

Micro News

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1. *Clostridium difficile* 027 is now predominant in the UK

An analysis of 670 *C. difficile* isolates from 186 English hospitals over 13 months reports that *C. difficile* ribotype 027 is now the predominant cause of *C. difficile* infection in England, accounting for 41.3% of the isolates (Brazier et al. 2008). Previous studies have shown an equal prevalence of types 106, 001 and 027 but in this study types 106 and 001 accounted for only 20.2% and 7.8% of the isolates, respectively. This suggests that *C. difficile* 027 is an increasingly important cause of *C. difficile* infection in England.

2. A new *C. difficile* epidemic strain?

In the previous three years, the incidence of *C. difficile* ribotype 078 has increased from 3% to 13% in the Netherlands (Goorhuis et al. 2008). Compared with *C. difficile* 027 CDI, 078 isolates affected significantly younger patients and were more frequently isolated from community-associated cases. This could be the first sign that the epidemiology of *C. difficile* is changing in the Netherlands.

3. Deaths from Norovirus, MRSA and *C. difficile* in the UK

Several recent studies have reported on the number of deaths from nosocomial pathogens in the UK. Harris et al. report that 20% of non-*C. difficile* related infectious intestinal disease deaths are attributable to Norovirus in the >65 age group, which accounts for approximately 40 deaths per month (Harris et al. 2008). The number of death certificates mentioning MRSA rose from 2003-2006 has fallen slightly from 1652 in 2006 to 1593 in 2007, reflecting the national success in reducing MRSA bacteraemias (2008b). In contrast, the number of death certificates mentioning *C. difficile* continues to increase, rising from 6480 in 2006 to 8324 in 2007 (2008a).

4. MRSA carriage by children, farmers, soldiers, emergency department healthcare workers and criminals

A plethora of articles have been published over the last few months on MRSA carriage by various population subsets. The prevalence of MRSA colonisation varied from:

- 30% of 50 pig farmers in Holland (VAN, IV et al. 2008).
- 16% of 602 individuals arrested in Baltimore, Maryland, USA (Farley et al. 2008).
- 15% of 105 healthcare workers in an emergency department in Las Vegas (Bisaga et al. 2008) and 4% of 225 healthcare workers in an emergency department in Pittsburg (Suffoletto et al. 2008).
- 3% of 123 uninfected children in Greece (Sdougkos et al. 2008). In the same study, 56% of 170 *S. aureus* infections in Greek children were methicillin-resistant.
- 2% of 1721 healthcare workers in contact with veal calves in Holland (Wulf et al. 2008).
- 1% of 959 healthy members of the Greek air force (Karapsias et al. 2008).

The finding of MRSA colonisation in 30% of pig farmers in Holland and 15% of healthcare workers in one US emergency department is of great concern, indicating that community associated strains are becoming increasingly established.

5. How clean is clean?

A study from Scotland used complementary microbial hygiene standards to monitor cleaning efficacy on two wards (Dancer et al. 2008). One standard was a total aerobic count (TAC) <2.5cfu/cm² and the other was the absence of *S. aureus*. Beds / hoists, bedside lockers and overbed tables were the most frequently contaminated items, TAC counts >2.5cfu/cm² and the finding of *S. aureus* were correlated and the frequency of hygiene failure was associated with bed occupancy. This useful study helps to calibrate cleaning and decontamination requirements.

6. MRSA contamination of ointments and keyboards

Two studies in the same issue of the *Journal of Hospital Infection* have identified bacterial contamination in different hospital settings. A Japanese study investigated bacterial contamination of keyboards by anaesthetists (Fukada et al. 2008). While most of the contamination was not with nosocomial pathogens, MRSA was cultured from four of the keyboards. Bacteria were readily transmitted from gloves to keyboards and visa versa. In another study, 101 ointments from 19 MRSA-positive patients were sampled for MRSA (Grif et al. 2008). 6% of the ointments were contaminated with MRSA and although they were used on only one patient, the contaminated ointments could be a reservoir for cross transmission or for reinfection of the same patient.

7. PVL is not a virulence determinant in mice

The debate on the role of the Panton-Valentine leukocidin in the pathogenesis of *S. aureus* continues. Following studies suggesting that PVL does or does not play a role in the virulence of *S. aureus* in various animal models (Labandeira-Rey et al. 2007;Voyich et al. 2006), a convincing study demonstrates that PVL is not a virulence determinant in mouse models of *S. aureus* disease (Bubeck et al. 2008). However, there is undoubtedly an epidemiological association between successful community-associated MRSA lineages and PVL so the reason for this remains a hot research topic.

8. And finally...are you scared of needles...?

An outbreak of invasive MRSA infection occurred in 7 patients in Western Australia in May 2004; an eight case was subsequently identified retrospectively. All cases were eventually traced to a medical practitioner practising acupuncture who was colonised with EMRSA-15 (Murray et al. 2008)! This case highlights the need for infection control in all healthcare settings.

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