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Improving Nurse Response to Seizure Events in a Pediatric Epilepsy Monitoring Unit with Use of a Standardized Process

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Abstract

Problem: Nurses responding to seizure events in the pediatric epilepsy monitoring unit (EMU) should initiate a neurological exam in addition to managing seizure activity. When nurses respond to these events, however, there can be significant variability, which can result in diagnostic inaccuracy and adverse patient outcomes. The purpose of this project is to implement a nursing response checklist and neurological assessment guide to standardize the process of response to seizure events in the pediatric EMU.

Methods: This quality improvement (QI) project utilized a cohort study design. Standardized tools were placed in an accessible area outside patient rooms. Education was provided to nursing staff on how to use the tools. Nurses also received an emailed survey to assess confidence in the ability to respond to seizure events both before and after implementation of the tools. The primary outcome measure was nursing compliance with utilizing the tools, with secondary outcomes of medication administration times and nursing confidence in responding to seizures. Data was collected through review of patient charts, review of video EEGs obtained, and answers to survey questions.

Results: Nursing compliance in utilizing the tools during seizure events was 26.7%. The mean medication administration time for the post-intervention sample was 17.5 minutes compared to 20.7 minutes for the pre-intervention sample; however, this difference was not statistically significant. Additionally, there was no significant difference between self-reported nursing confidence between the pre- and post-implementation samples.

Implications and Recommendations: Future studies should focus on generating data from larger samples to determine the effect of standardized seizure response protocols on nursing response to seizure events and confidence in caring for patients with epilepsy.

Improving Nurse Response to Seizure Events in a Pediatric Epilepsy Monitoring Unit with a Use of a Standardized Process

The epilepsy monitoring unit (EMU) is an in-hospital setting that allows for continuous video electroencephalography (EEG) monitoring for the diagnosis, quantification, and classification of seizure activity, in addition to pre-surgical planning for patients with refractory epilepsy (Baumgartner & Pirker, 2019). To correlate EEG data with the clinical manifestations of seizures, clinicians are required to initiate a specialized neurological exam when a seizure event is noted on video recording. A thorough neurological exam can maximize the data obtained during a video EEG and identify the area of the brain responsible for seizure onset, which is especially important in children being evaluated for surgical intervention; however, these exams are often suboptimal (Kinney et al., 2019). Even in the inpatient setting, healthcare provider response time is twice as long as that of children's caregivers, making it challenging to initiate an exam near seizure onset (Malloy et al., 2018). Additionally, when healthcare providers respond to seizure events, they may forget to optimize the view of the patient on video recording. At times, the healthcare providers themselves obscure the view of the camera (Malloy et al., 2018). Another barrier to thorough examination assessment is the nursing staff's confidence in responding to seizures in pediatric patients (Lee et al., 2019). EMU nursing requires knowledge of specialized training in seizure management and assessment, but also in cardiopulmonary resuscitation for patients who experience acute decompensation with seizure activity (Baumgartner & Pirkner, 2019). It can be challenging to perform the components of a neurological exam while also anticipating the need for medication administration or additional interventions. A delay in rescue

medication not only prolongs seizure time but can result in the need to transfer to the intensive care unit or even death (Gainza-Lein et al., 2018). Even when nurses are able to complete a neurological exam during a seizure event, there is often significant variability in exam performance, resulting in missed components that may impact diagnostic accuracy in identifying the region of seizure onset (Hanrahan et al., 2021). These barriers can be mitigated with a standardized exam and seizure response protocol within the EMU (Baumgartner & Pirker, 2019).

In 2016, the International League Against Epilepsy (ILAE) published a consensus describing a standardized procedure to be utilized for testing and managing patients during seizure events in the EMU (Beniczky et al., 2016). Prior to this consensus, there was no internationally recognized standardized test for use in the EMU. The components of the neurological exam evaluate the patient's baseline, ictal, and postictal status and can be modified to accommodate the needs of pediatric patients. One of the defining characteristics of the protocol developed by the ILAE task force is the recognition that in the EMU, nurses perform most assessments and interventions related to seizure management. When developing their guidelines, the task force created it to facilitate the ability of nurses and techs to carry out the components rather than focusing efforts on epileptologists. The purpose of this project is to implement a nursing response checklist and neurological assessment guide based on the 2016 ILAE consensus to standardize the process of response to seizure events in the pediatric EMU. The Johns Hopkins Nursing Evidence-Based Practice Model serves as a framework to identify potential barriers to implementation, in addition to establishing a response protocol that can be adapted into the EMU's current workflow. The aim of the project is to achieve nursing compliance in

utilizing the tools to 50% within four weeks of implementation. The primary outcome measure is nursing compliance in utilizing the tools. The secondary outcome measures include medication administration times and nursing confidence in responding to seizure events. The question for the study is: In nurses working in a pediatric EMU, how does the implementation of a standardized seizure response protocol, including a seizure response assessment checklist, compared to the current standard practice without a standardized response protocol, affect nursing response, nursing assessment, and medication administration over a period of four weeks?

