Seizure Precaution Implementation and Management Policy and Procedure

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Learning Objectives

- Self-report a greater understanding of evidence-based practice as a result of this learning activity
- To educate and share information with nurses and other healthcare providers focused on evidence-based practice.

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Seizure Types

Generalized

- Produced by electrical impulses from both hemispheres of the brain

Focal

- Produced (at least initially) by electrical impulses in a relatively small part on one side of the brain

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Main variants of generalized seizures

- Tonic-clonic (Grand Mal)
- Absence
- Myoclonic

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Tonic-Clonic Seizure

- Most common and dramatic, and most well known
- Patient loses consciousness
- Generalized body stiffening (called the "tonic" phase of the seizure) for 30 to 60 seconds followed by violent jerking (the "clonic" phase) for 30 to 60 seconds
- Tongue biting and urinary incontinence

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Absence Seizure

- Short loss of consciousness (just a few seconds) with few or no symptoms
- Most often a child
- Typically interrupts an activity and stares blankly
- Begin and end abruptly
- Usually not aware that they are having a seizure
- "Losing time"
- Eye flutter or blinking is common

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Myoclonic Seizure

- Sporadic jerks
- Usually on both sides of the body
- May result in dropping or involuntarily throwing objects
- People may have myoclonus that is not due to seizure activity-myoclonic simply describes the movement

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Focal Onset Seizure

2 Types of Focal Onset Seizures

Focal Aware
- simple complex

Focal Impaired Awareness
- complex partial seizure

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Focal Aware Seizure

- Patients retain awareness
- Jerking, muscle rigidity, spasms, head-turning
- Unusual sensations affecting either the vision, hearing, smell, taste, or touch
- Memory or emotional disturbances

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Focal Impaired Awareness

- Patient loses awareness
- Patients seem to be "out of touch," "out of it," or "staring into space“
- Automatisms consist of involuntary but coordinated movements that tend to be purposeless and repetitive
- Automatisms such as lip smacking, chewing, fidgeting, walking and other repetitive, involuntary but coordinated movements

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Combined Generalized and Focal

- Clonic
- Tonic
- Atonic

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Clonic Seizures

Repetitive, rhythmic jerks that involve both sides of the body at the same time

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Tonic Seizure

- Stiffening of the muscles
- Short duration
- Usually occur during sleep

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Atonic Seizures

- Sudden and general loss of muscle tone, particularly in the arms and legs, which often results in a fall
- Falls may result in head injuries

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Status Epilepticus

- Both focal and generalized seizures can lead to a condition known as status epilepticus.
- Two or more epileptic seizures following one another without recovery between them.
- May be convulsive: seizure activity is noticeable.
- May be non-convulsive: seizure activity is not noticeable.

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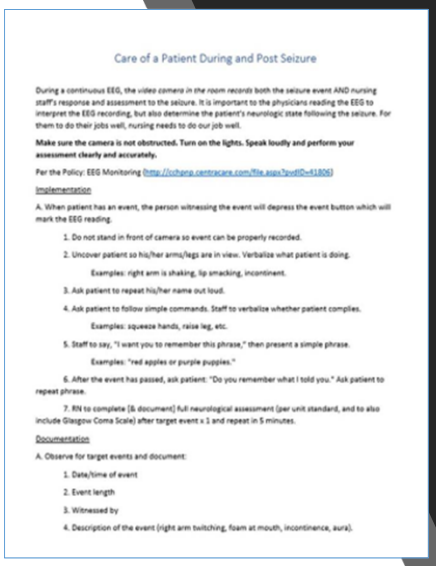
Patient Care During & Post Seizure



Care of a Patient During and Post Seizure

During a continuous EEG, the *video camera in the room records* both the seizure event AND nursing staff's response and assessment to the seizure. It is important to the physicians reading the EEG to interpret the EEG recording, but also determine the patient's neurologic state following the seizure. For them to do their jobs well, nursing needs to do our job well.

Make sure the camera is not obstructed. Turn on the lights. Speak loudly and perform your assessment clearly and accurately.

