# Foundations of Health Professions Education: Clinical Simulation

# HCS5100

## **Assessment 5:** My lesson plan for a simulation based teaching session

**Student ID:** 34876871

**Due Date:** June 5, 2024

**Word Count:** 3300

**Subject Co-Ordinator:** Debra Nestel

# Nursing management of a Seizure

## Purpose

**Context**

Seizures occur due to surges of electrical activity in the brain that cause an altered state of cerebral dysfunction (Epilepsy Action Australia, 2017). This can manifest as changes in movement, behaviour, sensation or state of awareness (Epilepsy Action Australia, 2017). There are many potential causes of seizures in the hospital setting. These include cerebral haemorrhage, stroke, space occupying lesions within the brain, epilepsy, neurological disorders, infection, hypoglycaemia, electrolyte imbalance and alcohol withdrawal (Epilepsy Action Australia, 2017).

They occur with few warning signs and nurses are usually the first responders. Nursing staff must have the knowledge and skills to safely escalate and care for a seizing patient. Delays to management of a seizure can lead to serious complications for the patient including airway compromise, aspiration or acquired brain injury (Epilepsy Action Australia, 2017).

To ensure a safe and consistent approach to seizure management, an A - E algorithm is utilised. Accurate escalation and management of seizures relates to the National Safety and Quality Health Service (NSQHS) standard of Recognising and Responding to Acute Deterioration (Australian Commission on Safety and Quality in Health Care, 2023). This session will provide participants with the theoretical knowledge and skills they need to do this.

**Learner group**

The learner group is Graduate Registered Nurses at St Vincent's Public Hospital Melbourne (SVHM), who are working in an acute or subacute inpatient unit. Seizures are covered briefly in undergraduate studies. However, there will be varying levels of practical exposure depending on the location of student placements and graduate rotations. Each graduate nurse has been assessed in Basic Life Support (BLS). This means that they have demonstrated competence in performing simple airway manoeuvres, such as jaw support, that may be required in seizure management.

**Rationale**

A need for this session was identified via a learning needs analysis in 2023. Many graduate nurses indicated that they would feel 'scared' or 'lost' if they were caring for a patient who began seizing. Seizures are confronting and graduate nurses have expressed that they would like education to help them build confidence responding to this situation. There is currently no seizure policy or guideline at SVHM that can be used as a resource.

A large proportion of seizures occur in the Emergency Department or the Stroke/Neurology wards, however all graduate nurses will participate in this session. There are many causes of seizures, both neurological and metabolic. Thus, nurses in all clinical areas should be competent in managing them.

## Intended Learning Objectives (ILO's)

After this lesson graduate nurses should be able to:

| | |
|---|---|
| **ILO1** | Discuss seizure classification as per the International League Against Epilepsy. |
| **ILO2** | Differentiate between generalised and focal seizures based on clinical presentation. |
| **ILO3** | Discuss the role of the nursing team (including teamwork, communication and role allocation) in managing a seizure. |
| **IL04** | Demonstrate safe escalation and interventions for the seizing patient using the A-E algorithm. |
| **ILO5** | Demonstrate preparation and administration of emergency seizure medications as per the Australian Injectables Drug Handbook (AIDH). |

## Teaching strategies and learning activities

The content will be delivered as a suite of education on a graduate nurse study day. This includes-

- preparation videos covering seizure types
- a tutorial on the 'A-E of seizure management'
- a high fidelity scenario based simulation

All participants are delivered the same content on seizures before entering the simulation. This will help protect psychological safety.

### Educational theories

*This lesson plan follows elements of behaviourism/experiential learning, constructivism (scaffolding), and cognitive load theory.*

