

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

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| 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 |

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| 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 |
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| 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 |

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| 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;