## GENERAL EEG INFORMATION

1. Date EEG recorded: // to //
2. EEG type:

Routine

Continuous/prolonged

Other, specify:

* 1. Routine EEG duration:

1 hour or less

1-2 hours

2 hours

Greater than 2 hours

N/A

Other, specify:

* 1. Prolonged EEG duration:

Less than 24 hours

Greater than or equal to 24 hours

N/A

Other, specify:

1. Video?

No

Yes

Unknown

Other, specify:

1. Sampling rate?

256 Hz

512 Hz

Unknown

Other, specify (Hz):

1. Behavioral states recorded:

Awake

Asleep

Unresponsive state

Indeterminate

Other, specify:

## RECORDING/TECHNICAL SPECIFICATIONS

1. Number of electrodes (including reference and ground):
2. Electrode type: (select at least one):

Reusable silver electrodes  Disposable conductive plastic electrodes

Reusable tin electrodes  Electrode cap

Reusable gold cup electrodes  Subdermal needle electrodes

Reusable sintered silver-silver chloride electrodes  Subdermal wire electrodes

Reusable platinum electrodes  Intracranial electrode strips

Reusable stainless-steel electrodes  Intracranial depth electrode

Disposable silver-silver chloride electrodes  Other, specify:

1. Quantitative EEG analysis used (select at least one):

None  Asymmetry indices

Amplitude-integrated EEG  Rhythmicity measures

Spectral analysis  Spike detection

Seizure detection  Other

1. EEG indication (select at least one):

Seizure detection  Management of SE

Ischemia detection  Burst-suppression for management of ICP

Characterization of spells  Research

Prognosis  Unknown

1. Electrodes attached by:

EEG technologist  ICU RN

ICU MD  Other

## FOCAL AND GENERALIZED SLOWING

1. Focal slowing?

Yes

No

1. Focus:
2. Start time:
3. Slowing type:

Persistent (i.e., continuous)

Transient

Post-ictal

1. Slowing location:

Localized regional lobar or multilobar

Hemispheric (side):

Generalized

No localized onset, specify:

1. Localized regional lobar or multilobar:

Left frontal

Right frontal

Left parietal

Right parietal

Left occipital

Right occipital

Left temporal

Right temporal

## EEG BACKGROUND AND PDR

1. Posterior dominant rhythm (PDR) present?

Yes

No

Unable to determine

N/A (< four months of age)

1. Frequency of the posterior dominant rhythm during relaxed wakefulness (round to the closest 0.5 Hz):
2. EEG background and PDR normal for age?

Yes

No – PDR slow, disorganized or absent, or background slow

EEG data not adequate to assess background and PDR

1. Background symmetry categorized as :

Symmetric

Mild asymmetry (consistent asymmetry in amplitude on referential recording of < 50%, or consistent asymmetry in frequency of 0.5-1 Hz)

Marked asymmetry (> 50% amplitude or > 1 Hz frequency asymmetry)

1. Predominant EEG background frequency:

Delta (1-4 Hz)

Theta (4-7 Hz)

Alpha or greater (≥ 7 Hz)

Unable to determine; artifact contaminated

1. Voltage:

Normal

Low (most < 20 µV in longitudinal bipolar with standard 10-20 electrodes)

Suppressed (all activity < 10 µV)

1. Continuity categorized as:

Continuous

Nearly continuous (< 10% attenuation [> 10 µV but 50% of the background voltage] or suppression [< 10 µV)

Discontinuous (10-49% of attenuation or suppression)

Burst-attenuation/burst-suppression (50-90% attenuation or suppression)

Suppression (>90% of the record <10 uV)

1. Reactivity to stimulation categorized as (select one or more):

Frequency change to tactile stimulation

Amplitude change to tactile stimulation

Other change to tactile stimulation \_\_\_\_\_\_

Frequency change to auditory stimulation

Amplitude change to auditory stimulation

Other change to auditory stimulation \_\_\_\_\_\_

Frequency change to visual stimulation

Amplitude change to visual stimulation

Other change to visual stimulation \_\_\_\_\_\_

None

Unclear

Untested

1. Stage II sleep transients (select one):

Normal (for age, in adults K-complexes and spindles both present and normal)

Abnormal (for age, in adults K-comlexes but no spindles present)

Abnormal (for age, in adults spindles but no K-comlexes present)

