

MSSA reduction strategies in a Paediatric Cardiothoracic Transplant Unit, Newcastle upon Tyne Hospitals NHS Foundation Trust

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Introduction

Surgical site infection (SSI) is a common postoperative complication in children undergoing cardiothoracic surgery with SSI rates varying between 0.5-6% according to the National Nosocomial Infection Surveillance System¹ (US Figures - there is currently no UK wide national surveillance for these types of infections, however some centres engage in local surveillance).

In the paediatric cardiothoracic department various infection prevention initiatives are in place including; MSSA screening programme for ventricular assisted devices followed by eradication, the introduction of Octenisan washes throughout inpatient stay, theatre surveillance audits and device management audits. However, concerns were raised of a perceived increase in sternal wound infections in the unit.

Method

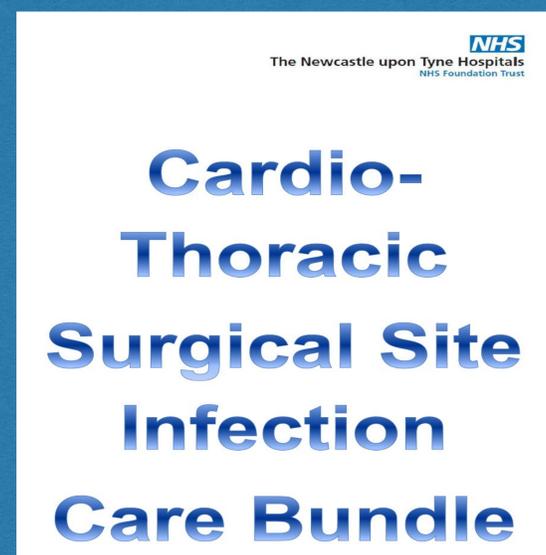
Prospective microbiological surveillance was undertaken, along with a review of infection control practices, to help evaluate the problem and determine if any interventions were warranted. During March 2018, using the microbiology laboratory information system, data was collected prospectively for all patients with a sample collected from sternotomy or thoracotomy wound.

The Infection Prevention and Control team also conducted a review of clinical practice, theatre environmental audit, echo probe cleaning and introduced the SSI bundle. After the implementation of changes, repeat surveillance was carried out during July 2018.

Figure 1. Photographs of example case of surgical sternal skin and soft tissue infection



Figure 2. Surgical Site Infection Care Bundle

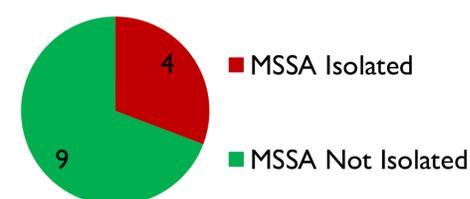


Results

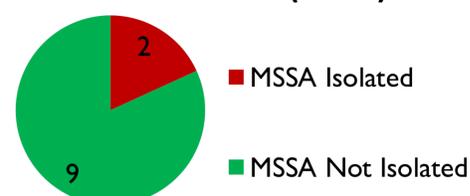
During March 2018, MSSA was isolated from 4 of 24 samples, which corresponded to 4 of 13 patients (31%). From the infection control review, key issues for improved practice included the appropriate decontamination of echo probes and the need to introduce local guidelines to manage post-operative wounds. A cardiothoracic surgical site infection care bundle was adopted which included guidance on good practice pre-operatively (including Octenisan washes), intra-operatively (including antibiotic prophylaxis, skin prep with 2% Chlorhexidine in 70% alcohol and glycaemia control) and post-operative wound care.

Follow up surveillance was undertaken after instigation of the care bundle. During July 2018, 31 relevant sternal samples were received from 11 patients. MSSA was isolated from 3 of 31 samples which corresponded to 2 of 11 patients (18%).

Pre- intervention: MSSA Isolation (cases)



Post-intervention: MSSA Isolation (cases)



Discussion

Although small numbers in the study, the introduction of a surgical care bundle may have had a positive impact in reducing post-operative MSSA site infection and was felt to complement our existing strategies. Key areas that continue to be monitored and developed include; IV device management, review of Matching Michigan data, use of simulation in improving IPC practice and addressing competency for carers involved in direct wound care.