

infection rates of 0.19 and 0.09 per 10,000 patient days, respectively. **Conclusions:** Control of CP-CRE remains extremely challenging in hospitals with multibed open wards. A bundle approach to infection control showed a gradual reduction in CP-CRE cases, with a significant impact on the prevention of clinical infections.

Antimicrobial Stewardship & Healthcare Epidemiology 2023;3(Suppl. S1):s27–s28
doi:10.1017/ash.2023.82

Subject Category: Multidrug-Resistant (MDR) Organisms

Abstract Number: SG-APUSIC1102

Antimicrobial resistance and related factors in an intensive care unit—A study at Hue Central Hospital

Tan Dang, Hue Central Hospital, Hue City, Vietnam; Mi Ho Thihhoa, Hue Central Hospital, Hue City, Vietnam; Vo Dai Quyen, Hue Central Hospital, Hue City, Vietnam; Tran Chi Thanh, Hue Central Hospital, Hue City, Vietnam; Mai Van Tuan, Hue Central Hospital, Hue City, Vietnam; Nguyen Thithanh Nhan, Hue Central Hospital, Hue City, Vietnam; Le Diem Phuoc, Hue Central Hospital, Hue City, Vietnam; Ha Thithuan, Hue Central Hospital, Hue City, Vietnam; Hoang Thiquynh Nhi, Hue Central Hospital, Hue City, Vietnam; Tran Thanh Thuy, Hue Central Hospital, Hue City, Vietnam; Nguyen Van Thanh Toan, Hue Central Hospital, Hue City, Vietnam; Hoang Thilan Huong, Hue Central Hospital, Hue City, Vietnam

Objectives: Antimicrobial resistance (AMR) has emerged as a major concern in Vietnam, mainly due to the inappropriate use of antibiotics. Appropriate antibiotic management enables us to minimize the likelihood of antibiotic resistance and the spread of resistant bacteria. We evaluated vancomycin and colistin resistance and related factors in the intensive care unit (ICU) of Hue Central Hospital, a national hospital in central Vietnam. **Methods:** Using a cross-sectional descriptive study, we enrolled 362 patients who were prescribed antibiotics and were admitted to the ICU in 2019. Pathogens isolated from 473 routine clinical samples were subjected to antimicrobial susceptibility testing following the recommendations in the *Clinical & Laboratory Standards Institute M100, 28th Edition*. Colistin testing was performed using the broth microdilution method. Statistical significance was determined using the Fisher exact test. **Results:** The most commonly identified microorganisms were *Acinetobacter baumannii* (31.5%), *Klebsiella pneumoniae* (31.2%), *Pseudomonas aeruginosa* (12%), and *Staphylococcus aureus* (8.9%). All isolates of *A. baumannii*, *K. pneumoniae*, and *P. aeruginosa* tested with colistin were nonresistant. Moreover, >65% of *A. baumannii* isolates were resistant to all antibiotics except colistin. *S. aureus* had the highest resistance rate to erythromycin (80.6%), but no vancomycin-resistant isolates were identified. Factors associated with resistance to at least 1 antibiotic tested included length of stay (OR, 5.32; 95% CI, 1.47–19.17; $P = .017$), duration of antibiotics therapy (OR, 5.25; 95% CI, 1.46–18.95; $P = .017$), and the use of tracheal intubation and ventilator (OR, 3.08; 95% CI, 1.09–8.72; $P = .038$). **Conclusions:** These data indicated that although the vancomycin and colistin resistance rate is low, patients with longer length of stay, longer time on antibiotics, and invasive ventilation were at higher risk of AMR infection. Decreasing device use and strong antibiotic stewardship program at the hospital would help to reduce AMR infections.