Abnormal (immature, asymmetric or asynchronous for age)

Absent

1. EEG features consistent with ischemia:

No

Attributed to vasospasm

From other cause of ischemia, specify:

1. qEEG detected ischemia:

None

Relative alpha variability

Asymmetry index

Alpha delta ratio

Other

## EEG FINDINGS ICTAL

1. Seizures recorded?

Yes

No

1. Type of seizures recorded:

Convulsive

Non-convulsive

1. Electrographic seizures:

Yes

No

1. Typical electrographic seizure duration (any individual seizure):

None

Brief rhythmic discharge (< 10 sec)

Short (≥ 10 sec but < 5 min)

Prolonged (5 to 30 min)

> 30 min

1. Electrographic seizure burden:

/24 hours

1. General epileptiform abnormalities:

Yes: ≥ 3 Hz

Yes: < 3 Hz

No

1. Ictal onset: location on EEG:

Localized focal

Localized regional lobar or multilobar

Hemispheric (side):

Generalized

No localized onset, specify:

Other, specify:

1. Full ictal propagation: location on EEG:

Localized focal

Localized regional lobar or multilobar

Hemispheric (side):

Generalized

No localized onset, specify:

Other, specify:

1. Generalized rhythmic or periodic patterns (choose all that apply):

None

Periodic discharges (≥ 6 cycles)

Spike-wave (includes sharp-wave and polyspike-wave)

1. Type of generalized rhythmic or periodic patterns:

Frontally predominant

Occipitally predominant

Midline predominant

“Truly” generalized

1. Prevalence of generalized rhythmic or periodic patterns (specify % of record that includes the pattern):

Continuous (> 90% abundant):

Abundant (50-89%):

Frequent (10-49%):

Occasional (1-9%):

Rare (< 1%):

1. Frequency of generalized rhythmic or periodic patterns (cycles per second):
2. Evolving generalized rhythmic or periodic patterns (choose all that apply):

None

Frequency

Morphology

Location

1. Clinical correlate of generalized rhythmic or periodic patterns (choose all that apply):

None

Facial twitching

Eye deviation

Minor muscle movements

Convulsive movement of the extremities

1. Generalized rhythmic or periodic patterns, PLUS:

None

Superimposed fast activity

Superimposed sharp waves or spikes

Superimposed fast activity or rhythmic activity

Superimposed fast activity and sharp waves/spikes

1. Lateralized rhythmic or periodic patterns (choose all that apply):

None

Periodic discharges (≥ 6 cycles)

Rhythmic delta activity (≥ 6 cycles)

Spike-wave (includes sharp-wave and polyspike-wave)

1. Type of lateralized rhythmic or periodic patterns:

Unilateral asymmetric

Bilateral asymmetric

Lobes most involved

Hemispheric

1. Prevalence of lateralized rhythmic or periodic patterns (specify % of record that includes the pattern):

Continuous (> 90%):

Abundant (50-89%):

Frequent (10-49%):

Occasional (1-9%):

Rare < 1%):

1. Frequency of lateralized rhythmic or periodic patterns (cycles per second):
2. Evolving lateralized rhythmic or periodic patterns (choose all that apply):

None

Frequency

Morphology

Location

1. Clinical correlate of lateralized rhythmic or periodic patterns:

None

Facial twitching

Eye deviation

Minor muscle movements

Convulsive movement of the extremities

1. Bilateral independent rhythmic or periodic patterns (choose all that apply):

None

Periodic discharges (≥ 6 cycles)

Rhythmic delta activity (≥ 6 cycles)

Spike-wave (includes sharp-wave and polyspike-wave)

1. Type of bilateral independent rhythmic or periodic patterns:

Unilateral asymmetric

Bilateral asymmetric

Lobes most involved

Hemispheric

1. Prevalence of bilateral independent rhythmic or periodic patterns (specify % of record that includes the pattern):

Continuous (> 90%):

Abundant (50-89%):

Frequent (10-49%):

Occasional (1-9%):

Rare < 1%):

1. Frequency of bilateral independent rhythmic or periodic patterns (cycles per second):
2. Evolving bilateral independent rhythmic or periodic patterns (choose all that apply):

