

## Supplementary Online Content

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This supplementary material has been provided by the authors to give readers additional information about their work.

**eTable 1. ICD-10-CM Codes Used to Define Primary Cause of Death Groups Used in Tables 1 through 3**

<b>Diagnostic Groups</b>	<b>ICD-10-CM Codes</b>
Natural causes	A00-R99
Cardiovascular	I00-I99
Ischemic heart disease	I20-I25
Non-ischemic heart disease	I00-I09, I11, I13, I26-I51
Stroke	I60-I66
Other circulatory disease	Other I00-I99
Cancer	C00-C97
Lung	C34
Colon	C18
Breast	C50
Liver	C22
Pancreas	C25
Hematologic	C81-C96
Other cancers	Other C00-C97
Diabetes mellitus	E10-E14
Renal failure	N17-N19
Influenza or pneumonia	J09-J18
Sepsis	A40-A41
Chronic obstructive pulmonary disease	J40-J44
Liver diseases	K70-K77
Other natural causes	Other A00-R99
Unnatural causes	U01-U03, V00-Y99
Suicide	X60-X84, Y87.0, U03
Accidents	V01-X59, Y85-Y86
Assault (homicide)	U01-U02, X85-Y09, Y87.1
Injuries with undetermined intent and other injuries	Other A00-R99

<b>eTable 2. ICD-10-CM Codes Used to Define Primary Cause of Death Groups in Table 4</b>	
<b>Diagnostic Groups</b>	<b>ICD-10-CM Codes</b>
Substance-induced deaths	D52.1, D59.0, D59.2, D61.1, D64.2, E06.4, E16.0, E23.1, E24.2, E27.3, E66.1, F11.1-F11.5, F11.7-F11.9, F12.1-F12.5, F12.7-F12.9, F13.1-F13.5, F13.7-F13.9, F14.1-F14.5, F14.7-F14.9, F15.1-F15.5, F15.7-F15.9, F16.1-F16.5, F16.7-F16.9, F17.3-F17.5, F17.7-F17.9, F18.1-F18.5, F18.7-F18.9, F19.1-F19.5, F19.7-F19.9, G21.1, G24.0, G25.1, G25.4, G25.6, G44.4, G62.0, G72.0, I95.2, J70.2-J70.4, K85.3, L10.5, L27.0-L27.1, M10.2, M32.0, M80.4, M81.4, M83.5, M87.1, R50.2, R78.0-R78.5, X40-X44, X60-X64, X85, Y10-Y14, E24.4, F10, G31.2, G62.1, G72.1, I42.6, K29.2, K70, K85.2, K86.0, R78, X45, X65, Y15
Substance-induced, suicide deaths	X60-X65
Substance induced, non-suicide deaths	D52.1, D59.0, D59.2, D61.1, D64.2, E06.4, E16.0, E23.1, E24.2, E27.3, E66.1, F11.1-F11.5, F11.7-F11.9, F12.1-F12.5, F12.7-F12.9, F13.1-F13.5, F13.7-F13.9, F14.1-F14.5, F14.7-F14.9, F15.1-F15.5, F15.7-F15.9, F16.1-F16.5, F16.7-F16.9, F17.3-F17.5, F17.7-F17.9, F18.1-F18.5, F18.7-F18.9, F19.1-F19.5, F19.7-F19.9, G21.1, G24.0, G25.1, G25.4, G25.6, G44.4, G62.0, G72.0, I95.2, J70.2-J70.4, K85.3, L10.5, L27.0-L27.1, M10.2, M32.0, M80.4, M81.4, M83.5, M87.1, R50.2, R78.0-R78.5, X40-X44, X85, Y10-Y14, E24.4, F10, G31.2, G62.1, G72.1, I42.6, K29.2, K70, K85.2, K86.0, R78.0, X45, Y15
Non-suicide, drug-induced deaths	D52.1, D59.0, D59.2, D61.1, D64.2, E06.4, E16.0, E23.1, E24.2, E27.3, E66.1, F11.1-F11.5, F11.7-F11.9, F12.1-F12.5, F12.7-F12.9, F13.1-F13.5, F13.7-F13.9, F14.1-F14.5, F14.7-F14.9, F15.1-F15.5, F15.7-F15.9, F16.1-F16.5, F16.7-F16.9, F17.3-F17.5, F17.7-F17.9, F18.1-F18.5, F18.7-F18.9, F19.1-F19.5, F19.7-F19.9, G21.1, G24.0, G25.1, G25.4, G25.6, G44.4, G62.0, G72.0, I95.2, J70.2-J70.4, K85.3, L10.5, L27.0-L27.1, M10.2, M32.0, M80.4, M81.4, M83.5, M87.1, R50.2, R78.1-R78.5, X40-X44, X85, Y10-Y14
Non-suicide, drug-induced deaths, non-drug abuse	D52.1, D59.0, D59.2, D61.1, D64.2, E06.4, E16.0, E23.1, E24.2, E27.3, E66.1, F17.3-F17.5, F17.7-F17.9, G21.1, G24.0, G25.1, G25.4, G25.6, G44.4, G62.0, G72.0, I95.2, J70.2-J70.4, K85.3, L10.5, L27.0-L27.1, M10.2, M32.0, M80.4, M81.4, M83.5, M87.1, R50.2, X40, X41, X43, X44, X85, Y10, Y11, Y13, Y14
Non-suicide, drug-induced deaths, drug abuse	R78.1-R78.4, F11.1-F11.5, F11.7-F11.9, F12.1-F12.5, F12.7-F12.9, F13.1-F13.5, F13.7-F13.9, F14.1-F14.5, F14.7-F14.9, F15.1-F15.5, F15.7-F15.9, F16.1-F16.5, F16.7-F16.9, F18.1-F18.5, F18.7-F18.9, F19.1-F19.5, F19.7-F19.9, R78.1-R78.5, X42, Y12
Non-suicide, alcohol-induced deaths	E24.4, F10, G31.2, G62.1, G72.1, I42.6, K29.2, K70, K85.2, K86.0, R78.0, X45, Y15
Firearms	U01.4, W32-W34, X72-X74, X93-X95, Y22-Y24.
Firearms, suicide	X72-X74,
Firearms, assault (homicide)	X93-X95, U01.4
Firearms, accidental and undetermined intent	W32-W34, Y22-24
Legal intervention	Y35

