Reduction of Surgical Site Infections in Children undergoing Cardiac Surgery
T. Witter, R. Christodoulou, J. Shoshan, L. Chiwera, D. Anderson, C. Austin, A. Bell
Evelina Children’s Hospital, Guy’s and St Thomas’ Hospital, London, UK

Introduction
Surgical site infections (SSI’s) are a significant cause of post operative morbidity. This can result in prolonged hospital stay, reoperation or systemic sepsis including endocarditis. We describe a successful strategy to reduce surgical site infection in our institution.

Methods
A prospective rolling audit of surgical site infections, as defined by Health Protection Agency (HPA) criteria, has been ongoing since 2008 in our institution. The first years (October 2008 – November 2009) findings revealed an unacceptably high rate of surgical site infections. After multidisciplinary team review a four step plan to reduce SSI’s was devised and implemented. This consisted of: an education program for all staff; revision of wound care guidelines; pre-operative skin preparation with octenidine wash* and nasal mupirocin; and the introduction of a Biosynthetic cellulose & polyhexamidine dressing**. Infection rates pre and post intervention were compared.

Results
From October 2008 to November 2009 a total of 447 paediatric cardiac surgical procedures were performed with 44 SSI’s (9.84%). The predominant causative organism was staphylococcus aureus 9/44 (20.45%). SSI’s that met HPA criteria but were culture negative accounted for 17/44 (39.18%) of patients.

In the period following these interventions (December 2009 – June 2011) 33 SSI’s were identified from 628 operations indicating a reduction in the rate to 5.25% (p= 0.004). The predominant organism remained Staphylococcus Aureus 4/33 (12.12%) with culture negative SSI’s accounting for the largest proportion of cases 23/33 (67%).

Conclusion
We have shown that robust audit in conjunction with a structured program of interventions can result in a significant improvement in the rates of Surgical Site infections in this particularly high risk group.

* Octensian – Schuke-Mayer
** Suprasorb X & PHMB – Lohmann & Rauscher