



## **Reducing Surgical Site Infections (SSIs) in Paediatric Scoliosis Surgery: A Multidisciplinary Improvement Program and 8-year Audit of 1210 patients.**

Jonathan Lucas, Adil Ahmad, John Wong, Mark Harris, Tom Ember. Evelina London Children's Hospital. Guys and St Thomas' NHS Foundation Trust, Richard Pinder. Imperial College London, London, United Kingdom

### **Background**

In 2013, the institution's paediatric scoliosis corrective surgery service recorded a spike in its SSI rate of 8.6%. As a consequence, a multidisciplinary review was undertaken to develop a more comprehensive SSI prevention protocol.

### **Methods**

A prospective audit of post-operative SSIs within 3 months following paediatric spinal deformity corrective surgery in Idiopathic (IS) and Neuromuscular/Congenital (NM) patients, excluding growing rod constructs, between January 1, 2014 and January 1, 2022 following introduction of a specific multidisciplinary derived anti-septic protocol. This included pre and peri-operative skin decontamination, antibiotic prophylactic, haemostatic regimes with additional wound specific antiseptic strategies.

### **Results**

591 Idiopathic scoliosis patients underwent 619 operative procedures. The mean age was 15.24 years (range 10.10 to 21.86 yrs) with Male to female ratio of 1:3.31. 2 patients had an SSI giving a SSI rate of  $2/591 = 0.34\%$ . The organisms were staphylococcus aureus and Acinetobacter funii. 228

Neuromuscular/Congenital patients underwent 237 procedures. The mean age was 14.65 years (range 2.58 to 21.78 yrs) with a male to female ration of 1:1.10. 9 patients had an SSI, giving a SSI rate of 3.95%. 8 different organisms were identified of which 6 were gram negative, in 2 cases, no specific organism was able to be determined.

## **Conclusion**

A multidisciplinary approach with a standardized protocol adopted by all surgeons significantly reduced SSIs in the unit's pediatric scoliosis surgeries and is comparable to the very best reported SSI rates in the literature. Such a continuous evidence based surgical pathway improvement plan and audit improves patients outcomes and is almost certainly cost effective.