

Reduction of Surgical Site Infections in Children undergoing Cardiac Surgery

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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 & polyhexanide dressing**. Infection rates pre and post intervention were compared

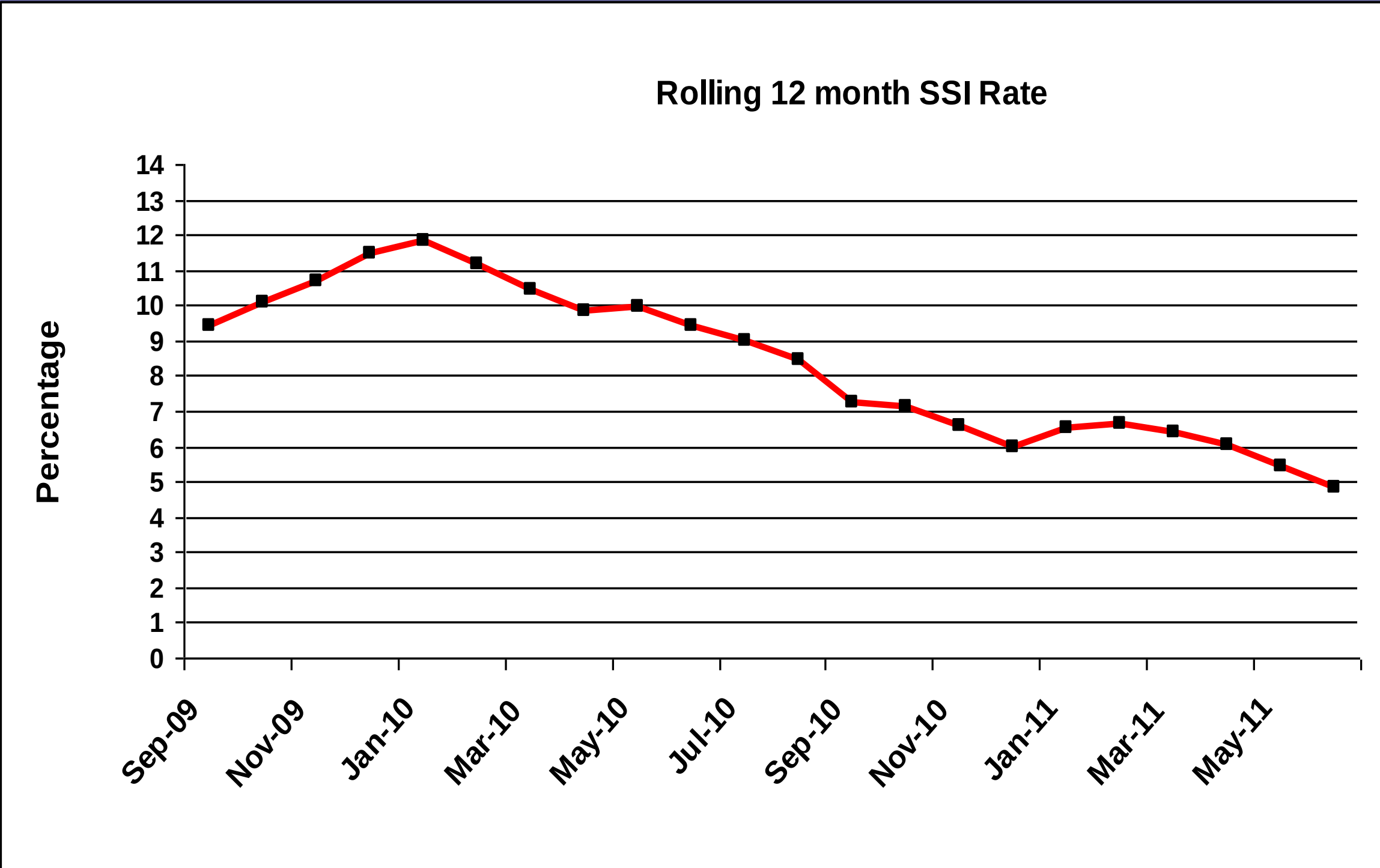
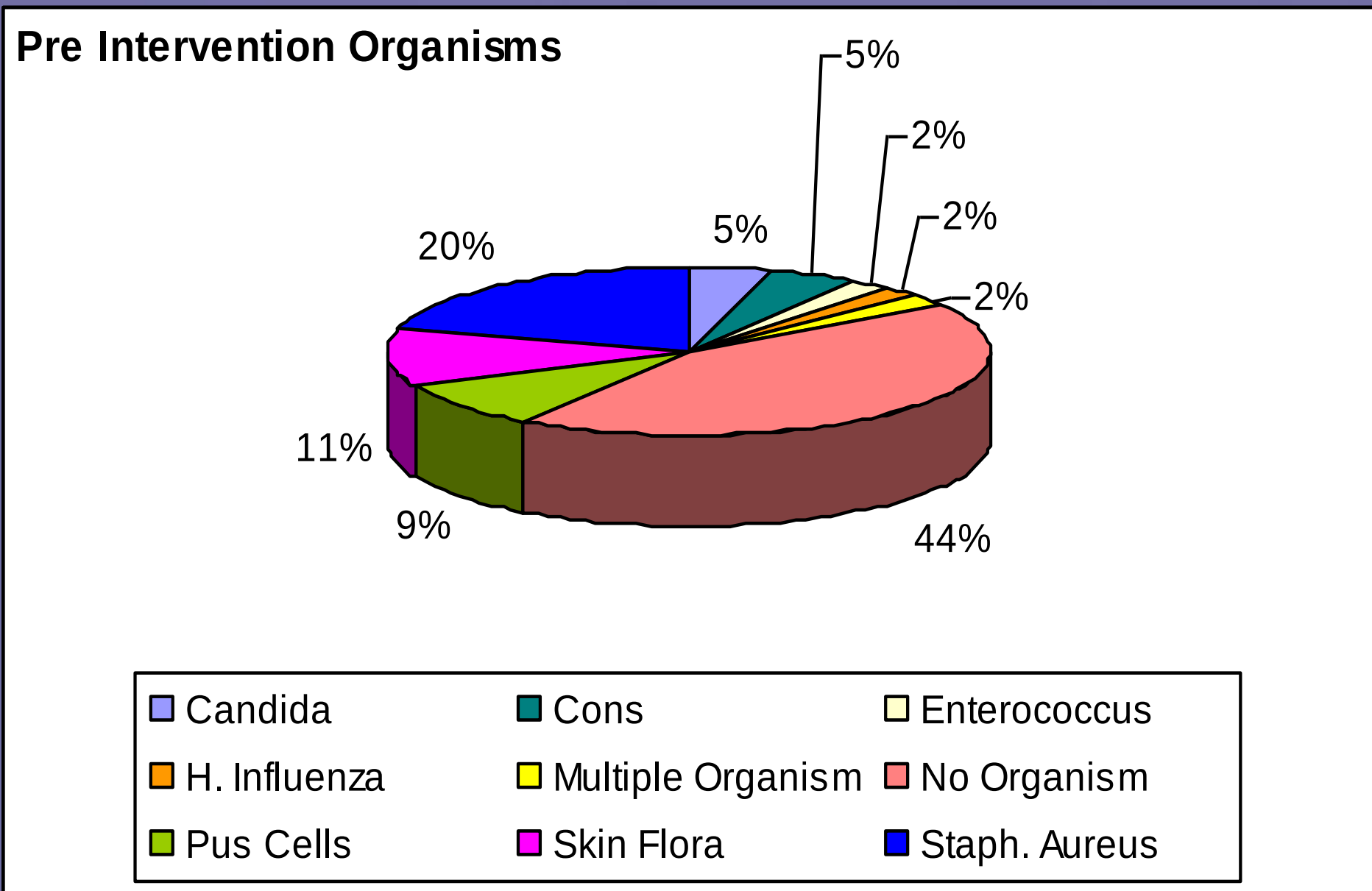


Figure 1 – A rolling 12 month graph depicting SSI percentage rates up to June 2011

