

Appendix
Prevalence of Non-pharmacologic and Pharmacologic Therapies Among Non-cancer Chronic Pain–Associated Ambulatory Care Visits, 2016
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Appendix Table 1. ICD-10-CM Codes Associated With Chronic Non-cancer Pain

ICD-10	Description
B022	Zoster with other nervous system involvement
D570-D572, D578	Sickle-cell disorders
E084	Diabetes due to underlying condition w neurological comp
E10*, E11*, E134	Diabetes mellitus
G43*	Migraine
G44*	Other headache syndromes
G50*, G540-G546, G548, G549, G55*- G59*	Nerve, nerve root and plexus disorders
G60*, G62*, G64*	Polyneuropathies and other disorders of the peripheral nervous system
G65*	Other disorders of peripheral nervous system
G890, G892, G894	Pain, not elsewhere classified
K860, K861	Other diseases of pancreas
L405	Arthropathic psoriasis
L89*	Pressure ulcer
M02*	Postinfective and reactive arthropathies
M04*	Autoinflammatory syndromes
M05*- M08*, M10*- M14*	Inflammatory polyarthropathies
M15*- M19*	Arthrosis
M1A*	Chronic gout
M20*-M25*	Other joint disorders
M300, M302, M308, M31*- M36*	Systemic connective tissue disorders
M40*- M43*, M45*, M460, M461, M464, M465, M468, M469, M47*, M48*, M498, M50*, M51*, M53*, M54*	Dorsopathies
M608, M609, M621-M625, M628, M629, M65*-M67*, M70*, M71*, M720, M722, M724, M75*-M77*, M79*	Soft tissue disorders
M80*, M81*, M83*, M85*, M863, M864, M865, M866, M87*-M89*, M91*- M94*	Osteopathies and chondropathies
M950, M952- M955, M958, M959, M96*, M990, M992- M998	Other disorders of the musculoskeletal system and connective tissue
N301	Interstitial cystitis (chronic)
N80*, N94*	Noninflammatory disorders of female genital tract

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Q68*, Q76*	Congenital malformations and deformations of the musculoskeletal system
R102	Pelvic and perineal pain
R26*, R294	Symptoms and signs involving the nervous and musculoskeletal systems
R51*	Headache

*Inclusive of subcodes.

Note: List adapted from Miller et al. (2018).⁴ Visits with a primary diagnosis involving an ICD-10-CM code from the list above and an indication of “chronic problem” (routine or flare-up) as the reason for visit were considered associated with chronic pain. Diagnosis codes associated with painful conditions were selected and those associated with acute or subacute (lasting <6 weeks) were eliminated. The remaining codes were verified as being associated with chronic pain when coupled with a measure of chronicity. Not all codes under listed descriptions were included, but only the subset of codes listed in the left column.

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Appendix Table 2. Generic Drug Names for Opioid and Nonopioid Prescription Drugs

OPIOIDS	NONOPIOIDS
ACETAMINOPHEN; BUTABARBITAL; CODEINE	ACETAMINOPHEN
ACETAMINOPHEN; BUTALBITAL; CODEINE	ACETAMINOPHEN; ALUMINUM HYDROXIDE; ASPIRIN; CAFFEINE; MAGNESIUM ANTACIDS
ACETAMINOPHEN; CAFFEINE; DIHYDROCODEINE	ACETAMINOPHEN; ASPIRIN; CAFFEINE
ACETAMINOPHEN-CODEINE	ACETAMINOPHEN; BUTALBITAL; CAFFEINE
ACETAMINOPHEN-HYDROCODONE	ACETAMINOPHEN; PHENYLTOLOXAMINE; SALICYLAMIDE
ACETAMINOPHEN-MEPERIDINE	ACETAMINOPHEN-BUTALBITAL
ACETAMINOPHEN-OXYCODONE	ACETAMINOPHEN-CAFFEINE
ACETAMINOPHEN-PENTAZOCINE	ACETAMINOPHEN-CHLORZOXAZONE
ACETAMINOPHEN-PROPOXYPHENE	ACETAMINOPHEN-PHENYLTOLOXAMINE
ACETAMINOPHEN-TRAMADOL	ALLOPURINOL
APAP; BUTALBITAL; CAFFEINE; CODEINE	ALUMINUM HYDROXIDE; ASPIRIN; MAGNESIUM ANTACIDS
ASA; CAFFEINE; PROPOXYPHENE	AMITRIPTYLINE
ASPIRIN; BUFFERS; CODEINE	AMOXAPINE
ASPIRIN; BUTALBITAL; CAFFEINE; CODEINE	ANTIMIGRAINE AGENTS
ASPIRIN; CAFFEINE; CODEINE; PHENACETIN	ASPIRIN
ASPIRIN; CAFFEINE; DIHYDROCODEINE	ASPIRIN; CAFFEINE; ORPHENADRINE
ASPIRIN; CARISOPRODOL; CODEINE	ASPIRIN; CAFFEINE; ORPHENADRINE; PHENACETIN
ASPIRIN-CODEINE	ASPIRIN; CALCIUM CARBONATE; MAGNESIUM ANTACIDS
ASPIRIN-HYDROCODONE	ASPIRIN; CARISOPRODOL; CODEINE
ASPIRIN-OXYCODONE	ASPIRIN-CARISOPRODOL
ASPIRIN-PENTAZOCINE	ASPIRIN-METHOCARBAMOL
BELLADONNA-OPIUM	BACLOFEN; CYCLOBENZAPRINE; DICLOFENAC; TETRACAINE
BUPRENORPHINE	BROMFENAC
BUTORPHANOL	BUPROPION
CODEINE	CAFFEINE; CARISOPRODOL; PHENACETIN
CODEINE; ACETAMINOPHEN; CAFFEINE; BUTALBITAL	CARBAMAZEPINE
FENTANYL	CARISOPRODOL
HYDROCODONE	CARISOPRODOL-TRAMADOL
HYDROCODONE-IBUPROFEN	CELECOXIB
HYDROMORPHONE	CHLORZOXAZONE