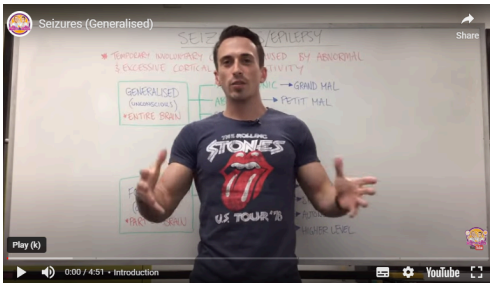
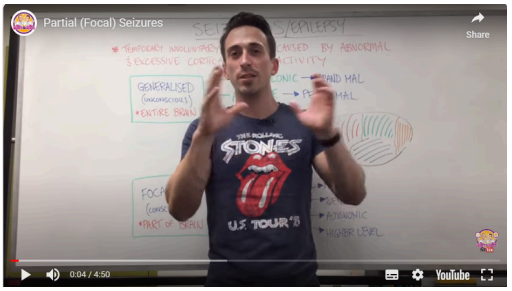
Behaviourism and the Experiential Learning Theory heavily influenced the lesson plan. As per Kolb's cycle, participants are given the opportunity to move through concrete experience (participating in or observing the simulation) , reflective observation (debriefing), abstract conceptualisation (drawing conclusions from the experience) and active experimentation (using learnings in the clinical environment). (Morris, 2019). Behaviorism traditionally focuses on learning occurring due to

reinforcement (Taylor, 2004). This will be provided as real time feedback from the faculty during the debrief.

Constructivism is reflected, by ensuring that the learning activities are engaging and interactive. Participants will actively learn by building new knowledge based on experience, rather than just passively absorbing information (Brandon & All, 2010). It is acknowledged that each participant will bring varying levels of knowledge related to seizures to the session depending on exposure. Therefore, the learning activities have been carefully scaffolded to ensure everyone is adequately prepared for the simulation.

Cognitive load theory will be drawn upon by displaying an A-E of assessment and management sign in the simulation room. This will act as a visual aid for participants in case they have not yet stored the information in long term memory.

## Preparation activities (before simulation)

| Time | ILOs | Teaching and Learning Activity (TLA) |
|---|---|---|
| *Approx 10 minutes self-directed learning pre-session* | **ILO1**<br>**ILO2** | *TLA 1 - Pre-session videos*<br><br>These videos will be distributed to participants via email one week before the session. The videos cover types of seizures, differentiating between focal and generalised. Participants should watch these You-Tube videos before attending the study day.<br><br>Seizures (Generalised)<br>  <br><br>Focal Seizures<br>  <br> |
| *15 minutes (Online Quiz )* | **ILO1**<br>**ILO2** | **Assessment of Learning** (ILO1, ILO2)<br>A 10 question quiz on Microsoft forms will be emailed to participants with the preparation videos. It will consolidate learning and allow faculty |

| | | |
|---|---|---|
| | | to identify any potential knowledge deficits before the simulation.<br><br>**Feedback**<br>After completion, participants will be able to see their score out of 10 on the Microsoft forms quiz, as well as the correct answers.<br>Faculty will provide education in the tutorial based on questions that were challenging for participants.<br><br>**See appendix B for Microsoft Forms Quiz: Seizure Classification and Management** |
| *45 mins (tutorial)* | **ILO3** | *TLA 2 - A-E of seizure management tutorial*<br><br>**Location:** Conference room<br>**Faculty:** 1 Acute Practice Development Nurse (PDN)<br>**Participants:** 30 graduate nurses<br><br>Participants will attend this tutorial on their study day, before breaking into smaller groups for the simulation. It will be interactive and run as an open group discussion and brainstorm. Participants will be asked to contribute ideas on the nursing management of a seizure for each step of the A-E algorithm. Faculty will use a whiteboard to document ideas, and can use the provided PowerPoint presentation for prompts at their discretion. The presentation will be distributed to each participant via email following the session.<br><br>**Assessment of Learning and Feedback**<br>Formative assessment will occur throughout the group discussion, and feedback will be given in real time by faculty.<br><br>**See appendix A for tutorial slides: A-E of seizure management** |

## TLA 3 - Simulation (ILO3, ILO4, ILO5)

| | |
|---|---|
| **Location** | Debrief and Main Simulation Room |
| **Participants** | 8 |
| **Faculty** | 3 |
| **Time** | 60 mins |

This simulation is intended to be run as a high fidelity continuous case based scenario in the main simulation room. There will be a degree of realism lacking due to the inability of the available mannequin to produce a life-like seizure. Participant buy-in will rely on thorough descriptions from the embedded faculty.

If staffing and resources are available, this session can run with a simulated participant (faculty member) in place of a mannequin. The faculty member would need to feel comfortable enacting a seizure for approximately 3 minutes, and have interventions such as side rolling and jaw support performed on them. It would take careful planning, briefing and a 'practice run' of the scenario to ensure physical and psychological safety of the simulated participant. The other embedded faculty members would help to maintain safety.

