Research Compact

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Tags	MDRO, MRSA, Universal Decolonization
Title	**The Effect of Universal Decolonization With Screening in Critical Care to Reduce MRSA Across an Entire Hospital**
Authors	CW Bradley, MAC Wilkinson, MI Garvey
Source	Infection Control & Hospital Epidemiology, 2017: 1-6, 10.1017/ice.2017.4

Aim of the study

Staphylococcus aureus and especially MRSA are a major cause of hospital acquired infections. Infections have a high impact on e.g. length of hospital stay, mortality and treatment cost. Universal decolonization of all patients independent of their MRSA status as well as screening and decolonitaion of patients with a positive MRSA culture are the two main strategies to prevent MRSA spread and infection. The study analyzed the effect of universal decolonization on the rates of nosocomial MRSA bacteremia and acquisitions after discontinuation of universal decolonization in August 2014 and subsequent reintroduction in December 2015 in the ICU of University Hospitals Birmingham.

Methods

Before August 2014 all patients were decolonized using nasal mupirocin 2% thrice daily for 5 days and daily chlorhexidine 4% body wash. After August 2014 decolonization was only carried out in MRSA positive patients using mupirocin 2% thrice daily and daily octenidine body wash. In December 2015 universal decolonization was reintroduced with (we assume*) mupirocin and octenidine. A break-point time series analysis and regression analysis was applied to reveal significant changes in the number of MRSA acquisition and bacteremia cases during the timeline April 2013 to August 2016.

Results

Break-point time analysis showed association of break points with discontinuation and subsequent reintroduction of universal decolonization. MRSA bacteremia cases decreased from 2.8 to 0.9 per 100,000 bed days (Fig. A) and the MRSA acquisitions decreased from 32.8 to 21.5 per 100,000 bed days (Fig. B) after reintroduction of universal decolonization in December 2015. Regression analysis revealed these changes to be highly significant ($p \leq 0.001$). Audits showed no significant changes in hand hygiene compliance, the use of personal protection gear or general cleanliness during these periods.
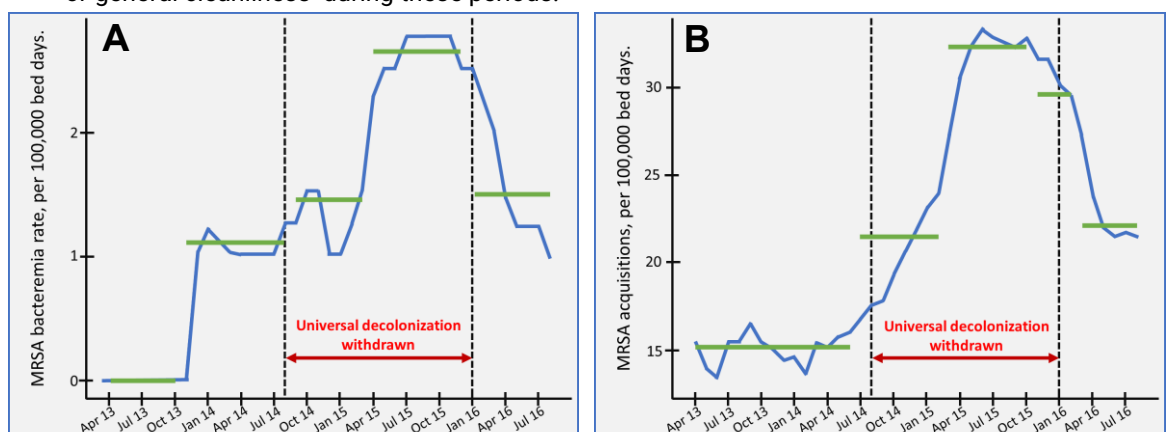
Monthly changes in A) MRSA bacteremia rates and B) MRSA acquisition rates. Universal decolonization was discontinued from August 2014 to December 2015. The break-point model found 4 probable changes in ratio indicated by green horizontal bars. Illustration adapted to: Bradley et al., 2017, Infect Control Hosp Epidemiol.

Conclusion

Universal decolonization of all patients with antiseptic (octenidine) body wash and nasal mupirocin regardless of their MRSA status in an ICU setting is an effective strategy to reduce the spread of MRSA and the rates of infection with MRSA

* not explicitly described but to be assumed from the wording