



Supplement

Table S1: ICD-9 codes used to identify each category of medical diagnoses. Where relevant, superordinate codes listed include all subordinate codes in that category (e.g., 388.3 for tinnitus includes 388.0 [tinnitus, unspecified], 388.31 [subjective tinnitus], and 388.32 [objective tinnitus]).

Traumatic Brain Injury	
mTBI	310.2, 850, 850.0, 850.1, 850.11, 850.5, 850.9, 959.01, V15.5_C, V15.5_7, V15.5_2, V15.52_C, V15.52_7, V15.52_2, V15.59_C, V15.59_7, V15.59_2
Moderate TBI	800.00, 800.01, 800.02, 800.03, 800.06, 800.09, 800.10, 800.11, 800.12, 800.13, 800.16, 800.19, 800.20, 800.21, 800.22, 800.23, 800.26, 800.29, 800.30, 800.31, 800.32, 800.33, 800.36, 800.39, 800.40, 800.41, 800.42, 800.43, 800.46, 800.49, 801.00, 801.01, 801.02, 801.03, 801.06, 801.09, 801.10, 801.11, 801.12, 801.13, 801.16, 801.19, 801.20, 801.21, 801.22, 801.23, 801.26, 801.29, 801.30, 801.31, 801.32, 801.33, 801.36, 801.39, 801.40, 801.41, 801.42, 801.43, 801.46, 801.49, 803.00, 803.01, 803.02, 803.03, 803.06, 803.09, 803.10, 803.11, 803.12, 803.13, 803.16, 803.19, 803.20, 803.21, 803.22, 803.23, 803.26, 803.29, 803.30, 803.31, 803.32, 803.33, 803.36, 803.39, 803.40, 803.41, 803.42, 803.43, 803.46, 803.49, 804.00, 804.01, 804.02, 804.03, 804.06, 804.09, 804.10, 804.11, 804.12, 804.13, 804.16, 804.19, 804.20, 804.21, 804.22, 804.23, 804.26, 804.29, 804.30, 804.31, 804.32, 804.33, 804.36, 804.39, 804.40, 804.41, 804.42, 804.43, 804.46, 804.49, 850.12, 850.2, 851.00, 851.01, 851.02, 851.03, 851.06, 851.09, 851.20, 851.21, 851.22, 851.23, 851.26, 851.29, 851.40, 851.41, 851.42, 851.43, 851.46, 851.49, 851.60, 851.61, 851.62, 851.63, 851.66, 851.69, 851.80, 851.81, 851.82, 851.83, 851.86, 851.89, 852.00, 852.01, 852.02, 852.03, 852.06, 852.09, 852.20, 852.21, 852.22, 852.23, 852.26, 852.29, 852.40, 852.41, 852.42, 852.43, 852.46, 852.49, 853.00, 853.01, 853.02, 853.03, 853.06, 853.09, 854.00, 854.01, 854.02, 854.03, 854.06, 854.09, V15.5_D, V15.5_8, V15.5_3, V15.52_D, V15.52_8, V15.52_3, V15.59_D, V15.59_8, V15.59_3
Severe TBI	800.0, 800.1, 800.2, 800.3, 800.4, 800.5, 800.6, 800.7, 800.8, 800.9, 801.0, 801.1, 801.2, 801.3, 801.4, 801.5, 801.6, 801.7, 801.8, 801.9, 803.0, 803.1, 803.2, 803.3, 803.4, 803.5, 803.6, 803.7, 803.8, 803.9, 804.0, 804.1, 804.2, 804.3, 804.4, 804.5, 804.6, 804.7, 804.8, 804.9, 851.0, 851.1, 851.2, 851.3, 851.4, 851.5, 851.6, 851.7, 851.8, 851.9, 852.0, 852.1, 852.2, 852.3,

