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Safety

IN SPINE SURGERY SUMMIT

Transforming Patient Care and Optimizing Outcomes

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E-POSTER #10

The Feasibility and Merit of a Surgeon-Driven Shareable Electronic Checklist System for Scoliosis Spine Surgery Safety: A Multi-Site POSNA-Funded Pilot Quality Improvement Project

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INTRODUCTION: The use of checklists to improve safety by establishing standard workflow is well accepted in aviation and manufacturing. While healthcare has embraced the use of checklists, these are often paper-based and not tailored to needs. This study examines whether it is possible for surgeons to develop and use an electronic checklist (eChecklist) system during the preparation and performance of pediatric scoliosis spine surgery, and to assess the merit of the intervention for the teams via surveys.

AIMS/OBJECTIVES: 1. Determine if eChecklists are feasible to develop and implement amongst a group of pediatric spine surgeons across the United States. 2. Examine the perceived benefit to the surgeon and team using surveys before and after the first six months of the intervention

METHODS: Surgeons and their teams trained on the eChecklist software by running the World Health Organization surgical safety checklist over several weeks. Once comfortable they were allowed to develop and execute their own checklists and share them. Surveys were created using a collection of previously validated instruments and input from professionals in the field to assess team dynamics, satisfaction, and knowledge and opinions about checklists. Surveys were then administered to ten surgeons before (pre-intervention) and six months into the implementation of the eChecklist system (post-intervention). Bivariate analyses assessed potential change which included the calculation of aggregate scores for each domain. Grouped ANOVA tests were performed on the response data to assess whether or not the post-intervention group had any significantly different scores to the baseline established using the pre-intervention survey results.

RESULTS: 100% of surgeons were able to create their own surgical checklists, and execute them. There were 59 pre-assessment, and 13 post-assessment survey responses. There was a positive change of Aggregate Team Dynamics and Cooperation Score, which rose from 27.86 pre-intervention to 31.08 ($p< 0.002$), with three out of the four individual Team Dynamics and Cooperation scores also significantly improved ($p< 0.012$)

CONCLUSIONS: 1. It is feasible to implement eChecklists for surgeons to use in the operating room. 2. Use of eChecklists had a significant positive impact on team dynamics and cooperation. This electronic checklist system, continually improved by a diversity of surgical teams input has the potential to become a highly reliable and universal system to improve team dynamics and patient safety in surgery.