BIDMC ICU EEG Service Guideline on the Duration of EEG Monitoring to "Rule out seizures"

Seizures and other potentially harmful forms of abnormal rhythmic and periodic patterns of brain activity are common in acutely hospitalized patients with brain injuries. Most of these seizures are subclinical and detectable only by continuous EEG (cEEG). ***This guideline provides recommendations regarding the duration of cEEG brain monitoring for cases where the clinical indication for cEEG is to "rule out" subclinical seizures.***

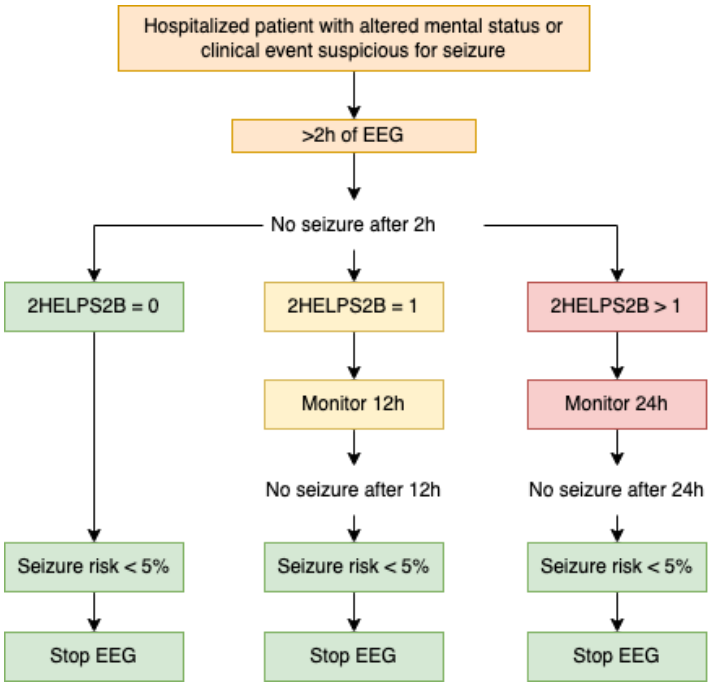
Risk Factor	Points
Frequency >**2Hz***	1
Sporadic **E**pileptiform Discharges	1
LPD/BIPD/LRDA	1
Plus features**	1
Prior **S**eizure***	1
Brief Ictal Rhythmic Discharge (BIRD)	2
	Total Score

Total	0	1	2	3	4	5	≥6
Seizure Risk	<5%	12%	27%	50%	73%	88%	>95%

* any rhythmic or periodic pattern except GRDA
** superimposed rhythmic , fast, or sharp activity for LRDA, LPDs, or BIPDs.
*** includes history of epilepsy or recent events suspicious for seizures.

2HELPS2B is a validated clinical risk score that provides the probability that a hospitalized patient will have seizures within the next 72 hours after an initial brief screening EEG, and of the time needed to monitor until the the risk declines below 5% [1]. 2HELPS2B can be calculated after the initial two hours of cEEG monitoring. We recommend discontinuing cEEG monitoring the risk declines below this level (**see Figure**). The recommended duration of monitoring is as follows:

- 2HELPS2B = 0: no further monitoring
- 2HELPS2B = 1: monitor 12h
- 2HELPS2B >1: monitor 24h



Logistics: The ICU EEG service will by default discontinue cEEG after the recommended duration of monitoring (during business hours, and subject to staffing availability). This is a guideline; exceptions may be warranted. Requests to monitor beyond the recommended duration should be discussed with the on-service ICU EEG fellow or attending.

Limitations: This guideline does not apply to monitoring done for the following indications: prognostication in patients with coma following cardiac arrest; detection of delayed cerebral ischemia following subarachnoid hemorrhage; monitoring patients undergoing pharmacologically induced coma for treatment of traumatic brain injury or status epilepticus; "ictal-interictal-continuum" findings which are causing clinical symptoms and being actively treated , or other indications outside of the "rule out seizures".

[1] Assessment of the Validity of the 2HELPS2B Score for Inpatient Seizure Risk Prediction. JAMA Neurol. 2020 Apr 1;77(4):500-507. doi: 10.1001/jamaneurol.2019.4656. Erratum in: JAMA Neurol. 2020 Feb 24; PMID: 31930362; PMCID: PMC6990873.

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