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Abstract (oral session)

A pre-post intervention study of rapid polymerase chain reaction (PCR) screening for methicillin-resistant *Staphylococcus aureus* (MRSA) and methicillin-sensitive *Staphylococcus aureus* (MSSA) in a UK teaching hospital

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Objectives: Mandatory surveillance of hospital admissions for methicillin resistant (MRSA) and methicillin sensitive *Staphylococcus aureus* (MSSA) was introduced in England sequentially from 2008. In 2007-08, Blackpool Teaching Hospitals NHS Foundation Trust (BTH) had a 54% excess of cases of MRSA bacteraemia, 40 cases compared to the target 26 cases. To drive reductions in hospital acquired infections (HAIs), BTH conducted a pilot study of PCR screening of all emergency admissions for MRSA during 2008-09, and adopted this as regular service from April 2009. Screening of elective admissions continues, according to existing policy, using chromogenic agar culture. In 2010 PCR screening for MSSA of surgical admissions through A&E was introduced. Regression analyses are being undertaken comparing pre- and post-intervention periods to understand the relative contributions of the new PCR screening approach and other potential explanatory variables, to changes in the patterns of HAI and associated outcomes. **Methods:** An uncontrolled before and after intervention study in a large acute care teaching hospital of PCR screening for MRSA and MSSA, with accompanying infection prevention measures including an HAI awareness campaign, hand hygiene measures and mandatory staff training on infection prevention. MRSA and MSSA infection data cover all inpatient admissions to BTH, serving a local population of 440,000 and 12 million annual holiday makers. Data for analysis were linked and compiled from BTH administrative and laboratory databases. Regression models are employed to analyse the impact of the PCR screening measures, controlling for other variables including patient demographics, on rates of MRSA and MSSA HAIs and hospital length of stay. **Results:** MRSA infection rates were 4.1 (95% CI: 3.7, 4.5), 2.8 (CI: 2.5, 3.1) and 1.0 (CI: 0.8, 1.2) per 1000 hospital admissions for the pre-intervention period, after the pilot study and at 4 years, respectively. This represents reductions of 31.3% (95% CI: 20.7, 40.5) and 76.4% (95% CI: 70.5, 81.1) in the MRSA infection rate compared to the base period. Regression analyses of MRSA and MSSA infection data are ongoing and will be reported at congress. **Conclusion:** Preliminary analyses indicate rapid PCR screening for MRSA alongside other infection prevention measures at BTH contributes to major reductions in MRSA infections.