collected data on 39 visibly soiled instruments reported by the OR from 2021 to October 2023. Through personnel interviews, questionnaires, and identification of types of soiled instruments,we identified key issues using fishbone diagram analysis, the findings as follows (1).only 48% of OR personnel had received precleaning education and training, 75% of respondents cited being too busy for not precleaning (2).CSSD staff demonstrated a cleaning cognitive test success rate of 81%, particularly challenging were instruments with intricate designs, requiring specialized cleaning procedures (3). Failure to provide different cleaning methods depending on the level of residues or difficulty to clean.The following strategies are proposed:(1). Enhanced precleaning education and training for OR staff (2).Use of enzymatic precleaning products to saturate instruments prior to cleaning. 3. Development of a classification system for instruments requiring longer cleaning times. **Results:** Between November 2023 to March 2024, one visibly soiled instrument was reported, marking a significant drop from an incidence rate of 1.15 to 0.20 per month. Cognitive test success rate rose from 81 to 97%. Implementing different methods based on the difficulty of cleaning or the complexity of features, as well as enzymatic precleaning products, were universally adopted in the OR **Conclusion:** Thorough cleaning is a crucial process for effective sterilization. Collaborative efforts between CSSD and OR significantly reduce the possibility of cross-contamination

Keywords: precleaning; surgical instrument; infection risk

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A study on the effectiveness of N95 mask-wearing training through fit tests for healthcare workers at a tertiary hospital in South Korea

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Background: The risk of respiratory infection varies on the degree of the fit of N95 masks, so education and training of appropriate wearing methods are required. This study was conducted to investigate whether there are differences in the fit of N95 masks among healthcare workers (HCWs) with education and experience in N95 mask-wearing and to assess the effectiveness of N95 mask-wearing training through fit tests. **Methods:** From October 2023 to February 2024, training on the wearing of N95 masks was conducted through fit tests for 195 high-risk department HCWs and new HCWs at a tertiary hospital. Fit tests was conducted before and after the training. Previous experiences of N95 mask-wearing education were investigated using questionnaires. The fit test was measured using QNFT (Quantitative Fit Test). Data was analyzed using percentages and a chi-square test. **Result:** Out of the 195 participants, 44 HCWs had experience by group or rote learning. The fit test pass rate in the group with education experience was 45.5%, which was higher than the 32.9% in the group without education experience; however, there was no statistically significant difference (P=0.293). The fit test pass rate for N95 mask-wearing training increased significantly from 35.8% (70 HCWs) before training to 98.5% (192 HCWs) after training (p=0.000). The three HCWs who failed the first test all passed the fit test after retraining using N95 masks of different shapes and sizes. **Discussion:** It was confirmed that N95 mask-wearing training through fit tests was effective in increasing fit, whereas group or rote learning was not effective. N95 mask-wearing training through fit tests is an effective method to enhance N95 mask fitting. It is essential to explore diverse approaches to sustain the training impact.

Keywords: N95 mask; Healthcare workers (HCWs); Training; Quantitative fit test (QNFT)

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Risk assessment and intervention strategies in controlling HAIS risk in the HCU at Premier Bintaro Hospital

