

## Appendix A

### ICD codes for risk marker and outcome definitions

#### ICD-10 codes for outcome definitions

##### Definition 1: PDO (unintentional or of undetermined intent)

X40–X44	Unintentional poisoning due to drugs
Y10–Y14	Poisoning of undetermined intent with contributing causes
Exclusion diagnoses	
V66	Palliative care
140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 170, 171, 172, 174, 175, 176, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 200, 201, 202, 203, 204, 205, 206, 207, 208	Cancer
282.6, 282.41	Sickle cell anemia
196, 197, 198, 199.0, 199.1	Metastatic carcinoma
Other risk markers	
Psychiatric disorder	
300	Anxiety disorder
327.21, 327.23, 327.20, 327.29, 780.53, 780.57	Central sleep apnea
298, 311, 309.0, 309.1	Depression
296	Episodic mood disorder [1]
296.2, 296.3	Major depressive disorder
296, 301	Personality disorder
309.81	Post-traumatic stress disorder
292, 293.0, 293.8, 294, 295, 297.1, 297.3, 297.8, 297.9, 299	Psychoses agitation [35]
295	Schizophrenia
Substance Abuse	
304	Drug dependence
305.0	Alcohol abuse
305.5	Opioid abuse
305.4	Sedative anxiolytic abuse
305.7	Amphetamine abuse
305.8	Antidepressant abuse
305.2, 305.3, 305.6, 305.9	Other drug abuse
305.1	Tobacco use disorder
303, 304, 305.0, 305.2, 305.3, 305.4, 305.5, 305.6, 305.7, 305.8, 305.9, 965.0, V11.3	Alcohol drug seeking
V11.3, 291, 303.0, 303.9, 305.0, 357.5, 425.5, 535.3, 571.0, 571.1, 571.3, 790.3, 980.0	Alcohol abuse [35]
965.00, 965.01, 965.02, 965.09	Prior opioid overdose
Other conditions	
789	Abdominal symptoms [1]
780	General symptoms that is, alteration of consciousness, and so forth [1]
521, 522, 523, 525.3, 525.9, 873.63	Nontraumatic dental conditions
786	Respiratory syndrome [1]
729	Soft tissue disorder—fasciitis or limb pain [1]
722	Vertebrae disorders [1]
Chronic pain	
719	Joint disorder [1]
307.81, 339.00, 339.01, 339.02, 339.03, 339.04, 339.05, 339.09, 339.10, 339.11, 339.12, 339.20, 339.21, 339.22, 339.3, 339.41, 339.42, 339.43, 339.44, 339.81, 339.82, 339.83, 339.84, 339.85, 339.89, 346.0, 346.00, 346.01, 346.02, 346.03, 346.1, 346.10, 346.11, 346.12, 346.13, 346.2, 346.20, 346.21, 346.22, 346.23, 346.30, 346.31, 346.32, 346.33, 346.40, 346.41, 346.42, 346.43, 346.50, 346.51, 346.52, 346.53, 346.70, 346.71, 346.72, 346.73, 346.8, 346.80, 346.81, 346.82, 346.83, 346.9, 346.90, 346.91, 346.92, 346.93, 784.0	Headaches [44]
720.1, 720.2, 720.81, 720.89, 720.9, 721.0, 721.1, 721.2, 721.3, 721.41, 721.42, 721.5, 721.6, 721.7, 721.8, 721.90, 721.91, 722.0, 722.10, 722.11, 722.2, 722.30, 722.31, 722.32, 722.39, 722.4, 722.51, 722.52, 722.6, 722.70, 722.71, 722.72, 722.73, 72.280, 722.81, 722.82, 722.83, 722.90, 722.91, 722.92, 722.93, 723.0, 723.1, 723.2, 723.3, 72.35, 723.6, 723.7, 723.9, 724.00, 724.01, 724.02, 724.03, 724.09, 724.1, 724.2, 724.3, 724.4, 724.5, 724.6, 724.70, 724.71, 724.79, 724.8, 724.9, 756.10, 756.11, 756.12, 756.13, 756.14, 756.15, 756.16, 756.17, 756.19	Back pain [44]
550.00, 550.01, 550.02, 550.03, 550.10, 550.11, 550.12, 550.13, 551.00, 551.01, 551.02, 551.03, 551.1, 551.20, 551.21, 551.29, 552.00, 552.01, 552.02, 552.03, 552.1, 552.20, 552.21, 552.29, 560.81, 562.01, 562.03, 562.11, 562.13, 567.2, 567.21, 567.22, 567.31, 567.38, 567.8, 567.82, 567.89, 567.9, 569.5, 574.00, 574.01, 574.10, 574.11, 574.20, 574.21, 574.30, 574.31, 574.40, 574.41, 574.50, 574.51, 574.60, 574.61, 574.70, 574.71, 574.80, 574.81, 574.90, 574.91, 575.0, 575.1, 575.10, 575.11, 575.12, 577.0, 577.1, 592.0, 592.1, 592.9, 594.0, 594.1, 594.2, 594.8, 594.9, 596.0, 788.0, 789.0, 789.02, 789.60, 789.61, 789.62, 789.63, 789.64, 789.65, 789.66, 789.67, 789.69	Visceral pain [44]
053.13, 072.72, 337.0, 337.1, 353.0, 353.1, 353.2, 353.3, 353.4, 353.5, 353.6, 353.8, 353.9, 354.0, 354.1, 354.2, 354.3, 354.4, 354.5, 354.8, 354.9, 355.0, 355.1, 355.2, 355.3, 355.4, 355.5, 355.6, 355.7, 355.71, 355.79, 355.8, 355.9, 356.0, 356.1, 356.2, 356.3, 356.4, 356.8, 356.9, 357.0, 357.1, 357.2, 357.4, 357.5, 357.6, 357.7, 357.8, 357.81, 357.82, 357.89, 357.9, 377.33, 377.34, 377.41	Neuropathy [44]