Per the Policy: EEG Monitoring (http://cchpnp.centracare.com/file.aspx?pvdID=41806)

Implementation

A. When patient has an event, the person witnessing the event will depress the event button which will mark the EEG reading.

1. Do not stand in front of camera so event can be properly recorded.
2. Uncover patient so his/her arms/legs are in view. Verbalize what patient is doing.
   Examples: right arm is shaking, lip smacking, incontinent.
3. Ask patient to repeat his/her name out loud.
4. Ask patient to follow simple commands. Staff to verbalize whether patient complies.
   Examples: squeeze hands, raise leg, etc.
5. Staff to say, "I want you to remember this phrase," then present a simple phrase.
   Examples: "red apples or purple puppies."
6. After the event has passed, ask patient: "Do you remember what I told you." Ask patient to repeat phrase.
7. RN to complete [& document] full neurological assessment (per unit standard, and to also include Glasgow Coma Scale) after target event x 1 and repeat in 5 minutes.

Documentation

A. Observe for target events and document:

1. Date/time of event
2. Event length
3. Witnessed by
4. Description of the event (right arm twitching, foam at mouth, incontinence, aura).

- Make sure the camera is not obstructed. Turn on the lights. Speak loudly and perform your assessment clearly and accurately.
- Part of the EEG includes a video monitor
- Monitor is not just important to "see" the seizure
  - see our nursing assessment of the patient during and following the seizure
- Not to "spy" on our staff at all
- BEST PRACTICE to care for our patients
- The VOA (video observation assistant) camera is not the same as the EEG camera
  - Stay out of the way of the EEG camera during event
- **LPNs & RNs:** STAY WITH your patient and complete the assessments as noted below.
- The RN will need to be aware of what is going on (obviously)
  - the LPN is able to complete these assessments
- **Nursing assistants:** STAY WITH the patient while you phone your RN or LPN
- *The video camera in the room records* both the seizure event AND nursing staff's response and assessment to the seizure.
- Important to the physicians reading the EEG to interpret the EEG recording
- Determine the patient's neurologic state following the seizure

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Purpose

- **The purpose of this quality improvement project was to ensure that the hospital staff within the St. Cloud Hospital were knowledgeable on how to provide the appropriate and expected seizure precaution measures for adult inpatients at risk for seizures and seizure related injuries.**

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Statistics

- Approximately 70% of seizures have no known cause.
- The frequent causes for the remaining 30% include:
  - Brain tumor and/or stroke
  - Head Trauma
  - Poisoning or substance abuse
  - Infection
  - Maternal injury, infection, or systemic illness that affects the developing brain of the fetus during pregnancy.
    - (Epilepsy Foundation Minnesota, n.d.).

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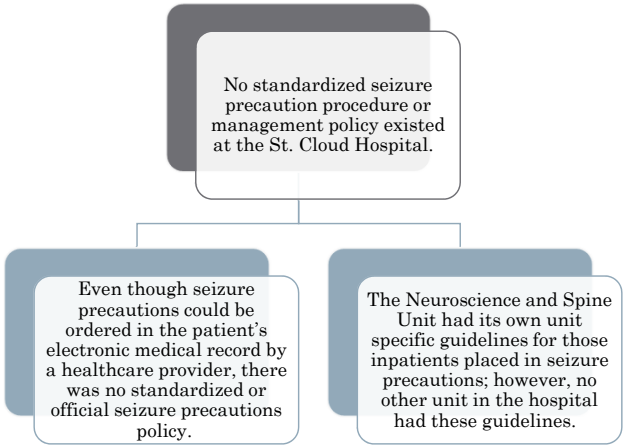
Why was this a problem?



