

Supplementary Online Content

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eTable 1. *International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Identify Clinical Covariates and Outcomes*

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eTable 3. Healthcare Cost and Utilization Project (HCUP) Clinical Classifications Software (CCS) groups, *Current Procedural Terminology (CPT) codes*, and Healthcare Common Procedure Coding System (HCPCS) Codes Used to Identify Clinical Covariates and Outcomes

eReferences

This supplementary material has been provided by the authors to give readers additional information about their work.

eTable 1. International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Identify Clinical Covariates and Outcomes

ICD-9-CM diagnosis codes used to identify hospitalizations or emergency department visits attributed to opioid poisoning¹⁻⁵	
	E850.0 (accidental poisoning by heroin) E850.1 (accidental poisoning by methadone) E850.2 (accidental poisoning by another opioid) 965.00 (poisoning by opium) 965.01 (poisoning by heroin) 965.02 (poisoning by methadone) 965.09 (poisoning by other opiates)
ICD-9-CM diagnosis codes used to identify hospitalizations or emergency department visits attributed to self-harm^{5,6}	
	V62.84 (Suicidal ideation) E950.0 (Suicide and self-inflicted poisoning by analgesics, antipyretics, and antirheumatics) E950.1 (Suicide and self-inflicted poisoning by barbiturates) E950.2 (Suicide and self-inflicted poisoning by other sedatives and hypnotics) E950.3 (Suicide and self-inflicted poisoning by tranquilizers and other psychotropic agents) E950.4 (Suicide and self-inflicted poisoning by other specified drugs and medicinal substances) E950.5 (Suicide and self-inflicted poisoning by unspecified drug or medicinal substance)
ICD-9-CM diagnosis codes used to identify medical and psychiatric comorbidity	
Depression ⁷	296.2-296.39, 311, 300.4, 296.9-296.99
Anxiety disorder ⁷	300-300.3, 300.5-300.9, 309.21, 309.81
ADHD ⁷	314-314.9
Acute pain condition ⁵	282.62, 338.11, 338.12, 338.18, 338.19, 522.5, 522.7, 574, 577, 592, 733.1, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 850, 851, 852, 853, 854, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 890, 891, 892, 893, 894, 895, 896, 897, 900, 901, 902, 903, 904, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959
Chronic pain condition ⁵	338.21, 338.22, 338.28, 338.29, 338.4, 346.0, 346.1, 346.2, 346.3, 346.4, 346.5, 346.6, 346.7, 346.8, 346.9, 307.81, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729
Opioid use disorder ⁸	304.0x, 304.7x
Alcohol use ⁹	Alcohol withdrawal, intoxication, and abuse: 291.0, 291.3, 291.4, 291.81, 303.0, 305.0 Alcohol dependence: 291.1, 291.2, 291.5, 291.8, 291.82, 291.89, 291.9, 303.9
Other drug use ⁹	Drug withdrawal, intoxication, and abuse: 292.0, 292.1, 292.2, 292.81, 305.2-305.7 Drug dependence: 292.82-292.89, 292.9, 304.1-304.6