(continued on next page)

(continued)

## ICD-10 codes for outcome definitions

729.1

725, 726.0, 726.10, 726.11, 726.12, 726.19, 726.2, 726.30, 726.31, 726.32, 726.33, 726.39, 726.4, 726.5, 726.60, 726.61, 726.62, 726.63, 726.64, 726.65, 726.69, 726.71, 726.72, 726.90, 727.00, 727.03, 727.04, 727.05, 727.06, 727.09, 727.2, 727.3, 727.49, 727.50, 727.51, 727.60, 727.61, 727.62, 727.63, 727.64, 727.65, 727.66, 727.67, 727.68, 727.69, 727.89, 727.9, 728.11, 728.12, 728.81, 728.83, 728.86, 728.89, 728.9, 729.0, 729.1, 72.94, 729.5, 729.71, 729.72, 729.73, 729.79, 729.89, 729.9, 729.91, 729.92, 781.99, 830.0, 830.1, 831.00, 831.01, 831.02, 831.03, 831.04, 831.09, 831.10, 831.11, 831.12, 831.13, 831.14, 831.19, 832.00, 832.01, 832.02, 832.03, 832.04, 832.09, 832.10, 832.11, 832.12, 832.13, 832.14, 832.19, 832.2, 833.00, 833.01, 833.02, 833.03, 833.04, 833.05, 833.09, 833.10, 833.11, 833.12, 83.313, 833.14, 833.15, 833.19, 834.00, 834.01, 834.02, 834.10, 834.11, 834.12, 835.00, 835.01, 835.02, 835.03, 835.10, 835.11, 835.12, 835.13, 836.0, 836.1, 836.2, 836.3, 836.4, 836.50, 836.51, 836.52, 836.53, 836.54, 836.59, 836.60, 836.61, 836.62, 836.63, 836.64, 836.69, 837.0, 837.1, 838.00, 838.01, 838.02, 838.03, 838.04, 838.05, 838.06, 838.09, 838.10, 838.11, 838.12, 838.13, 838.14, 838.15, 838.16, 838.19, 839.00, 839.01, 839.02, 839.03, 839.04, 839.05, 839.06, 839.07, 839.08, 839.10, 839.11, 839.12, 839.13, 839.14, 839.15, 839.16, 839.17, 839.18, 839.20, 839.21, 839.30, 839.31, 839.40, 839.41, 839.42, 839.49, 839.50, 839.51, 839.52, 839.59, 839.61, 839.69, 839.71, 839.79, 83.98, 838.9, 840.0, 840.1, 840.2, 840.3, 840.4, 840.5, 840.6, 840.7, 840.8, 840.9, 841.0, 841.1, 841.2, 841.3, 841.8, 841.9, 842.00, 842.01, 842.02, 842.09, 842.10, 842.11, 842.12, 842.13, 842.19, 843.0, 843.1, 843.8, 843.9, 844.0, 844.1, 844.2, 844.3, 844.8, 844.9, 845.00, 845.01, 845.02, 845.03, 845.09, 845.10, 845.11, 845.12, 845.13, 845.19, 846.0, 846.1, 846.2, 846.3, 846.8, 846.9, 847.0, 847.1, 847.2, 847.3, 847.4, 847.9, 848.0, 848.1, 848.2, 848.3, 848.40, 848.41, 848.42, 848.49, 848.5, 848.8, 848.9, 905.6, 905.7, V43.60, V43.61, V43.62, V436.3, V436.4, V436.5, V436.6, V43.69, V43.7, V48.3, V49.60, V49.61, V49.62, V49.63, V49.64, V49.65, V49.66, V49.67, V49.70, V49.71, V49.72, V49.73, V49.74, V49.75, V49.76, V49.77

