ALGORITHMS TO ENHANCE SPECIFICITY OF FRACTURE IDENTIFICATION Case-qualifying definition 2 (CQ2): 0 = not CQ; 1 = CQ, primary inpatient diagnosis; 2 = CQ secondary inpatient diagnosis; 3 = CQ, fracture repair CPT+DX codes in carrier or outpatient file; 4 = carrier line or outpatient record E/M HCPCS, spine dx code & up to 10 days earlier, HCPCS in (72010-72159, 72240-72295); 5 = other

Fracture site ("case" ICD-9 codes)*	Additional case-qualifying requirements	Old CPT codes used by Baron (1986-1990 data) & Ray (1987 data)
Hip-closed (substr4(8200, 8202, 8208), 73314)	[**Inpatient** primary or secondary diagnosis code in ("case")] [CQ=1 or 2] **OR** [**Carrier line or outpatient claim** with HCPCS in (27230-27248) and diagnosis code in ("case") and date on or after follow-up start and before EOS] [CQ=3]	Baron: 27230-27248 Ray: 27125-27127, 27230-38, 27240-48
Hip-other (after excluding substr4 in 8200, 8202, 8208, all substr3=820)	[**Inpatient** primary or secondary diagnosis code in ("case")] [CQ=1 or 2] **OR** [**Carrier line or outpatient claim** with HCPCS in (27230-27248) and diagnosis code in ("case") and date on or after follow-up start and before EOS] [CQ=3]	"
Pelvis-closed (substr4 8080, 8082, 8084, 8088)	[**Inpatient** primary or secondary diagnosis code in ("case")] [CQ=1 or 2] **OR** [**Carrier line or outpatient** claim with HCPCS in (27193-27194, 27215-27218, 27220, 27222, 27226-27228) and diagnosis code in ("case") and date on or after follow-up start and before EOS] [CQ=3]	Baron: 27210-27214 Ray: 27220, 27222, 27224, 27225
Pelvis-other (after excluding substr4 in 8080, 8082, 8084, 8088, all substr3=808)	[**Inpatient** primary or secondary diagnosis code in ("case")] [CQ=1 or 2] **OR** [**Carrier line or outpatient** claim with HCPCS in (27193-27194, 27215-27218, 27220, 27222, 27226-27228) and diagnosis code in ("case") and date on or after follow-up start and before EOS] [CQ=3]	"

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ALGORITHMS TO ENHANCE SPECIFICITY OF FRACTURE IDENTIFICATION Case-qualifying definition 2 (CQ2): 0 = not CQ; 1 = CQ, primary inpatient diagnosis; 2 = CQ secondary inpatient diagnosis; 3 = CQ, fracture repair CPT+DX codes in carrier or outpatient file; 4 = carrier line or outpatient record E/M HCPCS, spine dx code & up to 10 days earlier, HCPCS in (72010-72159, 72240-72295); 5 = other		
Fracture site ("case" ICD-9 codes)*	**Additional case-qualifying requirements**	**Old CPT codes used by Baron (1986-1990 data) & Ray (1987 data)**
Leg-closed other than hip, *not including knee or ankle* (substr4(8210, 8212, 8230, 8232, 8238), 73315, 73316)	[**Inpatient** primary or secondary diagnosis code in ("case")][CQ=1 or 2] **OR** [**Carrier line or outpatient** claim with HCPCS in (27500-27514, 27530-27536, 27750-27759, 27780-27784, 27824-27828) and diagnosis code in ("case")] [CQ=3]	Baron: 27500-14, 27530-40, 27750-58, 27780-84, 27800-06 Ray: 27500,02,04,06,08, 10,12,14; 27530,32,34, 36-38,40, 27750,52,54, 56,58,80-82,84, 27800, 02,04,06
Leg-other, *not including knee or ankle* (after excluding substr4 in 8210, 8212, 8230, 8232, 8238 all substr3=821, 823)	[**Inpatient** primary or secondary diagnosis code in ("case")] [CQ=1 or 2] **OR** [**Carrier line or outpatient** claim with HCPCS in (27500-27514, 27530-27536, 27750-27759, 27780-27784, 27824-27828) and diagnosis code in ("case")] [CQ=3]	"
Ankle (substr3=824)	[**Inpatient** primary or secondary diagnosis code in ("case")] [CQ=1 or 2] **OR** [**Carrier line or outpatient** claim with HCPCS in (27760, 27762, 27766, 27786, 27788, 27792, 27808, 27810, 27814, 27816, 27818, 27822, 27823, 28430, 28435, 28436, 28445 (includes talus)) and diagnosis code in ("case")] [CQ=3]	Baron: 27760-66, 27786-92, 27808-23 Ray: 27760,62,64,66,86,88, 90,92; 27810,12,14,16,18, 20,22,23
Distal forearm (substr4(8134, 8135), 73312)	[**Inpatient** primary or secondary diagnosis code in ("case")] [CQ=1 or 2] **OR** [**Carrier line or outpatient** claim with HCPCS in (25600, 25605, 25611, 25620, 25650, 25651, 25652 (includes ulnar styloid)) and diagnosis code in ("case")] [CQ=3]	Baron: 25600-20 Ray: 25600-20

