

Supplemental Table 8. ICD-10CM Diagnosis and ICD-10-PC and CPT Procedure Codes Used to Identify Comorbidities, Safety Outcomes, and Spine Interventions

Comorbidities	
Asthma	ICD-10-CM: J45.20-J45.991
Back syndrome	ICD-10-CM: M96.1
Chronic obstructive pulmonary disease	ICD-10-CM: J44.0, J44.1, J44.9
Diabetes	ICD-10-CM: E10.10-E13.9
Diabetic neuropathy	ICD-10-CM: E08.21, E08.40-E08.49, E09.21, E09.21, E09.40-E09.43, E09.610, E10.40-E10.44, E10.610, E11.40-E11.44, E13.40-E13.44, E13.610, G90.09
Intervertebral disc disorders	ICD-10-CM: M51.04- M51.06, M51.34-M51.37
Heart failure	ICD-10-CM: I50.1-I50.9, I11.0, I09.81
Hypertension	ICD-10-CM: I10
Obesity	ICD-10-CM: E66.01-E66.09, E66.2-E66.9
Osteoarthritis	ICD-10-CM: M15.0-M15.9, M16.1, M16.0, M17.10-M17.5, M19.01-M19.93
Osteoporosis	ICD-10-CM: M81.0, M81.6, M81.8, M80.00XA, M80.0AXA, M80.8AXA, M80.80XA, M80.08XA, M80.08XD, M80.08XG, M80.08XS, M80.88XA, M80.88XD, M80.88XG, M80.88XS
Closed or pathological hip fracture	ICD-10-CM: M84.559, M84.659, M97.01, M97.02, M48.50XA-M48.50XS, M48.56XA-M48.56XS, M48.57XA-M48.57XS, M48.58XA-M48.58XS
Lumbar spondylolisthesis	ICD-10-CM: M43.16
Spondylolisthesis, other than lumbar	ICD-10-CM: M43.10-M43.15, M43.17-M43.19, S12.13-S12.64
Vascular claudication	ICD-10-CM: I70.201-I70.228
Post-operative complication	
Mechanical complications due to displacement, breakdown or unspecified complication of device	ICD-10-CM: T85.625A, T85.625D, T85.625S, T85.628A, T85.628D, T85.628S, T85.615A, T85.615D, T85.615S, T85.618A, T85.618D, T85.618S, T85.9XXA, T85.9XXD, T85.9XXS
Spinous process fracture	ICD-10-CM: S32.009A, S32.019A, S32.029A, S32.039A, S32.049A, S32.059A, M48.56XA, M48.57XA
Allergic reaction to device implant	ICD-10-CM: T88.6XXA-T88.6XXS, Y83.1
Infection/inflammation due to device	ICD-10-CM: T85.733A, T85.733D, T85.733S, T85.734A, T85.734D, T85.734S, T85.738A, T85.738D, T85.738S, T85.79XA, T85.79XD, T85.79XS
Lumbosacral spinal cord injury	ICD-10-CM: S34.101A-S34.109S, S34.4XXA-S34.5XXD