710.0, 710.1, 710.2, 710.3, 710.4, 710.8, 710.9, 711.00, 711.01, 711.02, 711.03, 711.04, 711.05, 711.06, 711.07, 711.08, 711.09, 711.10, 711.11, 711.12, 711.13, 711.14, 711.15, 711.16, 711.17, 711.18, 711.19, 711.20, 71.121, 711.22, 711.23, 711.24, 711.25, 711.26, 711.27, 711.28, 711.29, 711.30, 711.31, 711.32, 711.33, 711.34, 711.35, 711.36, 711.37, 711.38, 711.39, 711.40, 711.41, 711.42, 711.43, 711.44, 711.45, 711.46, 711.47, 711.48, 711.49, 711.50, 711.51, 711.52, 711.53, 711.54, 711.55, 711.56, 711.57, 711.58, 711.59, 711.60, 711.61, 711.62, 711.63, 711.64, 711.65, 711.66, 711.67, 711.68, 711.69, 711.70, 711.71, 711.72, 711.73, 711.74, 711.75, 711.76, 711.77, 711.78, 711.79, 711.80, 711.81, 711.82, 711.83, 711.84, 711.85, 711.86, 71.187, 711.88, 711.89, 711.90, 711.91, 711.92, 711.93, 711.94, 711.95, 711.96, 711.97, 711.98, 711.99, 713.0, 713.1, 713.2, 713.3, 713.4, 713.5, 713.6, 713.7, 713.8, 714.0, 714.1, 714.2, 714.30, 714.31, 714.32, 714.33, 714.4, 714.81, 714.89, 714.9, 715.00, 715.04, 715.09, 715.10, 715.11, 715.12, 715.13, 715.14, 715.15, 715.16, 715.17, 715.18, 715.20, 715.21, 715.22, 715.23, 715.24, 715.25, 715.26, 715.27, 715.28, 715.30, 715.31, 715.32, 715.33, 715.34, 715.35, 715.36, 715.37, 715.38, 715.80, 715.89, 715.90, 715.91, 715.92, 715.93, 715.94, 715.95, 715.96, 715.97, 715.98, 716.00, 716.01, 716.02, 716.03, 716.04, 716.05, 716.06, 716.07, 716.08, 716.09, 716.10, 716.11, 716.12, 716.13, 716.14, 716.15, 716.16, 716.17, 716.18, 716.19, 716.20, 716.21, 716.22, 716.23, 716.24, 716.25, 716.26, 716.27, 716.28, 716.29, 716.30, 716.31, 716.32, 716.33, 716.34, 716.35, 716.36, 716.37, 716.38, 716.39, 716.40, 71.641, 716.42, 716.43, 716.44, 716.45, 716.46, 716.47, 716.48, 716.49, 716.50, 716.51, 716.52, 716.53, 716.54, 716.55, 716.56, 716.57, 716.58, 716.59, 716.60, 716.61, 716.62, 716.63, 716.64, 716.65, 716.66, 716.67, 716.68, 716.80, 716.81, 716.82, 716.83, 716.84, 716.85, 716.86, 716.87, 716.88, 716.89, 716.90, 716.91, 716.92, 716.93, 716.94, 716.95, 716.96, 716.97, 716.98, 716.99, 717.0, 717.1, 717.2, 717.3, 717.40, 717.41, 717.42, 717.43, 717.49, 717.5, 717.6, 717.7, 717.81, 717.82, 717.83, 717.84, 717.85, 717.89, 717.9, 718.00, 718.01, 718.02, 718.03, 718.04, 718.05, 718.07, 718.08, 718.09, 718.10, 718.11, 718.12, 718.13, 718.14, 718.15, 718.17, 718.18, 718.19, 718.20, 718.21, 718.22, 718.23, 718.24, 718.25, 718.26, 718.27, 718.28, 718.29, 718.30, 71.831, 718.32, 718.33, 718.34, 718.35, 718.36, 718.37, 718.38, 718.39, 718.50, 718.51, 718.52, 718.53, 718.54, 718.55, 718.56, 718.57, 718.58, 718.59, 718.60, 718.65, 718.70, 718.71, 718.72, 718.73, 718.74, 718.75, 718.76, 718.77, 718.78, 718.79, 718.80, 718.81, 718.82, 718.83, 718.84, 718.85, 718.86, 718.87, 718.88, 718.89, 718.90, 718.91, 718.92, 718.93, 718.94, 718.95, 718.97, 718.98, 718.99, 719.00, 719.01, 719.02, 719.03, 719.04, 719.05, 719.06, 719.07, 719.08, 719.09, 719.10, 719.11, 719.12, 719.13, 719.14, 719.15, 719.16, 719.17, 719.18, 719.19, 719.20, 719.21, 719.22, 719.23, 719.24, 719.25, 719.26, 719.27, 719.28, 719.29, 719.30, 719.31, 719.32, 719.33, 719.34, 719.35, 719.36, 719.37, 719.38, 719.39, 719.40, 719.41, 719.42, 719.43, 719.44, 719.45, 719.46, 719.47, 719.48, 719.49, 719.50, 719.51, 719.52, 719.53, 719.54, 719.55, 719.56, 719.57, 719.58, 719.59, 719.60, 719.61, 719.62, 719.63, 719.64, 719.65, 719.66, 719.67, 719.68, 719.69, 719.70, 719.75, 719.76, 719.77, 719.78, 719.79, 719.80, 719.81, 719.82, 719.83, 719.84, 719.85, 719.86, 719.87, 719.88, 719.89, 719.90, 719.91, 719.92, 719.93, 719.94, 719.95, 719.96, 719.97, 719.98, 719.99, 720.0, V13.4

Fibromyalgia [44]

Musculoskeletal pain [44]

Arthritis [44]