**Appendix**

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| **Table 1:** ICD-9 Codes Used for Definition of Opioid Abuse and Dependence |
| **ICD-9 Code** | **Description**  |
| 304.00  | Opioid Dependence - Unspecified |
| 304.01 | Opioid Dependence - Continuing |
| 304.02 | Opioid Dependence - Episodic |
| 304.70 | Opioid & other drug dependence - Unspecified |
| 304.71 | Opioid & other drug dependence - Continuing |
| 304.72 | Opioid & other drug dependence - Episodic |
| 305.50 | Opioid Abuse - Unspecified |
| 305.51 | Opioid Abuse - Continuing |
| 305.52 | Opioid Abuse - Episodic |

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| **Table 2:** ICD-9 Codes and Description of Common Major Operating Room Procedures |
| **ICD-9 Code** | **Description**  |
| 36.11-36.19, 36.2, 36.3, 36.31-36.34, 36.39  | Coronary artery bypass graft (CABG) |
| 81.00-81.09, 81.30-81.39, 81.61-81.64, 85.41 | Spinal fusion |
| 00.80-00.84, 81.41-81.44, 81.46, 81.47, 81.54, 81.55 | Knee replacement |
| 00.70-00.77, 00.85-00.87, 81.51-81.53, 81.69  | Hip replacement |
| 51.21-51.24, 51.41-51.43, 51.49, 51.51, 51.59  | Cholecystectomy |
| 54.5, 54.51, 54.59  | Lysis of adhesions |
| 68.3-68.79, 68.9  | Hysterectomy |
| 32.20-32.27, 32.29-32.59  | Pneumonectomy |
| 85.24, 85.25, 85.31-85.36, 85.50, 85.53-85.79, 85.82-85.89, 85.93-85.99  | Breast surgery |
| 78.50, 78.52-78.59, 78.62-78.68, 79.10-79.39, 79.50-79.52, 79.55-79.69, 79.80-79.88, 79.98, 84.94  | Limb fracture surgery |
| 74.0-74.2 74.4 74.99 | Cesarean delivery |
| 17.31-17.39, 45.71-45.83, 48.40-48.69 | Colorectal surgery |

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| **Table 3:** ICD-9 Codes to Define Diagnoses |
| **ICD-9 Code** | **Description**  |
| 338.12, 338.18, 338.19 | Acute pain |
| 965.00, 965.01, 965.02, 965.09 | Opioid overdose |
| 292.0 | Drug withdrawal |
| 292.11, 292.12, 292.2, 292.8, 292.82, 292.83, 292.84, 292.85, 292.89, 292.9 | Drug mental disorders |
| 967.0, 967.6, 967.8-968.0, 969.0-969.05, 969.09, 969.1, 969.2-969.73, 969.79-970.1, 970.8, 970.81, 970.89, 970.9, 975.2, 975.4, 975.6, 976.1 | Non opioid overdose (barbiturates, sedative hypnotics, CNS depressants, antidepressants, tranquilizers, benzodiazepines, hallucinogens, psychostimulants, amphetamines, cocaine, psychotropics, muscle relaxants, antitussives antipruritic, cold drugs) |
| 304.10-304.12, 304.20-304.22, 304.30-304.32, 304.40-304.42, 304.50-304.52, 304.60-304.62, 304.80-304.82, 304.90-304.92, 305.20-305.22, 305.30–305.32, 305.40-305.42, 305.60-305.62, 305.70-305.72, 305.80-305.82, 305.90-305.92 | Non-opioid abuse or dependence (barbiturates, cocaine, cannabis amphetamines) |
| 539.01, 539.81, 569.61, 530.86, 596.81, 996.68, 999.31-999.33, 997.31, 997.62, 998.5, 998.51, 998.59, 999.39, 99.34, 999.39, 997.62 | Device/procedure related infections |
| 038.0, 038.1X, 038.2, 038.3, 038.4X, 038.8, 038.9, 054.5, 449, 771.81, 790.7, 995.91, 995.92  | Sepsis |
| 020.1, 021.0, 022.0, 031.1, 032.85, 035, 039.0, 376.01, 680.0-682.9, 684-686.9  | Skin/subcutaneous infections |
| 036.42, 074.22, 093.20, 098.84, 112.81, 115.04, 115.14, 115.94, 421.0, 421.9, 424.90, 424.99 | Infective endocarditis |
| 003.23, 003.24, 026.1, 036.82, 056.71, 711.00-711.99, 730.00-730.39, 730.70-730.99 | Bone and joint infections |
| 032.83, 567.0-567.23, 567.29, 567.38, 567.39, 567.8-567.82, 567.89, 567.9, 569.5  | Peritonitis/abdominal abscess |
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| 036.0, 100.81, 112.83, 114.2, 115.01, 115.11, 115.91, 320.0– 320.3, 320.7-321.1, 324.0, 324.1, 324.9, 326  |

