to correlate with lower compliance to hand hygiene (HH) protocols among healthcare workers (HWs). This project aimed to improve and sustain HH compliance (HHC) among HWs in the ETD by adapting to the World Health Organization (WHO) HH Multimodal Improvement Strategy. **Methodology:** This is a cross-sectional study in ETD, Sarawak General Hospital, a university-affiliated, public tertiary-care hospital in Malaysia. It spanned 12 months, from Jan 2023 to Jan 2024. The intervention involved installing wall-mounted automated ABHR dispensers at multiple fixed locations in ETD. Pre-, during, and post-12 weeks intervention HHC audit were conducted according WHO's gold-standard direct observation method. We conducted a sequential trend analysis and compared proportions across these periods using a linear logistic regression model to assess the improvement and sustainability of HHC. **Results & Discussion:** Mean HHC improved from 66% (383/579) (95% confidence interval [CI], 62.1%-70.0%) in the pre- intervention period to 81% (321/397) (95% CI, 76.6%-84.6%) in the intervention period, and further sustained at 85% (302/352) (95% CI, 81.7%-89.3%) in the post-intervention period (P value<0.05). The positive coefficient of 1.13 in the model, when moving from the pre- to the post-intervention period indicates a positive trend in HH compliance. The availability of adequate wall-mounted automated ABHR dispensers at multiple fixed locations at ETD created easy accessibility of ABHRs for HWs and acted as visual reminders for good HH behavior at the ETD. **Conclusions:** Having wall-mounted automated ABHR dispensers in various fixed locations proved effective in promoting good HH among HWs in emergency settings. It's essential to have fixed ABHR dispenser placement in crowded - areas like the ETD to improve and sustain HHC among HWs.

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Risk factors associated with continuous ambulatory peritoneal dialysis-related infections in chronic kidney disease patients at Dr. Kariadi Hospital Semarang

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Introduction: Continuous Ambulatory Peritoneal Dialysis (CAPD) is a treatment method for Chronic Kidney Disease (CKD) that allows patients to undergo dialysis therapy at home. Although CAPD provides benefits in terms of flexibility, efficiency, and comfort, patients undergoing CAPD are at high risk of infections, including exit site infections, tunnel catheter infections, and Peritoneal Dialysis (PD) peritonitis. This study aims to identify risk factors associated with CAPD infections in CKD patients at Dr. Kariadi Hospital, Semarang, Indonesia. **Methods:** A retrospective cross-sectional study design was applied to adult CKD patients undergoing CAPD at Dr. Kariadi Hospital between January 2022 and March 2024. Data were collected from patients' medical histories and records, then analyzed using SPSS 21. A p-value less than 0.05 was used to determine statistically significant variables. **Results:** This study involved 81 adult patients undergoing CAPD with 58% male subjects. There were 23 (31.9%) subjects who experienced CAPD infections. Subjects who had infections experienced exit-site infections (10,5%) and peritonitis (89,5%). The most dominant microorganism in infected patients was Staphylococcus epidermidis. Diabetes mellitus (p = 0.03) contributed as significant risk factors for infection, while hypoalbuminemia and overweight were not significant risk factors (p > 0.05). **Conclusion:** In conclusion, the incidence of CAPD-related infections was high with a predominance of Staphylococcus epidermidis. Diabetes mellitus is considered a contributing factor to the infection.

Keywords: Continuous Ambulatory Peritoneal Dialysis-Related Infections; Risk factors
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Correlation of serum albumin concentration with length of stay in Surgical Site Infection (SSI) patient at Rspad Gatot Soebroto, Jakarta, 2019-2022: a quantitative study

