

Micro News

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1. Assessing MRSA recontamination following HPV decontamination

A study published in this month's *Journal of Hospital Infection* investigated the efficacy and recontamination rate following hydrogen peroxide vapour (HPV) decontamination (Otter et al. 2007). HPV decontamination virtually eradicated MRSA, VRE and Gram-negative rods (GNR) that had persisted despite terminal cleaning. When a patient colonised with MRSA and GNR was re-admitted into the room, MRSA recontamination occurred to pre-cleaning levels and GNR recontamination occurred towards post-cleaning levels within one week, although the patient was not colonised or infected with the GNR species recontaminating the environment. The findings of this study combined with a similar study published earlier this year (Hardy et al. 2007) suggest that MRSA recontamination will be rapid (with a few days) if MRSA patients are re-admitted but that Gram-negative recontamination may be less rapid. Re-admitted MRSA-positive patients need to be treated in isolation for HPV decontamination to have a sustained impact.

2. MRSA, diarrhoea and environmental contamination

Many clinical laboratories do not routinely screen for MRSA gastrointestinal colonisation. A study published from a hospital in New Haven, CT, USA, reports that patients with heavy gastrointestinal colonization with MRSA accompanied by diarrhoea contaminated their environment 2.5-fold more frequently than patients without MRSA gastrointestinal colonization but with MRSA colonization at other sites (58.8% of 80 surfaces vs. 23.3% of 60 surfaces, $P < 0.0001$ using Fisher's Exact Test) (Boyce et al. 2007). This suggests that patients with MRSA gastrointestinal colonisation and diarrhoea cause widespread environmental contamination and may require additional isolation and decontamination measures.

3. Environmental contamination in surgical settings

A study from Edinburgh investigated bacterial contamination of bed-control handsets in a colorectal surgical unit, which are touched frequently by patients and staff (Brady et al. 2007). 70 handsets were sampled and 29 (41.4%) grew bacteria known to cause nosocomial infections including MRSA from 9 (12.2%) of the handsets. Such hand-touch sites in the near-patient environment are cleaned infrequently in most hospitals and the study concluded with a call for consideration of novel or more effective cleaning and decontamination methods. A similar study in the same issue of *Annals of the Royal College of Surgeons in England* investigated contamination of MRSA-positive patients' case-notes in surgical settings (Hamza et al. 2007). MRSA was cultured from the case-notes from 3 (6%) of 50 MRSA-positive patients. No molecular typing was conducted to investigate whether the MRSA originated from the patient and swabbing was conducted without the use of broth enrichment. Nevertheless, the study demonstrates the capacity of case-notes to harbour MRSA, which could provide a secondary reservoir for transmission.

4. More healthcare-associated infections caused by CA-MRSA

Two recent studies have once again highlighted the ability of community-associated MRSA to, somewhat paradoxically, cause problems in healthcare settings. A study from Germany reports a large healthcare-associated outbreak of PVL-positive MRSA colonization affecting 11.3% of patients and staff in three long-term care facilities in 2004, which was reduced to 5.5% by 2005 through the introduction of control measures (Wagenlehner et al. 2007). The infection control measures including increased screening and decolonization therapy for affected individuals.

A study from the Birmingham, Alabama in the US, where the prevalence of CA-MRSA is high, reports that 57% of MRSA surgical site infections were caused by USA300, the predominant clone caused CA-MRSA infections in the USA (Patel et al. 2007). These studies challenge the current “definition” of CA-MRSA and we may need to consider “community-origin” or “healthcare-origin” MRSA in the future.

5. Does asymptomatic colonization with *C. difficile* matter?

In a study from Cleveland, OH in the USA, 51% of 68 patients were found to be asymptotically colonized with toxigenic *C. difficile* (Riggs et al. 2007). 59% of the environmental sites in the rooms of patients with *C. difficile* colonization were contaminated with *C. difficile* compared with 24% of sites in the rooms of patients who were not colonized. Crucially, spores on the skin of asymptomatic patients were transferred easily to the hands of researchers, suggesting that transmission from colonized patients via the hands of healthcare workers is likely. This study opens the “Pandora’s box” of whether to routinely screen patients for *C. difficile* colonization. With isolation facilities already at a premium, especially in the UK, the identification of widespread *C. difficile* colonization would place further operational strain on healthcare facilities!

6. Making a business case for infection control

A useful article published this month in *Infection Control and Hospital Epidemiology* provides a helpful step-by-step guide to making a business case for infection control. The article covers key elements of the business case including how to manage the relationship with hospital administrators, realistic cost and outcome data ascertainment and an introduction to different economic analyses to ensure that the most appropriate analysis is selected for your business case (Perencevich et al. 2007)!

7. And finally...the writing’s on the patient?

Marker pens can be used to indicate correct operative sites or mark out areas of infection. Therefore, they present a theoretic risk of cross transmission. A study from Liverpool, UK, collected 21 marker pens from the wards and sampled them by “writing” on agar (Tadiparthi et al. 2007). No pathogens were cultured but an *in vitro* experiment demonstrated that MRSA can survive on dried pen tips for more than 30 minutes. Therefore, the use of old or dried marker pens should be avoided!

References

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