antibiotic use, and renal function test. **Result:** There were 106 subjects receiving cefepime (56 continuous and 50 intermittent infusions; p>0.05). No significant differences in demographic data such as gestational age, prematurity condition, birth weight, and surgical conditions were found between the two methods. Out of 66 subjects with proven sepsis, 28% were classified as MDR, 12% as XDR, and 16% as PDR. No difference in sepsis-related mortality outcomes was observed between the two methods (64.3% vs. 70%; p=0.532). Continuous administration reduced C-reactive protein (80.52 vs. 51.69 mg/L; p=0.000) and procalcitonin (11.9 vs. 6.72 ng/mL; p=0.008) more effectively than intermittent. In surgical cases, continuous administration reduced the risk of multidrug therapy (RR 0.5 CI 95% 0.243-0.902; p=0.045). There was no difference renal function impairment between two methods. **Conclusion:** Cefepime continuous infusion can significantly reduce infection markers compared to intermittent administration. In surgical cases, continuous cefepime administration reduces the risk of multidrug therapy. The use of continuous cefepime can be considered as part of antibiotic stewardship in the NICU.

Keywords: cefepime continuous; efficacy; sepsis; antibiotic stewardship

Effects of using the nursing care model for the prevention of adverse events in critically ill patients undergone arterial line insertion

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Objectives: The most common adverse events (AEs) of an arterial line (A-line) insertion included inflammation, infection, bloodstream infection (BSI), disconnection, and occlusion of the device, etc., the purposes of this study were to compare the nursing practice of registered nurses before and after using the nursing care model for the prevention of AEs and to compare the incidence of AEs. **Methods:** This quasi-experimental study was conducted among registered nurses (n = 14) and critically ill patients who received A-line insertion (n = 40), which were divided into either a control group (n = 20) or an experimental group (n = 20). The tools used included 1) personal data and clinical data recording form, 2) AEs recording form, 3) the nursing care model for prevention AEs in patients who received A-line insertion comprising five methods "ABCD'S of care nursing care model"; 1) assessment of the AEs, 2) blood sampling, 3) cleansing and closed A-line site with the use innovation "Tegaderm with Window for A-line" and circuit care, 4) daily review, and 5) standard of care and 4) a nursing practice behavior assessment form. Data analysis involved descriptive statistics, t-tests, and chi-square tests. **Results:** The average nursing practice behavior scores increased from 2.57 points (SD = 0.51) to 4.5 points (SD = 0.52), indicating a substantial improvement. Moreover, the incidence of AEs decreased from 45% to 5%, a remarkable reduction. These findings underscore the effectiveness of the nursing care model in preventing AEs in critically ill patients. **Conclusion:** Based on the "ABCD'S of care", the nursing care model has proven effective in reducing the incidence of AEs in critically ill patients. This finding enhances our understanding of nursing practices and provides a practical solution for healthcare professionals. It is, therefore, crucial to disseminate and implement these guidelines to ensure sustainable nursing practices.

Reduction of the blood culture contamination rate in emergency department: a success story

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Introduction: Blood culture result provides a crucial information for patient care. Contaminated blood culture samples may result in inappropriate antimicrobial prescription, increase the cost and unnecessary prolonged hospitalization. In our hospital, the blood culture contamination is high in the emergency department. This initiative aims to improve the emergency department's blood culture contamination rate which will eventually improve the patient care and benefit the hospital financially. **Methods:** This quality improvement initiative used the Planning, Doing, Checking and Acting (PDCA) models, which provides a simple yet effective approach for problem solving and managing changes. A workgroup consist of Infection control team and emergency department representatives was formed to work on this initiative. Weekly blood culture contamination rate was closely monitored. Root causes were identified, and series of retraining were performed. Blood culture contamination rate before and after the initiative were compared. **Results:** Focus group discussion and site visit reinforcement showed that the high blood culture contamination rate is contributed by many factors. Among the factors included were the inadequacy of blood culture sets, improper use of skin disinfectant, improper hand hygiene techniques and improper aseptic techniques practice by some of the house officers. Blood culture contamination rates 6 months before and during feedback intervention showed significant decrease (3.52% before intervention and 2.95% after intervention; *P* < .05. **Discussion:** Blood culture contamination rate reduced significantly after the joint initiative continued to decrease with the use of a predisinfection process with 2% Chlorhexidine gluconate cloth before blood sample collection process. Practice improvement also was evident with effective feedback mechanism.
Conclusion:

Key words: Blood culture contamination; Infection prevention; Emergency department; Quality improvement

Improving the quality of tuberculosis patient care in NAN hospital using the FCD NAN model

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Introduction: During the years 2018-2019, Nan Hospitalhad tuberculosis screening rates of 69.15% and 74.24%, respectively, which were lower than the target (target > 90%). Consequently, tuberculosis patients were referred for further examination in various hospital units and treated in general

rooms without proper isolation. Also, one and four healthcare personnel were diagnosed with pulmonary tuberculosis in 2018 and 2019, respectively. Additionally, the treatment success rates for pulmonary tuberculosis patients were 74.63% and 79.92%, respectively (target >85%). Therefore, to achieve these target goals, actions were taken following the national tuberculosis strategy using the FCD Nan model, which comprises of Fast screening (F), Cure (C), and do not spread (D). **Objectives:** To develop the tuberculosis patient-care system at Nan Hospital and assess the outcomes of the tuberculosis patient-care system in terms of FCD Nan model **Methods:** We used the PDSA quality improvement process as follows.