ALGORITHMS TO ENHANCE SPECIFICITY OF FRACTURE IDENTIFICATION Case-qualifying definition 2 (CQ2): 0 = not CQ; 1 = CQ, primary inpatient diagnosis; 2 = CQ secondary inpatient diagnosis; 3 = CQ, fracture repair CPT+DX codes in carrier or outpatient file; 4 = carrier line or outpatient record E/M HCPCS, spine dx code & up to 10 days earlier, HCPCS in (72010-72159, 72240-72295); 5 = other

Fracture site ("case" ICD-9 codes)*	Additional case-qualifying requirements	Old CPT codes used by Baron (1986-1990 data) & Ray (1987 data)
Radius/ulna-other (after excluding substr4 in 8134, 8135, all substr3=813)	[**Inpatient** primary or secondary diagnosis code in ("case")] [CQ=1 or 2] **OR** [**Carrier line or outpatient** claim with HCPCS in (24650, 24655, 24665, 24666, 24670, 24675, 24685, 25500, 25505, 25515, 25520, 25525, 25526, 25530, 25535, 25545, 25560, 25565, 25574, 25575) and diagnosis code in ("case")] [CQ=3]	Baron: 24620-35 (elbow), 24650-85, 25500-75 Ray: 24650,55,60,65,66,70, 75,80,85; 25500,05,10,15, 30,35,40,45,60,65,70,75
All radius/ulna, not including elbow (substr3=813, 73312)	[**Inpatient** primary or secondary diagnosis code in ("case")] [CQ=1 or 2] **OR** [**Carrier line or outpatient** claim with HCPCS in (24650, 24655, 24665, 24666, 24670, 24675, 24685, 25500, 25505, 25515, 25520, 25525, 25526, 25530, 25535, 25545, 25560, 25565, 25574, 25575, 25600, 25605, 25611, 25620, 25650, 25651, 25652 (includes ulnar styloid)) and diagnosis code in ("case")] [NOTE: 24620-35 are elbow] [CQ=3]	Baron: 24620-35, 24650-85, 25500-75, 25600-20 Ray: 24620,25,35,50,55, 60,65,66,70,75,80,85, 25500,05,10,15,30,35,40,45, 60,65,70,75, 25600,05,10, 11,15,20,50
Humerus-closed (substr4(8120, 8122, 8124), 73311)	[**Inpatient** primary or secondary diagnosis code in ("case")] [CQ=1 or 2] **OR** [**Carrier line or outpatient** claim with HCPCS in (23600, 23605, 23615, 23616, 23520, 23625, 23630, 23665, 24500, 24505, 24515, 24516, 24530, 24535, 24538, 24545, 24546, 24560, 24565, 24566, 24575, 24576, 24577, 24579, 24582) and diagnosis code in ("case")] [CQ=3]	Baron: 23600-23630, 23665-23680, 24500-24588 Ray: 23600,05,10,15,20,25,30,65, 70,75,80, 24500,05,06,10,15,30,31, 35,36,38,40,42,45,60,65,70, 75-81,83,85-88

