

hundred and two patients were recruited. The oral care sets were used with each patient on the first day they received mechanical ventilation until weaning. VAP surveillance was conducted to compare the VAP rate before and after the ICU used the oral care set. **Results:** Two hundred and sixty-six VAPs developed with an overall 34,731 ventilator days in the participating ICUs in 2022, before ICUs used oral care sets. The VAP rate was 7.66 per 1,000 ventilator days. The cost of antibiotic treatment was 5,134,621.74 Thai Bath. In 2023, after the ICUs used the oral care sets, 182 VAPs were developed. The overall ventilator day was 34,309. The VAP rate was reduced to 5.30 per 1,000 ventilator days. The cost of antibiotic treatment was reduced to 2,101,939.70 Thai Bath. One hundred and eighty-seven ICU nurses evaluated the benefit of the oral care set. Ninety-six-point eight percent of them agreed and strongly agreed that the single-use oral care set could prevent hospital-associated infections. Ninety-two-point five percent agreed and strongly agreed that only one nurse could clean the patient's oral cavity, the oral care set helped reduce VAP occurrence (92%), the patient's teeth and oral cavity were clean (92%), and ICU nurses could work conveniently (91.4%). **Conclusion:** The single-use oral care set can help reduce the VAP occurrence among patients admitted to the ICU.

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Using the ultra violet C radiation (UVC) led to reduce the airborne microbe in the medical center of North Taiwan

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Introduction: According to the recommendation of the United States Environmental Protection Agency, the bacteria count of airborne microbe must be under 1500 cfu/ m³. And as we know, the environment is the key factor of the airborne microbe. Traditional, we used air-conditioning to let the air circulate, but this method may be useful in other environments but is not suitable in hospitals. So, there were many new technologies to improve the quality of airborne microbe, just as UVC, plasma, and filtration. In this study, we used the UVC LED to examine the quality of airborne microbes in our meeting room of the emergency room. **Material and method:** We used the impaction method to collect the air for 10 minutes then gathered 1000L air to impact the Tryptone Soy Agar. After collection, we incubated at 37°C for 48 hours to check the bacteria count. So, we used this method to test the quality of airborne microbe before and after adding the UVC-LED (NKFG, Taiwan) to our air conditioner vent in the meeting room of the emergency room. **Result:** Before adding the UVC-LED, the average bacteria count in difference time was from 361 to 443, and after adding the UVC-LED, the average bacteria count in difference time was from 214 to 300, and the percentage of reducing count was from 24% to 40%. **Conclusion:** Due to this study, we thought the UVC-LED could improve the quality of the airborne microbe. Otherwise, this technology would not use too much space because of the limitations of the environment.

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Improving the quality of terminal cleaning & disinfection and reducing nosocomial outbreaks during COVID-19 pandemic in medical center of TAIWAN

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Introduction: Severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) is highly contagious in humans, and in May 2021, an outbreak occurred in the Wanhua district of Taiwan. During the Coronavirus disease 2019 (COVID-19) pandemic, we implemented various rules to prevent the spread of SARS-CoV-2- alpha in the hospital. This included establishing four special wards (dedicated care wards) specifically for patients infected with SARS-CoV-2-alpha. When patients were discharged, we conducted real-time polymerase chain reaction (RT-PCR) testing on the terminal environment to ensure that SARS-CoV-2- alpha was not present. Maintaining a negative test result was crucial for preventing cross-infection and further outbreaks. The goal of this study was to identify effective intervention measures to improve the quality of terminal cleaning and achieving overall infection control in the hospital. **Methods:** After cleaning and disinfection of the dedicated care wards by the cleaning staff as per the recommendations of the Centers for Disease Control (CDC), we collected three swabs from different areas in one ward. We used Roche and GeneXpert instruments for COVID-19 RT-PCR testing. However, because the test results were not ideal, we introduced ultraviolet-C (UV-C) machines and a disinfectant solution containing hydrogen peroxide (H₂O₂) into our current cleaning and disinfection procedures. **Results:** The negative test result ratios for RT-PCR testing were 80.13% when cleaning was done with bleach- only method as a disinfectant (without intervening with other methods); 92.81% when intervening with UV-C machine disinfection for 5 minutes was done before bleach disinfection; 96.19% when bleach was replaced with a disinfectant solution containing H₂O₂ and intervening with UV-C disinfection. **Conclusion:** The quality of terminal cleaning and disinfection was a key factor in reducing nosocomial outbreaks. We could consider using UV-C machine and H₂O₂ disinfectant to intervene in the current bleach disinfection method to enhance the quality of terminal cleaning and disinfection in the hospital.

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The effect of Meropenem stewardship at Prof Ngoerah Hospital on the prevalence of carbapenem resistant *Acinetobacter baumannii*, Carbapenem-resistant *Pseudomonas aeruginosa* and the cost of purchasing meropenem

