

S5. Parameter estimates from Cox model without any interaction terms

Of note, we only measured AED use during baseline while did not measure or adjust AED use during follow-up because AED use might be an intermediate variable on a causal pathway from exposure to outcome. Adjusting for an intermediate variable biases the results toward the null.² Also, the hazard ratios for the confounders may provide some hint for the identification of high-risk patients for seizure-related hospitalization; however, it should be pointed out that the model did not intend to estimate the effects of these factors and control for confounding for them. The hazard ratios cannot be interpreted as the association between these factors and the outcome.

Drug exposure and covariates	Parameter estimate	Standard Error	Chi-Square	p-value	Hazard Ratio	95% CI	
Current exposure	-0.056	0.070	0.634	0.43	0.95	0.83	1.09
Former exposure	-0.010	0.074	0.019	0.89	0.99	0.86	1.15
Gender							
Male	0.037	0.041	0.812	0.37	1.04	0.96	1.13
Race							
Black	0.276	0.052	27.652	<.0001	1.32	1.19	1.46
American Indian or Alaskan Native	-0.429	0.321	1.786	0.18	0.65	0.35	1.22
Asian	-0.006	0.197	0.001	0.97	0.99	0.68	1.46
Hispanic or Latino	-0.060	0.072	0.695	0.40	0.94	0.82	1.08
Native Hawaiian or other pacific islander	0.792	0.246	10.370	0.00	2.21	1.36	3.57
Hispanic or latino and one or more races	0.376	0.131	8.287	0.00	1.46	1.13	1.88
More than one race	0.097	0.451	0.046	0.83	1.10	0.46	2.67
Unknown	0.002	0.080	0.000	0.98	1.00	0.86	1.17
Age							
age 6-9	-0.347	0.058	35.735	<.0001	0.71	0.63	0.79

age 10-14	-0.774	0.063	151.534	<.0001	0.46	0.41	0.52
age 14-18	-0.854	0.071	146.389	<.0001	0.43	0.37	0.49
Epilepsy type							
Generalized convulsive epilepsy	0.105	0.081	1.681	0.19	1.11	0.95	1.30
Focal epilepsy	0.031	0.081	0.150	0.70	1.03	0.88	1.21
Other types of epilepsy	0.127	0.078	2.635	0.10	1.14	0.97	1.32
Epilepsy severity							
Intractable epilepsy	0.296	0.049	37.212	<.0001	1.34	1.22	1.48
Unknown severity epilepsy	0.059	0.074	0.638	0.42	1.06	0.92	1.23
Comorbidities							
Cerebral palsy	0.022	0.052	0.183	0.67	1.02	0.92	1.13
Congenital nervous system anomalies	0.236	0.050	22.504	<.0001	1.27	1.15	1.40
Intellectual disability	0.279	0.051	30.375	<.0001	1.32	1.20	1.46
Head trauma	0.538	0.119	20.441	<.0001	1.71	1.36	2.16
ADHD	-0.046	0.062	0.542	0.46	0.96	0.85	1.08
Anxiety	0.110	0.121	0.829	0.36	1.12	0.88	1.42
Autism	0.249	0.053	22.231	<.0001	1.28	1.16	1.42
Bipolar disorder	0.169	0.138	1.496	0.22	1.19	0.90	1.55
Depression	0.107	0.129	0.692	0.41	1.11	0.87	1.43
ODD/CD	-0.078	0.078	0.995	0.32	0.93	0.80	1.08
Schizophrenia	-0.049	0.204	0.059	0.81	0.95	0.64	1.42
Sleep disorder	0.099	0.103	0.924	0.34	1.10	0.90	1.35
Medicaid eligibility							
Foster care	-0.173	0.106	2.673	0.10	0.84	0.68	1.04
Cash assistance	0.436	0.070	38.432	<.0001	1.55	1.35	1.78
Poverty	0.171	0.076	5.035	0.02	1.19	1.02	1.38
Disability	-0.176	0.075	5.565	0.02	0.84	0.72	0.97
State							
AL	0.459	0.283	2.633	0.10	1.58	0.91	2.76
AR	-0.397	0.192	4.266	0.04	0.67	0.46	0.98

