

| Variables | Definition |
|--|---|
| Persistent Opioid Use | Documented continued use of opioids 3-6 months after surgery |
| Surgical Procedure | Whether patient received either a hip arthroplasty (posterolateral approach), hip arthroplasty (anterior approach), revision hip arthroplasty, total knee arthroplasty, or revision knee arthroplasty |
| Age | years |
| Sex | male or female |
| Body Mass Index | body mass index at time of surgery |
| English-speaking | if it is noted that patient can speak English and does not require interpreter |
| Preoperative opioid use | active use of more than 20mg equivalent daily oxycodone use for at least two weeks prior to surgery |
| Previous joint replacement surgery | whether patient had a joint replacement surgery in either extremity/side prior to current surgery |
| Hypertension | diagnosis of hypertension in chart |
| Coronary Artery Disease | diagnosis of coronary artery disease in chart |
| Congestive Heart Failure | diagnosis of congestive heart failure in chart |
| Chronic Obstructive Pulmonary Disease | diagnosis of chronic obstructive pulmonary disease in chart |
| Asthma | diagnosis of asthma in chart |
| Obstructive Sleep Apnea | diagnosis of obstructive sleep apnea in chart |
| Diabetes Mellitus | diagnosis of diabetes mellitus in chart |
| Insulin-dependent Diabetes Mellitus | use of insulin as part of diabetic regimen |
| Anxiety/Depression | history of anxiety and/or depression in chart |
| Dementia | history of dementia |
| Renal Insufficiency | diagnosis of renal insufficiency in chart |
| Frequent Alcohol Use | patient drinks more than 1 drink per day |
| Active Smoker | patient currently smokes cigarettes daily |
| Frequent Marijuana Use | patient currently uses marijuana at least once a week |
| Active Illicit Drug Use | patient currently uses illicit drugs at least once a week |
| Severe Osteoarthritis of the Joint | radiographic description of severe osteoarthritis on operative joint based on x-ray |
| Fracture | radiographic description of fracture on operative joint based on x-ray |
| Primary Anesthesia Type | general versus neuraxial anesthesia (epidural, spinal, or combined spinal-epidural) |
| Peripheral Nerve Block | if patient received a peripheral nerve block for postoperative analgesia |
| Intraoperative Dexmedetomidine | if patient received dexmedetomidine as part of their intraoperative anesthetic |
| Intraoperative Ketamine | if patient received ketamine as part of their intraoperative anesthetic |
| Postoperative Day 1 Opioid Consumption | total opioid consumption measured in intravenous morphine equivalents on postoperative day 1 |
| Hospital Length of Stay | duration of hospital stay since surgery measured in days |
| Total Opioids Prescribed at Discharge | total opioids prescribed at discharge measured in intravenous morphine equivalents |
| Oxycodone Prescribed at Discharge | if patient was prescribed oral oxycodone on discharge |
| Morphine Prescribed at Discharge | if patient was prescribed oral morphine on discharge |
| Hydromorphone Prescribed at Discharge | if patient was prescribed oral hydromorphone on discharge |
| Tramadol Prescribed at Discharge | if patient was prescribed oral tramadol on discharge |

Hydrocodone Prescribed at Discharge if patient was prescribed oral hydrocodone on discharge

Supplementary Table 1. Definitions of features included in the predictive models