

O597

Abstract (oral session)

Nosocomial transmission of community-associated methicillin-resistant *Staphylococcus aureus* in Danish hospitals

D.J. Hetem*, H. Westh, K. Boye, J.O. Jarløv, M.J.M. Bonten, M.C.J. Bootsma (Utrecht, NL; Copenhagen, DK)

Objective: The emergence of community-associated methicillin-resistant *Staphylococcus aureus* (CA-MRSA) has changed the epidemiology of MRSA infections worldwide. In contrast to hospital-associated MRSA (HA-MRSA), CA-MRSA more frequently affects healthy individuals, both with and without recent healthcare exposure. Despite obvious epidemiological differences, it is unknown whether differences in nosocomial transmissibility exist. We have, therefore, quantified transmissibility, expressed by the single admission reproduction number, RA, of CA-MRSA and HA-MRSA in hospital settings in Denmark. **Methods:** MRSA index cases and secondary cases were investigated in four hospitals in the Copenhagen area. Index cases were defined as non-isolated, non-screened patients with MRSA, and secondary cases were defined as persons carrying MRSA isolates – identical to that of the corresponding index – as identified through contact screening. CA-MRSA and HA-MRSA were categorized upon genotyping (CA-MRSA: t008-ST8, PVL+; t019-ST30, PVL+; t127-ST1, PVL+; t044-ST80, PVL+ and their related spa-types; HA-MRSA: all other). A mathematical model based on the queueing theory was applied to determine the genotype-specific transmission rate (RA) of CA-MRSA and HA-MRSA strains. **Results:** During the 7 year study period there were 117 MRSA-index cases with subsequent post-contact screenings (of 1,108 patients and healthcare workers), revealing 22 outbreaks with a total of 52 secondary patients. RA values were 0.07 (95% CI 0.00-0.28) and 0.65 (95% CI 0.48-0.84) for CA-MRSA and HA-MRSA, respectively. **Conclusion:** In four Danish hospitals the nosocomial transmission rate of CA-MRSA was 9.3 times lower than that of HA-MRSA.