CA	-0.271	0.111	5.966	0.01	0.76	0.61	0.95
GA	-0.344	0.126	7.391	0.01	0.71	0.55	0.91
ID	-0.391	0.237	2.724	0.10	0.68	0.43	1.08
IL	-0.133	0.115	1.340	0.25	0.88	0.70	1.10
IN	-1.048	0.190	30.442	<.0001	0.35	0.24	0.51
KS	0.056	0.190	0.086	0.77	1.06	0.73	1.54
LA	-0.193	0.118	2.676	0.10	0.83	0.66	1.04
MA	0.024	0.346	0.005	0.94	1.03	0.52	2.02
MN	-0.116	0.151	0.596	0.44	0.89	0.66	1.20
MS	-0.285	0.150	3.582	0.06	0.75	0.56	1.01
MO	-0.284	0.159	3.169	0.08	0.75	0.55	1.03
NJ	0.629	0.152	17.117	<.0001	1.88	1.39	2.53
NM	0.389	0.521	0.556	0.46	1.48	0.53	4.10
NY	0.422	0.110	14.690	0.00	1.53	1.23	1.89
NC	-0.524	0.122	18.573	<.0001	0.59	0.47	0.75
OH	-0.133	0.114	1.366	0.24	0.88	0.70	1.09
SC	-0.279	0.139	4.005	0.05	0.76	0.58	0.99
TN	-0.295	0.192	2.375	0.12	0.74	0.51	1.08
TX	-0.215	0.110	3.846	0.05	0.81	0.65	1.00
VA	-0.464	0.170	7.504	0.01	0.63	0.45	0.88
WA	-0.161	0.421	0.147	0.70	0.85	0.37	1.94
WV	-0.785	0.195	16.257	<.0001	0.46	0.31	0.67
WI	-0.125	0.141	0.790	0.37	0.88	0.67	1.16
Calendar year							
1999	0.402	0.164	6.021	0.01	1.50	1.08	2.06
2000	0.388	0.134	8.341	0.00	1.47	1.13	1.92
2001	0.248	0.133	3.481	0.06	1.28	0.99	1.66
2002	0.214	0.131	2.671	0.10	1.24	0.96	1.60
2003	0.279	0.128	4.749	0.03	1.32	1.03	1.70
2004	0.188	0.128	2.164	0.14	1.21	0.94	1.55

2005	0.126	0.129	0.956	0.33	1.13	0.88	1.46
2006	0.102	0.132	0.598	0.44	1.11	0.86	1.43
2007	0.128	0.134	0.918	0.34	1.14	0.88	1.48
2008	0.044	0.138	0.100	0.75	1.05	0.80	1.37
2009	0.063	0.137	0.211	0.65	1.07	0.81	1.39
Non-AED Drugs							
amoxicillin	0.100	0.044	5.164	0.02	1.11	1.01	1.21
ciprofloxacin	-0.036	0.099	0.132	0.72	0.97	0.80	1.17
desmopressin	0.131	0.180	0.530	0.47	1.14	0.80	1.62
ofloxacin	0.301	0.106	8.104	0.00	1.35	1.10	1.66
Number of AEDs	0.347	0.039	80.094	<.0001	1.42	1.31	1.53
AEDs							
carbamazepine	0.016	0.067	0.060	0.81	1.02	0.89	1.16
clonazepam	-0.112	0.081	1.916	0.17	0.89	0.76	1.05
diazepam	-0.019	0.068	0.076	0.78	0.98	0.86	1.12
divalproex	-0.050	0.062	0.653	0.42	0.95	0.84	1.07
ethosuximide	-0.188	0.173	1.174	0.28	0.83	0.59	1.16
gabapentin	-0.078	0.115	0.456	0.50	0.93	0.74	1.16
lamotrigine	0.121	0.070	2.990	0.08	1.13	0.98	1.29
levetiracetam	0.286	0.070	16.593	<.0001	1.33	1.16	1.53
lorazepam	-0.290	0.112	6.650	0.01	0.75	0.60	0.93
oxcarbazepine	0.267	0.074	12.988	0.00	1.31	1.13	1.51
phenobarbital	-0.039	0.073	0.286	0.59	0.96	0.83	1.11
phenytoin	0.241	0.085	7.960	0.00	1.27	1.08	1.50
topiramate	0.195	0.065	8.904	0.00	1.22	1.07	1.38
zonisamide	0.075	0.092	0.658	0.42	1.08	0.90	1.29
MPR							
mpr = 0	-0.699	0.091	59.524	<.0001	0.50	0.42	0.59
mpr (0, 80]	-0.065	0.052	1.568	0.21	0.94	0.85	1.04
Psychotropics							

SSRIs	0.034	0.105	0.105	0.75	1.04	0.84	1.27
Non-SSRI antidepressants	-0.064	0.114	0.312	0.58	0.94	0.75	1.17
Atypical antipsychotics	-0.130	0.078	2.793	0.09	0.88	0.75	1.02
Other antipsychotics	-0.472	0.247	3.655	0.06	0.62	0.38	1.01

1. Vittinghoff E, McCulloch CE. Relaxing the rule of ten events per variable in logistic and Cox regression. *Am J Epidemiol.* Mar 2007;165(6):710-718.
2. Schisterman EF, Cole SR, Platt RW. Overadjustment bias and unnecessary adjustment in epidemiologic studies. *Epidemiology.* Jul 2009;20(4):488-495.