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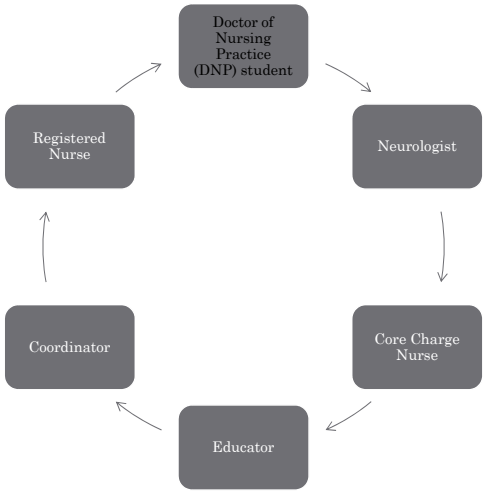
Interprofessional Team – Task Force



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Shareholders

- A clinical value analysis specialist
- The Neuroscience and Spine/Neuro Progressive Care Unit (NPCU) director
- The Medical Unit 2 director
- The Medical Progressive Unit (MPCU) director
- The Medical Unit 2/MPCU educator.

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Committee Approvals Required

- The Product Value Analysis Committee (PVAC)
- The Education Council committee
- The Administrative Patient Care Council (APCC) committee
- The Clinical Patient Care Committee (CPCC),
- The Nursing Research Review Board (NRRB)
- The Institutional Review Board (IRB) at the College of St. Scholastica.

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Setting

This quality improvement project took place at the St. Cloud Hospital.

The St. Cloud hospital serves patients who are admitted with various diagnoses; including those patients with seizure disorders or who are at a high risk for having a seizure due to their diagnosis.

This quality improvement project chose to compare the Neuroscience and Spine Unit/Neuro Progressive Care Unit (NPCU) to the Medical 2 Unit/Medical Progressive Care Unit (MPCU) because it was felt that the hospital staff in both of these areas had comparable knowledge and were both equally as likely to care for patients at risk of seizure activity.

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Population

Inclusion Criteria	Exclusion Criteria
Adult, aged 18 years of age and older, inpatient population at the St. Cloud Hospital who had a history of active seizures (within the last three months), were at a high risk for having a seizure, or were actively seizing.	No vulnerable adults, pediatric (aged 17 years of age and younger) inpatients, or outpatients.

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Goals

- Establish and implement a standardized seizure precaution policy based on evidence-based practice and best practice recommendations.
- Ensure that all adult inpatients with a seizure precaution order had all of the appropriate supplies at their bedside in the event that a seizure occurred during their hospitalization.

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Objectives

- Create a seizure precaution policy based on the best evidence-based practice
- Educate the hospital staff of the new seizure precautions policy.
- Evaluate learning with a pre- and post- survey.
- Obtain approval from necessary committees to ensure proper seizure precaution supplies were ordered prior to the implementation.
- Evaluate the hospital staff's understanding of supplies with a pre- and post- checklist.

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Sample Size for pre- and post-survey

All 170 registered nurses on the Neuroscience and Spine Unit, NPCU, Medical 2 Unit, and MPCU were encouraged to participate in the pre- and post-survey.

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Seizure Precaution Policy

Original: 12/15 Minor Review: Full Review:
Replaces:
Responsible Person: Coordinator, Neuroscience Support Services
Approving Committee: Clinical Patient Care Committee
Category: Patient Care
Cross Reference: EEG Monitoring, Continuous; Transport to/from Procedures, Intrahospital
Type: Procedure

•PURPOSE
To provide seizure precautions for adult patients.

•POLICY
Seizure precautions will be implemented in the event of a seizure, a seizure history (within last 3 months), and/or a high risk of seizures.

•DEFINITIONS
•Aura: A warning of an approaching seizure.
•Epilepsy: Recurrent, unprovoked seizures caused by biochemical, anatomical, and physiological changes.
•Postictal Phase: The interval immediately following the seizure.
•Seizure: A clinical presentation of the central nervous system characterized by abnormal cerebral electrical discharges.
•Status Epilepticus: Recurrent seizures without complete recovery of consciousness between attacks or virtually continuous seizure activity for more than 30 minutes, with or without impaired consciousness.

•STANDARD OF PRACTICE
Patient care staff will be knowledgeable about seizure precaution measures.

•OUTCOME STANDARD
Patients can expect a safe environment in the event of a seizure.

