**APPENDICES**

Appendix A - Diagnoses codes to identify opioid use disorder

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| **Purpose** | **ICD-9-CM Codes** | **Diagnosis** |
| **Identify opioid****use disorder** | 3040x | Drug dependence - Opioid type dependence |
| 3047x | Drug dependence - Combinations of opioid type drug with any other |
| 3055x | Nondependent opioid abuse |
| 96500 | Poisoning by opium (alkaloids), unspecified |
| 96502 | Poisoning by methadone |
| 96509 | Poisoning by other opiates and related narcotics |
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Appendix B - Diagnoses codes for other baseline comorbidities1

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| --- | --- | --- |
| **Comorbid Condition** | **ICD-9-CM Codes** | **Diagnosis** |
| **Non-opioid** | 303 | Alcohol dependence syndrome |
| **substance** |
|  |  |
| **use** | 3041-3046, 3048- | Drug dependence (excl. opioid) |
|  | 3049 |  |
|  | 3050-3054, 3056- | Nondependent abuse of drugs (excl. opioid) |
|  | 3059 |  |
|  | V113 | Personal history of alcoholism |
| **Psychiatric disorder** | 290-294 | Organic psychotic conditions |
| 295-299 | Other psychoses |

1 Adapted from White et al (2011)

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|  | 300-302, 306-319 | Neurotic/Personality/Other Nonpsychotic Mental Disorders (excl. abuse/dependence) |
| V110-V112, V114, V118, V119 | Personal history of mental disorders (excl. alcoholism) |
| **Trauma** | 800-959 | Injury |
| **Neuropathic pain** | 05310, 05312, 05313,05319, 0532, 0537,0539 | Herpes zoster (various) |
| 2506 | Diabetes with neurological manifestations |
| 30089 | Other somatoform disorders |
| 33384 | Organic writers' cramp |
| 3369, 3370, 3379 | Genetic, acquired, and fragments of torsion dystonia |
| 34620 | Abdominal migraine |
| 350-357 | Disorders of The Peripheral Nervous System (excl. myoneural, dystrophies and myopathies) |
| 37730 | Optic neuritis |
| 38589 | Other disorders of middle ear and mastoid |
| 38850 | Disorders of acoustic nerve |
| 38871 | Otogenic pain |
| 5110 | Pleurisy, without mention of effusion or current tuberculosis |
| 60790 | Unspecified disorder of penis |
| 60889, 60890 | Other specified, unspecified disorders of male genital organs |
| 62590 | Unspecified symptom associated with female genital organs |
| 7292 | Neuralgia, neuritis, and radiculitis, unspecified |
| 7880 | Renal colic |
| 7881 | Dysuria |
| 8972, 8974, 8976 | Open wound of lower limb, amputation of leg |
| 950-957 | Injury to nerves and spinal cord |

|  |  |  |
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|  | 9976 | Amputation stump complication |
| **Arthritis** | 710 | Diffuse diseases of connective tissue |
| 7119 | Unspecified infective arthritis |
| 714 | Rheumatoid arthritis and other inflammatory polyarthropathies |
| 715 | Osteoarthrosis and allied disorders |
| 7161 | Traumatic arthropathy |
| 7162 | Allergic arthritis |
| 7165 | Unspecified polyarthropathy or polyarthritis |
| 7166 | Unspecified monoarthritis |
| 719 | Other and unspecified disorders of joint |
| 725-729 | Rheumatism, Excluding the Back (excl. myalgia and neuralgia) |
| **Fibromyalgia** | 7291 | Myalgia and myositis, unspecified |
| **Back/Neck pain** | 720-724 | Dorsopathies |
| 737 | Curvature of spine |
| 7384 | Acquired spondylolisthesis |
| 7385 | Other acquired deformity of back or spine |
| 7391-7394 | Nonallopathic lesions, cervical/thoracic/lumbar/sacral regions |
| 741 | Spina Bifida |
| 7425 | Other specified congenital anomalies of spinal cord |
| 7561 | Congenital anomalies of spine |
| **General pain** | 78096 | Generalized pain |

Appendix C - Diagnosis codes for comorbidities included in the Charlson Comorbidity Index2

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| --- | --- |
| **Condition** | **Diagnosis** |
| **Myocardial infarction** | 410, 412 |
| **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 |
| **Peripheral vascular disease** | 093.0, 437.3, 440, 441, 443.1-443.9, 447.1, 557.1, 557.9, V43.4 |
| **Cerebrovascular disease** | 362.34, 430-438 |
| **Dementia** | 290, 294.1, 331.2 |
| **Chronic pulmonary disease** | 416.8, 416.9, 490-505, 506.4, 508.1, 508.8 |
| **Rheumatic disease** | 446.5, 710.0-710.4, 714.0-714.2, 714.8, 725 |
| **Peptic ulcer disease** | 531-534 |
| **Liver disease, mild** | 070.22, 070.23, 070.32, 070.33, 070.44, 070.54, 070.6, 070.9,570, 571, 573.3, 573.4, 573.8, 573.9, V42.7 |
| **Diabetes without chronic complications** | 250.0-250.3, 250.8, 250.9 |
| **Diabetes with chronic complications** | 250.4-250.7 |
| **Hemiplegia or paraplegia** | 334.1, 342, 343, 344.0-344.6, 344.9 |
| **Renal disease** | 403.01, 403.11, 403.91, 404.02, 404.03, 404.12, 404.13, 404.92,404.93, 582, 583.0-583.7, 585, 586, 588.0, V42.0, V45.1, V56 |
| **Any malignancy, including leukemia and lymphoma, except for malignant neoplasm of skin** | 140-172, 174-195.8, 200-208, 238.6 |
| **Liver disease, moderate or severe** | 456.0-456.2, 572.2-572.8 |
| **Metastatic solid tumor** | 196-199 |
| **AIDS/HIV** | 042-044 |

2 Quan et al (2005)