

## Micro News

April 2007

### 1. Infection control at home?

An article published this month in the *American Journal of Infection Control* is essentially a condensed version of an extensive, well-researched and well-referenced report from the International Scientific Forum on Home Hygiene (IFH), available to download free from [www.ifh-homehygiene.org](http://www.ifh-homehygiene.org) (Bloomfield et al. 2007). The report uses literature review as a tool to examine the risk of acquiring certain organisms classically regarded as nosocomial in the home and community. MRSA, *C. difficile* and extended-spectrum beta-lactamase (ESBL)-producing *E. coli* are covered in detail. The emergence of MRSA as a community-associated pathogen has been reported with increasing frequency over the past decade, but reports of community-associated *C. difficile* and ESBL-producing *E. coli* have been less common. The key conclusion of the report is the need for the responsibility of controlling these pathogens to be shared by the public and not just managed by infection control professionals in hospitals. Even if you disagree with the conclusions of the report, it is worth downloading for the comprehensive literature reviews and list of references!

### 2. Updates on the costs associated with nosocomial infection

Assigning accurate costs to nosocomial infection is not straightforward but is necessary to develop cost-effectiveness analyses of infection prevention and control interventions. A helpful review article published recently in *Infection Control and Hospital Epidemiology* discusses some of these issues in detail (Graves et al. 2007a). An Australian study from the same research group published this month provides data to support the concept of 'omitted variables bias' (Graves et al. 2007b). The study found that, surprisingly, urinary tract infection was not associated with increased length of stay or increased variable costs and that a lower respiratory tract infection was associated with a small increased length of stay (2.6 days) and negligible increase in variable costs (AUS\$24). The article concludes that many published estimates of the cost attributable to nosocomial infection may be overestimates, with particular criticism of the rationale of control patient selection. However, the moderate apparent costs of nosocomial infection identified in this study do not provide much leverage for increasing infection control resources!

In the same issue of *Infection Control and Hospital Epidemiology*, a German study found that the average treatment cost for patients with an MRSA bloodstream infection (BSI) were USD\$24,931, more than 50% greater than those with a methicillin-susceptible *S. aureus* BSI (Greiner et al. 2007). However, the patients with MRSA BSI were more likely to have been hospitalised prior to their BSI and therefore were more likely to have serious underlying conditions, which would explain in part the increased costs of an MRSA BSI.

### 3. The clinical impact of methicillin-resistance in *Staphylococcus aureus*

There is ongoing discussion regarding the clinical impact of methicillin-resistance in *S. aureus* infection. An 8 year US single-centre study published this month concludes that methicillin-resistance alone significantly increases the mortality risk

in *S. aureus* infection (except pneumonia) complicated by a BSI infection after adjusting for confounders such as age and comorbidities (Shurland et al. 2007).

#### 4. Attributable mortality of *Acinetobacter* bloodstream infection

The clinical impact of *Acinetobacter* infection remains controversial. A 3-year Israeli matched cohort study published this month found that *Acinetobacter* BSI alone is associated with increased attributable mortality compared with controls matched by age, sex, primary and secondary diagnosis, operative procedures, and date of admission (Grupper et al. 2007). However, the data are confounded by the fact that 12% of the case patients were not matched for major operative procedure and 45% for the presence of an important secondary underlying disease. Nevertheless, significantly more case patients died and the attributable mortality of *Acinetobacter* BSI was 36.5%.

#### 5. And finally...dirty letters

A letter from Chris Griffith (Griffith 2007) in the *Journal of Hospital Infection* this month criticises a 2006 study by a team in Leeds, which demonstrated that there is no consistent relationship between hospital cleanliness determined by Patient Environment and Action Team (PEAT) scores and MRSA bacteraemia rates (Green et al. 2006). Griffith highlights several weaknesses in the study, including the changes in the PEAT data collection forms and processes and the fact that PEAT is a visual assessment, which may not correlate with actual microbial contamination. In the authors' reply published in the same issue, the authors defend their analysis by re-stating their methods and objectives, and agree that 'PEAT assessments likely do not reflect levels of microbial contamination'. Regardless of the validity of the research methods used and conclusions drawn, these data do not add weight either way to the question of whether microbiological environmental contamination in hospitals contributes to the cross transmission of nosocomial pathogens.

## References

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