Four participants enter the simulation room and take on the role of registered nurses, while the other four participants become active observers from the debrief room.

The faculty may decide to adjust to a 'Pause and Discuss' at their discretion. This will depend on the progress of the participants as they work through the scenario.

**Faculty (4 in total)**

- Three faculty from the simulation team as they have the skills and experience to run the session-
    - Two will act as embedded faculty and play a role
    - The other will pre-brief, manage the technology and co-debrief.
- One Acute PDN-
    - Expert on scope of practice of graduate nurses. They will assist with facilitation and co-debrief.

**Equipment and resources**

| Equipment and resources | Notes |
|---|---|
| ● Full size mannequin | ● Dressed in hospital gown, pillow and blanket, IVC in r) forearm |
| ● Ward bed | |
| ● Monitoring equipment | ● Not connected at start of scenario |
| ● Charts and documentation | ● Observation and medication charts (with prn IV clonazepam for seizures > 3 minutes), seizure chart |
| ● Oxygen equipment | ● Nasal prongs, hudson mask |
| ● Resus trolley | ● Must include airway equipment including guedel and yankauer sucker |
| ● Medication props | ● Clonazepam, midazolam and levetiracetam ampoules, 10mL syringes, normal saline ampoules, drawing up needles, Alaris pumps, 100mL normal saline bags |
| ● Alaris pump | |
| ● Medication resources | ● MIMMS, Australian Injectable Drugs Handbook |
| ● ECG | |
| ● Glucometer | |
| ● A-E sign **(see Appendix C: A-E sign)** | ● Display in simulation room and debriefing room to help decrease cognitive load |

**Scenario**

| | |
|---|---|
| **Name** | Taylah Holden |
| **Sex** | Female |
| **Age** | 20 |
| **Past history** | Hx: Epilepsy, anxiety, r) knee arthroscopy |
| **Medications** | 100mg levetiracetam BD<br>50mg lamotrigine nocte<br>20mg escitalopram nocte |
| **Social history** | Lives with family. Supportive parents. Two younger siblings. Works at MECCA Cosmetica. Keen AFLW player. |
| **History of presenting illness** | Presented to the emergency department after a high impact collision to her right leg at football on Saturday morning. 9/10 pain in her lower right leg. X-Ray confirmed a fractured tibia. She began fasting for an emergency open reduction internal fixation (ORIF). |
| **Current situation** | A graduate nurse is caring for Taylah on the Orthopaedic ward the morning after her surgery. They hear a student nurse call for help and press the emergency buzzer. Taylah is having a seizure. Her whole body is stiff and jerking. She is unresponsive and has blue lips. |

Taylah is a 20 year old woman, on the Orthopaedic ward. She is admitted following an emergency R) tibia ORIF after a football injury. Post operatively, she has been alert and oriented, haemodynamically stable and pain is well controlled.

It is an AM shift, so full nursing and medical staff are available to assist. Taylah has epilepsy and missed her anti-seizure medications (levetiracetam and lamotrigine) the previous evening due to being in surgery. This will be evident on a medication chart provided.

The scenario begins when a student nurse (embedded faculty) calls for help. Two graduate nurses (participants) are called into the room and the student describes that Taylah suddenly let out a big cry, lost consciousness and her whole body began jerking. She now has blue lips.

Participants will start timing the seizure, call for help from nursing colleagues (two participants) and escalate to the medical team (embedded faculty). They will complete an A-E assessment and intervene appropriately. Taylah will continue to seize until medication is administered. In the post-ictal phase she will be very drowsy, drop her oxygen saturations and have evidence of an obstructed airway. Simple airway measures such as the recovery position and jaw support will correct this. After a few minutes she becomes alert, confused and tries to climb out of bed. Reassurance and gentle reorientation will settle her. At this point the scenario ends.

