

## **Abstract**

### **Background:**

Behavioral assessments during video EEG (vEEG) are critical for accurate seizure localization and semiology. Despite their importance, standardized behavioral testing protocols remain underutilized. Since 2012, the University of Minnesota has implemented the Response-Oriented Assessment of Recall (ROAR©) protocol for structured behavioral evaluation during vEEG, with reported ease and efficiency by the multidisciplinary team. However, a formal evaluation of its feasibility has not been previously conducted.

### **Objective:**

To assess the feasibility of implementing the ROAR© protocol during vEEG in a clinical setting.

### **Methods:**

We conducted a retrospective review of 292 events recorded at the Epilepsy Monitoring Unit (EMU) from 2018 to 2023. Data were entered into a REDCap database and analyzed using MATLAB (version R2023b, MathWorks, Natick, MA, USA).

### **Results:**

The ROAR© protocol was initiated in approximately 65% of eligible events. Full completion was achieved in about 24% and 5% for ictal and postictal assessments respectively. Notably, this was accomplished with only 20 minutes of staff training. The protocol demonstrated feasibility across varied seizure types, with reasonable initiation and completion rates. The median time from behavioral onset to ROAR testing initiation was 77 seconds and 114 seconds for ictal and postictal assessments respectively, with no significant differences observed across seizure types.

### **Conclusions:**

The ROAR© protocol is a feasible tool for structured behavioral testing during vEEG, even with minimal staff training. Enhanced and ongoing training initiatives may further improve protocol adherence and utility in seizure localization and characterization