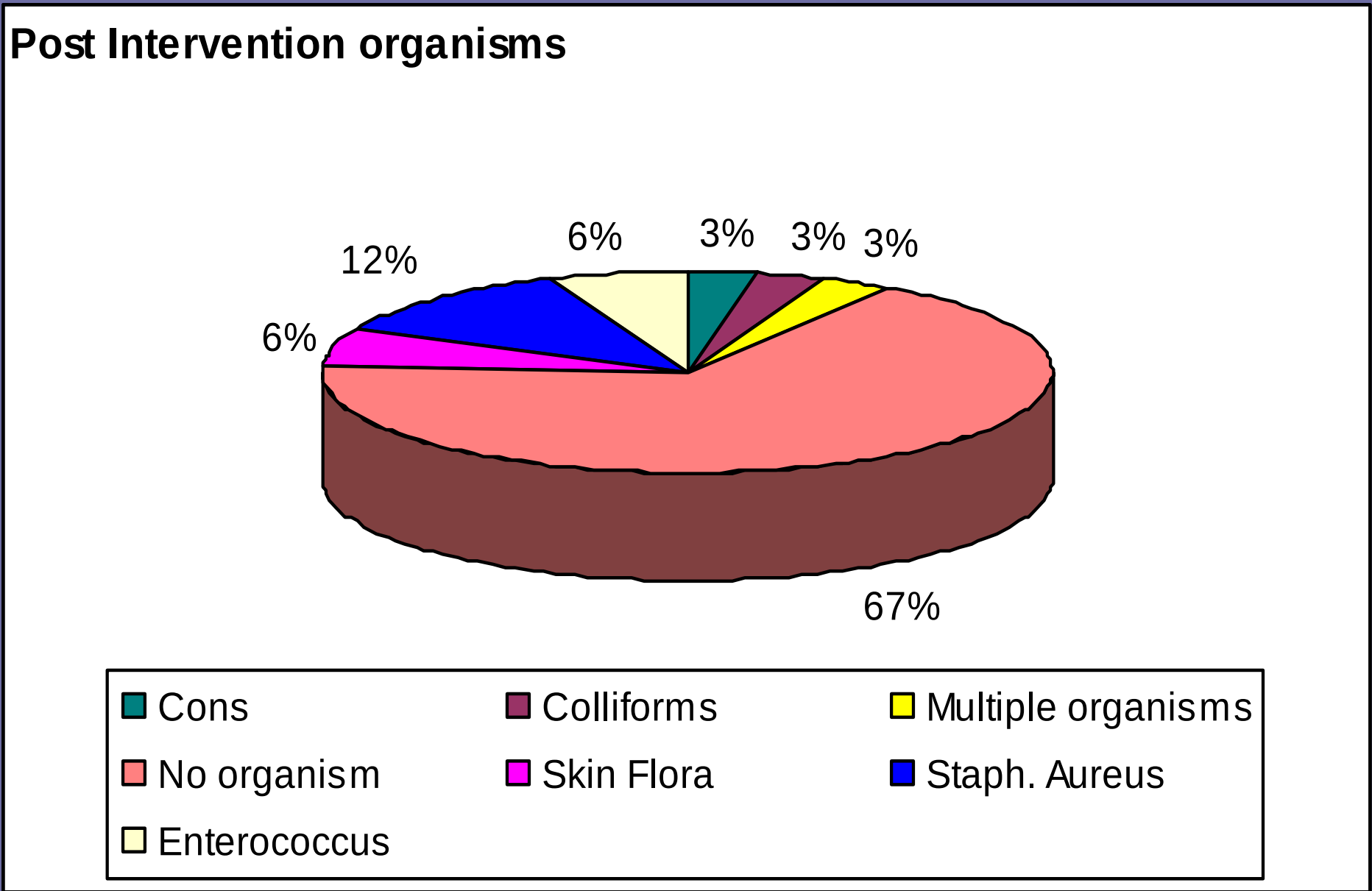
* Octensian – Schulke-Mayer
** Suprasorb X & PHMB – Lohmann & Rauscher

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 (43.18%) 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.