Nerve root injury	ICD-10-CM: S24.2XXA-S24.2XXS, S24.9XXA-S24.9XXS, S34.21XA-S34.22XS, S14.2XXA-S17.2XXS
Cerebrospinal fluid leaks	ICD-10-CM: G96.00-G96.09
Wound infections	ICD-10-CM: O86.00-O86.09
Wound dehiscence	ICD-10-CM: T81.30XA, T81.30XD, T81.30XS, T81.32XA, T81.32XD, T81.32XS, T81.33XA, T81.33XD, T81.33XD, T81.33XA, T81.33XD, T81.33XS
Hematomas	ICD-10-CM: O71.7, O90.2, M79.81, N83.7, L76.32
Thrombophlebitis	ICD-10-CM: I80.00-I80.9
Life Threatening Complication	
Acute myocardial infarction	ICD-10-CM: I21.01-I21.A9
Cardiac arrest	ICD-10-CM: I46.2, I46.8, I46.9
Deep venous thrombosis	ICD-10-CM: I82.401, I82.402, I82.403, I82.421, I82.422, I82.442, I82.449, I82.621, I82.622
Ischemic Stroke	ICD-10-CM: I63.00-I63.9
Pneumonia	ICD-10-CM: J15.0, J15.20, J15.29, J15.7
Pulmonary embolism	ICD-10-CM: I26.01-I26.99, I27.81-I27.89
Sepsis	ICD-10-CM: R65.20, R65.21
Subsequent Surgeries - LSS Surgical Intervention	
Interspinous spacer without decompression or fusion	CPT: 22869, 22870 ICD-10-PCS: 0SH00BZ
MILD	CPT: 0275T ICD-10-PCS: 00NY3ZZ
Open decompression	CPT: 63005, 63017, 63030, 63035, 63042-63048, 63052, 63053 ICD-10-PCS: 00NY0ZZ, 01NB0ZZ
Fusion	CPT: 22558, 22585, 22612, 22614, 22630-22634 ICD-10-PCS: 0SG0070-0SG00KJ, 0SG0370-0SG03KJ, 0SG0470-0SG04KJ, 0SG1070-0SG10KJ, 0SG1370-0SG13KJ, 0SG3070-0SG30KJ, 0SG3370-0SG33KJ
Interspinous spacer with decompression	CPT: 22867, 22868 ICD-10-PCS: (0SB00ZZ, 0SB20ZZ, or 0NY00ZZ) + 0SH00BZ
Subsequent Surgeries - Other Surgical Intervention	
Spinal cord stimulation	CPT: 63685, 63650, 63655 ICD-10-PCS: 00HU0MZ, 00HU3MZ, 00HV0MZ, 00HV3MZ, 0JH70BZ, 0JH70CZ, 0JH70DZ, 0JH70EZ, 0JH80BZ, 0JH80CZ, 0JH80DZ, 0JH80EZ

Procedural removal of an implant in the spine region	CPT: 22899
Disc procedure	CPT: 22857, 22858, 22862, 22865 ICD-10-PCS: 0RR50JZ, 0SR20JZ, 0SR40JZ, 0RW50JZ, 0SP20JZ, 0SP40JZ
Drug delivery implant	CPT: 20702, 20703, 11981-11983, 96522, 96523, 95990, 95991 ICD-10-PCS: 0JHT03Z, 0JHV03Z, 0JHW03Z, 0JPT03Z, 0JPV03Z, 0JPW03Z, 0JWT3VZ, 0JWV3VZ, 0JWW3VZ, 3C1ZX8Z, 00WU33Z, 00WV33Z
Endoscopic decompression	CPT: 62380 ICD-10-PCS: 00NY4ZZ, 01NB4ZZ
Repair of dural or cerebrospinal fluid leak	CPT: 62100, 63707, 63709 ICD-10-PCS: 00U107Z, 00U10JZ, 00U10KZ, 00U207Z, 00U20KZ, 0JB00ZZ, 00Q20ZZ
Vertebral excision	CPT: 63301-63308 ICD-10-PCS: 00B20ZZ, 00BX0ZZ, 00BY0ZZ
Other lumbar spine surgeries (e.g. discectomy, vertebroplasty, kyphoplasty)	CPT: 63076-63078, 22510-22512, 22513-22515 ICD-10-PCS: 00NX0ZZ, 01N80ZZ, 0PU437Z, 0PU43JZ, 0PU43KZ, 0QU037Z, 0QU03JZ, 0QU03KZ, 0QU137Z, 0QU13JZ, 0QU13KZ, 0PU43JZ, 0QU03JZ

ISD, interspinous spacer; LSS, lumbar spinal stenosis; MILD, minimally invasive lumbar decompression;