Review of Literature

To conduct the literature search, search engines used included PubMed, CINAHL, and the Cochrane Library. Key search terms and phrases included seizure response, nursing assessment, nursing involvement, epilepsy monitoring unit, seizure capture, spell capture, primary evaluation, and standardized protocols with use of the Boolean operators AND and OR. Initially, 335 results were generated based on key search terms and phrases. Inclusion criteria were human participants, studies published from 2018 to 2023, article type (clinical trial, meta-analysis, randomized controlled trial, review, and systematic review), English language, and age filter for child (0-18 years). Publications selected were all from the past five years to ensure the most up to date information, except for one article deemed relevant to the review since it was one of the few dedicated to the development of a management pathway of seizures in pediatric patients. Exclusion criteria included publication date prior to 2016, patient age above 18 years, animal studies, article type (books and documents), and languages other than English. An exception for year published was made for the 2016 ILAE consensus on standardized

testing and management of seizure events in the EMU, since it is the basis for the current literature on standardization of seizure response protocols in the EMU. Eventually, the decision to include studies focused on adult patients was rendered due to the sparse nature of literature devoted to standardized protocols for EMU seizure response in pediatric facilities. After inclusion and exclusion criteria were applied, 60 publications were generated. Ultimately, 12 publications were selected for this review of literature.

One of the driving factors for implementing standardized nursing responses to seizure events within the EMU is to prevent delay of treatment for prolonged seizure activity. Cassel-Choudury and colleagues (2019) demonstrated the efficacy of a standard protocol on preventing medication administration delay in pediatric patients with status epilepticus. They created a standardized management protocol and made it accessible on the organization's intranet. They experienced a decrease in second-line medication administration time from 52 to 21 minutes. They also experienced a decrease in overall seizure time from 65 minutes to 31 minutes. Gainza-Lein et al. (2018) performed a multicenter, observational, prospective cohort study to assess the consequences of delayed medication administration in children with convulsive status epilepticus. They determined delays in first-line benzodiazepine administration led to longer seizure times, as well as increased risk of hypotension, need for continuous infusions, and therefore admission to the intensive care unit, and death. Therefore, it is important to evaluate the barriers to timely rescue medication administration for patients with in-hospital seizure events. In Cassel-Choudhury et al. (2021)'s project, they implemented standardized medication order sets and made the anti-seizure medications readily available in the unit Pyxis to promote accessibility along with implementing standardized response protocols.

Baang and colleagues (2020) evaluated barriers to treatment of nonconvulsive status epilepticus in both comatose and non-comatose patients in a large academic hospital with a Level IV epilepsy center. They found a median time of 80 minutes for medication administration for first-line medications, 126 minutes for second-line medications, and 158 minutes for third-line medications. While there was a greater delay for comatose patients, delay in medication administration in all studied patients was attributed primarily to delay in placing an order for rescue medication. Ostendorf and colleagues (2018) also evaluated medication administration to children with status epilepticus within inpatient departments outside of the ICU. They developed interventions to address delayed benzodiazepine administration, including implementing a standard nursing response process, prioritizing inhaled midazolam over intravenous lorazepam, and developing a documentation process to reinforce the response protocol. The median time to medication administration decreased from 14 minutes to 7.5 minutes with these interventions. The proportion of patients receiving rescue medication in under 10 minutes improved from 39% to 79%. They also found a decrease in the proportion of patients requiring transfer to the ICU, from 39% requiring transfer to only 9%. This resulted in cost savings of approximately $2.1 million in hospital charges. A project developed and implemented by Vidaurre and colleagues (2021) further illustrates the effectiveness of targeting response interventions to overcome recognized barriers to medication administration. By creating a protocol to decrease the time interval between first-line benzodiazepine administration and second-line fosphenytoin administration in patients with status epilepticus, they were able to achieve a decrease from 30 minutes to 11.4 minutes. Hence, when creating a standardized protocol to guide seizure response in the

EMU, it is crucial to evaluate the potential barriers to timely intervention and account for them within the process.