•PROCEDURE
•Set-up suction head with canister and tubing. Have Yaunker suction available in room next to suction head.
•Set-up oxygen with flow meter and green adapter. Have non-rebreather mask available in room next to oxygen set-up.
•Ensure that the patient has an IV access.
•Apply seizure pads to upper side rails.
•Inspect environment for potential safety hazards and remove from surroundings (examples: sharp objects, hot drinks, breakable items, etc.).
•Consideration will be given for performing procedures at the bedside whenever possible.

•REFERENCES
National Guidelines/National Standards/Regulatory
American Association of Neuroscience Nurses. (2009). *Care of the patient with seizures (2nd ed.): AANN clinical practice guidelines series.* From www.aann.org/pdf/cpg/aannseizures.pdf
Literature
Cross, C. (2004). Seizures regaining control. *RN, 67*(12), 44-50.
Schrub, E. & Caple, C. (2014). Seizure precautions for adults: Initiating and maintaining. *CINAHL Nursing Guide.*

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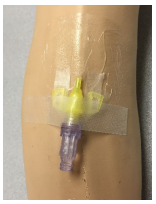
Seizure Precautions Policy

Go-live date: February 2nd, 2016

Seizure Pads

Apply seizure pads to the upper side rails of the patient's bed.

IV Access



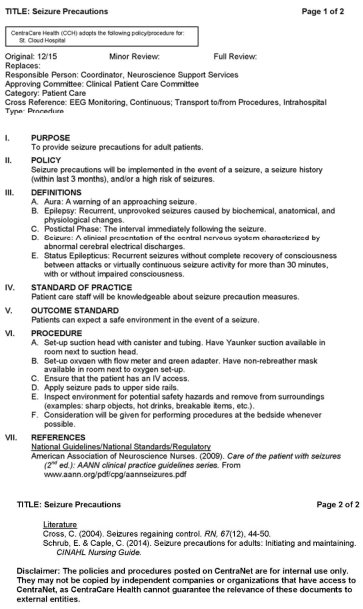
Ensure that patient has a functional IV access.

Oxygen set-up

Set-up oxygen flow meter with green adapter. Have non-rebreather mask available in room and next to oxygen set-up.

Suction set-up

Have suction head with canister and tubing set-up and ready. Yaunker needs to be available next to suction head.



TITLE: Seizure Precautions Page 1 of 2

CentraCare Health (CCH) adopts the following policy/procedure for: St. Cloud Hospital

Original: 12/15 Minor Review: Full Review:
Replaces:
Responsible Person: Coordinator, Neuroscience Support Services
Approving Committee: Clinical Patient Care Committee
Category: Patient Care
Cross Reference: EEG Monitoring, Continuous; Transport to/from Procedures, Intrahospital
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I. **PURPOSE**
To provide seizure precautions for adult patients.

II. **POLICY**
Seizure precautions will be implemented in the event of a seizure, a seizure history (within last 3 months), and/or a high risk of seizures.

III. **DEFINITIONS**
A. Aura: A warning of an approaching seizure.
B. Epilepsy: Recurrent, unprovoked seizures caused by biochemical, anatomical, and physiological changes.
C. Postictal Phase: The interval immediately following the seizure.
D. Seizure: A clinical presentation of the central nervous system characterized by abnormal cerebral electrical discharges.
E. Status Epilepticus: Recurrent seizures without complete recovery of consciousness between attacks or virtually continuous seizure activity for more than 30 minutes, with or without impaired consciousness.

IV. **STANDARD OF PRACTICE**
Patient care staff will be knowledgeable about seizure precaution measures.

V. **OUTCOME STANDARD**
Patients can expect a safe environment in the event of a seizure.

VI. **PROCEDURE**
A. Set-up suction head with canister and tubing. Have Yaunker suction available in room next to suction head.
B. Set-up oxygen with flow meter and green adapter. Have non-rebreather mask available in room next to oxygen set-up.
C. Ensure that the patient has an IV access.
D. Apply seizure pads to upper side rails.
E. Inspect environment for potential safety hazards and remove from surroundings (examples: sharp objects, hot drinks, breakable items, etc.).
F. Consideration will be given for performing procedures at the bedside whenever possible.

