

global threat of antimicrobial resistance. **Methods:** Point prevalence surveys were performed in April 2019 and November 2022 utilizing the Hospital National Antimicrobial Prescribing Survey (NAPS) tool. The study aimed to evaluate the prevalence of antibiotic use among inpatients and monitor antibiotic prescribing quality in 2022 compared to 2019 in a Malaysian teaching hospital as part of AMS core elements. **Results:** The prevalence of antibiotic use remained relatively stable between 2019 and 2022 (44.1% vs. 42.3%), with no significant change observed. Prescription patterns, including the type of antimicrobials, treatment modalities, and prescriptions per patient, showed insignificant differences between the two surveys. Antibiotics from the World Health Organisation (WHO) Access group constituted up to 47% of prescriptions in 2022, while usage of antibiotics from Watch group decreased from 57% to 53%, albeit insignificantly. Notably, there was a non-significant increase in appropriate prescribing for surgical prophylaxis in 2022 (40% vs 16.7%, $p=0.078$), alongside a less prevalent in prolonged surgical prophylaxis (28% in 2022 vs. 50% in 2019). Despite static prevalence and prescribing patterns, compliance with guidelines ($p<0.006$) and appropriate prescribing ($p<0.002$) showed significant improvement. The likelihood of compliance and appropriate prescribing was approximately 1.8-fold higher in 2022 compared to 2019. However, an increase in prescription of unnecessary broad-spectrum antibiotics was observed (23.1% vs 48%, $p=0.002$). Multiple logistic regression revealed that inappropriate prescribing significantly occurred when antibiotic indication was poorly documented (adjusted OR 3.67; 95% CI 1.28–10.53; $p=0.016$). **Conclusion:** While prescribing patterns remained relatively unchanged, our findings highlight notable improvement in antibiotic prescribing quality. However, challenges persist, including the increased use of unnecessary broad-spectrum antibiotics. Continued efforts in AMS are imperative to address these issues and further enhance prescribing practices.

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Intranasal octenidine and daily octenidine bathing reduces incidence of hospital-onset MRSA bacteremia amongst MRSA carriers

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Objectives: Octenidine dihydrochloride is a topical antiseptic that has been demonstrated to decrease the microbial burden of bacteria colonizing the skin. Various applications of octenidine have been studied with evidence supporting reductions in *Staphylococcus aureus* infections. MRSA carriers are at a higher risk of MRSA bacteremia and can be identified early during admission through screening. This study aimed to evaluate the impact of octenidine on the incidence of hospital-onset (HO) MRSA bacteremia amongst MRSA carriers. **Methods:** A quasi-experimental before-and-after interventional study was conducted in a single 1700 bed academic teaching hospital. From December 2021 onwards, five days of intranasal octenidine and daily octenidine bathing until discharge was introduced only for MRSA carriers. Screening for MRSA colonization status occurs on admission (either by nasal PCR or nasal, axilla and groin culture, and upon inpatient transfer or through clinical cultures. An HO-MRSA bacteremia event is defined as occurring more than 3 days from admission or more than 14 days from the last positive date. Baseline yearly incidence of HO-MRSA bacteremia for 2021, and the proportion occurring in MRSA and non-MRSA carriers was determined. This was then compared to yearly incidence observed post-intervention in 2022 and 2023. **Results:** Between 2021–2023, the yearly incidence of HO-MRSA bacteremia in carriers decreased steadily from a baseline of 11 to 10 and then to 6 per 1000 patients. In contrast, over the same period the yearly incidence in non-MRSA carriers initially increased from a baseline of 0.26 to 0.33, before decreasing to 0.22 per 1000 patients. Overall yearly incidence decreased by a greater proportion in those receiving octenidine compared to those who

did not – 45.5% vs 15.4%. **Conclusion:** Intranasal octenidine and daily octenidine bathing when performed on a high risk group such as MRSA carriers, reduces the incidence of HO-MRSA bacteremia.

Keywords: MRSA bacteremia; MRSA carrier; octenidine bathing; intranasal octenidine

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Hand hygiene compliance from an occupational health perspective - the importance of choosing the right handrub to prevent contact dermatitis

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Objectives: Hand hygiene is the cornerstone of infection prevention and control. Factors associated with hand hygiene compliance continues to be a key focus of research today. Choosing the 'right' alcohol-based hand rub (ABHR) is pivotal in mitigating ICD (irritant contact dermatitis) caused or aggravated by repetitive use of ABHRs. 31% of our healthcare workers (HCWs) reported worsening of their underlying eczema from repetitive use of the incumbent ABHR, whilst 74% experienced either dryness or ICD. In this study, we aim to evaluate two ethanol-based hand rubs against the incumbent hand rub (ethanol and n-propanol mix) to determine if skin tolerability and incidence of ICD can be improved. **Methods:** 500 HCWs from three departments were invited to participate in a survey to evaluate skin tolerability and user's acceptability of the 1) incumbent ABHR (i-ABHR) (176 responded) and (2) New ABHR 1 (n-ABHR-1) (147 responded), whilst 190 HCWs from one department were invited to trial 3) New ABHR 2 (n-ABHR-2) (87 responded) using the WHO protocol 1 for handrub evaluation over the course of two weeks for each product respectively. **Results:** For skin tolerability assessment, only n-ABHR-2 achieved the product acceptability criteria of $\geq 75\%$ of the participants choosing scale 5 or higher, whereas the other two ABHRs did not. Only 47.7% felt that i-ABHR provided acceptable moisture content. Product acceptability wise, only n-ABHR-2 achieved the acceptable criteria for all measurements. For n-ABHR-1, 45% experienced ICD or dryness, whilst 9% reported worsening of underlying eczema. For n-ABHR 2, 23% reported ICD whilst 1% experienced worsening of underlying eczema. **Conclusion:** In conclusion, n-ABHR-2 was a more suitable alternative compared to i-ABHR and n-ABHR-1 in terms of acceptability and skin tolerability, particularly for those with underlying eczema. Further investigation is warranted to determine if the low ICD rate could be maintained longer-term to ensure hand hygiene compliance.

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Antibiotic prescribing for children for acute conditions in public primary care clinics in Singapore: a retrospective cohort database study

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Objectives: Data on primary care antibiotic prescription practices for children in Southeast Asia, which are essential for policy, quality improvement and patient safety, are lacking. We aimed to describe this gap and to benchmark prescription practices against international standards. **Methods:** Antibiotic prescriptions for children (age <18 years) who visited six public primary care clinics in Singapore between 2018 and 2021 were extracted and categorized according to the World Health Organization Access, Watch, Reserve (WHO AWaRe) classification. Quality indicators from