

Table E1. Detailed list of ICD-10 codes used to identify mechanisms of injury.**INTENT**Unintentional: V00 X59, Y85 Y86Suicide: X60 X84, U03, Y87.0Homicide: X85 Y09, U01 U02, Y87.1Undetermined: Y10 Y34, Y87.2, Y89.9Intervention: Y35 Y36, Y89.0, Y89.1**MECHANISM**Cuts / Pierces: W25 W29, W45, X78, X99, Y28, Y35.4Drowning: W65 W74, X71, X92, Y21Falls: W00 W19, X80, Y01, Y30Fire (Any): X00 X19, X76 X77, X97 X98, Y26 Y27, Y36.3, U01.3Firearms: W32 W34, X72 X74, X93 X95, Y22 Y24, Y35.0, U01.4Machinery: W24, W30 W31Transport (Any): V00 V99, X82, Y03, Y32, Y36.1, U01.1Transport (Motor Vehicle ONLY): V02.[1,9], V03.[1,9] V04.[1,9],

V1[2 4].[3 9], V19.[4 6], V2[0 8].[3 9], V29.[4 9], V3[0 9].[4 9],

V4[0 9].[4 9], V5[0 9].[4 9], V6[0 9].[4 9], V7[0 9].[4 9], V80.[3 5],

V81.[1 2], V82.1, V8[3 6].[0 3], V87.[0 8], V89.2

Natural / Environmental: W42 W43, W53 W64, W92 W99,

X20 X39, X51 X57

Overexertion: X50Poisoning: X40 X49, X60 X69, X85 X90, Y10 Y19, Y35.2, U01.[6 7]Struck: W20 W22, W50 W52, X79, Y00, Y04, Y29, Y35.3Suffocation: W75 W84, X70, X91, Y20Other Specified / Classifiable: W23, W35 W41, W44, W49, W85 W91,

X75, X81, X96, Y02, Y05 Y07, Y25, Y31, Y35.[1,5], Y36.[0,2,4 8], Y85,

U01.[0,2,5], U03.0

Other Specified: X58, X83, Y08, Y33, Y35.6, Y86, Y87.[0 2], Y89.[0 1],

U01.8, U02

Unspecified: X59, X84, Y09, Y34, Y35.7, Y36.9, Y89.9, U01.9, U03.9

Table E2. Urban-rural county classification codes with definition and descriptive factors of the counties in each group.