VII. **REFERENCES**
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TITLE: Seizure Precautions Page 2 of 2

Literature
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- The purpose is to provide seizure precautions to adult patients.
- Implement seizure precautions on a patient in the event of a seizure, a seizure history (within the last 3 months), or if at high risk of seizures.
- In the event of a seizure, do not try to hold the person down or restrain them. Do not insert any objects in the patient's mouth.
- Inspect and remove potential safety hazards from the patient's surroundings.
- Consider performing procedures at the bedside whenever possible.
- Current seizure pads are in the process of being updated with bed specific models. Look for this change in the upcoming months.

References:

American Association of Neuroscience Nurses. (2009). *Care of the patient with seizures (2nd ed.): AANN clinical practice guidelines series.* Retrieved from www.aann.org/pdf/cpg/aannseizures.pdf

Cross, C. (2004). Seizures regaining control. *RN, 67*(12), 44-50.

Posey. (n.d.). *5725 posey seizure side rail pads.* Retrieved from http://www.posey.com/products/bed-safety/side-rail-protection/5725-5725-posey-seizure-side-rail-pads

Schrub, E. & Caple, C. (2014). Seizure precautions for adults: Initiating and maintaining. *CINAHL Nursing Guide.*

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January 2016

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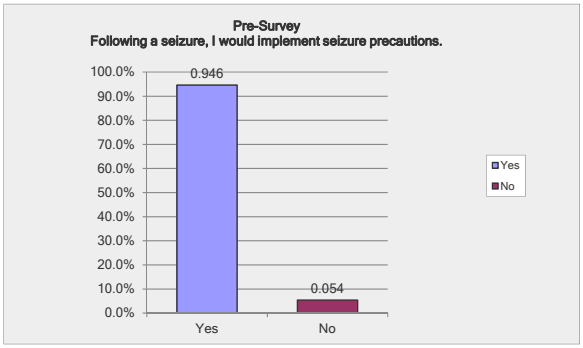
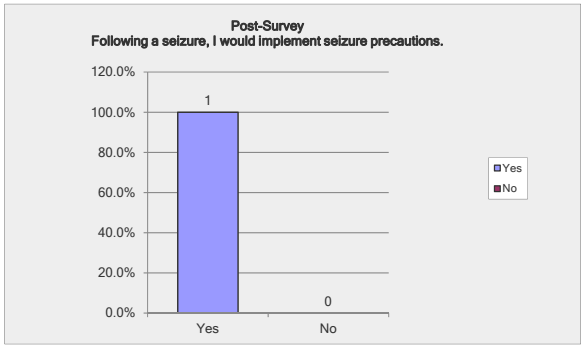
Pre- and Post-Survey Data

Question 4. Following a seizure, I would implement seizure precautions.





- The post-survey showed an improvement in the overall understanding of seizures
- 100% of the registered nurses selected that they would implement seizure precautions and notify a provider following a seizure.

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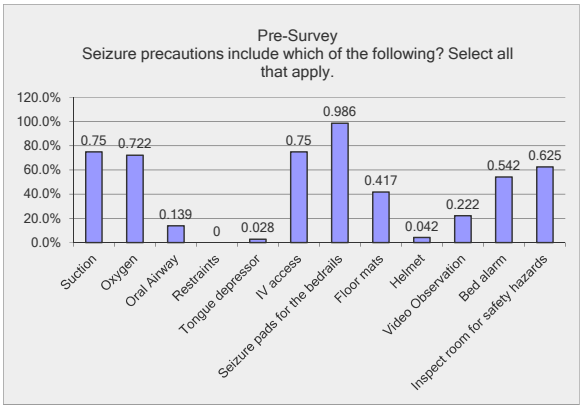
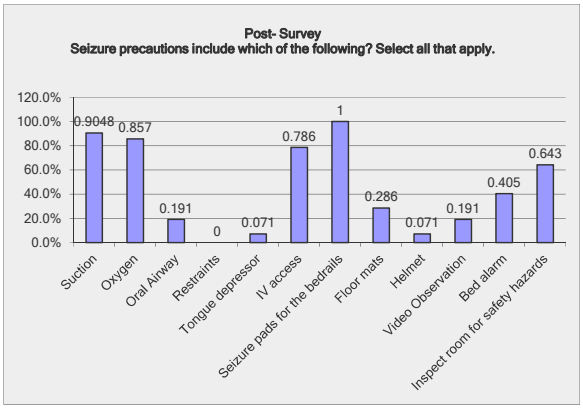
Pre- and Post-Survey Data

Question 7. Seizure precautions include which of the following? Select all that apply.





