Pediatric Orthopedic Trauma at a Level II Trauma Center: Benefits of Coverage by Traumatologists *Dietrich W. Riepen, MD; Joseph Gardner, BS; Pierce Johnson, MD; Peter Althausen, MD, MBA* 

**Purpose:** Our objective was to compare implant costs and case duration of pediatric trauma cases performed by fellowship-trained orthopaedic traumatologists versus fellowship-trained pediatric orthopaedists.

**Methods:** In this retrospective analysis at a Level II trauma center, trauma cases involving patients age 18 years or younger were identified over a 20-month period (January 2023 to August 2024). Cases by four traumatologists were compared with similar cases by two pediatric orthopaedists. Case types were deemed similar if they had the same CPT code and similar fracture type, means of reduction, and manner of fixation. Mean implant costs and case duration (incision to closure) were compared using two-tailed t-testing.

**Results:** In total, 307 pediatric trauma cases were identified (246 by traumatologists and 61 by pediatric orthopaedists). Details of the 12 similar case types are shown in Figure 1. For 9 of 12 case types, traumatologists had lower implant costs and shorter case duration. When average implant costs are combined, trauma surgeons used implants that were 52% less expensive than pediatric surgeons. Pediatric surgeons also took 35% longer than trauma surgeons, on average, for these 12 case types. Unplanned reoperation rates were similar.

**Conclusion:** For comparable pediatric trauma cases, traumatologists completed cases 26% faster with 52% less expensive implants than pediatric orthopaedists. Pediatric trauma coverage by traumatologists may improve hospital resource allocation, improve operating room utilization, and financially benefit patients and the healthcare system.

Case Type	Trauma volume	Pedi volume	Trauma Average Implant Cost (per case, \$)	Pedi Average Implant Cost (per case, \$)	Percentage Difference (trauma/ped s)	p-value	Trauma Average Case Duration (mins)	Pedi Average Case Duration (mins)	Percentage Difference (trauma/peds )	p-value
Supracondylar Humerus CRPP	60	7	7	8	88	0.833	19	29	66	0.249
Radius or Ulna Shaft ORIF (per bone)	27	5	612	749	82	0.077	36	43	84	0.079
Ankle ORIF	22	9	490	693	71	0.368	43	51	84	0.292
Distal Radius CRPP	19	11	5	3	167	0.012	17	21	81	0.228
Tibia IMN	15	2	1087	3815	28	0.436	55	83	66	0.009
Slipped Capital Femoral Epiphysis CRPP	5	6	219	415	53	0.105	34	31	110	0.755
Medial Epicondyle ORIF	4	6	49	328	15	0.02	32	50	64	0.098
Lateral Condyle ORPP	6	1	5	4	125	0.35	41	31	132	0.082
Distal Femur ORIF	5	1	1053	1958	54	0	79	81	98	0.36
Tibial Tubercle ORIF	5	1	1008	1232	82	0.069	40	69	58	0
Femur Shaft IMN (elastic nails only)	3	1	329	325	101	0.171	44	38	116	0.269
Proximal humerus ORPP	1	1	26	650	4	0	27	103	26	0
TOTALS:	172	51	4916	10180	48%		467	630	74%	2
Unplanned	9/172,	4/51,								

Unplanned 9/172, 4/51, Reoperation Rate 5.2% 7.8% p = 0.50