<b>eTable 3. Total Patients, Fee-for-Service Patients, Managed Care Patients, and Deaths in the Schizophrenia Cohort Stratified by State</b>				
State	Total Patients	Fee-for-Service Patients (N)	Managed Care Patients (N)	Deaths (N)
<b>Total</b>	<b>1,138,853</b>	<b>967,538</b>	<b>171,315</b>	<b>74,003</b>
Alaska	2,479	2,479	0	121
Alabama	19,301	18,930	371	1,525
Arkansas	12,410	12,410	0	789
California	158,688	129,212	29,476	6,118
Colorado	7,970	6,967	1,003	562
Connecticut	15,851	15,703	148	1,107
Florida	62,979	54,726	8,253	5,301
Georgia	31,841	31,112	729	2,541
Hawaii	7,321	5,950	1,371	415
Iowa	10,132	10,125	7	715
Idaho	4,970	4,970	0	260
Illinois	57,048	56,902	146	4,880
Indiana	22,627	21,720	907	1,874
Kansas	9,439	9,105	334	747
Kentucky	16,465	13,544	2,921	1,234
Louisiana	23,060	23,060	0	2,165
Maine	4,636	4,636	0	289
Maryland	21,615	11,802	9,813	1,657
Massachusetts	29,157	28,408	749	2,000
Michigan	29,117	18,108	11,009	939
Minnesota	22,999	21,286	1,713	1,440
Missouri	32,011	31,386	625	2,468
Mississippi	18,243	18,243	0	1,316
Montana	3,042	3,042	0	225
North Carolina	35,436	35,405	31	2,854
North Dakota	1,677	1,677	0	103
Nebraska	6,484	5,902	582	467
New Hampshire	3,275	3,275	0	230
New Jersey	30,015	21,105	8,910	2081
New Mexico	6,584	3,483	3,101	475
New York	147,262	113,195	34,067	7,005
Ohio	55,204	40,984	14,220	4,383
Oklahoma	20,161	18,961	1,200	1,310
Pennsylvania	26,550	20,121	6,429	2,375
South Carolina	16,501	15,846	655	1,168
South Dakota	1,452	1,452	0	55
Tennessee	28,632	22,015	6,617	2,513
Texas	54,893	37,368	17,525	3,540
Utah	4,310	4,246	64	360
Virginia	22,321	15,367	6,954	1,257
Vermont	1,857	1,857	0	37
Washington	21,356	20,771	585	848
Wisconsin	20,900	20,239	661	1,556
West Virginia	9,524	9,385	139	635
Wyoming	1,058	1,058	0	63

**eTable 4. Number of Observed Deaths of Adult Medicaid Beneficiaries Diagnosed With Schizophrenia by Disease Category, Sex, Age Group, and Race/Ethnic Group**

