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Two Adolescent Idiopathic Scoliosis (AIS) Cases, Two Surgeons, One Operating Room, One Day. Faster and Safer Than One Case in a Day.

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Background

- The Orthopaedic Department developed a QI initiative to increase value by decreasing surgery times for AIS patients undergoing posterior spinal instrumentation and fusion (PSIF).

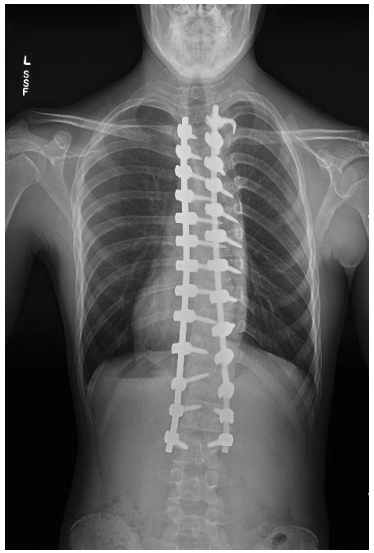
Methods

- 2017-2023, ages 10-18 years, AIS patients
- "Two Spine Tuesday" group (2 Spine group)
- Compared to sex/age-matched single cases by single surgeon over the same time period (1 Spine group)
- Compared time to incision, surgery time, total OR time, and blood loss.

Results

	Demographics	Age	Preoperative Cobb Angle	Number of Levels Fused	Revision Surgery
Two Spine	73% Female	15.2 ± 1.8	60 ± 13	10.5 ± 2.2	1 (1.8%)
One Spine	73% Female, p=1.0	15.1 ± 1.7, p=0.8	57 ± 10, p=0.2	10.3 ± 2.8, p=0.7	3 (5.4%), p=0.2

Variable	Two Spine n = 56	One Spine n = 56	p-value
In room to incision, mean ± SD	65 ± 10	76 ± 13	<0.001
Surgery stop to out OR, mean ± SD	16.9 ± 6.1	22.1 ± 12.8	0.047
Surgery time, mean ± SD	208 ± 41	298 ± 64	<0.001
Total OR time, mean ± SD	292 ± 53	396 ± 64	<0.001
EBL (mL), median (range)	400 (100-1600)	524 (60-2340)	0.02
% blood loss, median (range)	10.5 (2.8-52)	13.5 (1.4-50)	0.08
Cell saver, median (range)	77.5 (0-470)	96 (0-615)	0.9
Transfusion, median (range)	0 (0-320)	0 (0-786)	0.7
90-day readmission, n(%)	0 (0%)	0 (0%)	1.0
Achieved MCID, n(%)	16 (52%)	25 (61%)	0.43



Conclusion

- Performing 2 AIS case in one OR by 2 surgeons in the same day significantly reduced various surgical times
- Surgery times and blood loss can improve with this practice model, which may decrease complications and lower costs
- Using the estimate that each minute in the OR costs $200, performing PSIF on "Two Spine Tuesday" saves up to $20,000 per case in OR costs
- Over the course of this project, "Two Spine Tuesday" has saved the hospital an estimated $1,120,000 based on improvements in OR time alone

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