

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