**Simulation delivery**

| **Prebrief** | |
|---|---|
| **20 minutes** | ● Introduce faculty and their roles<br>● Introduce the scenario and set expectations. Ensure participants that the preparation material and their experience as graduate nurses has equipped them to respond to the scenario.<br>● Basic assumption - 'We believe that everyone participating in this simulation is intelligent, well trained, cares about doing their best and wants to improve.' (Centre for Medical Simulation Harvard Medical School, 2023).<br>● Set ground rules for the simulation - focus on confidentiality and professionalism. Acknowledge not all participants 'buy in' to the fidelity, but if this is the case they should not spoil it for others.<br>● Discuss plans. 20 minutes for scenario, 25 minutes for debrief with both participants and observers. Feedback will be delivered.<br>● Practise within scope of practice, as you would in your usual work environment.<br>● Orientation to the simulation learning environment including the mannequin, how to connect monitoring equipment and where to find other props/resources. Explain the embedded faculty will assist in locating equipment if requested.<br>● Opportunity for all participants to ask questions.<br>● Split into two even groups (random allocation). One group will be the participants and the other the observers.<br><br>**Peer observer role**<br>In the debrief room, let the observers know they play an important role in enhancing learning outcomes. They will be watching from a screen in the debrief room. They will be giving feedback and it must be delivered in a professional manner.<br><br>Observers will be handed a checklist that gives them specific points to consider while observing the simulation and giving peer feedback in the debrief. These are-<br>● Classification of the seizure based on clinical presentation.<br>● How effectively the A-E algorithm was utilised in the management of a seizure.<br>● Is medication administered in a timely manner?<br>● Are post-ictal considerations appropriately addressed?<br>● Communication, role allocation and teamwork during seizure management. |

| **Roles** |
|---|
| **Participant 1 - primary nurse** |
| You are a graduate nurse caring for Taylah on a morning shift. She is 20 years old and arrived at the ward following a R) tibia ORIF overnight. Her surgery went well and her recovery so far has |

| |
|---|
| been uncomplicated. She has a history of anxiety and epilepsy. You enter the room after seeing an emergency buzzer for your patient and hearing a student nurse calling out for help.<br>The student nurse has been working on the ward for many weeks and knows the environment, including where equipment is located. |
| **Participant 2 - nurse** |
| You are a graduate nurse working the morning shift. You enter the room with the primary nurse after receiving an emergency buzzer and hearing a call for help. |
| **Participants 3 and 4** |
| You are nurses working the morning shift. You will enter the room when you are called to help. The faculty will advise you when this is. |
| **Faculty - Student nurse** |
| You are a student nurse who has been on the Orthopaedic ward for the past 3 weeks. You were helping set Taylah up for breakfast when she let out a loud cry, lost consciousness and started having a generalised tonic clonic seizure. You press the emergency buzzer and call out for help.<br><br>Initially, two graduate nurses, including Taylah's primary nurse will respond to your call for help. Due to the fidelity of the mannequin, you will need to describe what Taylah's seizure looks like to the participants. She is stiff, jerking her whole body and has blue lips.<br><br>You are able to help source equipment, however you are an undergraduate student and must not initiate any interventions.<br><br>You will wear an earpiece and the Faculty Voice will prompt you to say things that move the scenario along. For example, a few minutes after the medication is administered you will let participants know that the shaking has stopped, but she sounds like she is snoring heavily. |
| **Faculty - medical officer/MET team** |
| You are a doctor who arrives several minutes after the participants escalate to the medical team or a MET call. You have not met Taylah before and do not know her history. You ask for an ISBAR handover, including what type of seizure she had.<br><br>If the participants have not yet administered prn clonazepam as per the medication chart, you instruct them to do this. |
| **Faculty - voice** |
| You will be in the simulation control room. You will answer the phone when the participants escalate for help. You will also act as Taylah's voice however she is non-verbal for most of the scenario. In the post ictal phase initially she will be breathing/snoring heavily until simple airway support is implemented. Then Taylah will become alert and confused. You will call out 'where am I? I need to get out of here, I'm going home, get me out of bed.' She will easily settle with gentle reorientation. |

**Scenario - 20 minutes**

| Simulation Programming/observations | | | |
|---|---|---|---|
| | **First observations (on entry to room, seizing)** | **Second observations (cessation of seizure)** | **Third observations (on waking)** |
| **Neurological** | Unresponsive | Unresponsive | GCS 14, disorientated, agitated |
| **Cardiovascular** | HR 135<br>BP 150/100 | HR80<br>BP 120/60 | HR95<br>BP 132/65 |
| **Respiratory** | Unable to get RR due to active seizing<br>Sp02 85% | RR10<br>Sp02 87%<br>Heavy snoring, airway obstruction | RR17<br>Sp02 97% with 02 |
| **Response to intervention** | Patient actively seizing. Move to the second set of observations after IV clonazepam has been administered. | Patient stops seizing but is unresponsive and has signs of respiratory depression following IV clonazepam.<br>Move to third observations once jaw support is performed for approx one minute, and oxygen applied/increased. | Patient wakes, begins trying to get out of bed and is calling out. Patient will calm down with gentle reorientation and assurance. |

