The Percentage of Sacroiliac Fusions Done in the U.S. by Non-Surgical Specialties Has Increased

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INTRODUCTION: Surgical fusion of the sacroiliac (SI) joint is often performed to manage chronic lower back or buttock pain. When Current Procedural Terminology (CPT) codes were introduced, SI joint fusion procedures were done primarily by orthopaedic surgeons and neurosurgeons. The purpose of this study was to utilize CPT codes to examine which specialties have been billing for surgical SI joint fusions.

METHODS:

A retrospective cohort study was conducted using the PearlDiver database. The database was queried using CPT codes to identify patients who underwent SI joint fusion via percutaneous, open, or trauma codes. Specialties queried included surgical specialties (orthopaedic surgery and neurosurgery) and non-surgical specialties (PM&R, neurology, anesthesiology, pain medicine). Total number and number per year of SI joint fusion procedures were identified for each specialty group. Trends of SI fusion was compared between surgical specialties and non-surgical specialties.

RESULTS:

Comparing 2015 and 2021, the SI fusion codes submitted across all three groups (percutaneous, open, and trauma) increased for non-surgical specialties compared to surgical specialties. Between 2015 and 2021, the total number of percutaneous procedures submitted by all specialties increased by 294%, while the number of procedures being submitted by non-surgical specialties increased by 25,050%.

DISCUSSION AND CONCLUSION:

Our study demonstrated how quickly and to what degree the procedure market can react to higher work RVU value codes. Despite requiring less overall time and utilizing an intra-articular rather than a transfixing approach, non-surgical specialties submitted the same CPT code as surgical specialties performing the transfixing procedure at an increasing rate during the study period. With the introduction of new technologies to perform SI fixation and a new code to capture the intra-articular procedure, future studies could examine whether the number of SI fusion procedures performed by the various physician specialties stabilizes over time.

Figure 1: Pie Charts Comparing Percutaneous SI Codes Submitted by Surgical and Non-Surgical Specialties in 2015 versus 2021

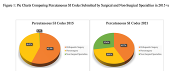

Table 2: Contingency Table of SI Fusion Codes Submitted

	Surgical Specialties (Orthopaedic Surgery & Neurosurgery)	Non-Surgical Specialties (Anesthesia, Pain, PM&R, & Neurology)	Aggregate
PERCUTANEOUS			
2015	928 (99.6%)	4 (0.4%)	932
2021	2,670 (72.6%)	1,006 (27.4%)	3,676
OPEN			
2015	675 (99.4%)	4 (0.6%)	679
2021	971 (95.1%)	50 (4.9%)	1,021
TRAUMA			
2015	831 (99.9%)	1 (0.1%)	832
2021	1318 (99.3%)	9 (0.7%)	1,327
ALL CODES			
2015	2,434 (99.6%)	9 (0.4%)	2,443
2021	4,959 (82.3%)	1,065 (17.7%)	6,024

*PM&R, Physical medicine and rehabilitation

Table 3: Work RVU by CPT Codes for 2015 and 2021

CPT Code	Short Description	2015 Work RVU	2021 Work RVU
PERCUTANEOUS			
CPT-27279	Arthrodesis Sacroiliac Joint	9.03	12.13
OPEN			
CPT-27280	Fusion of Sacroiliac Joint	14.64	20.00
TRAUMA			
CPT-27216	Treat Pelvic Ring Fracture	15.73	15.73
CPT-27218	Treat Pelvic Ring Fracture	20.93	20.93

* RVU, Relative Value Unit; CPT, Current Procedural Terminology

https://www.dol.gov/agencies/owcp/regs/feeschedule/fee Accessed 01/10/2024

Figure 2: Trend of SI Fusion Codes Submitted by Specialty Over Time

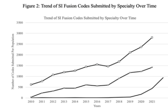

Figure 3: Pelvis Cross Section Showing Transfixing versus Non-Transfixing Devices

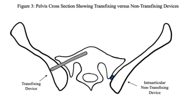

Table 1: Medical Comorbidities for all SI fusion codes in Surgical vs. Non-Surgical Specialties

	Surgical Specialties (Orthopaedic and Neurosurgery) n = 29,280		Non-Surgical Specialties (Anesthesia/Pain/PM&R/Neurology) n = 2,160		
Variable	*Count*	*%*	*Count*	*%*	*P-value*
Mean age in years (range)	53 (3 to 84)	--	63 (23 to 84)	--	**<0.001**
ECI, mean (range)	4.9 (0 to 24)	--	7.7 (0 to 25)	--	**<0.001**
Gender (Male)	11,289	38.6	626	29.0	**<0.001**
Obesity	12,129	41.4	1,143	52.9	**<0.001**
Diabetes	9,857	33.7	988	45.7	**<0.001**
Hypertension	19,521	66.7	1,786	82.7	**<0.001**
COPD	9,846	33.6	870	40.3	**<0.001**
Chronic Kidney Disease	4,203	14.4	501	23.2	**<0.001**
CAD	7,062	24.1	734	34.0	**<0.001**
Rheumatoid Arthritis	1,544	5.3	179	8.3	**<0.001**

*Bolded P-values indicate statistically significant results. PM&R, Physical medicine and rehabilitation; ECI, Elixhauser comorbidity index; COPD, Chronic obstructive pulmonary disease; CKD, Chronic kidney disease; CAD, Coronary artery disease