

MRSA and Dental Health-Care Settings (1/12)

Petti S, Polimeni A. Risk of methicillin-resistant *Staphylococcus aureus* transmission in the dental healthcare setting: a narrative review. *Infect Control Hosp Epidemiol* 2011;32:1109–1115.

Information on the risk of methicillin-resistant *Staphylococcus aureus* (MRSA) infection transmission in dental health-care settings was incomplete only few years ago; therefore, MRSA infection control guidelines were mostly based on data extrapolated from other fields. Recently, publications of specific studies have made it possible to review such risk. The authors completed a comprehensive literature review of studies of MRSA infection in dentistry and assigned them into the following categories: direct evidence: documented cases of MRSA transmission in dentistry; indirect evidence: carriage rates among dental health-care personnel (DHCP) and patients (high carriage rates suggest that transmission is likely); speculative evidence: MRSA occurrence in the dental environment (high environmental contamination probably increases the risk of infection); and speculative



Source: Public Health Image Library (PHIL)

evidence: MRSA carriage in human dental plaque and saliva (oral carriers may spread MRSA in the environment during dental therapy, with consequent environmental contamination and probable increased risk of infection). The authors found that transmission has been confirmed during surgical interventions, particularly in surgical units and among head and neck cancer patients. Carriage rates among DHCP were lower than those among other health-care personnel. Carriage rates among adult patients were low, whereas among pedodontic and special care patients rates were higher than those in the general population. Finally, MRSA has been detected in the environment of emergency and surgical units and in dental hospitals. Some individuals in poor general condition were oral MRSA carriers. **The occupational risk of MRSA infection among DHCPs is minimal. Among special patients (e.g., special care, hospitalized, and cancer patients) the risk of infection is high, whereas among the remaining patients undergoing conventional therapy such risk is probably low.**

DECS Comment: Methicillin-resistant *Staphylococcus aureus* is a type of bacteria that is resistant to certain antibiotics. This type of bacteria causes "staph" infections that are resistant to treatment with usual antibiotics. MRSA was first isolated in 1961, only two years after the introduction of methicillin into clinical practice, in the United Kingdom. There have only been two reports of MRSA infection among dental patients—one confirmed and one suspected. The first case occurred over 20 years ago and was caused by dentist in the United Kingdom who did not wear gloves. This could not happen these days because the large majority of DHCP worldwide have adopted the practice of wearing single-use gloves. The other cases of demonstrated or suspected MRSA infection or colonization occurred during oral or maxillofacial surgery and in hospitalized patients who exhibited poor overall health. In Japan, after implementing the use of single-use barrier covers on lights, headrests, instrument tables, suction, and chair control switches and surface disinfection there were no reports of patients becoming MRSA carriers. The literature review ranging from 1999 to 2010 did not find any studies describing cross-infection, including MRSA infection, among British DHCP. In summary, the lack of cases of transmission of MRSA to DHCP in dental health-care settings along with the reported low MRSA carriage rates among DHCP, suggest that the occupational risk of MRSA infection among DHCP is probably minimal. Transmission of MRSA is a cause of concern among DHCP and patients, however this review suggests that control of MRSA infection is achievable and requires a few simple infection control measures.

Selected References and Additional Resources

- Klevens RM, Gorwitz RJ, Collins AS. Methicillin-resistant *Staphylococcus aureus* a primer for dentists. *J Am Dent Assoc* 2008;139:1328–1337.
- Siegel JD, Rhinehart E, Jackson M, Chiarello L and the Healthcare Infection Control Practices Advisory Committee. Management of multidrug-resistant organisms in healthcare settings, 2006.
- Siegel JD, Rhinehart E, Jackson M, Chiarello L, and the Healthcare Infection Control Practices Advisory Committee. Guideline for isolation precautions: preventing transmission of infectious agents in healthcare settings, 2007.