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Introduction: Hundreds of millions of patients worldwide are infected with Healthcare-Associated Infections (HAIs) each year causing deaths and significant financial losses to health systems. HAIs incidence in Indonesia (2021) reached 15.74%, far above in developed countries (4.8-15.5%). At Premier Bintaro Hospital (RSPB), the number of High Care Unit (HCU) patients at risk of HAIs reached 51% in the January - June 2023 period. The aim of this research is to reduce the risk of HAIs in HCU patients at RSPB. **Methods:** The HAIs risk identification was conducted on all HCU patients when first admitted using the SIRS (Systemic Inflammatory Response Syndrome) and REDS (Risk Emergency Department Scoring) criteria. Based on the screening results, interventions were applied through environmental modifications, implementation of HAIs care bundle, and nurse allocation based on colour codes: At risk of infection as RED, and no risk of infection as GREEN. The risk monitoring was conducted using HAIs scoring. **Results:** The research was conducted in the January - June 2023 period on 206 patients. It was found that 51% of the patients were at risk of HAIs. After interventions, the number reduced to 39%. In addition, there were zero incidents of HAIs during that period. **Conclusions:** To control the risk of HAIs in HCUs, the implementation of risk screening & scoring and interventions such as environmental modifications, nurse allocation, and HAIs care bundle, have shown to be effective strategies. This is evident from the decrease in the number of patients at risk of HAIs.
Recommendations for hospital is to continue implementing risk control of HAIs by regularly assessing the risk, applying interventions, and consistently monitoring the risk as efforts in continuously reducing the HAIs risks. For future research, it is recommended to expand the sample of patients and extend the period to implement risk control of HAIs even further.

Keywords: HAIs; Screening; Scoring; HCU

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Hospital-wide surveillance of central line-associated bloodstream infections in a tertiary hospital in South Korea

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Objectives: Central Line-Associated Bloodstream Infections (CLABSIs) are associated with prolonged hospitalization, increased healthcare costs. It is important to reduce CLABSI rates through interventions. This study investigated the current status of CLABSI rates among hospitalized patients to gather foundational data for implementing CLABSI intervention measures. **Methods:** During a month from June 1st to 30th, 2023, a retrospective investigation of CLABSI rates was conducted among patients hospitalized at a tertiary hospital in South Korea. Psychiatric and obstetric, hospice, emergency, neonatal wards, and delivery rooms were excluded from the study. CLABSI was defined according to NHSN and Korean

National Healthcare-associated Infections Surveillance System. **Results:** A total of 48 CLABSIs were identified, with mucosal barrier injury laboratory-comfirmed bloodstream infection (MBI-LCBI) accounting for 29 (60.4%) and non-MBI-LCBI for 19 (39.6%). Among MBI-LCBI, 28 (96.6%) occurred in hematology wards, while among non-MBI-LCBI cases, 9 (47.4%) occurred in general wards, 9 (47.4%) in hematology wards, and 1 (5.3%) in the intensive care units (ICUs). Overall CLABSI rates was 2.75 per 1,000 catheter days, with 1.66 for MBI-LCBI and 1.09 for non-MBI-LCBI. By department, the CLABSI rates per 1,000 catheter days were 6.11 in hematology wards, 1.02 in general wards, and 0.63 in the ICUs. A total of 58 organisms were isolated, with gram- negative bacteria (78.8%) predominating in MBI-LCBI and gram-positive bacteria (56.0%) in non-MBI-LCBI. Among MBI-LCBI, *Klebsiella pneumoniae* (30.3%), *Escherichia coli* (27.3%) were the most frequently isolated organisms, whereas among non-MBI-LCBI, coagulase-negative staphylococci (16.0%) and *E. coli* (16.0%) were the most frequently isolated organisms. **Conclusions:** The CLABSI rates among hospitalized patients at a tertiary hospital in South Korea was higher for MBI-LCBI than non-MBI-LCBI, with the majority occurring in hematology wards. Since the departments and causative organisms are different depending on MBI-LCBI and non-MBI-LCBI, it is necessary to individualize the CLABSI surveillance policy based on this.

Keywords: CLABSI; Hospital-wide Surveillance; MBI-LCBI

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A point-prevalence surveillance of healthcare-associated infections in a tertiary care teaching hospital in Malaysia