Disease	Sex		Age Group, Years			Race/Ethnicity			
	Male	Female	20-34	35-54	55-64	White, Non-Hispanic	Black, Non-Hispanic	Other, Non-Hispanic**	Hispanic
All Cause	40,544	33,458	4,583	35,815	33,605	44,125	19,227	1,398	2,665
Natural Deaths	29,631	26,109	1,896	25,222	28,623	33,581	14,640	898	1,779
Cardiovascular	10,716	8,665	547	8,605	10,229	11,369	5,342	320	577
Ischemic heart disease	5,886	4,210	148	4,138	5,810	6,266	2,362	174	296
Non-ischemic heart disease	3,172	2,816	319	3,229	2,440	3,345	1,861	95	173
Cerebrovascular	758	803	30	537	994	829	519	25	51
Other circulatory	900	836	50	701	985	929	600	26	57
Cancer	4,767	4,871	107	3,831	5,700	5,865	2,419	160	258
Lung	2,021	1,574	*	1,321	2,269	2,339	794	47	58
Colon	338	341	*	249	422	409	182	11	21
Breast	16	979	*	417	570	501	337	25	32
Liver	230	85	*	136	177	165	81	11	19
Pancreas	227	174	*	153	246	241	114	*	13
Hematologic	371	277	33	294	321	396	143	*	29
Other cancer	1,564	1,441	49	1,261	1,695	1,814	768	52	86
Diabetes mellitus	1,357	1,612	132	1,327	1,510	1,533	989	71	124
Renal failure	176	151	14	121	192	186	114	*	11
Influenza and pneumonia	879	723	52	616	934	1,073	332	22	51
Sepsis	590	664	28	467	759	731	370	23	29
COPD	2,154	2,150	14	1,370	2,920	3,315	547	30	73
Liver disease	921	470	32	889	470	824	289	38	106
Other natural	8,071	6,803	970	7,996	5,909	8,658	4,238	233	550
Unnatural Deaths	6,217	3,595	2,030	6,236	1,546	6,481	1,816	254	412
Suicide	1,638	860	737	1,482	279	1,793	308	85	88
Assault (Homicide)	421	161	151	361	70	216	273	12	30
Accidents	3,600	2,153	969	3,713	1,071	3,793	1,064	127	269
Poisoning	1,739	1,107	548	2,069	229	1,968	427	58	152
Non-poisoning	1,861	1,046	421	1,644	842	1,825	637	69	117
Undetermined intent & other	558	421	173	680	126	679	171	30	25

Schizophrenia mortality data from National Death Index data of Medicaid beneficiaries aged 20 to 64 years in 2001-2009. \*≤10 deaths, results suppressed.

\*\* N=105,277 with missing race/ethnicity excluded. Other Non-Hispanic includes 8,759 American Indians, 13,717 Asian/Pacific Islanders, 18,419 Native Hawaiians, and 833 with two or more races.

**eTable 5. Demographic Characteristics of a National Cohort of Medicaid Beneficiaries Diagnosed With Schizophrenia, Observed Deaths, Person Years, and All-Cause Mortality Rates**

Characteristic	Total N (%)	Observed Deaths	Person Years	All Cause Mortality Rate per 100,000 Person-Years (95% CI)
Total	1,138,853 (100)	74,003	4,807,121	1539.5 (1528.4 – 1550.5)
Sex				
Male	610,711 (53.6)	40,544	2,572,033	1576.3 (1561.0 – 1591.7)
Female	528,097 (46.4)	33,458	2,234,995	1497.0 (1481.0 – 1513.1)
Age, years				
20-34	270,670 (23.8)	4,583	997,117	459.6 (446.3 – 472.9)
35-44	323,856 (28.4)	11,956	1,408,602	848.8 (833.6 – 864.0)
45-54	340,238 (29.9)	23,859	1,494,920	1596.0 (1575.8 – 1616.3)
55-64	204,089 (17.9)	33,605	906,482	3707.2 (3667.6 – 3746.8)
Race/ethnicity*				
Hispanic	72,583 (6.4)	2,665	262,071	1016.9 (978.3 – 1055.5)
White, non-Hispanic	587,096 (51.6)	44,125	2,493,138	1769.9 (1753.3 – 1786.4)
Black, non-Hispanic	332,169 (29.2)	19,227	1,371,102	1402.3 (1382.5 – 1422.1)
Other, non-Hispanic	41,728 (3.7)	1,398	185,277	754.5 (715.0 – 794.1)
Schizophrenia mortality data from National Death Index data of Medicaid beneficiaries aged 20 to 64 years in 2001-2007 with ≥2 outpatient or ≥1 inpatient claim for schizophrenia. * N=105,277 with missing race/ethnicity excluded from race/ethnicity analysis. Other, non-Hispanic includes 8,759 American Indians, 13,717 Asian/Pacific Islanders, 18,419 Native Hawaiians, and 833 with two or more races.				