Antimicrobial Stewardship & Healthcare Epidemiology 2023;3(Suppl. S1):s28
doi:10.1017/ash.2023.83

Subject Category: Multidrug-Resistant (MDR) Organisms

Abstract Number: SG-APUSIC1096

Changes in resistance patterns of “ESKAPE” pathogens to azithromycin and levofloxacin in Yogyakarta

Rizka Asdie, Perdalín Cabang Yogyakarta, Dr Sardjito General Hospital, Yogyakarta, Indonesia; Faisal Heryono, Perdalín Cabang Yogyakarta, Dr Sardjito General Hospital, Yogyakarta, Indonesia; Ika Puspitasari,

Faculty of Pharmacy of Gadjah Mada University, Yogyakarta, Indonesia; Tri Wibawa, Academic Hospital of Gadjah Mada University, Yogyakarta, Indonesia; Abu Tholib Aman, Soeradji Tirtonegoro Hospital Klaten, Central Java, Indonesia; Andaru Daheshidewi, Perdalín Cabang Yogyakarta, Dr Sardjito General Hospital, Yogyakarta, Indonesia; Ludang Rizki Pradhita, PKU Muhammadiyah Hospital, Yogyakarta, Indonesia

Objectives: Bacterial coinfection occurred in 3.5% of COVID-19 patients, and secondary bacterial infection occurred in 14.3% of patients. In Indonesia, one of the guidelines for COVID-19 therapy is to administer azithromycin 500 mg per 24 hours for mild and moderate cases and azithromycin 500 mg per 24 hours and levofloxacin 750 g per 24 hours for severe cases with suspected secondary bacterial infection. At the beginning of the pandemic, many antibiotics were used, even without proven or suspected bacterial infection. We sought to determine changes in the resistance of “ESKAPE” bacteria (ie, *Enterococcus faecium*, *Staphylococcus aureus*, *Klebsiella pneumoniae*, *Acinetobacter baumannii*, *Pseudomonas aeruginosa*, and *Enterobacter* spp) to the antibiotics levofloxacin and azithromycin prior to and during the COVID-19 pandemic. **Methods:** The study was conducted retrospectively by examining the culture and sensitivity test results of “ESKAPE” bacteria to levofloxacin and azithromycin antibiotics in 2019 (before the pandemic) and April 2020–April 2021 (during the pandemic) in 4 hospitals in Yogyakarta. The number of samples represents all cultures completed within the specified period to detect antibiotic sensitivity patterns. **Results:** In a top referral hospital, resistance to levofloxacin and azithromycin increased significantly for *E. faecium* and *P. aeruginosa*, but at a private hospital, an increase in resistance to azithromycin and levofloxacin occurred for *A. baumannii* and for *Enterobacter* spp and resistance to levofloxacin increased significantly. At an academic hospital, there was a considerable decrease in *S. aureus* and *E. faecium* resistance to levofloxacin and azithromycin. At the government hospital, *S. aureus*, *K. pneumoniae*, *P. aeruginosa*, *Acinetobacter baumannii*, and *Enterobacter* spp developed resistance to levofloxacin. **Conclusions:** Resistance to azithromycin and levofloxacin by different ESKAPE bacteria increased on average during the COVID-19 pandemic.

Antimicrobial Stewardship & Healthcare Epidemiology 2023;3(Suppl. S1):s28
doi:10.1017/ash.2023.84

Subject Category: Multidrug-Resistant (MDR) Organisms

Abstract Number: SG-APUSIC1164

Cost-effectiveness of temporary isolation rooms in acute-care settings in Asia

Nicholas Graves, Singapore General Hospital, Singapore; Yiyi Cai, Singapore General Hospital, Singapore; Dale Fisher, Singapore National University Hospital, Singapore; Martin Kiernan, University of West London, London, United Kingdom; Brett Mitchell, Newcastle University, Newcastle, Australia

