

Control of Endemic Methicillin-Resistant *Staphylococcus aureus*

A Cost-Benefit Analysis in an Intensive Care Unit

Carine Chaix, MD; Isabelle Durand-Zaleski, MD, PhD; Corinne Alberti, MD; Christian Brun-Buisson, MD

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Context Despite the success of some countries in controlling endemic methicillin-resistant *Staphylococcus aureus* (MRSA), such programs have not been implemented for some hospitals with endemic infection because of concerns that these programs would be costly and of limited benefit.

Objective To compare the costs and benefits of an MRSA control program in an endemic setting.

Design and Setting Case-control study conducted at a medical intensive care unit (ICU) of a French university hospital with a 4% prevalence of MRSA carriage at ICU admission.

Patients Twenty-seven randomly selected patients who had ICU-acquired MRSA infection between January 1993 and June 1997, matched to 27 controls hospitalized during the same period without MRSA infection.

Main Outcome Measures Intensive care unit costs attributable to MRSA infection, computed from excess therapeutic intensity in cases using estimates from a cost model derived in the same ICU, were compared with costs of the control program, derived from time-motion study of nurses and physicians. The threshold for MRSA carriage that would make the control strategy dominant was determined; sensitivity analyses varied rates of MRSA transmission and ratio of infection to transmission, length of ICU stay, and costs of isolation precautions.

Results The mean cost attributable to MRSA infection was US \$9275 (median, \$5885; interquartile range, \$1400-\$16,720). Total costs of the control program ranged from \$340 to \$1480 per patient. A 14% reduction in MRSA infection rate resulted in the control program being beneficial. In sensitivity analyses, the control strategy was dominant for a prevalence of MRSA carriage on ICU admission ranging from 1% to 7%, depending on costs of control measures and MRSA transmission, for infection rates greater than 50% following transmission.

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