While assessing response time to status epilepticus is crucial since EMU patients can also be at risk of acute decompensation or status epilepticus, it is also necessary to assess consequences of and barriers to timely interventions in the EMU setting. Li et al. (2021) found an overall increased risk of adverse events for EMU patients. They also studied characteristics that could predispose patients to experiencing a seizure-related adverse event, including a diagnosis of bilateral tonic-clonic seizures. They found that patients admitted to an epilepsy subunit, with continuous video monitoring provided by specially trained EEG technicians and the presence of a warning signal facilitated shorter time to intervention. This highlights the importance of having staff specifically trained for the EMU setting, as well as the need for a consistent and reliable process to alert staff to the start of a seizure.

In addition to considerations related to preventing intervention delay, EMU response protocols must include instructional elements to prevent nurse interference with the neurological exam and video recording. Malloy and colleagues (2018) assessed nurse response to patients who experienced generalized tonic-clonic seizures during their EMU admission. They discovered patient visibility was limited at the start of the seizure in over 73% of the events. In approximately 55% of those events, visibility improved via nursing intervention such as removing the patient's blankets, although this occurred more than 30 seconds into the seizure. In 40% of the events, the view of the patient's seizure activity remained obscured, hindering the ability of the epilepsy clinicians to assess the seizure activity. This demonstrates the importance of including interventions to promote patient

visibility when building a standardized nursing response for seizures that occur in the EMU.

EMU nurses must promote patient visibility while responding to a seizure event within the EMU, but it is also crucial they have a standardized exam to assess the patient's neurological status both during and after their seizure. Hanrahan and colleagues (2021) created a tool with eight high-yield components for nurses to utilize to assess patient focal deficits during and immediately after a seizure event. When compared to neurological exams performed without the use of a standardized protocol, the use of the standardized tool provided a short-term increase of 20.4% in assessing all elements, along with a long-term increase of 16.7%. O'Kula et al. (2021) also developed a standardized exam tool based on identified barriers to performing an assessment during a seizure event. These barriers to accurate exams included inadequate education, lack of knowledge about the rationale for exam components, and lack of awareness of goals tailored to specific patients. While they noted some persistent confusion regarding the rationale for performing exam components, the standardized exam allowed nurses to spend 0.8 minutes conducting an exam compared to 1.5 minutes prior to utilizing standardized exams. The standardized exam allows for greater diagnostic accuracy, but the succinct nature of it promotes timely administration of medication if needed. Similarly, Ouchida et al. (2022) created a standardized exam for seizure events and the postictal period. While clinical testing was performed 67% of the time prior to use of a standardized exam tool, it increased to 82% of the time utilizing the tool. It also allowed for more timely initiation of exam from the start of the seizure event, with a decrease from 30.5 seconds to 14 seconds (Ouchida et al., 2022).

Pavitt et al. (2021) also evaluated the impact of a standardized assessment tool on the time required to complete the exam while also assessing the accuracy of the nursing staff's performance in assessing exam components. Completed items on the exam increased from two out of four pre-implementation to four out of four post-implementation. Their standardized protocol also defined seizure management interventions nursing staff should perform during an event. By utilizing a standardized tool outlining these interventions, nursing staff improved from completing three out of four components to four out of four. The staff also reported an increase in confidence in providing seizure interventions during a patient event.

The Johns Hopkins Evidence-Based Practice Model (JHEBP) is a framework created to translate evidence into clinical practice with a focus on interprofessional activity (Dang et al., 2022). One of the benefits to this practice model is a battery of tools for developing study questions, appraising evidence, and implementing a project (Dusin et al., 2023). This process consists of three phases, described as the PET process: practice question, evidence, and translation (Dang et al., 2022). The phase of developing the practice, or PICOT, question involves identification of the patient population, interventions to implement, and outcome measures. The second phase requires literature search and appraisal for strength and quality of the evidence. In the third and final phase, the evidence is translated into recommendations for clinical practice. JHEBP requires clinicians to engage in ongoing reflection to facilitate constant practice improvement. While a nurse may be charged with initiating an ictal exam, EMU patients are cared for by an interprofessional team consisting of neurologists, EEG technicians, and nursing staff, so a framework promoting interprofessional activity is essential when evaluating a

standardized seizure response protocol project. Current evidence on standardized seizure response protocols indicates there are multiple barriers identified to successful completion of standardized seizure response, so any framework utilized must promote ongoing practice improvement to address those issues.