eTable 2. National Drug Codes Used to Identify Receipt of Pharmacotherapy

National Drug Codes (NDCs) used to identify receipt of pharmacotherapy.¹⁰	
Buprenorphine	149075701, 12496075701, 12496075705, 54569141600, 54569141601, 54017613, 93537856, 228315603, 378092393, 12496127802, 35356055530, 49999063830, 50383092493, 68308020230, 54017713, 93537956, 228315303, 378092493, 12496131002, 35356055630, 49999063930, 50383093093, 63874117303, 68308020830, 74201201, 74201232, 409201232, 21695051510, 38779088800, 38779088801, 38779088803, 38779088806, 38779088809, 49452129201, 49452129202, 49452129203, 49452825301, 49452825302, 49452825303, 51552076501, 51552076502, 51552076505, 51552076506, 51552076509, 51552076510, 51552076550, 51927101200, 62991158301, 62991158302, 62991158303, 62991158304, 62991158306, 62991158307, 62991158308, 63275992201, 63275992202, 63275992203, 63275992204, 63275992205, 63275992207, 63370090506, 63370090509, 63370090510, 63370090515, 54018813, 93572056, 228315403, 228315473, 406192303, 12496128302, 16590066630, 42291017430, 49999039507, 49999039515, 49999039530, 50383029493, 52959074930, 54569549600, 54868575000, 55700018430, 63629402801, 63874108503, 65162041603, 68071151003, 68258299903, 54018913, 93572156, 228315503, 228315573, 406192403, 12496130602, 35356000407, 35356000430, 42291017530, 43063018407, 43063018430, 50383028793, 52959030430, 54569573900, 54569573901, 54569573902, 54569640800, 54868570700, 54868570701, 54868570702, 54868570703, 54868570704, 55045378403, 63629403401, 63629403402, 63629403403, 63874108403, 65162041503, 66336001630, 68071138003, 40042001001, 42023017901, 42023017905, 55390010010, 35356060704, 59011075004, 35356060504, 54569632500, 59011075104, 35356060604, 54569632600, 59011075204, 12496120201, 12496120203, 12496120801, 12496120803, 54569639900, 55700014730, 12496120401, 12496120403, 12496121201, 12496121203, 54123091430, 54123095730, 59011075804, 59385001201, 59385001230, 59385001401, 59385001430, 59385001601, 59385001630, 59011075704, 54123098630, 54123011430, 54123092930, 63481016101, 63481016160, 63481020701, 63481020760, 63481034801, 63481034860, 63481051901, 63481051960, 63481068501, 63481068560, 63481082001, 63481082060, 63481095201, 63481095260
Naltrexone	56001122, 56001130, 56001170, 56007950, 56008050, 185003901, 185003930, 406009201, 406009203, 406117001, 406117003, 555090201, 555090202, 16729008101, 16729008110, 42291063230, 43063059115, 47335032683, 47335032688, 50436010501, 51224020630, 51224020650, 51285027501, 51285027502, 52152010502, 52152010504, 52152010530, 54868557400, 65694010003, 65694010010, 68084029111, 68084029121, 68094085362, 68115068030, 49452483501, 51927275300, 51927360200, 51927354800, 63459030042, 65757030001, 65757030202, 38779088703, 38779088704, 38779088705, 38779088706, 38779088708, 49452480801, 49452480802, 49452483502, 51552073701, 51552073702, 51552073704, 51927437700, 52372075101, 52372075102, 52372075103, 55812033301, 55812033302, 55812033303, 63370015810, 63370015815, 63370015825, 63370015835, 63370015845, 60966014404, 60966024403, 60966034402, 62991124301, 62991124302, 62991124303, 62991124304

eTable 3. Healthcare Cost and Utilization Project (HCUP) Clinical Classifications Software (CCS) groups, *Current Procedural Terminology (CPT)* codes, and Healthcare Common Procedure Coding System (HCPCS) Codes Used to Identify Clinical Covariates and Outcomes

HCUP CCS groups used to identify pregnancy¹¹	
	Groups 177-196
CPT and HCPCS codes used to identify behavioral health services utilization (i.e., mental health or substance use disorder treatment)¹²	
Behavioral health services in any setting	90791-90792, 90832-90834, 90836-90840, 90853, 90863, 90875-90876, G0396, G0397, H0001, H0002, H0004, H0005, H0006, H0007-H0011, H0012, H0013, H0014, H0015, H0016, H0017, H0018, H0019, H0022, H0031, H0032, H0035, H0036, H0037, H0038, H0039, H0040, H0046, H0047, H0050, H2000, H2001, H2010, H2011, H2012, H2013, H2014, H2015, H2016, H2017, H2018, H2019, H2020, H2034, H2035, H2036, S0201, S9480, S9484, S9485, T1006, T1007, T1012
Among above codes, those indicating specific levels of service	H0008-H0014 (detoxification services) H0015, S9480 (intensive outpatient care) H0035, S0201 (partial hospital) H0012, H0013, H0017-H0019 (residential care) H0008-H0011 (inpatient care)
CPT codes used to identify health care utilization¹²	
Outpatient medical care	99201-99205, 99211-99215, 99241-99245
Emergency department care	99281-99285, 99288
Inpatient medical care	99221-99225, 99231-99235
HCPCS codes used to identify medication utilization¹²	
Methadone	H0020 (methadone administration and/or service (provision of the drug by a licensed program))
Naltrexone	J2315 (Injection, naltrexone, depot form)

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