(A) Policy Statement

Standard EEG shall be performed as a portable procedure in the nursing unit when so ordered by the physician, when determined by the primary nurse that it is in the best interest of the patient care and when it is necessary to avoid delay in testing.

(B) Purpose of Policy

To provide provisions for a standard EEG recording technique specific to portable EEG recording situations.

(C) Procedure

I. Portable Set-Up Equipment:
   A. The department shall dedicate a set-up cart for use with STAT and bedside recordings.
   B. The portable set-up cart shall be well stocked with sufficient quantities of all supplies and equipment necessary for immediate preparations for EEG testing.
   C. Supplies used must be immediately replaced.

II. Coordinate with the Primary Nurse:
   A. Upon arrival in the nursing unit, report to the primary nurse.
   B. Before taking any action within the patient’s room, consult with the primary nurse to determine the means to meet the needs of the test in a way that least interferes with the routine care of the patient. Seek out help and support from the primary nurse toward optimum quality of testing and patient care.
      1. Ask whether or not there are any restrictions:
         a) For moving the patient’s head side to side
         b) For adjusting the patient’s bed position
         c) For changing bed elevation
         d) For changing angle of head elevation
         e) For moving items or equipment near the bed
         f) For removing the pillow and using a towel roll to prop the head
         g) For hyperventilation
      2. Ask the nurse about the patient’s level of consciousness, expected degree of cooperation and behavior patterns.
      3. Anticipate the possible need for sedation and whether or not written orders for sedation exist.
      4. Discuss whether or not visitors should be permitted to observe the procedure.
C. Consult with the patient’s nurse regarding positioning of EEG equipment in the patient’s room.
D. Explain and educate the patient and/or family the rationale of any procedure or measures taken during set-up or recording.

III. Set-up Procedures:
A. Plan and organize set-up supplies and equipment for maximum efficiency.
   1. When permitted to do so and under guidance of the nurse:
      a) Move the bed away from the wall to allow access to the top of the head.
      b) Arrange I.V. poles, bedside furniture, etc. to gain passage to the head of the bed.
      c) Remove the headboard and place it in a relatively safe holding area until the test is completed.
      d) Adjust bed elevation and if possible the angle of the head of bed to optimum positions.
      e) Plug in the air flow meter and position it within comfortable range of the head of the bed, when using Collodion.
      f) Position the set-up equipment supply within reach from the head of the bed.
      g) Organize supplies that will be used for electrode application.
   2. Wash hands prior to patient contact, then put on non-latex gloves. Use non-latex gloves for all EEG procedures.
   3. If using Collodion, pour it just before it will be used. Use the minimal amounts at a time to reduce concentration of organic vapors.
   4. Remove any glasses, hearing aids, or other items made of plastic that might come into contact with the Collodion or acetone.
   5. If allowed, prop the patient’s head with a towel roll to free the back of the head from contact with the mattress.
   6. Use appropriate barrier technique for Standard Precautions (gown, mask, eye wear, etc.).
B. Investigate and attempt to resolve any barrier to completion of a meaningful test.
   1. Should the patient’s head is discovered to be bandaged, consult with the nurse before disturbing the head bandage.
   2. If the bandage cannot be removed or not enough access to the scalp for an application of enough electrodes to generate a meaningful test, the ordering physician must be informed of the situation.
   3. The Neurologist on-call is to be consulted to resolve any problems or issues regarding need for test results and an inability to generate meaningful EEG data.
   4. If the patient’s behavior prevents electrode application, inform the nurse.
C. Observe professional standards for conversation and behavior at all times.
   1. If the patient is comatose, the technician must interact with the patient with an assumption that the patient is aware of events and surroundings and will recall all bedside care and activity.
   2. Avoid placing supplies and equipment on the patient’s mattress.
      a) Suspend the head-box from an available IV pole or stand.
      b) Bundle electrode strands with cable wrap.
D. Observe all head features and document aberrations.
   1. Note any skull depressions, suture lines, burr holes, ventricular shunts, head asymmetries, scalp edema and necessary deviations of electrode positions from the Standard International 10-20 System placement.
a) Mark all such observations on the head diagram provided on the Technician Report Sheet that is printed.
b) Describe pertinent observations as needed.
c) If the scalp is discovered to be coated with dried blood or excessively dirty consult the nurse and seek the most appropriate means for cleaning scalp areas for electrode application. If a general head cleaning is not possible, it may be necessary to use alcohol or acetone swabs to clean only the scalp area of each electrode position just before the electrodes are applied. Use Standard Precaution Techniques for all applications.

E. Apply electrodes as stated in Standard EEG Recording Policy.

IV. Portable EEG Recording:

B. If it is necessary to use sensitivity of 2μV/mm to display baseline or absence of baseline activity, also include a double electrode distance montage as follows:

Montage:
Fp1-C3
C3-O1
Fp2-C4
C4-O2
Fp1-T3
T3-O1
Fp2-T4
T4-O2
F7-Fz
Fz-F8
T3-Cz
Cz-T4
T5-Pz
Pz-T6
F3-P3
F4-P4
EMG
EKG

C. If the patient is comatose, apply noxious stimulation and passive eye opening.
1. Consult with the nurse before employing passive eye opening for possible contraindications.
2. Monitor and document level of consciousness in terms of reaction to noxious stimuli, spontaneous limb moves and speech functions.

D. Include hyperventilation and photic stimulation whenever possible unless contraindicated or otherwise prevented. If not performed, place note on the tracing to indicate why it was not performed.

V. Electrode Removal:

A. Electrodes must be removed upon completion of the portable EEG recording unless the doctor specifically orders electrodes to remain in place pending a follow up EEG.
B. Electrodes may be left in place without doctors orders if it has been determined there is intent to follow up with an electro-cerebral silence EEG upon completion of the clinical examination for determination of death by brain criteria. If the intent is not certain, electrodes must be removed.
C. If the electrodes are left on the patient’s head, write a message on the dry erase board in the Central Office to alert the staff.
   1. Write, “Wires left on” and give name and room number.
   2. The technical staff is to check the need for the electrodes to remain on the patient’s head daily until removed.
D. The patient’s head is to be cleaned of all traces of the means of electrode application.
E. All EEG related supplies and equipment must be removed from the patient’s room upon completion of the test.
F. Electrodes and contaminated equipment will be cleaned and disinfected according to Infection Control Policies.
G. Room furniture, call light and patient bedside equipment must be restored to original locations.
H. Do not store waste in set-up containers. All soiled disposable supplies (used gloves, cotton balls, gauze squares, used stub adapters, etc.) must be discarded immediately.
I. Report any scalp damage caused by abrasive technique to the nurse.
J. Document in the patient chart under Physician Progress Notes of the Date and time of EEG completion, followed by Technician/Technologist signature.

Refer to American Clinical Neurophysiology Society Guidelines 2006.