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IBUPROFEN-OXYCODONE	CLOMIPRAMINE
LEVORPHANOL	COLCHICINE
MEPERIDINE	COLCHICINE-PROBENECID
METHADONE	CYCLOBENZAPRINE
MORPHINE	DESIPRAMINE
MORPHINE LIPOSOMAL	DESVENLAFAXINE
MORPHINE-NALTREXONE	DICLOFENAC
NALOXONE-PENTAZOCINE	DICLOFENAC TOPICAL
OXYCODONE	DICLOFENAC-MISOPROSTOL
OXYMORPHONE	DIHYDROERGOTAMINE
TAPENTADOL	DIVALPROEX SODIUM
TRAMADOL	DOXEPIN
	DOXEPIN TOPICAL
	DULOXETINE
	ESOMEPRAZOLE-NAPROXEN
	ETODOLAC
	FENOPROFEN
	FLURBIPROFEN
	GABAPENTIN
	GABAPENTIN; KETOPROFEN; LIDOCAINE TOPICAL
	IBUPROFEN
	IMIPRAMINE
	INDOMETHACIN
	KETAMINE; BACLOFEN; CYCLOBENZAPRINE; GABAPENTIN; LIDOCAINE
	KETOPROFEN
	LEVOMILNACIPRAN
	MAGNESIUM SALICYLATE
	MECLOFENAMATE
	MECLOFENAMIC ACID
	MELOXICAM
	METAXALONE
	METHOCARBAMOL
	MILNACIPRAN
	NABUMETONE
	NAPROXEN
	NAPROXEN-SUMATRIPTAN

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NORTRIPTYLINE
ORPHENADRINE
OXAPROZIN
OXCARBAZEPINE
OXYPHENBUTAZONE
PHENYLBUTAZONE
PIROXICAM
PREGABALIN
PROBENECID
PROTRIPTYLINE
ROFECOXIB
SULINDAC
TIZANIDINE
TOLMETIN
TOPIRAMATE
TRIMIPRAMINE
VALPROIC ACID
VENLAFAXINE

Note: List adapted from Miller et al. (2018)⁴; current as of January 2020. Codeine excludes codeine cough syrup. Analysis excludes all buprenorphine formulations typically used to treat opioid use disorder; Butrans is included as a buprenorphine formulation typically used to treat pain. TNF-alpha blockers were not included for treating rheumatoid arthritis because these medications are used for purposes beyond treating and preventing specific chronic pain associated conditions. Belbuca, Lasmiditan, and MAB preventive agents (Erenumab, Fremanezumab, and Galcanezumab) were not available in the National Center for Health Statistics Ambulatory Care Drug Database due to their more recent Food and Drug Administration approval dates.

Appendix Table 3. Primary Diagnosis Associated With Chronic Pain and Chronic Problem Indication Among All Non-Cancer Adult NAMCS Visits and Those With Any Opioid or Any Non-Opioid Pharmacologic Therapy

Category	All non-cancer adult NAMCS visits	All non-cancer adult NAMCS visits with any opioid or any non-opioid pharmacologic therapy
	% (95% CI)	% (95% CI)
Primary diagnosis associated with chronic pain	15.3 (13.1, 17.8)	26.1 (21.9, 30.8)
Chronic problem indication	42.2 (39.2, 45.1)	49.3 (44.4, 54.2)
Both	8.1 (6.5, 10.1)	15.4 (11.5, 20.4)
Neither	50.7 (47.8, 53.5)	40.0 (35.9, 44.2)
Primary diagnosis associated with chronic pain, no chronic problem indication	7.2 (5.9, 8.8)	10.7 (8.8, 12.9)
Chronic problem indication, no primary diagnosis associated with chronic pain	34.0 (31.4, 36.8)	33.9 (29.7, 38.4)
Total	634,099,583	206,872,491

Notes: Authors' analysis of the 2016 National Ambulatory Medical Care Survey (NAMCS) data. Number of visits ($n=634,099,583$; unweighted $n=10,023$) and percentages are weighted to represent visits to nonfederally employed office-based physicians in the U.S. Among visits that were not included in the chronic pain associated group and had any opioid or non-opioid pharmacologic therapy, 27.9% of such visits had a diagnosis from Appendix Table 1 in a non-primary position.