County Code	Definition of Counties [^]	Income Median [IQ range]	Age Median [IQ range]	Median Living Alone Percent [IQ range]	Median Male Percent [IQ range]	Median College Educated Percent [IQ range]	Median Unemployed Percent [IQ range]	Median Latino Percent [IQ range]	Median Black Percent [IQ range]
Code 0	Population of ≥ 1 million in metropolitan areas with population ≥ 1 million	41,466 [38,639, 50,398]	34.2 [33, 36.4]	9.9 [8.4, 11.9]	49.1 [48.2, 49.9]	26.9 [22.7, 34.9]	3.7 [2.7, 4.8]	19.7 [5.5, 29.9]	12.8 [7.2, 20.3]
Code 1	Population of < 1 million in metropolitan areas with population ≥ 1 million	44,119 [37,477, 53,496]	35.9 [34.2, 37.4]	8.1 [6.8, 9.5]	49.6 [48.8, 50.2]	20.4 [13.3, 29.6]	3.1 [2.4, 4.1]	2.6 [1.2, 6.5]	6.2 [1.5, 14.4]
Code 2	Population 250,000 1,000,000 in metropolitan areas	38,488 [33,786, 42,909]	36.3 [34.4, 37.9]	9.2 [8.1, 10.5]	49.2 [48.5, 49.9]	18.3 [13.5, 24.8]	3.6 [2.8, 4.7]	2.5 [1.2, 6.2]	4.2 [0.9, 13.5]
Code 3	Population $< 250,000$ in metropolitan areas	35,194 [31,768, 39,052]	36.2 [33.6, 38.1]	9.6 [8.4, 10.7]	49.2 [48.6, 50.1]	16.7 [12.8, 22.0]	3.9 [3.0, 5.2]	2.0 [1.1, 5.2]	4.1 [0.7, 13.4]
Code 4	Urban population of $\geq 20,000$ and adjacent to a metropolitan area	33,722 [30,842, 39,048]	37.0 [35.1, 38.6]	9.7 [8.8, 10.5]	49.1 [48.5, 49.8]	15.0 [12.3, 18.8]	4.6 [3.4, 6.0]	2.9 [1.2, 5.9]	2.7 [0.9, 13.2]
Code 5	Urban population of $\geq 20,000$ and not adjacent to a metropolitan area	33,285 [30,385, 36,569]	35.8 [32.4, 38.1]	10.1 [8.8, 11.3]	49.3 [48.2, 50.4]	17.5 [15.6, 22.4]	4.4 [3.2, 6.1]	2.4 [1.2, 8.2]	2.0 [0.6, 6.6]
Code 6	Urban population of 2,500 19,999 and adjacent to a metropolitan area	31,219 [27,732, 34,903]	37.6 [35.7, 39.2]	9.6 [8.8, 10.4]	49.3 [48.6, 50.2]	11.8 [10.1, 14.5]	4.9 [3.6, 6.4]	1.7 [0.9, 4.9]	2.1 [0.3, 12.9]
Code 7	Urban population of 2,500 19,999 and not adjacent to a metropolitan area	30,808 [27,504, 34,728]	38.1 [35.7, 40.3]	10.5 [9.3, 11.6]	49.2 [48.5, 50.0]	13.7 [11.0, 16.8]	4.9 [3.3, 6.4]	1.6 [0.8, 4.8]	0.5 [0.2, 3.8]
Code 8	Completely rural or $< 2,500$ urban population and adjacent to a metropolitan area	30,161 [26,954, 34,295]	39.6 [37.3, 42]	10.1 [9.0, 11.3]	49.7 [48.8, 50.7]	12.0 [9.3, 15.1]	4.7 [3.4, 7.5]	1.2 [0.7, 2.6]	0.5 [0.1, 6.2]
Code 9	Completely rural or $< 2,500$ urban population and not adjacent to a metropolitan area	29,544 [25,979, 32,749]	41.1 [38.6, 43]	11.2 [9.9, 12.4]	49.5 [48.7, 50.4]	14.0 [10.9, 16.7]	3.9 [2.6, 6.4]	1.1 [0.7, 2.6]	0.2 [0.1, 0.6]

[^]See Branas et al¹⁴ for information on the percentage of US counties and percentage of US population in each category.

Table E3. Among the total population, death rate per 100,000 persons for each mechanism of injury, as well as adjusted rate ratio of injury death for each mechanism across the rural-urban continuum.