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Background: The prevalence of surgery in Indonesia is increasing every year and may increase the prevalence of surgical site infection (SSI). SSI is an infection in the surgical site organ or space that occurs after surgery. Complex treatment of SSI has a significant impact on patient outcomes due to increased length of stay. There are a variety of risk factors, both endogenous and exogenous, that can affect the length of stay of SSI patients, especially the concentration of serum albumin before and after surgery. Albumin is an important component of proteins. Albumin plays a role in promoting inflammation, so tissue repair is done more quickly, and without albumin, the body is more difficult to carry out cell regeneration. This study aimed to determine the relationship between pre- and post-operative concentrations of albumin and duration of stay in SSI patients. **Method:** The study design used a quantitative study using cross-sectional secondary data from the medical records of 40 patients diagnosed with SSI at Gatot Soebroto Army Hospital. All SSI patients met the inclusion criteria. **Results:** The results showed that patients had moderate hypolbuminemia before surgery (35%) and after surgery (35%), long-term stay (50%), 19-60 years (77,5%), women (52,5%), comorbidities (50%), malnourished nutrition (60%), ASA score 2 (52,5%), clean surgical wound type (60%), abdominal or vaginal hysterectomy (17,5%), and showed that it has the characteristics of a normal operation period. (65%) Bivariate analysis using assay chi-squared shows a relationship between pre-operative serum albumin (p-value =0.005; PR=7.207; 95% CI=1.09-47.55) and post-operative (p-value=0.016; PR=3.857; 95% CI=1.05-14.08) with duration of stay in SSI patients. Concentration. Multivariate results indicate serum albumin preoperative concentration (p-value = 0.049). **Conclusion:** It can be concluded that serum albumin preoperative concentration is the only variable that greatly affects the length of stay of SSI patients.

Keywords: Surgical Site Infection (SSI); Albumin Concentration; Length of Stay, Indonesia
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Effect of wearing particulate respirators on physiological changes of healthcare workers in isolation room

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Introduction: The use of Personal Protective Equipment (PPE) for healthcare workers must be addressed, especially for procedures that generate aerosols. A standard N95, FFP2 or FFP3 particulate respirator mask is

strongly recommended. WHO suggests using a particulate respirator for a maximum of six hours to avoid increasing oxygen debt, fatigue, CO2 levels, and nasal resistance. **Methods:** This study was observational, using a cross-sectional method conducted from February to April 2022. Participants were healthcare workers (HCWs), including doctors, nurses, and other HCWs who worked in ward of Mawar 1 Isolation Rooms. As screening, the participants underwent a Quantitative Fit Test with PortaCount® Respirator Fit Tester 8038, using particulate masks such as 3M 1870, 3M Vflex 9105, Dreamcan ME01LK, Dreamcan ME0 12.5, and RespoKare that are available in the hospital, while bending over, talking, head side to side, and head up and down. While doing the movement, the Fit Test Score had to reach ≥100. Then, we measured heart rate, oxygen saturation, and respiration rate before they entered and left the isolation rooms. **Result:** Thirty-one HCWs passed the screening test. One HCW could fit to more than one respirator. Sixteen (41,03%) HCWs fit to 3M Vflex 9105, 10 (25,64%) HCWs fit to Dreamcan ME01LK, 6 (15,38%) HCWs fit to RespoKare, 4 (10,26%) fit to 3M 1870 and 3 (7,69%) fit to Dreamcan ME0 12.5. HCWs served in the isolation room for 74,06 ± 28,18 (35-150) minutes. We found a significant difference in heart and respiration rates before entering and after leaving the isolation room ($p<0.05$). In contradiction, the study showed no difference in O2 saturation ($p=0,06$).

Keywords: Healthcare Workers; Quantitative Fit Test; Personal Protective Equipment

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Investigation and experience sharing of increased Vancomycin-Resistant Enterococcus (VRE) cases in adult intensive care units of hospitals in southern Taiwan

