

Table S1 Codes used to define inclusion/exclusion criteria and other demographic and clinical variables

Criteria	Code(s)
Inclusion criteria	
Laminotomy, laminectomy, discectomy	CPT-63005, CPT-63011, CPT-63012, CPT-63030, CPT-63042, CPT-63047
Arthrodesis	CPT-22558, CPT-22612, CPT-22630, CPT-22633
Instrumentation	CPT-22840, CPT-22841, CPT-22842, CPT-22843, CPT-22844

Table S2 Included opioid analgesic drugs

Drugs	
Opioids included	Oxymorphone, tapentadol, buprenorphine, oliceridine, morphine, methadone, meperidine, hydromorphone, hydrocodone, fentanyl, codeine, oxycodone, butorphanol, dihydrocodeine, levorphanol, opium, pentazocine, tramadol