Objectives: We estimated the change to health-service costs and health benefits resulting from a decision to adopt temporary isolation rooms, which are effective at isolating the patient within a general ward environment. We assessed the cost-effectiveness of the decision to adopt temporary isolation rooms in a Singapore hospital. **Methods:** Existing data were used to update a model of the impact of adopting temporary isolation rooms on healthcare-associated infections. We predicted the expected change to health service costs and health benefits, measured in life years gained. Uncertainty was addressed using probabilistic sensitivity analysis, and the findings were tested with plausible scenarios to determine the effectiveness of the intervention. **Results:** We predicted 478 fewer HAIs per 100,000 occupied bed days resulting from a decision to adopt temporary isolation rooms. This decreased would result in cost savings of SGD \$329,432 (US \$247,302) and 1,754 life years gained. When the effectiveness of the intervention was set at 1% of cases of HAI prevented, the incremental cost per life year saved was SGD\$16,519 (US \$12,400), indicating that this

would be a cost-effective measure in Singapore. **Conclusions:** We have provided evidence that adoption of a temporary isolation room would be cost-effective for Singapore acute-care hospitals. Using temporary isolation rooms may be a positive decision for other countries in the region with fewer resources for infection prevention and control.

Antimicrobial Stewardship & Healthcare Epidemiology 2023;3(Suppl. S1):s28–s29
doi:10.1017/ash.2023.85

Subject Category: Outbreaks
Abstract Number: SG-APUSIC1076

Bacteremia caused by *Streptococcus mitis* in a hematology unit

Ismail Bin Szali, Singapore General Hospital, Singapore; Lee Lai Chee, Singapore General Hospital, Singapore; May Kyawt Aung, Singapore General Hospital, Singapore; Molly How Kue Bien, Singapore General Hospital, Singapore; Tan Kwee Yuen, Singapore General Hospital, Singapore; Hatijah Binti Tohid, Singapore General Hospital, Singapore; A/Prof Ling Moi Lin, Singapore General Hospital, Singapore

Objectives: *Streptococcus mitis* is a gram-positive coccus and is a common commensal found in the throat, nasopharynx, and mouth. In an immunocompromised host, *S. mitis* opportunistically multiplies and can translocate to other sites. At baseline, the prevalence of *S. mitis* remained stable among hematological patients, averaging ~1 case monthly. However, in August–September 2020, 5 *S. mitis* cases were documented in a hematology ward and included overlapping inpatient stays. In this descriptive cluster report, we sought to identify the reasons for the increased prevalence of *S. mitis* in our institution. **Methods:** A literature review was undertaken to gain a better understanding of the bacteriology of *S. mitis*. Subsequently, geographical mapping was performed to identify epidemiological links. Further culture and sensitivity testing was requested. Hand hygiene compliance, environmental audit, and handling of central lines within the ward were examined for any lapses in practice. **Results:** Based on geographical mapping, no epidemiological linkages were established between patients; they were admitted to different rooms and did not share any equipment. Moreover, based on the antibiogram, different bacteria sensitivities were recorded across the isolates from these patients. A hand hygiene and environmental audit result showed 100% compliance. Nurses performed care of central lines in accordance with guidelines. However, an investigation of changes in practice revealed that the use of a toothbrush had only recently been permitted as part of streamlining oral care for hematology patients. Because toothbrushes were not provided by the hospital, patients were utilizing their personal toothbrushes with no direct supervision of their oral care regimen. **Conclusions:** The prevalence of *S. mitis* in hematological patients was likely due to the neutropenic condition of patients. This report provides valuable information supporting the optimization of oral hygiene in immunocompromised patients while minimizing the risk of opportunistic infections.

Antimicrobial Stewardship & Healthcare Epidemiology 2023;3(Suppl. S1):s29
doi:10.1017/ash.2023.86

Subject Category: Outbreaks
Abstract Number: SG-APUSIC1166
Strategies to reduce hospital-onset *Clostridioides difficile* infections in an acute-care hospital in Singapore

Shi Yun Foo, Changi General Hospital, Singapore; Li Jie, Changi General Hospital, Singapore; Foo Shi Yun, Changi General Hospital, Singapore; Chai Hairu, Changi General Hospital, Singapore; Theresa Cabahug, Changi General Hospital, Singapore; An Rong Yan, Changi General Hospital, Singapore; Wu Tuodi, Changi General Hospital, Singapore; Suhailah Binte Nasir, Changi General Hospital, Singapore; Harminder Kaur, Changi General Hospital, Singapore