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Background: Prevention of Healthcare-Associated Infections (HCAIs) is an essential component of patient's safety in every healthcare setting and serve as an indicator for a good healthcare practice. Surveillance for HCAIs is important to measure their burden, identify high-risk patients and procedures, and guide efforts to reduce HCAI incidence. The aim of current study is to determine the prevalence of HCAI Hospital Universiti Sains Malaysia (Hospital USM), Kelantan, Malaysia. **Methods:** A one-day point prevalence survey (PPS) was conducted between 1st October 2023 to 15th October 2023 on all patients admitted to 15 selected wards at Hospital USM. The PPS was performed strictly following the "Manual for point prevalence survey for healthcare associated infection" by Ministry of Health Malaysia. Data were collected by a team of trained infection control practitioners, compiled, and analysed accordingly. **Results:** The surveyed hospital is a tertiary care teaching hospital contained 829 beds, has 11 certified infection control nurses, has 50 isolation rooms and 4 negative pressure rooms. During the surveyed period, there were 121 patients on continuous bladder catheterization, 63 patients had central venous catheter in situ and 107 patients were on mechanical ventilation.
Of the 588 patients surveyed, 14 (2.4%) had an active HCAI. Identified predisposing factors associated with the occurrence of HCAI were underlying medical illness (40.7%), prolonged hospitalization (25.9%), prematurity (11.1%), history of surgery (11.7%), immunosuppressive therapy (7.4%) and others (3.7%). The most frequent types of HCAI were pneumonia, followed by blood stream infection, clinical sepsis, surgical site infection and urinary tract infection. **Conclusions:** The survey reports an overall prevalence of 2.4% of HCAI in Hospital USM. A yearly PPS is very useful tool to measure the overall prevalence of HCAI, highlighting the areas with prevalence that require special attention and allowing planning for improvement actions.

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Using the POCT real-time PCR to detect *Clostridium difficile* in the environment to reduce the healthcare association infection

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Introduction: To avoid Clostridium difficile infection in the healthcare facility is an important work. There were many methods to do in the C. difficile infection (CDI) reduction bundle, including cleaning and disinfection. After cleaning and disinfection, we can do an environmental examination to check whether it contains C.difficile or not. Traditional, we did the culture to check but it have to wait 24-48 hours. This method was so slow, so in this study, we try to use the molecular methodology to detect C.difficile. **Methods:** We collected the specimen after 16 hours when the cleaning and disinfection. Then we used the POCT real-time PCR((POCKIT central C.difficile, GeneReach Biotechnology Corp, Taiwan)) and culture agar to detect whether C.difficile is present or not. In this study, we collected 48 specimens from CDI patients' environments when they transferred to another space or left. **Results:** We found all the POCT real-time PCR results were the same compared to the culture results. That's to say, the POCT real-time PCR can replace the culture method and improve the term around time on the diagnosis of C.diffiicle. **Conclusion:** The molecular method could replace the traditional culture due to it was quick and precise. Patients can't wait for the culture result in clinical, especially in the ICU. Once delayed, the mortality rate would arise. In other words, the POCKIT central C.difficile is useful in clinical. It can be used to detect whether C.difficile survives on the surface or not. However, due to the limitation of the sample count, the statistical significance was not complete. So we will collect the sample to finish this study.

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Incidence and risk factors associated with healthcare associated infection of intensive care unit inpatients at Dr. Cipto Mangunkusumo Hospital

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Background: The incidence of Healthcare Associated Infection (HAI) in the ICU is five to seven times higher compared to general. The aim of this study was to determine the incidence and risk factors for HAI in the ICU at Dr. Cipto Mangunkusumo hospital. **Methods:** This study use retrospective data, adult patients age ≥ 18 years who were treated in ICU and suspected diagnosis of HAI (including Ventilator associated pneumonia, Catheter associated urinary tract infection, Central line associated bloodstream infection and Surgical site infection) in period from October 2022 – January 2023 were included in this study. We analyze the examination results of each specimen with identification, antibiotic susceptibility test and genomic data using whole genome sequencing. **Results:** There were 160 specimens with 108 positive culture results. The organisms that most commonly cause infections from blood specimens are *Klebsiella pneumoniae* (3/11), *Acinetobacter baumannii* (1/11) and *Pseudomonas aeruginosa* (1/11). For sputum, the causative pathogens obtained included *K. pneumoniae* (23/57), *A. baumannii* (11/57), and *P. aeruginosa* (9/57).