1. Plan: Planning to implement the national tuberculosis strategy including fast screening, cure, and prevention of transmission.
2. Do: Implementing the FCD Nan modelas follows.

   1) Fast screening. We used a fast-track system, enhanced screening efficiency in both OPD and IPD units, established a Line group alert pop-up and AI CXR.
   2) Cure. We adhered to treatment protocols,closely monitored cases, consulted specialists, utilized risk scoring for mortality, and nutritional alert.
   3) Do not spread. We administered 3 measures for preventing transmission including administrative, environmental, and PPE measures.

3. Study: Evaluating the FCD Nan model.
4. Action: Identifying household contacts as a high-risk group and implementing screening for all household contacts due tothe discovery of new tuberculosis patients in the household contacts.

Results: 1) Screening rates increased from 81.8% to 93.07% for OPD and from 70.76% to 97.29% for IPD. 2) Cure: Treatment success rate increased from 89.81% to 91.43% Do not spread: and 3) No incidence of tuberculosis among healthcare personnel. **Conclusion:** The FCD Nan model using the national tuberculosis strategy of fast screening, cure, and not spread can be used to achieve the goals of tuberculosis control.

Batik marker as an implementation of prevention of contact transmission of MDRO patients

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Background: WHO estimates over 700,000 deaths globally annually due to antimicrobial resistance. One of the main factors of antimicrobial resistance is non-compliance with infection control measures. Contact alert markers must be installed in the patient area to remind officers to carry out infection transmission prevention to prevent the failure of infection control practices. The provision of red markers and information on the infection suffered by patients creates a stigma that is less accepted because of patient privacy. This study aimed to evaluate the modified marker with a batik design as local wisdom without infection information, as a reminder of infection control practices by officers, and to maintain patient privacy. **Method:** The Committee for Infection Prevention and Control modified the design of markers of patients with antimicrobial resistance. Batik markers were designed with hand hygiene reminders and batik motifs as local wisdom so as not to cause negative stigma. Batik markers were implemented in the patient's bed area so that it was easy for officers to understand how to implement infection control practices and supervise patients with antimicrobial resistance. **Results:** Modifying the marker design was more acceptable to the patient's family than the previous one. Adherence to supervision filling of antimicrobial resistance patients was performed in all patients. Adherence to Hand Hygiene increased by up to 4% in one month. With the Batik Marker, officers could easily recognize the marker so that infection control practices could be carried out according to hospital regulations. **Conclusion:** Antimicrobial resistance is an increasing health threat. A type A hospital requires an intradisciplinary approach and collaborative efforts to prevent and control it. Implementing Batik Markers at inpatient areas with antimicrobial resistance makes it easier for staff to implement increased contact awareness, supervision recording, and improved hand hygiene without causing rejection from the patient's family.

Keywords: Antimicrobial Resistance Patient Marker; Hand Hygiene; Infection Control Practices; Antimicrobial Resistance Patient Supervision

Geriatric patients with multidrug resistant organisms in sepsis with community acquired pneumonia, pedic diabeticulcer, decubitus ulcer stage III, diabetic kidney disease stage V, urinary tract infection and anemia : case report

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Introduction: Patients with MDRO infection at hospital admission had increased the length of treatment. MDRO infection is also one of the factors that causes death in hospital. **Case Presentation:** A 68 year old man. Hospitalized with decreased consciousness. Experienced severe shortness of breath 3 days before entering the hospital. The patient also had wounds on his right and left legs since 1 month ago. But then became more widespread. The patient has kidney failure and routinely undergoes hemodialysis. The patient had diabetes since 6 years ago. Laboratory: Hemoglobin 7.5 Leukocytes 17.8 Netrophils 91.70 Lymphocytes 4.20 Albumin 2.2 Creatinine 2.5 Ureum 61 Artery 2.30, urine bacteria+++. Pus culture results: Enterobacter cloacae with the antibiotic meropenem. Sputum culture results Klebsiella pneumoniae ss. Pneumoniae with amikacin. After 1 week pus culture results: Pseudomonas aeruginosa with amikacin. Blood

Figure : Diabetic ulcers and decubitus ulcers in patient