hospital-acquired bacteremia.

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Subject Category: Improvement science (quality improvement)
Abstract Number: SG-APSIC1036
Effect of quality improvement in medical devices preparation on increasing customers' satisfaction in services of the Central Sterile Supply Department of Srinagarind Hospital
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Objectives: Preparation of medical devices from central sterile supply department (CSSD) for use in hospital services requires quality and readiness for use. A guideline for good practice is necessary for safety, assurance, and maximum customer satisfaction, and to accommodate effective healthcare services. We sought to develop and improve medical-device preparation guidelines to satisfy clients. **Methods:** This action research was based on the concepts of Kaizen and eliminate–combine–rearrange–simplify (ECRS). The research was conducted in 3 phases. In the first phase, we designed the study, conducted problem analysis, and developed a plan for improving the preparation of medical devices. In the second phase, we improved the plan for implementation of medical-device preparation guidelines that the research team adapted and developed. We added inspection categories, trained staff members, conducted a focus group. We improved cleaning processes and the inventory system. In the third phase, we conducted an improvement evaluation for (1) quality improvement of medical device preparation and (2) client satisfaction. The research took place from January to December 2019. **Results:** The monthly percentages of medical equipment that passed quality criteria before and after the implementation plan were 91.82±1.19% and 95.33±1.25% ($P \leq .005$). The average client satisfaction score increased from 76.80% to 83.40% ($P = .006$). **Conclusions:** The implementation of Kaizen and ECRS principles for quality improvement successfully increased the quality of equipment preparation and introduced standardized, quality guidelines. The plan–do–check–act (PDCA) process improved client satisfaction, staff performance, and operational efficiency while preventing damage to medical devices and improving readiness of use.

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Subject Category: Improvement science (quality improvement)
Abstract Number: SG-APSIC1163
A five-year review and analysis of sharp injuries in an acute-care hospital in Singapore
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Objectives: Sharp injuries are frequent occurrences in healthcare settings. According to the World Health Organization, >2 million occupational

exposures to sharp injuries occur among 35 million healthcare workers (HCWs) annually. We report the 5-year incidence and trends of sharp injuries in an acute-care hospital. We compared the rates of injury, the distribution of injuries, and the type of exposure of HCWs during the prepandemic and pandemic eras. **Methods:** We conducted a retrospective analysis of a 5-year surveillance on self-reported sharp injuries in Changi General Hospital, a 1,000-bed acute-care hospital. The occupational groups, the type of sharps, and the incident activity involved were reviewed. The bloodborne pathogen statuses of the identified source patients were studied. **Results:** In total, 441 sharp injuries were reported from 2017 to 2021. Among the occupational groups, doctors reported the highest number of sharp injuries (N = 272, 61.7%), followed by nurses (N = 129, 29.3%) and other allied health professionals (N = 29, 6.4%). An increasing proportion of doctors reported sharp injuries from 2017 to 2019 (prepandemic era) and the proportion declined from 2020 to 2021 (pandemic era); 52 doctors (58.4%) reported sharp injuries in 2017, 61 (61.1%) in 2018, 72 (67.9%) in 2019, 47 (61%) in 2020, and 40 (57.1%) in 2021. Most sharp injuries were caused by solid sharps (212 of 441, 48.1%) and hollow-bore needles (205 of 441, 46.5%). Source patients were identified in 407 sharp injuries. From the known sources, 51 were seropositive: 20 for hepatitis B (HBV), 27 for hepatitis C (HCV), and 4 for human immunodeficiency virus (HIV). No seroconversion occurred. Overall, 198 sharp injuries (44.9%) were sustained during surgical procedures, 83 (18.8%) occurred during blood taking, and 44 (9.9%) occurred during injection administration. Also, 37.5% of sharp injuries among doctors occurred during surgical procedures, and 69.6% of sharp injuries in OT occurred among junior surgical doctors. **Conclusions:** The overall incidence of sharp injuries has decreased during the pandemic. Fewer elective surgical procedures were performed during the pandemic period. OT suturing training workshops and awareness programs on strategies for preventing sharps injuries in the operating theatre, targeted at surgical residents during the past 2 years, could have contributed to the decrease in the incidence of sharp injuries in our hospital. Sharp injuries pose a significant exposure to blood and body fluids and should be subject to continued epidemiological surveillance.

