**Name of Policy:** EEG Monitoring for ICTAL SPECT

**Policy Number:** 3364-138-13

**Department:** Neurodiagnostic Services

**Approving Officer:** Associate Vice President, Associate Executive Director

**Responsible Agent:** Director, Respiratory Care

**Scope:** The University of Toledo Medical Center Respiratory Care Department

**Effective Date:** 8/20/2013

Initial Effective Date: 3/10/2004

(A) **Policy Statement**

Ictal SPECT is used in the evaluation of patients with intractable epilepsy as part of the pre-surgical work-up. Extensive data exists that confirms that Ictal SPECT findings correlate with seizure focus in approximately 80-90% of patients. In patients with discordant MRI, EEG or clinical data, the SPECT can help identify the seizure focus. When an Interictal SPECT scan is digitally subtracted from the Ictal SPECT scan, diagnostic yield is further improved. Most academic epilepsy centers with expertise in epilepsy surgery utilize this procedure in the majority of Phase I surgical evaluations.

(B) **Purpose of Policy**

To provide guidelines for the EEG Technologist to perform Ictal SPECT.

(C) **Procedure**

1. **Scheduling:**
   - The patient is admitted for LTME on Monday, the week of observation. When scheduling these dates, they must be confirmed with Nuclear Medicine and Neurodiagnostic Services for ample staff coverage.
   - Contact 5CD Nursing Station to reserve a fixed LTME room.

2. **Admission**
   - Electrodes should be applied using the International 10-20 system, including the T1, T2, F9F10, T9 T10 and P9P10. All electrodes will be attached using collodion.
   - Notify Nuclear Medicine to confirm patients' admission and verify time to start observation day.
   - 5CD RN will start 2 IVs, preferably contralateral arms prior to observation start time.

3. **Observation Days**
   - EEG Technologist will check all electrodes including impedance check, prior to nuclear medicine arrival.
   - RN will verify patency of IVs
   - Observation day will begin on arrival of Nuclear Medicine technologist with isotope.

4. **Seizure Occurs**
   - If any seizure is noted by EEG staff, they are to notify the Nuclear Medicine Technologist of the need for injection of isotope. It is preferable to inject only for complex partial seizures of the patient's typical seizure.
   - Note the time of injection and flushing of the IV.
   - Call 5CD RN at onset of seizure.
• Allow the patient to record for at least 5 minutes after the seizure or until baseline activity is resumed.
• Disconnect electrode cable and transfer the patient to Nuclear Medicine for SPECT.
• Recording will be continued on arrival back to room.

5. No seizure during observation day

• If the patient does not have a seizure during the allotted time, the EEG technical staff needs to contact the Epileptologist who ordered the test, to verify the need for monitoring the next day.

6. Ending of Study

• Remove the electrodes and traces of collodion from patient’s scalp.
• Complete all necessary paperwork