

Designated Spine Anesthesia Teams Improve Perioperative Outcomes for Complex Scoliosis

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INTRODUCTION:

Prior studies have demonstrated the benefits of dedicated anesthesia teams that focus on specific patient populations. In June 2020, our institution developed a designated anesthesia team for all pediatric spinal deformity surgery. We hypothesized that Designated Spine Anesthesia Teams (DSATs) would decrease time under anesthesia and improve perioperative care for our complex spine patients.

METHODS:

All pediatric patients who underwent a spinal fusion between June 2016 to June 2024 with a planned postoperative stay in the intensive care unit (ICU) were included in our retrospective analysis. This comprised 4 years before and after DSAT implementation.

RESULTS:

Chart review identified 204 spine patients with a planned post-operative ICU admission (88 patients pre-June 2020 DSAT implementation and 116 patients post-June 2020 DSAT implementation). DSATs led to significant enhancements in surgical efficiency and perioperative process measures including a reduction in average total anesthesia time by 41 minutes ($p = 0.01$) and decreased allogenic blood transfusion volume by approximately half (721 cc pre-DSAT vs 417cc post-DSAT, $p < 0.001$). There was no significant difference in demographics, preoperative radiographic findings, or procedures performed between the two cohorts.

DISCUSSION AND CONCLUSION:

DSATs significantly improved perioperative delivery of care for pediatric complex spinal deformity patients. Dedicated teams allow standardization and streamlining of intricate processes, ultimately benefiting our patients through a more refined approach to complex care.

	Pre (N=88) Mean (SD)	Post (N=116) Mean (SD)	p-value
Total Operation Time (min)	463.5 (112.4)	428.4 (117.1)	0.032*
Arrival at Preop Front Desk to Prep Handoff Complete (min)	94.2 (27.4)	85.7 (27.2)	0.038*
Anesthesia Start to Anesthesia Ready (min)	63.1 (31.8)	52.1 (23.1)	0.007*
Procedure Finish to Anesthesia Finish (min)	53.2 (19.1)	49.8 (15.8)	0.181