ALGORITHMS TO ENHANCE SPECIFICITY OF FRACTURE IDENTIFICATION Case-qualifying definition 2 (CQ2): 0 = not CQ; 1 = CQ, primary inpatient diagnosis; 2 = CQ secondary inpatient diagnosis; 3 = CQ, fracture repair CPT+DX codes in carrier or outpatient file; 4 = carrier line or outpatient record E/M HCPCS, spine dx code & up to 10 days earlier, HCPCS in (72010-72159, 72240-72295); 5 = other		
Fracture site ("case" ICD-9 codes)*	**Additional case-qualifying requirements**	**Old CPT codes used by Baron (1986-1990 data) & Ray (1987 data)**
Humerus-other (after excluding substr4 in 8120, 8122, 8124, all substr3=812)	[**Inpatient** primary or secondary diagnosis code in ("case")] [CQ=1 or 2] **OR** [**Carrier line or outpatient** claim with HCPCS in (23600, 23605, 23615, 23616, 23520, 23625, 23630, 23665, 24500, 24505, 24515, 24516, 24530, 24535, 24538, 24545, 24546, 24560, 24565, 24566, 24575, 24576, 24577, 24579, 24582) and diagnosis code in ("case")] [CQ=3]	"
Clavicle-closed (substr4=8100)	[**Inpatient** primary or secondary diagnosis code in ("case")] [CQ=1 or 2] **OR** [**Carrier line or outpatient** claim with HCPCS in (23500, 23505, 23515) and diagnosis code in ("case")] [CQ=3]	Baron: not analyzed Ray: 23500,05,10,15
Clavicle-other (after excluding substr4 in 8100, all substr3=810)	[**Inpatient** primary or secondary diagnosis code in ("case")] [CQ=1 or 2] **OR** [**Carrier line or outpatient** claim with HCPCS in (23500, 23505, 23515) and diagnosis code in ("case")] [CQ=3]	"

Spine - **incidence** (8052, 8054, 8058, 73313)
 	
NOTE: use same approach for separate categories:
  a. 8052, 8054, 8058
  b. 73313
	[**Inpatient primary** diagnosis code in ("case")] [CQ=1] **OR** [**Carrier line or outpatient** claim with HCPCS in (22520, 22521, 22522, 76012, 76013, 22305, 22310, 22315, 22318, 22319, 22325, 22326, 22327, 22328) and diagnosis code in ("case")] [CQ=3] **OR** [**Carrier line or outpatient** claim with HCPCS in (99xxx) and diagnosis in ("case") plus, up to 10 days earlier, Carrier line or outpatient revenue center claim with HCPCS in (72010-72159, 72240-72295)][CQ=4]	Not analyzed

ALGORITHMS TO ENHANCE SPECIFICITY OF FRACTURE IDENTIFICATION Case-qualifying definition 2 (CQ2): 0 = not CQ; 1 = CQ, primary inpatient diagnosis; 2 = CQ secondary inpatient diagnosis; 3 = CQ, fracture repair CPT+DX codes in carrier or outpatient file; 4 = carrier line or outpatient record E/M HCPCS, spine dx code & up to 10 days earlier, HCPCS in (72010-72159, 72240-72295); 5 = other

Fracture site ("case" ICD-9 codes)*	Additional case-qualifying requirements	Old CPT codes used by Baron (1986-1990 data) & Ray (1987 data)
Spine TL closed - **history** (8050, 8052, 8054, 73313)	[**Inpatient primary or secondary** diagnosis code in ("case") [CQ=1 or 2] **OR** [**Carrier line or outpatient** claim with HCPCS in (22520, 22521, 22522, 76012, 76013, 22305, 22310, 22315, 22318, 22319, 22325, 22326, 22327, 22328) and diagnosis code in ("case")] [CQ=3]**OR** [**Carrier line or outpatient** claim with HCPCS in (99xxx) and diagnosis in ("case")][CQ=5]	Not analyzed
Spine other – **history** (after excluding substr4 in 8050, 8052, 8054, all substr3=805, 806)	[**Inpatient primary or secondary** diagnosis code in ("case") [CQ=1 or 2] **OR** [**Carrier line or outpatient** claim with HCPCS in (22520, 22521, 22522, 76012, 76013, 22305, 22310, 22315, 22318, 22319, 22325, 22326, 22327, 22328) and diagnosis code in ("case")] [CQ=3]**OR** [**Carrier line or outpatient** claim with HCPCS in (99xxx) and diagnosis in ("case")][CQ=5]	Not analyzed
Wrist, carpal bones (substr3=814)	[**Inpatient** primary or secondary diagnosis code in ("case")] [CQ=1 or 2] **OR** [**Carrier line or outpatient** claim with HCPCS in (25622, 25624, 25628, 25630, 25635, 25645, 25680, 25685) and diagnosis code in ("case")] [CQ=3]	Baron: not analyzed Ray: 25622,24,26,28,30,35, 40,45,80,85
*4-digit substring unless otherwise specified.		