

FILE E-1. INPUT PARAMETERS

The effectiveness parameters for the model were based on: 1) two different meta-analyses with two different methodologies on the effectiveness of non-intravenous benzodiazepines ^{1,2}, and 2) two different meta-analyses with two different methodologies on the effectiveness of non-benzodiazepine antiseizure medications ^{3,4}. Within each treatment category (non-intravenous benzodiazepines and non-benzodiazepine antiseizure medications) we considered a low-effectiveness choice and a high-effectiveness choice. For non-intravenous benzodiazepines, the low-effectiveness choice was based on the current estimates of effectiveness of rectal diazepam and the high-effectiveness choice was based on the current estimates of effectiveness of intranasal midazolam. For non-benzodiazepine antiseizure medications, the low-effectiveness choice was based on the current estimates of effectiveness of intravenous phenytoin and the high-effectiveness choice was based on the current estimates of effectiveness of intravenous phenobarbital. As a sensitivity analysis, we also compared within each category the low-effectiveness choice with a medium-effectiveness choice. For non-intravenous benzodiazepine, the medium effectiveness choice was intranasal lorazepam. For non-benzodiazepine antiseizure medication, the medium effectiveness choice was intravenous valproate. The costs of these treatment choices were estimated in 2019 based on data from Lexicomp and corroborated with retail pharmacies ⁵.

Cost of different treatment choices.

Rectal diazepam	
Rectal diazepam 2.5 mg	\$306.90-\$347.86
Rectal diazepam 10 mg	\$364.06-\$412.64
Rectal diazepam 20 mg	\$364.06-\$412.64
Intranasal midazolam	
Intranasal midazolam 5 mg	\$330
Intranasal midazolam 10 mg	\$660
Intranasal lorazepam	
Intranasal lorazepam 2mg	\$0.62-\$4.06
Intranasal lorazepam 4mg	\$2.05-\$3.92
Intravenous fosphenytoin	
Intravenous fosphenytoin 500 mg	\$2.7-\$9.5
Intravenous fosphenytoin 1000 mg	\$5.4-\$19
Intravenous fosphenytoin 1500 mg	\$8.1-\$28.5
Intravenous fosphenytoin 2000 mg	\$10.8-\$38
Intravenous phenobarbital	
Intravenous phenobarbital 500 mg	\$201.39-\$261.39
Intravenous phenobarbital 1000 mg	\$402.78-\$522.78
Intravenous phenobarbital 1500 mg	\$604.17-\$784.17
Intravenous phenobarbital 2000 mg	\$805.56-\$1,045.56
Intravenous valproate	
Intravenous valproate 500 mg	\$40.15-\$128.8
Intravenous valproate 1000 mg	\$80.3-\$257.6
Intravenous valproate 1500 mg	\$120.45-\$386.4
Intravenous valproate 2000 mg	\$160.6-\$515.2

The costs of emergency department visits, hospital admissions for status epilepticus, and intensive care unit for status epilepticus were estimated based on prior literature on costs in the USA ⁶⁻⁸. When the estimates were from prior years, we transformed them in 2019 USA dollars using the USA Bureau of Labor Statistics Consumer Price Index ⁹.

Cost of hospital visits. All values are presented as median (p₂₅-p₇₅)

	Original values pediatric patients	Original values adult patients	2019 USA dollars values for pediatric patients	2019 USA dollars values for adult patients
Cost of emergency department visits ⁶	Estimated in 2016 USA dollars: \$1,959 (\$1,016 to \$3,877)	Estimated in 2016 USA dollars: \$1,959 (\$1,016 to \$3,877)	\$2,081 (\$1,079 to \$4,119)	\$2,081 (\$1,079 to \$4,119)
Cost of hospital admission for status epilepticus ⁷	Estimated in 2016 USA dollars: \$6,625 (\$3,678 to \$13,995)	Estimated in 2016 USA dollars: \$9,127 (\$5,715 to \$17,209)	\$7,039 (\$3,908 to \$14,869)	\$9,697 (\$6,072 to 18,284)
Cost of hospital admission for refractory status epilepticus ⁷	Estimated in 2016 USA dollars: \$13,286 (\$8,392 to \$22,273)	Estimated in 2016 USA dollars: \$17,179 (\$9,671 to \$28,298)	\$14,116 (\$8,916 to \$23,664)	\$18,252 (\$10,275 to \$30,065)
Cost of hospital admission for super- refractory status epilepticus ⁷	Estimated in 2016 USA dollars: \$139,790 (\$65,089 to \$230,451)	Estimated in 2016 USA dollars: \$54,584 (\$39,139 to \$78,273)	\$148,520 (\$69,154 to \$244,843)	\$57,993 (\$41,583 to \$83,161)

Legend: N/A: Not applicable.

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