

## Journal Watch

*Journal Watch presents a brief description of articles recently published in other journals and thought to be of relevance or interest to the AIC readership. Readers are encouraged to refer to the full article for complete information.*

### Can social marketing be used to achieve behaviour change on a sustained basis?

Changing healthcare worker behaviour is difficult and generally short-lived for many infection control practitioners. Most interventions to change behaviour have had disappointing results in many core practices such as hand hygiene, barrier precautions, sharps safety and influenza vaccination. In this article, the authors offer the concept of social marketing as the solution to effecting successful behaviour change on a sustained basis.

Social marketing is a systematic and coherent paradigm for thinking about and directing behaviour change through a number of steps. Social marketing may be the answer to behavioural non-adherence where the traditional approach of education and policy has failed. The focus is on the healthcare worker – the customer – where all activities that are intended to influence behaviour are designed to address the perceptions, needs and wants of the customer who must perform the behaviour. The benefits to the customer are more attractive if they are tangible, certain, immediate and direct. For example, “Even busy healthcare workers will find handrub fast, convenient, and effective at killing the superbugs on their hands”.

The authors also suggest that infection control professionals have not designed behaviour change interventions to appeal to healthcare worker self-interest, but they should consider doing so. In promoting hand hygiene compliance, infection control professionals can appeal to healthcare worker self-interest by promoting alcohol handrub use to be hassle free (fast and accessible) and better for skin health. The unique contribution of the marketing mindset is a systematic commitment to reduce barriers to behaviour change, to offer immediate rewards for adherence, and to fit desired behaviours into daily work routines without creating more problems.

*Mah M, Deshpande S & Rothschild M. Social marketing: a behaviour change technology for infection control. Am J Infect Control 2006; 34:452-7.*

### Hawthorne effect has a marked influence on hand hygiene compliance

In this study of five intensive care units in Germany, the authors investigated the influence of the Hawthorne effect on healthcare worker compliance with hand hygiene. The Hawthorne effect is well known and refers to the tendency of people being observed

to behave differently than they would normally. The investigators undertook to observe behaviour both covertly and overtly in separate periods. During the observation periods, no activities were undertaken to increase compliance with hand hygiene.

The results revealed a marked difference in rates of compliance between the two periods. In the covert period, the rate was 29% but in the overt observation period it was much higher at 45%. Compliance in nurses improved from 30-58% and for physicians from 25-47%. Differences in compliance between physicians and nurses are well known; physicians continue to have a lower compliance than nurses. The Hawthorne effect did have a marked influence on compliance, with a 55% increase in compliance between the covert and overt period in this study. Results also support the benefits to be made when the infection control team is highly visible in the clinical areas.

*Eckmanns T, Bessert J, Behnke M, Gastmeier P & Ruden H. Compliance with antiseptic hand rub use in intensive care units: the Hawthorne effect. Infect Control Hosp Epidemiol 2006; 27:931-934.*

### A link between contaminated blood pressure cuffs and healthcare-associated infections

Recent research in a French hospital investigated the potential role of blood pressure (BP) cuffs in the spread of bacterial infections in hospitals. The investigators measured the bacterial contamination of BP cuffs across the hospital. Samples were taken from both the outer and inner side of each BP cuff and cultured.

Results indicated that the highest rates of contamination were observed on the inner BP cuffs from the ICU and also from the adult surgical units. A high rate of contamination and colonisation by potentially pathogenic bacteria was seen on BP cuffs kept on nurses' trolleys and used for several patients, adding to the likely spread of pathogens between patients. Procedures for cleaning BP cuffs between each use on patients are strongly recommended, including a plan to alert and educate hospital staff about the potential risks associated with contaminated BP cuffs.

*Gialluly C, Morange V, de Gialluly E, Loulergue J, van der Mee N & Quentin R. Blood pressure cuff as a potential vector of pathogenic microorganisms: a prospective study in a teaching hospital. Infect Control Hosp Epidemiol 2006; 27:940-943.*

## Risk factors for hospital-acquired methicillin-resistant *Staphylococcus aureus* (MRSA) bacteraemia: a case-control study

This study notes that the proportion of *S. aureus* bacteraemia resistant to methicillin in England and Wales has risen from <2% in 1990 to 42% in 2002, and that the UK has the highest reported incidence of hospital-acquired MRSA bacteraemia in Europe. The authors were requested to undertake a case control study in a district general hospital in Wales which had rates of MRSA bacteraemia higher than elsewhere in Wales (1.6 cases per 10,000 bed-days compared with 0.09).