 | CNS abscesses |
| 003.22, 020.3, 020.5, 021.2, 022.1, 031.0, 039.1, 052.1, 055.1, 073.0, 083.0, 112.4, 114.0, 114.4, 114.5, 115.05, 115.15, 115.95, 130.4, 136.3, 480.0-486.0 513.0, 517.1  | Pneumonia |
| 517.3, 518.5, 518.51-518.53, 518.81-518.84, 799.1, V46.1-V461.4, V46.2  | Respiratory failure |
| 410 | Acute myocardial infarction |
| 451.11-451.81, 451.89, 451.9, 453.40-453.42, 453.8, 453.82-453.9 | Deep venous thrombosis  |
|  428.21, 428.23, 428.31, 428.33, 428.41, 428.43 | Acute heart failure |
| 518.81, 518.84 | Acute respiratory failure |
| 584.5-584.9, 586  | Acute renal failure |
| 293.81-293.83, 295.00–298.9, 300.4, 301.10-301.13, 301.20-301.22, 301.59-301.81, 301.84-301.9, 311, 312.30-312.35, 312.39 | Psychiatric disorders |
| 998.30, 998.31, 998.32, 998.33, 998.34, 998.6, 998.83 | Wound complications |
| 276.61, 277.83, 277.88, 285.3, 287.41, 349.0, 349.31, 415.11, 429.4, 458.2, 458.21, 458.29 ,512.1, 512.2, 518.7, 5190-519.02, 519.09, 530.86, 530.87, 536.40-536.42, 536.49-539.01, 539.09, 539.81, 539.89, 564.2-5644, 569.6, 569.62, 569.71, 569.79, 579.3, 596.81, 780.62, 780.63, 780.66, 909.3, 995.24, 995.4, 995.86, 997.0-997.09, 997.1-997.32, 997.39-997.41, 997.49, 997.5, 997.60, 997.62, 997.69, 997.71, 997.72, 997.79, 997.9, 997.91, 997.99-998.02, 998.09-998.13, 998.2-998.33, 998.4-998.51, 998.59-998.83, 998.89-999.34, 999.39-999.42, 999.49-999.52, 999.59-999.63, 999.69-999.85, 999.88-999.9, V15.53, V15.80, V15.83, V90.01, V90.09 | Procedure Complications |
| 279.50-279.53, 414.02-414.05, 414.07, 440.30-440.32, 569.60, 569.61, 569.69, 596.82, 596.83, 629.31, 629.32, 996.00-996.04, 996.09-996.32, 996.39-996.47, 996.49, 996.51-996.57, 996.59-996.96, 996.99, 999.31-999.33 | Device Complications |

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| **Table 4**: ICD-9 Codes Used to Define Opioid Abuse or Dependence in Remission |
| **ICD-9 Code** | **Description**  |
| 304.03 | Opioid dependence - in remission |
| 304.73 | Opioid & other drug dependence - in remission |
| 305.53 | Opioid abuse – in remission |