

**Mapping the Intensive Care Unit Environment and Health Care
Workers for Methicillin-Resistant *Staphylococcus aureus* Bacteria at
Jamil Tutanji hospital, Jordan**

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Abstract

Methicillin-resistant *Staphylococcus aureus* bacteria (MRSA) represent a big challenge to the health system being one of the most important causes of hospital-acquired infection. It can contaminate the surfaces of the ICU, and the health care workers hands. The aim of this study is to determine the distribution and the rate of contamination of surfaces and hands of the health care workers in the ICU with MRSA in Jamil Tutanji hospital, Jordan. This is to propose measures to decrease MRSA infections. Samples were taken from 129 surfaces and health worker`s hands with cotton swabs. Swabs were streaked on Mannitol Salt Agar, then on blood agar for isolation of *Staphylococcus aureus*. *Staphylococcus aureus* then were stained with gram stain, and perform catalase and coagulase tests. Disk diffusion and E-test were used to determine MRSA and study the sensitivity. PCR was used to confirm the presence of *mecA* gene. The prevalence of MRSA was 20% to the total numbers of samples and 30% of *S. aureus* samples. Among the 14 samples from HCWs, we found that the rate of MRSA isolates were 28%. No vancomycin-resistant MRSA could be isolated. In conclusion, MRSA is prevalent in significant rate in the ICU

department, and in health care workers hands so that it can be a potential source of hospital-acquired infection.