

Table S1: Definition of non-opioid analgesics

Non-Opioid Analgesic	Definition
Regional	Any charge code or professional fee associated with epidural catheter placement, peripheral nerve block placement or peripheral nerve catheter placement
Acetaminophen	Any charge for acetaminophen either as a sole agent or in combination with another medication
Non-Selective NSAIDs	Any code listing choline salicylate, diclofenac, diflunisal, etodolac, fenoprofen, flurbiprofen, ibuprofen, indomethacin, ketorolac, ketorolac, meclizolam, meloxicam, nabumetone, naproxen, oxaprozin, piroxicam, salsalate, sulindac, tolmetin
COX-2 Inhibitors	Any code listing celecoxib, rofecoxib, valdecoxib
Gabapentinoids	Any code listing gabapentin, pregabalin
Ketamine	Any code listing ketamine

Table S2: List of ICD-9 codes used to generate covariates

Covariate	ICD-9 Codes
<b><u>History of Substance Use/Abuse</u></b>	
Alcohol abuse	265.2, 291.1–291.3, 291.5–291.9, 303.0, 303.9, 305.0, 357.5, 425.5, 535.3, 571.0–571.3, 980.xx, V11.3
Drug Abuse	292.xx, 304.xx, 305.2–305.9, V65.42
Tobacco Use*	305.1x; V15.82, 649.0x
<b><u>Pain Conditions:*</u></b>	
Back Pain	720.xx - 724.xx, 738.4x, 739.3x, 739.4x, 756.11, 756.12, 805.xx, 846.xx, 847.xx, 648.7x
Fibromyalgia and or pain	729.1
Migraine or other headache syndrome	346.xx, 339.0x-339.8x; 784.0x
Chronic Pain	338.0x (338.1x excluded), 338.2x, 338.4x
Rheumatoid Arthritis	714.xx
Solid tumor without metastasis	140.xx–172.xx, 174.xx–195.xx
Metastatic cancer	196.xx–199.xx
Lymphoma	200.xx–202.xx, 203.0, 238.6
<b><u>Psychiatric Comorbidities</u></b>	
Anxiety	300.0x, 300.2x, 300.3x, 308.0x
Depression	296.2, 296.3, 296.5, 300.4, 309.xx, 311
Dementia	290.xx, 294.1, 331.2
Personality Disorder*	301.xx
Psychoses	293.8, 295.xx, 296.04, 296.14, 296.44, 296.54, 297.xx, 298.xx
<b><u>Medication Use:</u></b>	
Anxiolytic	alprazolam, chlordiazepoxide, clorazepate, diazepam, estazolam, flurazepam, halazepam, hydroxyzine, lorazepam, meprobamate, oxazepam, temazepam, triazolam
Anti-Depressant	amitriptyline, amoxapine, bupropion, chlordiazep/ amitrip, citalopram, clomipramine, desipramine, desvenlafaxine, doxepin, duloxetine, escitalopram oxalate, fluoxetine, fluvoxamine, imipramine hcl, isocarboxazid, maprotiline, mirtazapine, nefazodone, nortriptyline, paroxetine, perphenazine/ amitrip, phenelzine, protriptyline, sertraline, tranylcypromine, trazodone, trimipramine, venlafaxine
Anti-Psychotics	aripiprazole, chlorpromazn, chlorprothixene, clozapine, fluphenazine, haloperidol, loxapine, mesoridazine, molindone, olanzapine, paliperidone, perphenazine, pimozide, promazine, propiomazine, quetiapine, risperidone, thioridazine, thiothixene, trifluoperazine, ziprasidone
Anti-Convulsants	carbamazepine, clonazepam, divalproex na, ethosuximide, felbamate, fosphenytoin, lamotrigine, levetiracetam, mephenytoin, methsuximide,

	oxcarbazepine, phensuximide, phenytoin, primidone, tiagabine, topiramate, trimethadione, valproic acid, zonisamide
<b><u>Medical Comorbidities</u></b>	
Renal Disease	403.01, 403.11, 403.91, 404.02, 404.03, 404.12, 404.13, 404.92, 404.93, 582.x, 583.0–583.7, 585.xx, 586.xx, 588.0, V42.0, V45.1, V56.xx
Ischemic Heart Disease	410.xx, 412.xx
Congestive Heart Failure	398.91, 402.01, 402.11, 402.91, 404.01, 404.03, 404.11, 404.13, 404.91, 404.93, 425.4–425.9, 428.x
Cerebrovascular Disease	362.34, 430.xx–438.xx
Chronic Pulmonary Disease	416.8, 416.9, 490.xx–505.xx, 506.4, 508.1, 508.8
Diabetes	250.0–250.3, 250.4–250.9
Coagulopathy	286.xx, 287.1, 287.3–287.5
Liver disease	070.22, 070.23, 070.32, 070.33, 070.44, 070.54, 070.6, 070.9, 456.0–456.2, 570.x, 571.x, 572.2–572.8, 573.3, 573.4, 573.8, 573.9, V42.7
Obesity	278.0
AIDS/HIV	042.xx–044.xx
Paralysis	334.1, 342.xx, 343.xx, 344.0–344.6, 344.9
Peptic ulcer disease excluding bleeding	531.7, 531.9, 532.7, 532.9, 533.7, 533.9, 534.7, 534.9
Valvular Disease	093.2, 394.xx–397.xx, 424.xx, 746.3–746.6, V42.2, V43.3
Pulmonary circulation disorders	415.0, 415.1, 416.xx, 417.0, 417.8, 417.9
Seizure Disorder (separated from Quan's Definition)*	345.xx
Other neurological disorders	331.9, 332.0, 332.1, 333.4, 333.5, 333.92, 334.x–335.xx, 336.2, 340.xx, 341.xx, 348.1, 348.3, 780.3, 784.3

ICD-9 codes adapted from Quan et al<sup>28</sup> with the exception of categories marked with an asterisk which were created by the authors of this study