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TABLE S1. ICD-9-CM and ICD-10 codes for principal hospital diagnoses

	ICD-9-CM	ICD-10
Major depressive disorder	2961; 2962; 2963; 2969; 3004; 3011; 3090; 311	F322; F325; F329; F330; F331; F332; F334; F338; F339; F39
Bipolar disorder	2960; 2964; 2965; 2966; 2967; 2968;	F301; F302; F311; F312; F313; F314; F315; F316; F317; F318; F319
Psychotic depression	2980;	F323; F333
Schizophrenia/schizoaffective disorder	2938; 2951; 2952; 2953; 2954; 2956; 2957; 2958; 2959; 2971; 2978; 2979; 2988; 2989	F200; F201; F202; F203; F250; F251; F258; F259; F28; F29
Other	Other psychiatric ICD codes not mentioned above.	

Note: The principal diagnosis, as defined in the NUBC Official UB-04 Data Specifications Manual, is "the condition established after study to be chiefly responsible for occasioning the admission of the patient for care."¹

TABLE S2. ICD-10 codes for suicide deaths

	113 ICD-10 Cause of death recodes²	358 ICD-10 Cause of death recodes³	Individual ICD-10 code
Undetermined suicide	124; 125; 126	42400; 42500; 42600; 42700; 42800; 42900; 43000; 43100	Y10; Y11; Y12; Y13; Y14; Y15; Y16; Y17; Y18; Y19; Y20; Y21; Y22; Y23; Y24; Y25; Y26; Y27; Y28; Y29; Y30; Y31; Y32; Y33; Y34
Determined suicide			If first three characters include: X60; X61; X62; X63; X64; X65; X66; X67; X68; X69; X70; X71; X72; X73; X74; X75; X76; X77; X78; X79; X80; X81; X82; X83; X84; Y87
Accidental death	119,122		W32-W34; X40-X49

TABLE S3. Baseline differences in clinical and demographic characteristics between electroconvulsive therapy (ECT) and control groups after inverse probability treatment weighting

	Control (N=31,160) %	ECT (N=10,460) %	Standardized difference
Age, years			<0.01
65-74	55.2	55.1	
75-84	33.9	34.1	
85+	10.8	10.7	
Female sex	65.5	66.1	0.01
Year of index hospitalization			0.09
2011	21.7	23.2	
2012	20.9	22.8	
2013	20.1	19.8	
2014	18.3	18.1	
2015	19.0	16.1	
Urban residence	82.0	82.5	0.01
Modified Elixhauser index score			0.04
0	27.9	27.8	
1-5	19.5	19.4	
6-12	27.7	27.8	
>12	24.9	25.0	
Past-year psychiatric hospitalization			0.04
0	60.4	59.3	
1	24.7	25.3	
2	9.0	9.2	
≥3	6.0	6.3	
Past-year suicide attempt			0.15
0	95.0	94.8	
1	4.4	4.6	
≥2	0.6	0.6	
Race/ethnicity			0.17
Non-Hispanic White	87.5	87.4	
Hispanic	3.9	3.7	
African American	6.8	5.6	
Other	1.5	2.8	
Geographic region			<0.01
Northeast	24.6	24.7	
South	21.8	21.8	
Midwest	43.0	42.8	
West	10.7	10.8	
Principal hospital diagnosis			0.03
Major depressive disorder	70.4	69.3	
Bipolar disorder	18.8	19.9	
Psychotic depression	0.9	0.9	
Schizophrenia/schizoaffective disorder	6.5	6.7	
Other	3.3	3.3	
Median Income of Zip Code			<0.01
<\$40,000	22.6	22.6	
\$40,000 - \$60,000	40.1	40.0	
≥\$60,000	35.3	35.4	
Past-year psychotropic medication use			

Antidepressant	57.7	56.2	0.03
Lithium	3.9	3.9	<0.01
Antiepileptic Mood stabilizer	25.5	24.8	0.02
Antipsychotic	36.1	36.0	<0.01

TABLE S4. Hazard ratios for all-cause mortality and suicide deaths using Cox proportional hazard models following inverse probability treatment weighting

Outcome	Hazard Ratio (95% CI)
<i>All-cause mortality</i>	
30 days*	0.54 (0.49 to 0.61)
60 days	0.56 (0.52 to 0.61)
90 days	0.55 (0.51 to 0.57)
180 days	0.57 (0.54 to 0.61)
365 days	0.61 (0.58 to 0.64)
<i>Suicide death</i>	
30 days	0.38 (0.25 to 0.58)
60 days	0.44 (0.31 to 0.62)
90 days	0.52 (0.39 to 0.70)
180 days	0.88 (0.70 to 1.10)
365 days	0.89 (0.74 to 1.06)

*Days following index date, which is hospital discharge date.