	852.4, 852.5, 853.0, 853.1, 854.0, 854.1, 907.0, 950.1, 950.2, 950.3, V15.5_1, V15.5_B, V15.5_6, V15.52_0, V15.52_B, V15.52_6, V15.52_1, V15.59_1, V15.59_B, V15.59_6
Penetrating TBI	800.50, 800.51, 800.52, 800.53, 800.54, 800.55, 800.56, 800.59, 800.60, 800.61, 800.62, 800.63, 800.64, 800.65, 800.66, 800.69, 800.70, 800.71, 800.72, 800.73, 800.74, 800.75, 800.76, 800.79, 800.80, 800.81, 800.82, 800.83, 800.84, 800.85, 800.86, 800.89, 800.90, 800.91, 800.92, 800.93, 800.94, 800.95, 800.96, 800.99, 801.50, 801.51, 801.52, 801.53, 801.54, 801.55, 801.56, 801.59, 801.60, 801.61, 801.62, 801.63, 801.64, 801.65, 801.66, 801.69, 801.70, 801.71, 801.72, 801.73, 801.74, 801.75, 801.76, 801.79, 801.80, 801.81, 801.82, 801.83, 801.84, 801.85, 801.86, 801.89, 801.90, 801.91, 801.92, 801.93, 801.94, 801.95, 801.96, 801.99, 803.50, 803.51, 803.52, 803.53, 803.54, 803.55, 803.56, 803.59, 803.60, 803.61, 803.62, 803.63, 803.64, 803.65, 803.66, 803.69, 803.70, 803.71, 803.72, 803.73, 803.74, 803.75, 803.76, 803.79, 803.80, 803.81, 803.82, 803.83, 803.84, 803.85, 803.86, 803.89, 803.90, 803.91, 803.92, 803.93, 803.94, 803.95, 803.96, 803.99, 804.50, 804.51, 804.52, 804.53, 804.54, 804.55, 804.56, 804.59, 804.60, 804.61, 804.62, 804.63, 804.64, 804.65, 804.66, 804.69, 804.70, 804.71, 804.72, 804.73, 804.74, 804.75, 804.76, 804.79, 804.80, 804.81, 804.82, 804.83, 804.84, 804.85, 804.86, 804.89, 804.90, 804.91, 804.92, 804.93, 804.94, 804.95, 804.96, 804.99, 851.10, 851.11, 851.12, 851.13, 851.14, 851.15, 851.16, 851.19, 851.30, 851.31, 851.32, 851.33, 851.34, 851.35, 851.36, 851.39, 851.50, 851.51, 851.52, 851.53, 851.54, 851.55, 851.56, 851.59, 851.70, 851.71, 851.72, 851.73, 851.74, 851.75, 851.76, 851.79, 851.90, 851.91, 851.92, 851.93, 851.94, 851.95, 851.96, 851.99, 852.10, 852.11, 852.12, 852.13, 852.14, 852.15, 852.16, 852.19, 852.30, 852.31, 852.32, 852.33, 852.34, 852.35, 852.36, 852.39, 852.50, 852.51, 852.52, 852.53, 852.54, 852.55, 852.56, 852.59, 853.10, 853.11, 853.12, 853.13, 853.14, 853.15, 853.16, 853.19, 854.10, 854.11, 854.12, 854.13, 854.14, 854.15, 854.16, 854.19, V15.5_F, V15.5_A, V15.5_5, V15.52_F, V15.52_A, V15.52_5, V15.59_F, V15.59_A, V15.59_5
Unclassified TBI	800.04, 800.05, 800.14, 800.15, 800.24, 800.25, 800.34, 800.35, 800.44, 800.45, 801.04, 801.05, 801.14, 801.15, 801.24, 801.25, 801.34, 801.35, 801.44, 801.45, 803.04,