There was an overall improvement in correct responses for seizure precautions seen on the post-survey. However, there is still room for improvement due to not all of the correct responses are at 100%.

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Pre- and Post- Implementation Checklist

Table 2. Percentage of rooms that were correctly equipped with supplies

Table 2.

Percentage of rooms that were correctly equipped with supplies pre- versus post- seizure precaution policy implementation

	Oxygen*		Suction		IV Access		Seizure Pads		Environment	
Unit	**Pre**	**Post**	**Pre**	**Post**	**Pre**	**Post**	**Pre**	**Post**	**Pre**	**Post**
Medical Unit 2	57%	71%	14%	57%	86%	100%	100%	100%	100%	100%
MPCU	100%	67%	0%	100%	100%	100%	50%	100%	100%	100%
Neuroscience and Spine	73%	79%	73%	93%	93%	100%	100%	100%	100%	100%
NPCU	67%	75%	83%	75%	100%	100%	100%	100%	100%	100%
Total	70%	79%	60%	82%	93%	100%	97%	100%	100%	100%

Note. Neuroscience and Spine Unit/NPCU had a unit standard pre-implementation to have seizure pads, IV access, oxygen and suction set-up in room, whereas Medical Unit 2 /MPCU did not have a unit standard.

***On the pre-evaluation, any type of oxygen present in room was counted as correct, however during the post-evaluation only a non-rebreather mask was considered correct.**

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Ethical Considerations

- The population for this quality improvement project did not include vulnerable adults or pediatric, aged 17 years of age and younger, inpatients seen at this Central Minnesota hospital.
- There were no proposed risks to the participants of this quality improvement project.
- No identifiable patient data was collected when conducting the pre- and post- implementation checklist; the only information recorded was the seizure precaution supplies at the patient's bedside and what unit they were on.
- There was also no proposed risks to the hospital staff who completed the pre- and post-survey due to no identifiable data was collected. The only information gathered about the registered nurses was which hospital unit they currently worked on and how long they had been a registered nurse.

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Discussion

There was a noted difference in the observed outcomes and the anticipated outcomes as noted by a decreased percentage of oxygen present in the post-evaluation checklist audit.

This quality improvement project created a standardized seizure precaution policy which was aimed at improving safe patient care by having the necessary supplies available at the patient's bedside; while also increasing nursing staff knowledge.

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Discussion

Like many other studies and quality improvement projects, this will continue to be an ongoing process which will involve constant monitoring and evaluation.

This policy is currently up for a full review.

The post-survey showed an improvement in the correctly selected necessary supplies to be placed at the bedside, however additional unnecessary items were also selected.

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Conclusion

By creating a standardized seizure precaution policy and evaluation tools, the St. Cloud Hospital increased the staff's knowledge about seizures, what supplies and actions are necessary when a seizure precaution order was placed in the patient's electronic medical record.

The expectation was that by standardizing the seizure precaution policies and procedures, an improvement in patient safety outcomes would be seen.

This quality improvement project did not focus on the data collection regarding patient outcomes and safety due to the inaccuracy of reported or underreported seizure related injuries.

However, additional research was needed to see if by standardizing seizure precautions and providing hospital staff knowledge, patient safety outcomes improve.