Methods

Design

This quality improvement project involved implementing bedside checklists for neurological exam and seizure management to standardize nurses' response to seizure events in the EMU. This project was conducted utilizing a cohort study design. It utilized the Johns Hopkins Evidence-Based Practice Model for translation of evidence into practice and practice change implementation.

Setting

The study was conducted within the Epilepsy Monitoring Unit (EMU) at a large academic tertiary pediatric hospital in the Midwest. The EMU is part of the hospital's Epilepsy Center, which has been designated as a Level 4 Comprehensive Epilepsy Center from the National Association of Epilepsy Centers. The EMU consists of 10 dedicated inpatient beds with additional equipped rooms available to provide continuous video EEG monitoring. Patients are monitored 24/7 by trained video EEG technicians. They also receive 24/7 nursing care from nurses from the neurosciences inpatient department.

Intervention

The standardized seizure response protocol implemented had multiple components. Two checklist tools were utilized. One was a neurological exam checklist that incorporates high-yield questions designed to help localize epileptic lesions responsible

for seizure activity. This tool was developed by the EMU's medical staff, which consists of epileptologist physicians, and is based on recommendations set forth in the 2016 ILEA consensus, which is the most current consensus for EMU practice standards. The second tool was also developed by the medical staff and provides best practice nursing interventions for seizure management, based on current hospital policy and ILEA standards. A laminated copy of both the nursing response checklist and the nurse-initiated neurological exam were placed in an accessible area by the door to every patient room in the epilepsy monitoring unit, as well as in the additional rooms equipped with video EEG monitoring equipment. In addition, the staff received education on how to use the tools during two mandatory staff education days. The PowerPoint presentation from the education days was then emailed to the staff with a recorded explanation of the process. The staff were also provided with a video recording of a simulated seizure event to demonstrate how the tools should be used in practice. This education was provided by the primary investigator and associated emails were forwarded to the staff from the management team.

Sample

A convenience sample of all patients admitted to the EMU over a time interval of four weeks prior to and four weeks after implementation of the protocol was used. Assessment of time interval between seizure onset and medication administration was evaluated for all seizure events during this time interval. Forty-eight patients were admitted to the EMU in the pre-implementation time period, while the post-implementation sample included 46 patients. Inclusion criteria include patients with a known or suspected diagnosis of epilepsy, patients whose primary language is English,

and patients between the ages of 5 and 21 years. Exclusion criteria include patients under the age of 5 years and over the age of 21 years, patients with a diagnosis other than epilepsy or suspected diagnosis of epilepsy, patients whose primary language is not English, and patients who are non-verbal. After applying inclusion and exclusion criteria, 27 patients met the criteria and were included in the pre-implementation sample, while 29 patients met criteria and were included in the post-implementation sample. For the pre-/post-survey evaluating nurse confidence in responding to seizure events, the population or sample of nurses were surveyed and evaluated during this project included EMU staff nurses and agency nurses hired specifically to the neurosciences department. Float pool nurses, nurses floated from other departments within the hospital, and agency nurses hired to the float pool or other departments within the hospital were excluded.

Data Collection and Analysis

Data regarding the nurses' assessment and exam during seizure events were extracted from evaluation of video recordings obtained during the event. These recordings contain both video and audio data, and continuous recording is standard practice within the EMU, as patients are admitted for the purpose of video electroencephalography (EEG) assessment. The primary investigator assessed the video recordings on site in the EMU and manually extracted data regarding the utilization of the standardized nursing intervention checklist and the standardized nursing neurological exam checklist during a seizure event. Medication administration data was collected from EPIC medication administration records and was verified with video recording of administration. The electronic health record was reviewed for nurse documentation of medication

administration. To determine nursing confidence in responding to seizure events within the EMU, the nurses were invited to participate in a pre-/post-test survey that evaluates their reported comfort level in being the first responder to a seizure event, in implementing a neurological exam, in administering rescue medication, and in providing resuscitative measures if necessary. The primary investigator sent the survey via e-mail forwarded from the neurosciences' nursing leadership team. Nurses will be deidentified prior to sharing results with EMU medical staff and nursing management. Because only 15 nurses responded to the survey, a two-tailed Wilcoxon signed rank test was utilized to determine if there was any significant change in nurses' reported confidence. Descriptive statistics were used to describe demographics and the use of the tools. Medication administration records found in the electronic health record four weeks prior to the implementation of the tool was compared with medication administration records after implementation to determine if there was an improvement in response time with the use of the standardized process tool. Both SPSS and Intellectus Statistics software were used to perform statistical tests on the data collected.

