(A) Policy Statement
EEG testing to confirm death by brain criteria shall be performed using the published technical standards of the American EEG Society for determination of electrocerebral silence (ECS) and according to Hospital Administration Policy #3364-100-45-02, “Request for Determination of Death by Brain Criteria”.

(B) Purpose of Policy
To ensure that the policy and procedures used in the department comply with established Hospital policy regarding determination of death by brain criteria.

(C) Procedure

1. AUTHORIZATION FOR STARTING E.C.S. RECORDING:
   a) EEG tracing using the published technical standards of the American EEG Society for determination of electrocerebral silence will begin when the technical staff is notified by the “EEG Laboratory Director, or alternate,” that the “Request for Determination of Death by Brain Criteria” forms signed by the attending service “fulfills the criteria of electrocerebral silence”.
   b) The EEG technical staff shall not serve as the alternate for the EEG Laboratory Director neither to review the documentation of the clinical examinations to decide if the clinical criteria is met nor place a report in the chart stating the results of the study.
   c) The EEG technical staff shall obtain the NCR copies of the “Request For Determination of Death By Brain Criteria” and attach them to the EEG tracing for review by a physician who is also an electroencephalographer (EEGer). The EEG technical staff is responsible for notifying the electroencephalographer of the pending E.C.S.

2. ECS RECORDING TECHNIQUE:
   a) Electrodes shall be applied with Collodion and placed according to the International 10-20 system.
      1) If access to the 10-20 positions is obstructed in any way, electrodes are to be placed as close to the standard position as possible.
      2) A description and diagram of the change must be placed on the Technician Report Sheet head diagram.
      3) Consultation with the EEGer who will interpret the record is required to resolve matters when the majority of 10-20 positions are obstructed.
   b) Calibrations shall be performed as per established policy. Interelectrode Impedances must be under 10,000 Ohms but over 100 Ohms.
1) The patient's blood-pressure and body temperature must be documented at the beginning of the study.
c) Standard referential and bipolar chain montages shall be used in the initial portions of the recording.
   1) Bipolar longitudinal A-P chain.
   2) Monopolar with reference to a non-contaminated electrode.
   3) Bipolar coronal chain.
d) During the first montage, sensitivity shall be gradually but steadily increased to maximum amplification (1.0 uv/mm) as needed to demonstrate the presence or absence of brain generated activity.
e) During the first montage, tap EACH electrode (one at a time) with a pencil to generate an isolated electrode artifact. Annotate the name of each electrode tapped as it is done.
f) The majority of the recording shall be performed using a montage employing doubled inter-electrode distances as follows;
   1) FP1-C3
   2) C3-O1
   3) FP2-C4
   4) C4-O2
   5) FP1-T3
   6) T3-O1
   7) FP2-T4
   8) T4-O2
   9) F7-Fz
  10) Fz-F8
  11) T3-Cz
  12) Cz-T4
  13) T5-Pz
  14) Pz-T6
  15) F3-P3
  16) F4-P4
  17) EMG
  18) EKG
g) During the double distance montage, the low linear filter setting shall be set and maintained at LFF=0.5Hz, with high linear filter setting at HFF=70Hz.
h) The EMG channel shall be set at all channels controls to reflect instrumentation used for the EEG channels.
i) The EKG channel amplifier sensitivity may be set as needed to appropriately display the QRS complex.
j) All artifacts are to be identified promptly and rectified to the extent possible. The ventilator may be shut off by a Respiratory Care Practitioner for a period not to exceed 60 seconds, if a ventilator artifact is in question.
k) Artifacts which can not be eliminated must be graphically monitored (e.g. EKG and respiration related artifacts) using other bio-electrodes or transducers.
l) If muscle artifact is present, contact the EEG attending to request administration of a neuromuscular blocking agent who should contact the service attending. Suspend the tracing until EMG artifacts can be eliminated from the tracing.
m) During the double distance montage and recording using low filter setting of 0.5Hz, administer noxious (e.g. deep pain) stimulation:
   1) Apply pressure on the small fingernail, toenail, or deep sternal rub.
2) Allow any artifact generated by the initial touch of the patient to dissipate before beginning noxious stimulation. Avoid moving the patient’s body as the noxious stimulation is applied.
3) Maintain noxious stimulation for ten second duration.
4) The exact moment noxious stimulation is started and stopped is to be marked on the tracing.
5) Repeat the noxious stimulation sixty seconds later.

n) The EEG tracing must include no less than thirty minutes of interpretable recording with the majority done using a double distance montage.
o) Final calibrations shall be performed with calibration voltage dialed at the smallest possible voltage initially (2uv/mm) at maximum amplification (1.0uv/mm) using LFF=0.5Hz and HFF=70Hz.
p) Photic stimulation and passive eye opening should be performed.

3. PHYSICIAN NOTIFICATION AND DOCUMENTATION:
a) Upon completion of the ECS recording, the M.D./EEGer on duty is to be notified that the recording has been completed and is ready for interpretation.
b) The EEG technician is to enter a note in the patient’s chart in the Progress Notes to this extent:

1) EEG Technician Note:
EEG recording using ECS technique completed at _Hr on __/__/___, Dr. ___________________________ has been notified that the tracing is ready for interpretation.

c) If the M/D./EEGer on duty cannot be reached, this fact should also be documented with a statement in the chart regarding efforts to notify this physician. The attending service should then be notified of the completion of the test and asked to continue efforts to obtain the interpretation if it is needed urgently. This notification is then to be documented in the chart.
d) Entries in the Progress Notes must be signed and dated.

Refer to American Clinical Neurophysiology Society Guidelines 2006.