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Background: The adult intensive care unit comprises a total of 18 beds. On October 18, 2023, a text notification alerted us to a patient whose wound culture tested positive for Enterococcus faecium (VRE). Following protocol, an Anus VRE screening was conducted on the adjacent bed, revealing three additional positive cases, suggesting a cluster outbreak. Investigation and management were initiated. **Methods:** Through interviews, observations, medical record reviews, and expanded VRE screenings, a total of 8 beds tested positive, resulting in a positivity rate of 44.4% (8/18), all cases being colonization. Root cause analysis identified failures in hand hygiene among healthcare workers (HCWs), failure to wash hands before donning gloves, incorrect sequencing of environmental cleaning and disinfection, and inadequate implementation of contact isolation precautions. Measures included conducting Anus VRE screening for ICU admissions from October 15th to 18th, increasing the frequency of unit cleaning and disinfection, providing education and training, auditing hand hygiene practices and isolation measures, and centralizing VRE patient care. **Results:** Utilization of multiple measures for controlling drug-resistant bacterial infections, including auditing hand hygiene, environmental cleaning and disinfection, implementing contact isolation precautions, and conducting environmental sampling, yielded negative results. Observation until November 30th showed no new cases, effectively controlling the spread of drug-resistant bacteria and preventing healthcare-associated infections due to VRE. **Discussion:** Despite HCWs' often busy clinical care responsibilities leading to neglect of hand hygiene or substituting handwashing with glove usage, and lapses in implementing contact isolation precautions, no healthcare-associated infections occurred, and patients were successfully discharged without disease exacerbation or fatalities. Environmental sampling was conducted post-environmental disinfection. Additionally, all VRE-positive patients were identified as Enterococcus faecium (VRE). Due to limitations, PFGE testing couldn't be conducted, hence strain and susceptibility determination confirmed the same VRE colonization event within the hospital.

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Antibiofilm activity of chlorhexidine and levofloxacin on pathogen causing orthopaedics implant-related infections

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Objectives: The incidence of hospital-acquired infections (HAIs) related to the formation of biofilms reaches 80% of the total cases of infection in the world. It can infect patients using invasive medical equipment such as orthopaedics implants. Biofilm-related implant orthopaedics infections account for approximately 65% of all bacterial infections. Once bacteria adhere to the implant, a bacterial community established biofilm that can enhance resistance to antibiotics up to 1000 times. Therefore, an appropriate strategy is needed to eradicate biofilm. Chlorhexidine as an antiseptic and levofloxacin as an antibiotic are often used in the orthopaedics' setting. This study investigated in vitro antibiofilm activity of chlorhexidine and levofloxacin against bacterial isolates obtained from patient with implant orthopaedics-related infections. **Methods:** Ten clinical isolates of bacteria with strong biofilm-producer were collected from patients with orthopaedics implant-related infections including *Staphylococcus aureus* (n=2), *Staphylococcus haemolyticus* (n=1), *Serratia marcescens* (n=2), *Pseudomonas aeruginosa* (n=2), *Proteus mirabilis* (n=1), *Acinetobacter baumannii (*n=1*)* and *Klebsiella pneumoniae* (n=1). The inhibition and eradication activity of chlorhexidine and levofloxacin on biofilm growth were performed using microtiter broth dilution method in 96-well plates. **The minimum biofilm inhibitory concentration (MBIC) and minimum biofilm eradication concentration (MBEC) were determined using the MTT (3-(4-5- dimethylthiazol-2-yl)2,5-dyphenyl tetrazolium bromide) reduction assay. Results:** This study found that chlorhexidine inhibited the growth of Gram-positive bacterial biofilms by 80% with MBIC80 values ranged from 4-16 µg/ml and eradicated 80% of biofilm with MBEC80 value was 32 µg/ml. For Gram-negative bacterial biofilms, the ability of chlorhexidine to inhibit 80% of biofilm growth was indicated by MBIC80 values ranged from 8-16 µg/ml and to eradicate 80% of biofilm with MBEC80 values ranged from16-64 µg/ml. Meanwhile, levofloxacin can inhibit the growth of Gram- positive bacterial biofilms by 80% with MBIC80 values ranged from 1-4 µg/ml and can eradicate 80% of biofilm with MBEC80 values ranged from 16-32 µg/ml. For Gram-negative bacterial biofilms, the MBIC80 values of levofloxacin ranged from 1-16 µg/ml and the MBEC80 values ranged from 4-32 µg/ml. **Conclusions:** This result indicated that chlorhexidine and levofloxacin are potential to inhibit and eradicate bacterial biofilm. However, further studies need to be done for clinical evaluation.

Keywords: orthopaedics implant-related infection; biofilm; eradication; chlorhexidine; levofloxacin

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