



Service Priorities and Programmes  
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**Cost-effective MRSA screening strategies at admission to acute medical wards in Hong Kong**

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**Introduction**

According to the standardized web-based Methicillin-resistant Staphylococcus aureus (MRSA) surveillance system in Hospital Authority, 40%-45% of hospital isolates of S. aureus in Hong Kong are now MRSA. The majority of caseloads are concentrated in the medical units. Among infected patients, 9% of them are complicated by bacteremia, which has been used as a key performance indicator in Hospital Authority hospitals. The rates do vary among different acute hospitals. Nevertheless, the burden of colonized patients bringing the organism into the hospitals is currently undefined.

**Objectives**

To direct limited resources related to screening and infection control strategies by (1) determining the prevalence and risk factors of MRSA colonization among patients admitted to acute medical units in Hong Kong, (2) and defining a cost-effective screening strategy.

**Methodology**

This was a multicenter, cross-sectional study of MRSA colonization among patients admitted to acute medical units of 15 hospitals in Hong Kong. During the study period, consecutive, consented hospitalized patients (N=7661) were screened for MRSA carriage within 24 hours of admission.

**Result**

MRSA carriage at admission to acute medical units was prevalent in Hong Kong. The

overall carriage rate of MRSA was 14.3% (95% confidence interval [CI], 13.5-15.1). MRSA history within the past 12 months (adjusted odds ratio [OR], 4.60 [95% CI, 3.28-6.44]), old age home residence (adjusted OR, 3.32 [95% CI, 2.78-3.98]), and bed-bound state (adjusted OR, 2.19 [95% CI, 1.75-2.74]) were risk factors selected as MRSA screening criteria that provided reasonable sensitivity (67.4%) and specificity (81.8%), with an affordable burden (25.2%). Adopting the criteria, there are about 54,000 patients eligible for screening per year. The annual consumable cost for screening is around \$1.2 million. Given that the mean length of stay of patients having MRSA infection would be prolonged by about 13.2 days, with an extra cost of about \$42,000 per admission, it is already cost saving if 2 infections (less than 1% of all MRSA infections) can be prevented in each hospital annually as a result of reduced MRSA cross-transmission. Targeted screening, therefore, is a pragmatic approach to increase the detection of the MRSA reservoir.