Objectives: Control of *Clostridioides difficile* infections (CDIs) in health-care facilities presents significant challenges to infectious disease physicians, infection prevention and control practitioners, and environmental

services staff. CDI is a common cause of infectious diarrhea and is associated with significant morbidity, mortality, and healthcare cost. A high infection rate was documented in our institution in 2017, higher than the national infection rate. Strategies to reduce hospital-onset CDI were implemented after review of international guidelines and relevant literature. The impact on hospital-onset CDI was assessed. **Methods:** The following strategies were implemented beginning early in 2018: (1) contact precautions for patients with diarrhea; (2) early recognition and diagnosis of *C. difficile* infection; (3) prompt isolation of *C. difficile* patients; (4) emphasis on hand hygiene and contact precautions; (5) enhanced environmental cleaning with chlorine-based disinfectant and use of UV-C and ionized hydrogen peroxide for equipment disinfection; (6) enhanced cleaning and disinfection using sporicidal wipes for shared high-risk equipment; (7) audit and feedback regarding compliance with practices and environmental cleaning; and (8) collaboration with antibiotics stewardship program (ASP) to reduce inappropriate antibiotic use. Hospital-onset CDI cases were tracked by infection prevention and control nurses using definitions from the Singapore Ministry of Health. **Results:** In total, 135 hospital-onset *C. difficile* infection cases occurred in 2017, a rate of 4.2 per 10,000 patient days. This rate gradually decreased to 3.0 in 2018 and to 2.3 in 2020, with an average of 87 infections per year. This rate further decreased to 1.8 infections per 10,000 patient days in 2021, with 61 clinical infections. **Conclusions:** Using multimodal strategies, CGH achieved a gradual and steady reduction in hospital-onset CDI over several years. These strategies require close collaboration among various departments to achieve the desired outcome.

Antimicrobial Stewardship & Healthcare Epidemiology 2023;3(Suppl. S1):s29
doi:10.1017/ash.2023.87

Subject Category: SSIs
Abstract Number: SG-APUSIC1207
Effectiveness of a surgical-site infection bundle in reducing postoperative infection in cesarean deliveries in a tertiary-care teaching hospital in Malaysia

Sasheela Sri La Sri Ponnampalavanar, University Malaya Medical Centre, Malaysia; Arulvani Rajandra; Nur Alwani Suhaimi; Cindy Teh Shuan Ji; Sia Jia Xuen; Tan Shu Fan; Siti Zuhairah binti Mohd Razali; Kam Yit Yin; Zhi Xian Kong; Min Yi Lau; Yee Qing Lee; Siti Norintan Zainon; Anjanna Kukreja; Suzana Saaibon; Siti Shuhaida Shamsudin

Objectives: Surgical-site infections (SSIs) cause significant increases in mortality, morbidity, and prolonged hospitalization after cesarean deliveries. We assessed the effectiveness of the implementation of an SSI bundle in reducing postoperative infections in cesarean deliveries in a tertiary-care teaching hospital in Malaysia. **Method:** We conducted a quality-improvement study on all women who underwent labor and scheduled cesarean sections at the University Malaya Medical Center (UMMC) between May and December 2020. The preintervention period was May–June 2020 and the postintervention period was September–December 2020. Patients were followed for 90 days after their operation. Before the intervention, SSI rates and compliance with prevention practices were documented. A multidisciplinary team was formed, and education regarding the elements of the SSI prevention bundle was conducted before they were implemented. The care bundle focused on monitoring compliance with preoperative bathing, contact time for skin preparation, hair management, and antibiotics prophylaxis given within 60 minutes prior to incision, as well as patient education. **Result:** With the implementation of the SSI bundle, we observed a significant reduction in the SSI rate by 50%, from 7 per 100 procedures to 2 per 100 procedures. Compared with the preintervention period, overall compliance with bundle elements improved greatly for preoperative bathing (0 vs 95.7%) and contact time for skin preparation (0 vs 98.8%). In the postintervention period, the method of hair removal was documented, compared to no documentation during the preintervention period. The administration of prophylactic antibiotics within 60 minutes prior incision decreased from 99% to 92.3%. **Conclusion:** Implementation of an SSI prevention bundle successfully reduced the rate of SSI after