De-identification was addressed using the Safe Harbor approach described by the Health Insurance Portability and Accountability (HIPAA) Privacy Rule. Using this approach, all eighteen patient identifiers were removed from data collected (Kayaalp, 2018). The Privacy Rule's Limited Data Set provision was utilized to access information related to dates of patient admission and seizure events (Kayaalp, 2018). Identifying information regarding the nurses performing the ictal exam and interventions will also be removed from the data retrieved. Deidentification of patients and clinicians will be done automatically through reports generated from the electronic health record for data related

to medication administration. Deidentification of patients and clinicians was done manually when reviewing video footage of events for the purpose of evaluating utilization of the checklist protocols.

Approval Processes

The epilepsy center's medical staff approved the use of the nursing examination and intervention checklist tools. Approval and letter of IRB exemption was obtained from the hospital. IRB approval was also obtained from University of Missouri-St. Louis.

Results

Overall, nursing compliance in utilizing the checklist tools during seizure events in the EMU was only 26.7%. Because this is a new process for the department, there was no data to compare for standardized neurological exams prior to implementing these tools. There were a limited number of seizure events requiring rescue medication administration during study period (n=3 in the pre-implementation sample and n=4 in the post-implementation sample). Descriptive statistics were calculated utilizing SPSS. The mean medication administration time for the pre-intervention sample was 20.667 minutes compared to 17.5 minutes for the post-intervention sample.

Table 1

Mean Medication Administration Times

Variable	N	Minimum	Maximum	Mean	Standard Deviation
Pre-Implementation	3	17	25	20.667	4.04145
Post-Implementation	4	8	31	17.5	10.66146

A Mann-Whitney U test was conducted to examine whether there was a significant difference between pre-implementation medication administration times and post-implementation medication administration times. differences between pre-implementation medication. The result of the two-tailed Mann-Whitney *U* test was not significant based on an alpha value of .05, $U = 7$, $z = -0.18$, $p = .857$.

Table 2

Results of Mann Whitney U Test Between Medication Administration Times

	Pre-Implementation		Post-Implementation				
Variable	Mean Rank	*n*	Mean Rank	*n*	*U*	*z*	*p*
Administration Times	4.33	3	3.75	4	7.00	-0.18	.857

In order to determine if there was a statistically significant difference in responses to the nursing confidence survey between the pre- and post-implementation samples, a two-tailed Wilcoxon signed rank test was selected due to the limited number of nurses responding to the survey (n=15). The nurses were asked to rate on a scale of how much they agreed or disagreed with the statements presented. Ninety percent of nurses reported they “strongly agreed” with the statement, “I feel confident in my ability to initiate seizure management interventions when I am the first responder to a patient’s seizure,” prior to implementation of the checklist tool, while 80% selected “strongly agree” for the same statement post-implementation. In the pre-implementation group, 10% reported they “somewhat agreed,” and 20% reported they “somewhat agreed” in the post-implementation group. For the statements, “I feel confident in my ability to initiate a neurological exam when a patient is having a seizure” and “I feel confident in my ability to administer the appropriate rescue medication in a timely manner when a patient is

having a seizure," 90% of nurse reported they "strongly agree" prior to protocol implementation, while 80% reported they strongly agree and 20% reported they neither agree nor disagree post-implementation. Finally, for the statement, "I feel confident in my ability to initiate resuscitative measures such as providing bag-mask ventilation or initiating CPR if a patient acutely decompensates while having a seizure," 80% of respondents reported they "strongly agree" with 20% reporting they "somewhat agree" in both the pre- and post-implementation groups. The results of the two-tailed Wilcoxon signed rank test were not significant based on an alpha value of .05, $V = 6.00$, $z = -1.73$, $p = .083$, indicating that the differences between the confidence in responding to seizure events in the pre-implementation survey group ($Mdn = 0.90$) and that of the post-implementation survey group ($Mdn = 0.80$) are explainable by random variation.