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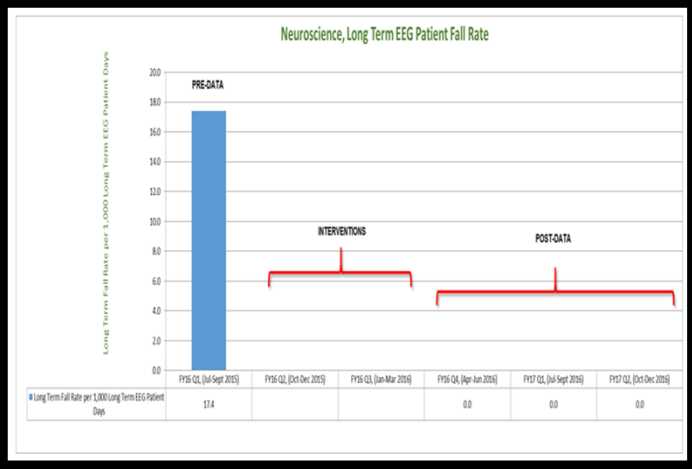

Magnet Story

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Questions??

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References

- American Association of Neuroscience Nurses. (2009). *Care of the patient with seizures (2nd ed.): AANN clinical practice guidelines series.* Retrieved from www.aann.org/pdf/cpg/aannseizures.pdf
- Centers for Disease Control and Prevention. (2015). *Chronic disease prevention and health promotion: Targeting epilepsy.* Retrieved from http://www.cdc.gov/chronicdisease/resources/publications/AAG/epilepsy.htm
- Cross, C. (2004). Seizures regaining control. *RN, 67*(12), 44-50.
- Cullen, L., Hanrahan, K., Tucker, S., Rempel, G., & Jordan, K. (2012). *Evidence-based practice building blocks: Comprehensive strategies, tools, and tips.* Iowa City, IA: Nursing Research and Evidence-Based Practice Office, Department of Nursing Services and Patient Care, University of Iowa Hospitals and Clinics.
- Epilepsy Foundation Minnesota. (n.d.). What is epilepsy. Retrieved from https://www.epilepsyfoundationmn.org/resources/what-epilepsy/
- Kralj-Hans, I., Goldstein, L. H., Noble, A. J., Landau, S., Magill, N., McCrone, P., ... Ridsdale, L. (2014). Self-management education for adults with poorly controlled epilepsy (SMILE (UK): A randomized trial protocol. *BioMed Central Neurology, 14*(69). doi:10.1186/1471-2377-14-69
- Labiner, D. M., Bagic, A. I., Herman, S. T., Fountain, N. B., Walczak, T. S., & Gumnit R. J. (2010). Essential services, personnel, and facilities in specialized epilepsy centers – Revised 2010 guidelines. *Epilepsia, 51*(11), 2322-2333.

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References

- Pallin, D. J., Goldstein, J. N., Moussally, J. S., Pelletier, A. J., Green, A. R., & Camargo, C. A. (2008). Seizure visits in US emergency departments: Epidemiology and potential disparities in care. *Journal of Emergency Medicine, 1*(2), 97-105. doi: 10.1007/s12245-008-0024-4
- Perkins, A. M. & Buchhalter, J. R. (2006). Optimizing care in the pediatric epilepsy monitoring unit. *Journal of Neuroscience Nursing, 38*(6), 416-421.
- Sanders, P. T., Cysyk, B. J., & Bare, M. A. (1996). Safety in long-term EEG/video monitoring. *Journal of Neuroscience Nursing, 28*(5), 305-313.
- Sauro, K. M., Macrodimitris, S., Krassman, C., Wiebe, S., Pillay, N., Federico, P., ... Jette, N. (2014). Quality indicators in an epilepsy monitoring unit. *Epilepsy & Behavior, 33,* 7-11.
- Schrub, E. & Caple, C. (2014). Seizure precautions for adults: Initiating and maintaining. *CINAHL Nursing Guide.*
- Shafer. P. O., Buelow, J. M., Noe, K., Shinnar, R., Dewar, S., Levisohn, P. M., ... & Barkley, G. L. (2012). A consensus-based approach to patient safety in epilepsy monitoring units: Recommended for preferred practices. *Epilepsy & Behavior, 25,* 449-456.
- Spanaki, M. V., McCloskey, C., Remedio, V., Budzyn, D., Guanio, J., Monroe, T., ... Schultz, L. (2012). Developing a culture of safety in the epilepsy monitoring unit: A retrospective study of safety outcomes. *Epilepsy & Behavior, 25,* 185-188.

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