culture results: Staphylococcus epidermidis suggested vancomycin. The patient underwent debriment in the operating room. However, the condition did not improve. **Discussion:** This patient experienced sepsis with MDRO. Apart from geriatric age, the patient also has diabetes with complications of kidney failure. This worsens the patient's immune system. So the patient's diabetic ulcers and decubitus ulcers worsened with the results of cultures with various antibiotic-resistant multiorganisms. And also the respiratory infections increase the risk of mortality. **Conclusion:** MDRO is a risk factor for inappropriate antibiotic therapy, which is undoubtedly associated with increased mortality.

Key Words: MDRO; Sepsis; Antibiotics; Mortality

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Routine air sampling and culture in operating room for prevention of surgical site infection

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Objective: Open surgical wound is prone to surgical site infection due to contamination of surrounding environment. Therefore, routine air sampling and culture of two operating rooms (OR) was performed from 2018 to 2023 to monitor and evaluate air quality and provide appropriate infection control measures. **Method:** 2 OR regularly performing prosthetic insertion were selected for routine air sampling every 6 months due to high risk of surgical infection associated with the procedure. Air sampling was performed by collecting 1000 litre of air over 10 minutes using air sampler (MAS-100 Eco, Merck). Collected air was cultured on blood agar plate and Sabourand dextrose agar for 30 days, and pathogen identification and quantification was performed upon positive culture result. This study employed a cut-off point of 17.6 colony forming unit (CFU) as specified by federal standards on biological particles published by National Aeronautics and Space Administration. **Results:** 12 air samplings was performed from 2018 to 2023. A single case of positive bacterial air culture was reported (20 CFU, coagulase-negative *Staphylococcus*). Infection control measures were provided upon reporting of positive bacterial air culture, including inspection of positive pressure ventilation system and high efficiency particulate air filter, disinfection of OR and the equipment, and more strict regulation of temperature and humidity. Air sampling was repeated after imposing the measures to evaluate their effectiveness. Cases of surgical site infection caused by the identified pathogen were monitored for 90 days, after which it was determined that there was no surgical site infection related to positive air culture. **Conclusion:** The six-year monitoring of OR air sampling confirmed that detection of positive air culture in routine sampling was not associated with surgical site infection. Based on this result, the hospital decided to conduct air sampling and culture only in outbreak of surgical site infection as part of epidemiologic evaluation.

Key Words: Airborne bacterial count; Air sampling; Operating room

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Enhancing infection control activities through departmental infection control facilitators

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Introduction: In the Intensive Care Unit(ICU), healthcare-associated infections can arise from factors such as compromised patient immunity and the use of diverse medical equipment. Furthermore, inadequate awareness of infection control among ICU staff can further increase the risk of infections. Therefore, it is crucial for ICU staff to recognize and address infection risks proactively. To enhance infection control measures, designated infection control facilitators within the department have spearheaded infection control activities. **Case Presentation:** Internal assessments within the ICU identified areas requiring improvement in infection control, leading to the formulation of a self-improvement initiative. The evaluation results revealed deficiencies in pre- hub disinfection and the appropriateness of Chlorhexidine gluconate(CHG) bathing. To address this, ICU team members were tasked with monitoring hand hygiene and performing pre-hub disinfection at least 10 times before central venous catheter usage. The monitoring results were shared with department members monthly, encouraging performance improvement by rewarding outstanding employees. Additionally, protocols and educational videos for proper CHG bathing were developed within the ICU and reviewed by the Infection Control Department. Using this material, internal education sessions were conducted within the ICU to support all team members in achieving their goals. **Discussion:** Through various improvement initiatives, staff awareness of infection control has increased, leading to proper CHG bathing and hub disinfection. The incidence rate of central venous catheter-related bloodstream infections decreased from 4.25 in 2022 to 3.35 in 2023. Additionally, hand hygiene compliance increased from 92% in 2022 to 96% in 2023. For effective infection management, the participation of not only the Infection Control Department but also departmental members is crucial. Through effective collaboration and discussions between ICU staff and the infection control team, we were able to address departmental issues, improve staff awareness and performance in infection management. Sustained interest and participation in these activities require continuous staffing and support.

Key Words: Healthcare associated infection; Quality improvement; Collaboration; Intensive care unit; central venous catheter

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Smart management of single surgical instruments through unique device identification (UDI) barcode tracking system for enhancing sterilization quality and patient safety

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Introduction: We propose to develop a Unique Device Identification (UDI) barcode tracking system for surgical instruments. This system aims to enhance hospital processes, thereby benefiting both patients and staff members. **Methods:** The UDI barcode tracking system for surgical instruments was implemented in March 2023: 1. Each surgical instrument underwent laser engraving with a UDI barcode, encompassing relevant data such as instrument name, image, model, specifications, origin, license, Instructions for Use (IFU), and total distribution quantity. 2. Upon scanning the engraved serial number, the system automatically discerns whether the instrument belongs to the designated set. 3. Mechanical, chemical, and biological monitoring indicators are integrated into the tracking system, with automatic adjudication for release into storage if criteria are met; otherwise, notifications are issued for review and retrieval by personnel. **Results:** 1. Between March 2023 and February 2024, a total of 157,614 instrument sets were equipped with this system, enabling staff to achieve a zero-error rate in rapid and precise instrument identification. 2.During this period, 4,026 cycles of high-temperature sterilization monitoring and 380 cycles of low- temperature H2O2 plasma sterilization monitoring were recorded. 3.Each monitoring cycle was digitally recorded, obviating the necessity for paper-based documentation and saving a total of 4,406 A4 paper sheets. 4. In the same timeframe, a total of 85,899 packages were dispensed, each linked to patient medical record numbers. **Conclusions:** The adoption of the surgical instrument UDI barcode tracking system by our institution's central sterilization supply department has garnered participation from 622 individuals. It not only reduces the time spent by staff searching for items and conducting educational training but also automatically identifies whether the instrument belongs to the package, thereby enhancing inventory efficiency and reducing the