None

Frequency

Morphology

Location

1. Clinical correlate of bilateral independent rhythmic or periodic patterns:

None

Facial twitching

Eye deviation

Minor muscle movements

Convulsive movement of the extremities

1. Multifocal rhythmic or periodic patterns (choose all that apply):

None

Periodic discharges (≥ 6 cycles)

Rhythmic delta activity (≥ 6 cycles)

Spike-wave (includes sharp-wave and polyspike-wave)

1. Type of multifocal rhythmic or periodic patterns:

Unilateral asymmetric

Bilateral asymmetric

Lobes most involved

Hemispheric

1. Prevalence of multifocal rhythmic or periodic patterns (specify % of record that includes the pattern):

Continuous (> 90%):

Abundant (50-89%):

Frequent (10-49%):

Occasional (1-9%):

Rare < 1%):

1. Frequency of multifocal rhythmic or periodic patterns (cycles per second):
2. Evolving multifocal rhythmic or periodic patterns (choose all that apply):

None

Frequency

Morphology

Location

1. Clinical correlate of multifocal rhythmic or periodic patterns:

None

Facial twitching

Eye deviation

Minor muscle movements

Convulsive movement of the extremities

1. Ictal Interictal Continuum (IIC):

Yes

No

1. Interictal epileptiform discharges:

Yes

No

1. Maximum frequency of interictal epileptiform discharges (cycles per second):

## RECORDING CIRCUMSTANCES

1. Medication received at time of EEG (record amount received in a 24 hour period):

Propofol:

Midazolam:

Pentobarbital:

Thiopental:

Dexmedetomidine:

Other, specify:

1. Maximum intracranial pressure (ICP) on day of EEG (mmHg):
2. Time ICP recorded during EEG recording above 20 mmHg (minutes):

## ARTIFACTS

1. Breach artifact:

None

Present but able to interpret EEG

Present and preventing interpretation of EEG

1. Muscle artifact:

None

Present but able to interpret EEG

Present and preventing interpretation of EEG

1. Ventilator artifact:

None

Present but able to interpret EEG

Present and preventing interpretation of EEG

1. Electrical artifact:

None

Present but able to interpret EEG

Present and preventing interpretation of EEG

1. Pneumatic boots artifact:

None

Present but able to interpret EEG

Present and preventing interpretation of EEG

1. Cardioballistic artifact:

None

Present but able to interpret EEG

Present and preventing interpretation of EEG

1. Other artifact not listed above:

## General Instructions

This CRF Module is designed for use in any project using electroencephalography (EEG) to study ictal or interictal abnormalities. EEG is the recording of electrical activity along the scalp produced by the firing of neurons within the brain. In clinical contexts, EEG refers to the recording of the brain's spontaneous electrical activity as recorded from multiple electrodes placed on the scalp. Researchers should note that these CDEs are not appropriate for Intensive Care Unit use.

Please note: The elements on this CRF are classified as Supplemental and should only be used when the research team considers them appropriate for the study.

## Specific Instructions:

Please see the Data Dictionary for definitions of each of the data elements included in this CRF module.

* Unable to determine PDR: If sedated or asleep cannot assess, which is different than absent despite having state which could be assessed.
* Reactivity to stimulation: Change in cerebral EEG activity to stimulation.
* Reactivity type: If reactive to stimulation characterize the response as change in amplitude or frequency
* EEG ischemia: In the interpretation of the treating team there were EEG findings indicating brain ischemia.
* qEEG ischemia: Indicate which qEEG parameters indicated brain ischemia.
* Electrographic seizures: Pattern has to last at least 10 min in patients with qualitative or quantitative impairment of consciousness. The following criteria qualify: (1) epileptiform discharges at >2.5 per second or (2) improvement after treatment with typical ictal spatiotemporal evolution or subtle ictal clinical phenomena with epileptiform discharges/rhythmic activity >0.5 per second.
* Electrographic seizure burden: Cumulative burden measured in total minutes of seizure over 24 hours.
* Evolution of rhythmic or periodic patterns:
  + Frequency: Change in the same direction for two consecutive time periodsby at least 0.5/s.
  + Morphology: ≥ 2 consecutive changes to a novel morphology
  + Location: Spread into or sequentially out of at least two standard 10-20 electrode locations.
* Maximum ICP: If measured, record range maximum ICP in mmHg on day of EEG.
* ICP, time above 20: If measured, record time spent in minutes above 20 mmHg.