	Most Urban Counties					Most Rural Counties				
All injuries										
Death rate	49.72	50.29	61.04	64.25	58.83	66.53	65.76	70.19	72.66	73.76
RR death	ref	1.12	1.12	1.1	1.06	1.08	1.12	1.14*	1.23**	1.22**
95% CI		0.99,1.26	0.99,1.27	0.97,1.24	0.93,1.20	0.95,1.24	0.99,1.27	1.01,1.29	1.08,1.41	1.07,1.39
Cut/pierce										
Death rate	1.11	0.88	0.90	0.85	0.75	0.81	0.75	0.73	0.65	0.69
RR death	ref	0.94	0.94	0.93	0.86	0.83	0.78**	0.77**	0.67**	0.76*
95% CI		0.81,1.08	0.82,1.09	0.80,1.09	0.73,1.02	0.69,1.01	0.67,0.92	0.64,0.91	0.53,0.86	0.60,0.95
Drown										
Death rate	1.19	1.18	1.45	1.65	1.77	2.07	1.98	2.02	2.39	2.37
RR death	ref	1.05	1	1.03	1	1.11	1.05	1.02	1.06	1.05
95% CI		0.87,1.26	0.83,1.20	0.85,1.25	0.82,1.22	0.89,1.39	0.86,1.28	0.83,1.26	0.83,1.34	0.83,1.33
Fall										
Death rate	6.22	5.60	7.27	7.50	4.23	7.35	3.81	4.89	3.84	4.05
RR death	ref	0.84	1	1.19	0.91	1.24	0.88	0.87	0.81	0.70**
95% CI		0.68,1.05	0.80,1.25	0.95,1.50	0.72,1.15	0.96,1.59	0.70,1.11	0.69,1.10	0.62,1.06	0.54,0.92
Fire										
Death rate	1.13	1.18	1.36	1.40	1.34	1.63	1.91	1.75	2.14	2.15
RR death	ref	0.86	0.85	0.76**	0.70***	0.74*	0.87	0.77*	0.91	0.87
95% CI		0.71,1.03	0.71,1.03	0.63,0.92	0.57,0.86	0.59,0.94	0.71,1.06	0.63,0.96	0.71,1.16	0.68,1.11
Firearm										
Death rate	10.50	9.52	10.13	10.51	10.39	11.01	11.91	12.42	14.15	13.88
RR death	ref	0.98	0.91	0.84**	0.82**	0.85*	0.85**	0.85**	0.96	0.91
95% CI		0.87,1.09	0.81,1.02	0.75,0.94	0.73,0.93	0.74,0.96	0.76,0.96	0.76,0.96	0.84,1.09	0.80,1.03
Machinery										
Death rate	0.11	0.17	0.25	0.33	0.33	0.36	0.57	0.51	0.73	0.90
RR death	ref	1.50***	1.73***	1.96***	1.86***	1.92***	2.81***	2.41***	3.41***	3.88***
95% CI		1.23,1.82	1.42,2.11	1.59,2.42	1.47,2.34	1.46,2.52	2.25,3.51	1.89,3.07	2.54,4.56	2.94,5.11
Transport										
Death rate	11.60	12.72	18.40	21.15	20.04	21.59	26.31	27.08	31.42	31.97
RR death	ref	1.43***	1.54***	1.54***	1.42***	1.43***	1.73***	1.77***	2.13***	2.16***
95% CI		1.21,1.68	1.31,1.81	1.30,1.81	1.20,1.68	1.20,1.72	1.46,2.04	1.50,2.09	1.78,2.54	1.81,2.57
MVC^										
Death rate	10.58	11.62	16.81	19.22	18.13	19.22	23.90	23.73	28.07	27.61
RR death	ref	1.42***	1.52***	1.51***	1.40***	1.40***	1.69***	1.69***	2.08***	2.00***
95% CI		1.20,1.67	1.29,1.80	1.28,1.79	1.18,1.67	1.16,1.68	1.43,2.01	1.42,2.00	1.73,2.50	1.67,2.39
Environmental										
Death rate	0.37	0.52	0.52	0.78	0.77	0.90	0.92	1.15	1.22	1.28
RR death	ref	1.66***	1.28	1.55**	1.57**	1.65**	1.81***	2.04***	2.30***	2.21***
95% CI		1.27,2.17	0.97,1.68	1.17,2.05	1.16,2.13	1.17,2.33	1.34,2.44	1.50,2.79	1.57,3.37	1.53,3.20
Overexertion										
Death rate	0.0021	0.0026	0.0039	0.010	0.0043	0.016	0.0074	0.010	0.015	0.0045
RR death	ref	1.38	1.25	2.28	1	2.71	1.39	1.72	2.31	0.58
95% CI		0.54,3.52	0.48,3.24	0.83,6.22	0.25,3.92	0.75,9.80	0.40,4.89	0.45,6.57	0.42,12.65	0.05,6.76
Poisoning										
Death rate	9.82	9.46	10.33	8.99	8.57	8.50	7.51	8.55	7.22	6.91
RR death	ref	0.84*	0.76**	0.65***	0.65***	0.58***	0.54***	0.54***	0.47***	0.41***
95% CI		0.71,0.99	0.64,0.89	0.55,0.77	0.55,0.78	0.48,0.70	0.46,0.64	0.45,0.64	0.39,0.57	0.34,0.50
Struck										
Death rate	0.28	0.34	0.44	0.55	0.42	0.58	0.59	0.66	0.79	0.82
RR death	ref	1.26**	1.43***	1.64***	1.29*	1.60***	1.64***	1.73***	2.08***	2.04***
95% CI		1.07,1.49	1.21,1.69	1.37,1.95	1.06,1.57	1.28,2.01	1.36,1.99	1.41,2.12	1.61,2.69	1.59,2.62
Suffocation										
Death rate	3.82	4.35	5.03	5.17	5.03	5.53	4.74	5.00	3.98	4.38
RR death	ref	1.17*	1.18*	1.18*	1.22**	1.25**	1.14	1.15	0.95	1.01
95% CI		1.02,1.34	1.02,1.35	1.03,1.36	1.05,1.41	1.06,1.46	0.99,1.32	0.99,1.33	0.80,1.12	0.86,1.19

Covariates in risk models: year, median income, % adults living alone, % males, % black, % latino, % college educated, % unemployed, region of the country

[^]MVC mechanism is a subset of Transport mechanism

*p<0.05

**p<0.01

***p<0.001