Discussion

The aim for this project was to implement a standardized neurological exam and seizure event response protocol in the EMU. While the nursing staff received education through education day presentations, a PowerPoint presentation with explanatory recording, and a video demonstration of how to use the tool in a simulated seizure event, overall nursing compliance was only 26.7% over the course of four weeks post-implementation. Ouchida and colleagues (2022) reported an increase in clinical assessment performance from 67% of seizure events to 82% of seizure events with utilizing a checklist tool. While the EMU in this study did not have a standardized assessment prior to providing checklists tools to staff, ongoing staff education and reinforcement of rationales and goals for using the checklists may increase the rate of nursing compliance in using the tools to administer a standardized neurological exam.

Nursing compliance in this study is similar to the one evaluated by Hanrahan and colleagues (2021). They experienced a 20% short-term increase in nursing performance of neurological assessments using a tool and an overall 16% long-term increase in neurological assessments performed. Ongoing use of the tools should be monitored to assess for both short- and long-term effects of utilizing the tools in promoting nursing performance of neurological exams.

In this study, average medication administration time was found to decrease from 20.667 minutes after seizure onset to 17.5 minutes after seizure onset. This is consistent with findings from Ostendorf and colleagues (2018), where a standardized protocol demonstrated a decrease in rescue medication administration to patients with status epilepticus. It's important to note, however, that this study's current findings are limited due to small sample size and ongoing efforts should be made to assess medication administration times with use of the checklist tools.

While Pavitt and colleagues found nursing confidence in responding to seizure events increased with the use of a standardized protocol, this study found no difference in nurses' reported confidence with implementation of the checklist tools. The nurses were asked if they had worked in the EMU during the study period, however, and all nurses completing the post-implementation survey noted they had not worked in the EMU and thus hadn't utilized the checklist tools.

There are several limitations to this project. It was conducted as a single-center study. There was limited opportunity to use the tools for neurological exams and medication administration guidance due to the limited number of qualifying seizure events during the study time period. Additionally, limited participation in the nursing confidence survey

may have resulted in more experienced nurses responding and skewing the results towards more confidence in responding to seizure events and may not truly reflect the overall confidence of the department staff. Additionally, the nurses responding to the post-implementation survey did not work in the EMU during the study period. While they received education on the use of the tools, it's important to recognize that they were unable to use the tools in clinical practice. Future quality improvement projects and research should be directed at engaging the nurses who work in the EMU and how the use of tools impacts the confidence of the nurses actually using the tools in practice. Additionally, ongoing efforts should be made to collect data on medication administration times to see if the use of tools impacts the time interval between seizure onset and medication administration in a statistically significant way.

Conclusion

Utilizing standardized neurological exams and seizure management tools can assist in preventing patient harm and promoting EMU accreditation by national organizations, as well as contributing to diagnostic accuracy of epileptic lesions to guide clinical management of these populations. While this study is limited by the small sample size, it is crucial to continue to study how standardized protocols involving neurological exams and seizure management interventions impact patients and providers alike.

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Appendix B

Interventions
☐ Administer the appropriate rescue medication as indicated by the EMU Team after the indicated time.

Once the patient's spell/seizure has ended:
☐ Reassess respiratory status after administration of benzodiazepines (such as lorazepam/Ativan). Stay with the patient until they are stable.
☐ Reorient the patient, explain what happened, and ask the patient what they remembered about the event.
☐ Evaluate motor strength of face, upper extremity, and lower extremity.
☐ Communicate with the EMU Technologist so event details can be documented.

Appendix C

Children's HOSPITAL • ST. LOUIS BJC HealthCare

EEG Monitoring Unit (EMU) Event Response

Washington University in St. Louis SCHOOL OF MEDICINE

Speak the following to capture on video:
Direction of eyes.
Part(s) of body affected.
Presence of automatisms (i.e. lip-smacking, manual picking movements)

Ask the patient to:
State their name.
Follow one step command: ☐ Close your eyes. ☐ Give me a thumbs up.
Follow a command that crosses midline: ☐ Take your right hand and touch your left ear.
Evaluate motor strength of ☐ Face ☐ Upper extremity ☐ Lower extremity.
Remember a color: 
Repeat this phrase: ☐ Today is a sunny day in St. Louis.
Name any of these items: 
Read one of these sentences: I like chocolate cake. The baby monkey only eats bananas.
Recall the color previously named. 

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