**Pediatric QI forum: Naming convention for stereoEEG electrode placement**

**Collaborators:** Jeffrey Raskin, Daniel Curry

**Contact Person:** Jeffrey Raskin

**Email:** jsraskin@goodmancampbell.com

**Institutions:** Riley Children’s Hospital, Indiana University // Texas Children’s Hospital, Baylor College of Medicine

**Intent/category:**

(no) Published material

(yes) Ongoing project

(yes) Seeking collaboration

**Problem:** There is a large amount of clinical, electrophysiologyical, and radiographic data involved in stereotactic targeting for epilepsy surgery. With multiple trajectories, there is risk for confusion and errors in trajectory identification perioperatively and in analysis of EEG data.

**Question:** How can we standardize a naming convention and planning approach for sEEG lead placement?

**Context:** There is a need for a standardized naming convention for stereoEEG electrodes placed for Phase 2 invasive epilepsy evaluation for individual clinical interpretation and for collaborative research.

**Description of Quality Improvement Activity:** A three-component naming system for naming sequential electrodes is proposed: 1. Numerical; 2. Location; 3. Technology. (see Figure: Naming system for stereoEEG electrodes)

**Resources/Skills needed:** n/a

**Results (if available):** In 102 surgeries, the surgical and neurology teams demonstrated reproducible ability to accurately label and identify sEEG electrodes based on the naming system. All electrodes have been identified accurately by the surgical team and the epileptology team intraoperatively and perioperatively in the intraoperative/extraoperative settings and in conference data review.

**Tips for others:** Keep copies of the Standard sEEG planning forms (see attachment) accessible in the OR and online. Send a pdf copy to all incoming residents on service. Invite your OR team and epileptologists/technicians to regular in-service education and input.

**Figure:** Naming system for stereoEEG electrodes

Three-component naming system for naming sequential electrodes: 1. Numerical; 2. Location; 3. Technology.

1. Numerical: self-explanatory, serial integers.
2. Location: Anterior temporal (AT), mid temporal (MT), occipital temporal (OccT), parietal temporal (ParT), middle temporal gyrus (MTG), etc.
3. Technology:

a – Anatomy

b – Brain electrical source analysis (BESA)

c – calcified

d – DTI

e – EEG

g – gadolinium enhancing

m – MEG

Mc – MEG cluster

p – PET

PI – PET ictal

r – RsfMRI

s – Semiology

Sp – SPECT

Examples:

1. First electrode, placed in anterior temporal lobe, based on SPECT: 1AT Sp
2. Second electrode, placed in occipital lobe, based on DTI: 2Occ D
3. Third electrode, placed in the fronto-temporal confluence, passed on MEG: 3FT M

**Attachment:** standard sEEG planning form