	803.05, 803.14, 803.15, 803.24, 803.25, 803.34, 803.35, 803.44, 803.45, 804.04, 804.05, 804.14, 804.15, 804.24, 804.25, 804.34, 804.35, 804.44, 804.45, 850.3, 850.4, 851.04, 851.05, 851.24, 851.25, 851.44, 851.45, 851.64, 851.65, 851.84, 851.85, 852.04, 852.05, 852.24, 852.25, 852.44, 852.45, 853.04, 853.05, 854.04, 854.05, V15.5_E, V15.5_9, V15.5_4, V15.52_E, V15.52_9, V15.52_4, V15.59_E, V15.59_9, V15.59_4
Conditions Commonly Comorbid with mTBI	
Alteration in mental status	780.02, 780.97
Cognitive problems	799.51–55, 799.59, 780.93, 331.83
Communication disorders	784.3, 784.51, 784.59–61, 784.69
Dizziness/vertigo	386.00, 386.03, 386.10–12, 386.19, 386.2, 386.30, 386.35, 386.40, 386.42–43, 386.50, 386.53, 386.58, 386.9, 780.4
Gait and coordination problems	781.2–3
Headache	339.10–12, 339.20–22, 339.3, 339.41–44, 339.82–85, 339.89, 339.00–03, 346.00–03, 346.10–13, 346.20–21, 346.30, 346.40, 346.51, 346.70–73, 346.80–82, 346.90–93, 784.0
Hearing problems	388.10–12, 388.2, 388.30–32, 388.40, 388.42–45, 388.5, 388.9, 389.00–06, 389.10–22, 398.8, 398.9
Non-headache pain	307.8, 307.89, 338–338.4, 355, 355.9, 356–356.9, 357.2, 357.9, 524.6, 710–733.99
Skin sensation disturbances	782.0
Sleep disorders and symptoms	307.40–49, 327.00–02, 327.09–15, 327.19–24, 327.26–27, 327.29, 327.30–31, 327.33, 327.35–36, 327.39, 327.40–44, 327.49, 327.51, 327.53, 327.59, 327.8, 347.00–01, 347.10, 780.50–59
Smell and taste disturbances	781.1
Syncope and collapse	780.2
Vision problems	377.75, 377.9, 378.00–01, 378.05, 378.10–11, 378.15, 378.17, 378.20–24, 378.30–35, 378.40–43, 378.45, 378.50–55, 378.60, 379.50–52, 379.54, 379.56–58, 379.8, 379.90–93
Behavioral Health Conditions	
Adjustment disorders	309.0, 309.1, 309.23–24, 309.28–29, 390.3, 309.4, 309.82–83, 309.89, 309.9
Anxiety disorders	293.84, 300.00–02, 300.09, 300.20–23, 300.29, 300.3, 300.89, 300.9
Acute stress disorders	308.0–4, 308.9

Alcohol abuse/dependence	303.00–03, 303.90–93, 305.00–03
ADD/ADHD	314.00–01, 314.8–9
Bipolar disorder	296.00–05, 296.10, 296.14, 296.40–45, 296.50–55, 296.60–64, 296.7, 296.80–82, 296.89
Delirium/dementia	293.0–1, 294.0, 294.8–9, 301.0, 310.2, 310.89, 310.9
Depression	293.83, 296.20–26, 296.30–36, 300.4, 311
Drug abuse/dependence	304.00–03, 304.10–13, 304.20–23, 304.30–33, 304.40–43, 304.50, 304.53, 304.60–63, 304.70, 304.71–73, 304.80–83, 304.90–93, 305.20–23, 305.30, 305.32–33, 305.40–43, 305.50–53, 305.60–63, 305.70–73, 305.80–81, 305.90–93
Personality disorders	301.0, 301.10, 301.12–13, 301.20, 301.22, 301.3–4, 301.50–51, 301.59, 301.6–7, 301.81–83, 301.89, 301.9
PTSD	309.81
Exploratory LLB-related Diagnoses	
Post-concussive syndrome	310.2
Tinnitus	338.3
Fatigue	780.7
Migraines	346