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ABSTRACT PROCEEDINGS – 11th International Conference of Asia Pacific Society of Infection Control (APSIC) 2024

Trends in prevalence and antibiotic susceptibility of multidrugs-resistant Carbapenem-Resistant *Acinetobacter baumannii* (CRAb) and carbapenem-resistant *Pseudomonas aeruginosa* (CRPa) in blood culture

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Background: Carbapenem-resistant *Acinetobacter baumannii* (CRAb) and carbapenem-resistant *Pseudomonas aeruginosa* (CRPa) are critical priority MDROs. They can develop resistance to last-line antibiotics, complicating infection treatment, leading to longer hospital stays, higher costs, and mortality. **Objectives:** To describe trends in CRAb and CRPa prevalence and antibiotic susceptibility in the access, watch, and reserve groups of positive blood cultures. **Methods:** This was a descriptive observational study using data from positive blood cultures at Dr Sardjito General Hospital from 2020-2023. Bacterial identification and antibiotic susceptibility testing were performed using the Vitec-2 Compact system. Patient demographics and clinical data were obtained from the microbiology LIS and electronic medical recods. **Results:** A total of 3603 positive blood cultures were obtained. CRAb rates were 85%, 62%, 68%, 78%, while CRPa were 26%, 21%, 12%, 25% respectively. CRAb antibiotic susceptibility in access group: 2%, 8%, 5%, 3%, in watch group: 27%, 28%, 27%, 22% and in reserve group: 33%, 58%, 37%, 30%. CRPa susceptibility was reduced in all groups: 13%, 30%, 13%, 6% in access, 0%, 4%, 0%, 19% in watch, and 13%, 7%, 13%, 14% in reserve group. CRPa was more susceptible in the access group, while CRAb was more susceptible in the watch and reserve groups suggesting that CRPa infections were more difficult to treat. The highest prevalence was in 2020, possibly due to failure to control antibiotic use during the early Covid-19 pandemic. A decrease in both MDR pathogens in 2021 was associated with intense ASP activities in the second year of the pandemic. Increasing prevalence in the following years may be due to a lack of stewardship following a change in the internal antimicrobial stewardship team structure. **Conclusions:** These data indicate that consistent ASP had important role in controlling CRAb and CRPa. Changing the structure of antimicrobial stewardship team should be well prepared to ensure a good adaptation.
Keywords: CRAb; CRPa; MDRO; antibiotic susceptibility; difficult to treat

Harnessing the capabilities of an electronic health record system to enhance surveillance for middle east respiratory syndrome in an acute hospital

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Objectives: The recent experience of the COVID-19 pandemic emphasized the critical need for a surveillance system to alert healthcare facilities about the admission of patients with emerging infectious diseases (EID), thereby preventing nosocomial transmissions. **Methods:** Tan Tock Seng Hospital, an 1800-bed acute tertiary-care hospital in Singapore, transitioned to a new- generation electronic medical record system, Epic, in August 2022. Leveraging the system's capabilities, we developed an algorithm to generate the line-list of suspected Middle East Respiratory Syndrome (MERS) patients, in alignment with the screening guidelines provided by Singapore's Ministry of Health. The algorithm first identifies patients who presented within 14 days (maximum incubation period) of their travel to Arabic peninsular countries. This information is documented by the emergency department's triage nurses. Additionally, patients with suspected MERS indicated in the problem list or diagnosis by attending clinicians, particularly emergency-medicine physicians or infectious-disease physicians, are included. Furthermore, patients who are ordered for a MERS- Coronavirus polymerase chain reaction test, are identified. The algorithm can also be further modified as and when the case definition of the EID changes. **Results:** The surveillance report constructed with Epic algorithm can be scheduled for daily generation or generated on demand within a few minutes. This newer approach is more time- and resource-efficient compared to the manual surveillance process, which necessitates at least three staff members to engage in a series of prolonged manual processes. The report, by extracting information directly from Epic in near real-time, also minimizes the likelihood of errors that may occur during the manual process. Subsequently, the team of epidemiologists identifies the suspected MERS patients form the generated report and efficiently follow up them until a diagnosis of MERS is excluded. **Conclusions:** Harnessing Epic's capabilities, we constructed an algorithm to efficiently and swiftly identify suspected MERS patients, enabling the timely implementation of infection prevention strategies to prevent nosocomial transmission.

Digitalisation of staff health record system in MT Alvernia Hospital

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Background/Aim: The manual compilation of employees' health information and record-keeping can be an arduous and distressing task. Therefore, it is essential to invest time and effort in finding a solution to collect, store, and retrieve data in real-time when required. **Method:** To address this challenge, the Infection Control Team collaborated with the IT department and relevant HODs to develop an integrated and digitalized record system known as the "Staff Health System." This system can be easily accessed by all employees, supervisors, and the infection control team. The Infection Control (IC) team is responsible for updating and maintaining vaccination records, while HR takes charge of documenting the health records of new employees and monitoring staff health/vaccination in compliance with MOH requirements. **Result:** The implementation of the Staff Health System offers several benefits as: (1) Empowerment of staff: The system grants employees the autonomy to schedule and reschedule vaccination and mask fitting sessions at their convenience; (2) Enhanced accessibility: Staff and other stakeholders can readily access vaccination and mask fitting records, as well as pre-employment lab results through the system; (3) Real-time data: The system can generate up-to-date data that are relevant to stakeholders and management, improving decision-making processes; (4) Resource efficiency: The digitalized system reduces the consumption of resources such as paper, toner, and manpower required for