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Subject Category: Improvement science (quality improvement)
Abstract Number: SG-APSIC1154
Evaluation of disposable antimicrobial curtains in an ambulatory cancer center
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Objectives: The prevention of nosocomial infection is a challenge for all healthcare institutions. Privacy curtains are often changed infrequently, and they are difficult to clean. Contaminated curtains can be touched by healthcare providers and patients, which may result in indirect transmission of infectious disease. Hence, we evaluated the impact of the antimicrobial properties of disposable curtains and their cost-effectiveness. **Methods:** This descriptive exploratory study was conducted in an ambulatory cancer center in 2017. Privacy curtains were assigned to 2 cohorts, labelled E1 and E2. They were placed in the clinical areas for 6–12 months. Moist swab samples for MRSA, VRE, and CP-CRE cultures were obtained from the leading edges of the curtains during the evaluation period. Also, 10-cm × 10-cm swatches were cut from the high-touch areas of curtains and were tested for total aerobic count on the first of the month and quarterly thereafter. **Results:** All bacterial culture swabs obtained from the E1 and E2 cohorts of curtains were negative. The total bacterial plate count results from E1 curtains were negative for up to 1 year. However, the total bacterial plate count results for E2 curtains were positive in the sixth month. Using disposable curtains yielded an annual cost saving of ~50%. **Conclusions:** The use of appropriate impregnated antimicrobial disposable curtains can improve patient safety in the clinical areas. These curtains may eliminate potential sources of infection and thereby decrease the rate of nosocomial infection. They also save significant institutional costs by reducing frequent laundry and manpower requirements needed for the installation of curtains.

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Subject Category: Improvement science (quality improvement)
Abstract Number: SG-APSIC1056
Finding the right fit: Our experience in quantitative N95 respirator fit-testing
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Objectives: Following a cluster of COVID-19 cases in a Singapore public hospital in April 2021, the local health authority mandated the use of N95 respirators in all inpatient wards. This increased the demand for N95 mask fit-testing to ensure that healthcare workers were donning respirators that fit their facial characteristics and hence provided protection through a good facial seal. The demand for fit-testing during the pandemic highlighted the scarcity of manpower and ergonomics concern, such as carpel tunnel syndrome experienced in long hours of qualitative fit-testing sessions. We evaluated the operational efficiency, cost-effectiveness, and difference in passing rate after the introduction of the quantitative method. **Methods:** Conventional qualitative fit-testing was conducted using manual pumping of a challenge agent, enabling the user to determine the fit of the respirator. The quantitative fit-testing protocol used a condensation particle counter (CPC) to measure the concentration of particles inside the mask and the atmosphere to determine the fit of respirator. The Occupational Safety and Health Administration (OSHA)–approved minimum fit factor of 100 was used as the criterion for a successful N95 respirator fit. Tubes used during quantitative fit-testing were reprocessed using thermal disinfection. **Results:** Quantitative mask fit-testing provided an objective numerical measure to assess adequate fit of N95 respirator, which provided users with confidence in the respirator fit. It addressed a manpower limitation issue because it did not require qualified trainers to conduct the test, and automation also prevented any potential occupational hazard from repeated actions required in qualitative fit-testing. An increase in the passing rate for N95 fit-testing from 94.5% to 95.5% was observed. However, the high cost of equipment, annual recalibration, and consumables must be considered. **Conclusions:** Quantitative N95 fit-testing, when adopted with careful consideration of its cost, is an approach to consider for hospital-wide fit-testing.

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Subject Category: Improvement science (quality improvement)
Abstract Number: SG-APSIC1180
Successful reduction in the number of hospital-acquired dialysis-catheter–related bloodstream infections: Quality improvement initiative
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Objectives: Patients undergoing hemodialysis using a catheter are at significant risk of developing central venous catheter–related bloodstream infections (CRBSIs), especially with methicillin-resistant *Staphylococcus aureus* (MRSA), resulting in increased morbidity, mortality, and cost. In our 1,000-bed regional hospital, the average CRBSI (any bacteria) rate in patients dialyzing via dialysis catheters was 1.44 per 1,000 catheter days, and the average CRBSI (MRSA) rate was 0.56 per 1,000 catheter days.