

Meanwhile, for urine specimen the main bacteria causing infection was *K. pneumoniae* (4/7). In the antibiotic susceptibility test, the results showed Carbapenem Resistant Organisms (CRO), namely *A. baumannii* 89.5% (17/19), *K. pneumoniae* 76.3% (29/38), *P. aeruginosa* 40% (4/10), and *E. coli* 20% (1/5) with positive ESBL presentation are 15.8% in *K. pneumoniae* and 40% in *E. coli*. **Conclusion:** We found that the most common risk factor for HAI was the use of medical devices. Most of HAI infections that occurred in all specimens we took were caused by *Klebsiella pneumoniae*. Antibiotic resistance results show that many organisms that cause HAI are also resistant to Carbapenem antibiotics with variations in resistance genes (gene CTX-M, CTX-M-1, SHV, or TEM).

Keywords: Healthcare associated infection; Intensive care unit; risk factor

Antimicrobial Stewardship & Healthcare Epidemiology 2025;5(Suppl. S1):s16–s17

doi:10.1017/ash.2025.123

Nationwide survey of importance-performance analysis on infection control and prevention practices at the tertiary hospitals in South Korea

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Objectives: This study was conducted to define the classification of the infection control and prevention (IPC) practices through task analysis method, and to perform importance-performance analysis (IPA) on IPC tasks, consequently providing operational guidelines for the department of IPC. **Methods:** To define the tasks of the IPC practices, the draft was developed through the legal and literature reviews, and the final IPC tasks were confirmed by content validity test. The IPC tasks were assessed by IPA method. The national surveys were conducted by the institutional and individual level from October to November, 2023. The institutional questionnaire was distributed nationally to the IPC director/manager of the tertiary hospitals, and IPC practitioners assessed the IPA of IPC task. **Results:** Two thirds (30/45) of the IPC director/manager responded the institutional questionnaire. A total of 135 IPC practitioners (32 physicians and 103 nurses) completed the IPA survey. The average beds of hospitals participated in this study were 1,060±436. The ICP staffing met the legal requirements in all hospitals. The IPC tasks were consisted of 11 categories and 38 items including surveillance and ICP planning. According to IPA, at a 1st quadrant (high in frequency and importance) surveillance, infectious patient management, health management and action planning of health-care associated infection were placed. At a 2nd quadrant (high in importance but low in frequency), annual IPC planning was positioned. At a third quadrant (low in frequency and importance), ICP training, policy-making, general hygiene, and ICP staffing were placed. There was nothing at a 4th quadrant (high in frequency but low in importance). **Conclusion:** Most of IPC tasks are consistent in degree of importance and frequency except IPC planning. Based on IPA, priority-based task distribution should be considered to maximize the work efficacy and effectiveness.

Antimicrobial Stewardship & Healthcare Epidemiology 2025;5(Suppl. S1):s17

doi:10.1017/ash.2025.124

Evaluation of the compatibility from antibiotic use with the Gyssens plot in community acquired pneumonia patients in RSUP DR Wahidin Sudirohusodo

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Objectives: Pneumonia is the leading cause of morbidity and mortality worldwide, eighth rank in the United States. The use of antibiotic for pneumonia therapy contribute the highest rate compared to the usage of antibiotic therapy for other diseases. Antibiotic resistance can occur due to the irrational use of antibiotics. World Health Organization (WHO) predicts that by 2050 there will be 10 million people per year who die due to drug

resistance. The Gyssens method is a tool to evaluate the quality of antibiotic use that has been widely used in various countries. The purpose of this study was to assess the compatibility of antibiotic use based on Gyssens plot categories in pneumonia patients. **Methods:** This study used descriptive-observational with a cross-sectional study in pneumonia patients at Dr. Wahidin Sudirohusodo Hospital on periode from July-December 2023. The compatibility of antibiotics was assessed using the Gyssens flow. **Results:** This study involved 116 subjects, 70 males, 46 females. In this study, found that the use of rational antibiotics is 58% and irrational 42%. From irrational group we obtained category IV (3%), IIIa (31%), IIIb (8%). The most often antibiotic that used are ceftriaxone (26,8%) and azithromycin (26,3%). **Conclusions:** The use of antibiotic in pneumonia patients assessed using the gyssens method in the Inpatient Installation of Dr. Wahidin Sudirohusodo Hospital from July to December 2023 found that the usage for antibiotic is rational for 58%, of the total patient and irrational use was 42% of the total patient during the research study.

Key words: antibiotic use; gyssens plot; community acquired pneumonia

Antimicrobial Stewardship & Healthcare Epidemiology 2025;5(Suppl. S1):s17

doi:10.1017/ash.2025.125

Infection control measures in response to detection of carbapenem-resistant enterobacterales in neonatal intensive care unit

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Objectives: Neonatal intensive care unit (NICU) admits premature babies and neonates with acute illness who are under high infection risk due to immature immune response system. Infections caused by carbapenem-resistant Enterobacterales (CRE) is a serious threat to such patient population. A single case of CRE infection occurred in 36-bed NICU on July 2023. Infection control measures were put in place to prevent further CRE infection within the NICU. **Methods:** A neonate delivered at gestational age of 23 weeks and 6 days with birth weight of 650g was under mechanical ventilator care. On 35th day of life, CRE (*Escherichia coli*, New Delhi metallo-beta-lactamase-1 positive) was isolated from this neonate's endotracheal suction material. After discussion with infection control physician, the bacterial culture was determined to have been resulted from colonization or localized infection, rather than invasive infection. Five measures were taken to prevent additional infection within the NICU. One, contact precaution was issued for CRE-infected baby, and an isolation ward and a designated nurse was assigned for the baby to prevent cross infection. Two, adherence to hand hygiene and personal protective equipment (PPE) application was monitored for medical personnel and visitors entering the NICU. Three, a checklist was designed specifically for disinfection of NICU isolation ward, and the designated cleaner and assistants were educated on the checklist. Four, testing with fluorescent markers was performed to validate cleaning. Five, the infectious disease specialist and the pharmacy analyzed the prescription pattern of broad-spectrum antibiotic among patients in NICU for systematic antibiotic regulation. **Results:** The following results were obtained after 2 weeks of infection control measures. 57 subjects underwent hand hygiene monitoring, on which 15.8% (9 case) of the subjects inadequately passed. Immediate feedback was provided upon these detections. Cleaning validation detected a single cases of inadequate disinfection (door to isolation ward), for which re-cleaning and education was performed. An increasing trend in consumption of 3rd generation cephalosporin (8.96% in April 2023 to 21.21% in June 2023) was found, and the neonatology department was advised to be more selective in prescription of broad-spectrum antibiotics. **Conclusions:** There was no CRE infection for 6 months following infection control measures. This case was determined to be an isolated case of CRE infection, and no further surveillance culture was obtained. Proactive infection control measures, including contact isolation, hand hygiene,