The hospital averaged 400 occupied beds during the period of the study. Cases were defined as patients  $\geq 16$  years from whom MRSA was isolated from a blood culture taken on or after the third day after admission. Controls were selected randomly from patients admitted during this time who were  $\geq 16$  years of age and in hospital longer than 2 days. The study had a statistical power of 80% of detecting an odds ratio (OR) of  $\geq 3$  at the 5% level assuming 30% of controls were exposed to the risk factor under investigation.

Data included factors present on admission (such as previous admissions, skin ulcers, wounds, bed sores, dermatitis, surgical site infections, in-dwelling urinary/venous catheters, history of IV drug use) and those occurring after admission (insertion of lines and catheters, antibiotic treatment, ward transfers and contacts with healthcare workers).

Risk factors remaining significant after adjustment for confounding factors included insertion of a central line (OR 35.3, 95%CI 3.8-325.5) or urinary catheter (OR 37.1, 95%CI 7.1-193.2), or surgical site infection (OR 4.3, 95%CI 1.2-14.6). The authors conclude that prevention measures for MRSA bacteraemia in hospitals should concentrate on improving procedures for the insertion and care of central lines and urinary catheters.

Carnicer-Pont D, Bailey KA, Mason BW, Walker AM, Evens MR & Salmon RL. Risk factors for hospital-acquired methicillin resistant *Staphylococcus aureus* bacteraemia: a case-control study. *Epidemiol Infect* 2006; 134:1167-1173.

## Reduction of surgical site infections after Caesarean delivery using surveillance

The Krankenhaus Infections Surveillance System (KISS) in Germany has been collecting data on surgical site infections (SSI) following Caesarean delivery (CD) since 1997. This study examined whether a reduction in the overall SSI rate could be achieved by continuous participation in KISS. The infection rates for the first, second and third year of participation were compared for significant differences, and the relative risk was calculated for the first and third year of participation. Multi-variate logistic regression was also performed to detect significant risk factors and the third year of participation was used as one parameter in the analysis.

Twenty six of a possible 52 obstetric and gynaecology departments met the inclusion criteria which was continuous participation for at least 3 years. In those departments, 17,045 procedures were performed and 331 SSIs recorded (1.9%). There were no significant changes over time in the distribution of risk factors such as ASA score or length of procedure. However, SSI rates decreased significantly in the third year of KISS surveillance to 1.6% from 2.4% in the first year. The relative risk for the third year was 0.63 (95%CI 0.48-0.82). This suggests a reduction in risk of infection for the third year of participation in the surveillance programme of 37%.

In the multi-variate analysis, an age of <25 or >45 years and an ASA score of greater than 3 increased the risk, while prolonged duration of procedure (>75th percentile) and continuous surveillance for >3 years were protective. This finding is consistent with other studies showing that participation in surveillance programmes can significantly reduce infection rates.

Barwolff S, Sohr D, Geffers C, Brandt C, Vonberg RP, Halle H, Ruden H & Gastmeier P. Reduction of surgical site infections after Caesarean delivery using surveillance. *J Hosp Inf* 2006; 64:156-161.



### Expressions of interest: Assistant Editors AIC

Applications are invited from suitably qualified people for the positions of assistant editors. The responsibilities include the management of the journal watch, diary and book review sections of the journal.

The journal has both a national and international profile and is indexed with Cinahl, AMI and ICI. There are plans to apply for indexation with Medline over the next 12 months.

Further information, including position descriptions, are available by contacting the AICA secretariat at:  
Australian Infection Control Association  
GPO Box 3254, Brisbane QLD 4001  
E-mail: aica@ozemail.com.au

### Erratum

In the September 2006 (Vol 11, No 3) edition of *Australian Infection Control*, on page 92, the article entitled *Establishing a communication model of infection control in country South Australia: a qualitative approach* - Figure 1, 3rd box should read ICP'S not ICPs as printed.

On page 72, the article entitled *Antimicrobial utilisation in South Australian hospitals 2002-2004* - Table 1, under antibiotic class should read penicillin/ beta-lactamase inhibitor combinations not penicillin / -lactamase inhibitor combinations as printed.

Our sincere apologies to the authors for these errors.