

The effect of an enhanced infection-control policy on the incidence of *Clostridium difficile* infection and methicillin-resistant *Staphylococcus aureus* colonization in acute elderly medical patients

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Abstract

Background: *Clostridium difficile* (CD) infection and methicillin-resistant *Staphylococcus aureus* (MRSA) colonization are increasingly common in elderly patients, are associated with cephalosporin or prolonged aminopenicillin courses and can be transmitted by direct contact. Management is by side-room isolation. Ward closure may be required to control outbreaks.

Methods: following prolonged bed closures due to CD and MRSA in an acute age-related geriatric service, an enhanced infection control policy was introduced—emphasis on handwashing, cephalosporin restriction, 7-day time limits on antibiotics and feedback of infection rates. The effect of this policy was evaluated by investigating 2467 consecutive admissions in the 9 months before and after its introduction.

Results: CD infection fell from 36/1075 admissions (3.35 per 100) to 27/1392 (1.94 per 100; $P < 0.05$). MRSA incidence fell from 3.95 per 100 to 1.94 ($P < 0.01$) whilst that in the rest of the hospital continued to fluctuate. Cephalosporin use fell (and aminopenicillin and trimethoprim use rose) by a factor of three. Unoccupied bed days fell from 1164 (12.6%) to 513 (5.1%) over the winter, an increase in bed availability of 4.95 a day.

Conclusions: introduction of the policy was associated with significant reductions in CD infection and unoccupied bed-days and helped maintain a lower incidence of MRSA. It is not clear which elements of the policy most influenced outcome. A multi-centre study is needed to determine whether our findings are generally applicable.

Keywords: acute medical patients, *Clostridium difficile*, infection-control policy, methicillin-resistant *Staphylococcus aureus*