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Background: Irrational use of antibiotics will trigger anti-microbial resistance which is a threat to health problems now and in the future. The use of meropenem is often the last choice in using antibiotics without undergoing microbiological examination (culture). The rational use of meropenem is expected to reduce resistant microbes as well as reducing hospital costs. Anti-microbial stewardship at Prof Ngoerah General Hospital began to be implemented at the end of 2020, and evaluation of the implementation of antimicrobial stewardship is required. **Objective:** The aim of this study

was to determine the effect of meropenem stewardship on the prevalence of Carbapenem-resistant *Acinetobacter Baumannii*, Carbapenem-resistant *Pseudomonas Aeruginosa* and evaluate meropenem cost of purchasing. Retrospective cohort study from medical records, pharmacy records and microbiology data from microbiology from 2020 to 2023 was taken. Data is presented in the form of tables and graphs. **Results:** Before antimicrobial stewardship was implemented, in 2020 the prevalence of Carbapenem-resistant *Acinetobacter Baumannii* reached 69.1% and began to decline in 2021 by 52.35%, in 2022 it became 43.8% and 44.3% in 2023, respectively. The prevalence of Carbapenem-resistant *Pseudomonas Aeruginosa* also decreased, in 2020 was 31.6% to 27.3% in 2021, in 2022 it fell again to 24.8% and in 2023 only 18.4%. The cost of purchasing meropenem at Prof Ngoerah hospital before implementing antimicrobial stewardship in 2020 was IDR 229,905,300,- decreasing to IDR 94,156,920,- in 2021, IDR 98,025,255 in 2022 and in 2023 IDR. 97,147,335,-, respectively. **Conclusions:** Meropenem stewardship at Prof. Ngoerah Hospital reduces the prevalence of Carbapenem-resistant *Acinetobacter Baumannii* and Carbapenem-resistant *Pseudomonas Aeruginosa*. Meropenem stewardship also reduces hospital costs in purchasing antibiotics.

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Korean community hospital network for preventing and managing healthcare-associated infections: a 7-year review of activities

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Objectives: Hospital networks can significantly improve healthcare-associated infection (HAI) prevention and management through quality improvement and standardization. Since 2017, the Korea Disease Control and Prevention Agency (KDCA) has coordinated a network project involving a central hospital and participating community hospitals nationwide. This paper shares our experience as one of the central hospital operating the program for seven years (2017-2023). **Methods:** Our network comprised one central tertiary-care hospital and 12 community hospitals. Activities focused on education, consultation, and quality improvement (QI). QI activities analyzed hand hygiene (HH) practices, alcohol-based hand rub consumption, and the World Health Organization's HH Self- Assessment Framework (HHSF) results. We provided educational resources for personal protective equipment (PPE) training, particularly during the COVID-19 pandemic. Annual workshops facilitated the sharing of specialized infection control programs from each hospital. **Results:** The project conducted 19 training sessions on topics like multidrug-resistant organism (MDRO) infection control, with 1,435 participants. We offered consultations for 41 cases (paper, phone, and 8 on-site visits) and shared consultation details through regular meetings. QI activities resulted in most hospitals maintaining a HH practice rate above 90%. All eight hospitals that consistently participated in the program saw improvements in their HHSF scores compared to baseline. Notably, two hospitals achieved an "Advanced" level, having previously been at an "Intermediate" level. PPE training for 12,762 healthcare workers across 13 hospitals strengthened their response capabilities during COVID-19 and reduced occupational infection risks. **Conclusions:** Frequent patient transfers and rising HAI rates highlight the limitations of individual hospitals in preventing and managing HAIs. The community hospital network establishes a government-led infection prevention response system. This model fosters enhanced infection control capabilities across network hospitals by offering technical support to resource-constrained facilities and implementing effective infection prevention initiatives that address ongoing challenges.

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A rare case of purulent massive pericardial effusion in an 85- years-old male: case report

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Introduction: Purulent pericarditis is defined as an infection in the pericardial space that produces macroscopically or microscopically purulent fluid. It was a rare but life-threatening condition. It may be primary or secondary to another infectious process. The diagnosis can only be confirmed by pericardiocentesis. Treatment must include drainage of the pericardial space combined with systemic antibiotics. This case report focuses on a critical and rare clinical scenario of purulent massive pericardial effusion in an 85- year-old male patient. This condition, characterized by an infectious or inflammatory accumulation of fluid in the pericardial cavity, presents significant diagnostic and therapeutic challenges, particularly in the context of multiple comorbidities. **Case Description:** The patient's presentation, complicated by pneumonia, diabetes mellitus (DM), and heart failure, underscores the complexities in diagnosing and managing elderly patients with diverse medical backgrounds. The diagnosis of massive pericardial effusion was confirmed through echocardiography, which revealed the purulent fluid from pericardiocentesis procedure, a finding critical for guiding the diagnostic and management strategy. The source of infection wasn't clear in patient with immunocompromised condition. Some examination performed to find the source of infection that led to a subdiaphragmatic suppurative focus. Infection management was good, but the patient ended with a constrictive that make his condition worse. The patient passed away on the 10th day of hospitalization. **Conclusion:** It is importance to recognize and promptly address purulent massive pericardial effusion in elderly patients with complex medical histories. The successful clinical outcome following the pericardiocentesis and the adaptive antimicrobial treatment approach provides valuable insights into the management of this severe condition.

Keywords: Bacterial Pericarditis; Secondary pericarditis; Pericardial effusion; Purulent pericarditis; Pneumonia; Pericardiocentesis

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Establishing a standardized high touch cleaning (HTC) training and competency framework

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Objectives: Environmental hygiene of patient zones in the wards of TTSH- a 1700 bedded hospital in Singapore is upheld through twice daily HTC. An outbreak in two wards end March 2023 with high levels of Adenosine Triphosphate (ATP) found on surfaces after cleaning corroborated that the cleaning process was ineffective [1]. Though operatives undergo on-job training (OJT), they expressed difficulty in understanding the purpose of such cleaning and remembering the steps. To address these gaps, a new training and competency framework was developed. We thus sought to evaluate its usefulness in improving compliance to HTC. **Method:** The framework, effected from May 2023, consisted of three domains: standardized education, competency assessment, and feedback mechanisms [2, 4]. Educational materials explaining the importance of HTC and overall infection prevention were developed in three common languages to facilitate understanding for operatives of different races. Under the framework, all existing and new operatives undertake a 2-day classroom teaching and OJT, before a competency check. Upon passing the first competency,