TABLE S5. Hazard ratios for all-cause mortality and suicide deaths using Cox proportional hazard models following exact matching (1:1 ratio) including length-of-stay as an exact-matched variable

Outcome	Hazard Ratio (95% CI)
<i>All-cause mortality</i>	
30 days*	0.58 (0.46 to 0.72)
60 days	0.58 (0.49 to 0.68)
90 days	0.53 (0.46 to 0.61)
180 days	0.53 (0.47 to 0.59)
365 days	0.56 (0.51 to 0.61)
<i>Suicide death</i>	
30 days	0.67 (0.31 to 1.44)
60 days	0.67 (0.36 to 1.27)
90 days	0.66 (0.37 to 1.18)
180 days	1.03 (0.65 to 1.64)
365 days	0.99 (0.68 to 1.42)

*Days following index date, which is hospital discharge date.

TABLE S6. Baseline clinical and demographic characteristics: Therapeutic versus subtherapeutic electroconvulsive therapy (ECT) groups

	Therapeutic ECT (N=6,670) n (%)	Subtherapeutic ECT (N=2,063) n (%)	Standardized difference
Age			0.09
65-74	3,612 (54.2)	1,155 (56.0)	
75-84	2,313 (34.7)	651 (31.6)	
85+	745 (11.2)	257 (12.5)	
Female sex	4,379 (65.7)	1,343 (65.1)	0.02
Year of index hospitalization			0.03
2011	1,513 (22.7)	479 (23.2)	
2012	1,492 (22.4)	464 (22.5)	
2013	1,340 (20.1)	403 (19.5)	
2014	1,230 (18.4)	381 (18.5)	
2015	1,095 (16.4)	336 (16.3)	
Urban residence	5,728 (85.9)	1,758 (85.2)	0.01
Modified Elixhauser index score			0.08
0	1,781 (26.7)	571 (27.7)	
1-5	1,311 (19.7)	378 (18.3)	
6-12	1,821 (27.3)	612 (29.7)	
>12	1,757 (26.3)	502 (24.3)	
Past-year psychiatric hospitalizations			0.15
0	3,823 (57.3)	1,286 (62.3)	
1	1,690 (25.3)	493 (23.9)	
2	694 (10.4)	152 (7.4)	
≥3	463 (6.9)	132 (6.4)	
Past-year suicide attempts			0.05
0	6,291 (94.3)	1,964 (95.2)	
1	213 (4.8)	88 (4.3)	
≥2	61 (0.9)	11 (0.5)	
Race/ethnicity			0.16
Non-Hispanic White	6,091 (91.3)	1,886 (91.4)	
Hispanic	176 (2.6)	52 (2.5)	
African American/Black	228 (3.4)	84 (4.1)	
Other	145 (2.2)	38 (1.8)	
Geographic region			0.20
Northeast	2,081 (31.2)	592 (28.7)	
South	1,788 (26.8)	662 (32.1)	
Midwest	2,064 (30.9)	674 (32.7)	
West	737 (11.1)	135 (6.5)	
Principal hospital diagnosis			0.12
Major depressive disorder	4,650 (69.7)	1,402 (68.0)	
Bipolar disorder	1,285 (19.3)	383 (18.6)	
Psychotic depression	72 (1.1)	15 (0.7)	
Schizophrenia/schizoaffective disorder	478 (7.1)	153 (7.4)	
Other	185 (2.8)	110 (5.3)	
Median income of zip code			0.08
<\$40,000	925 (13.9)	307 (14.9)	
\$40,000-\$60,000	2,502 (37.5)	841 (40.8)	
≥\$60,000	3,150 (47.2)	884 (42.9)	
Past-year psychotropic medication use			

Antidepressant	4,099 (61.5)	1,181 (57.3)	0.08
Lithium	501 (7.5)	120 (5.8)	0.07
Antiepileptic mood stabilizer	1,799 (27.0)	501 (24.3)	0.06
Antipsychotic	3,140 (47.1)	855 (41.4)	0.12

References

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2. Research Data Assistance Center (ResDAC). 113 ICD-10 Cause of Death Recodes. Available at: <https://resdac.org/cms-data/variables/113-icd-10-cause-death-recodes>. Accessed on March 31, 2021.
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