**Debriefing - 20 minutes**

At the completion of the scenario, all participants will attend a debriefing. Chairs will be arranged in a circle, and co-debriefers will sit opposite each other.

The Diamond Debrief model will facilitate this debrief. It works well for case based scenarios as it explores what happened, how participants felt and how they will use what they have learnt in their clinical practice. Advocacy inquiry questions will be utilised to encourage participants to become an active part of the debriefing process. Both simulation participants and observers will be given equal opportunity to contribute.

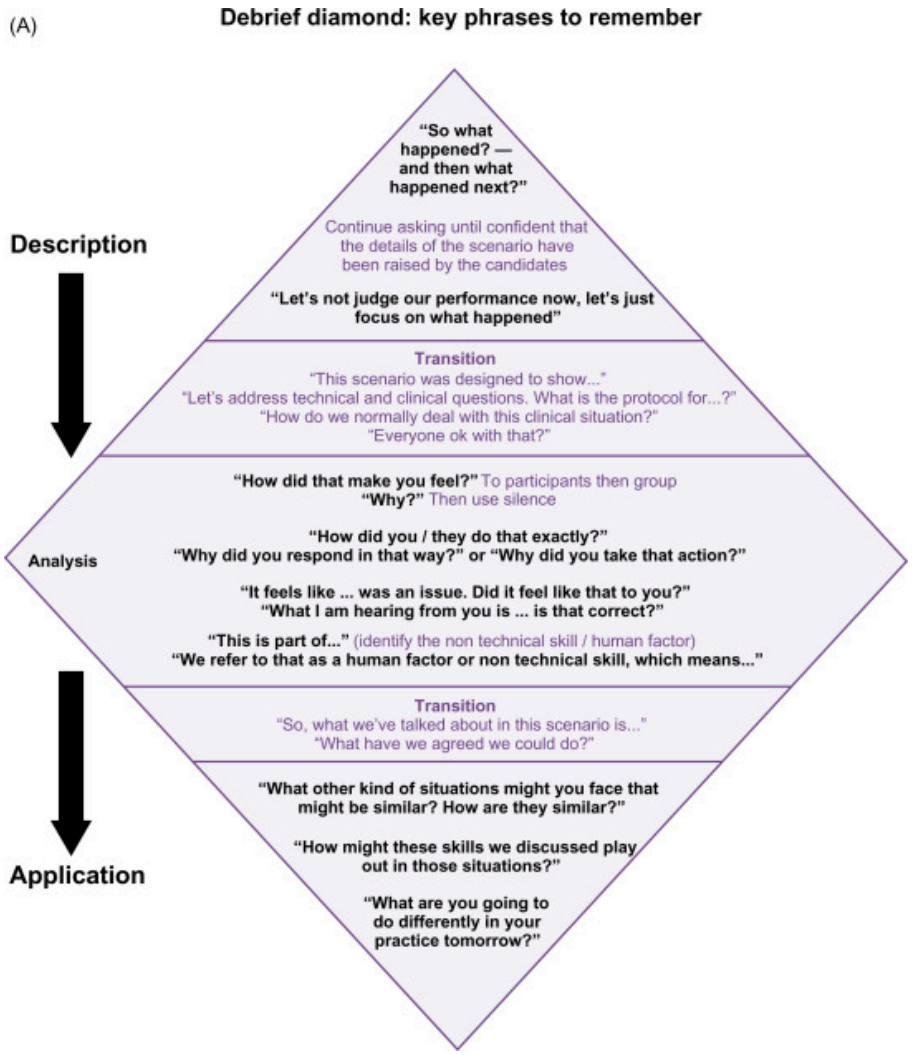



**Figure 1: The Diamond Debrief: Key phases to remember** (Levin et.al., 2019).

Co-debriefing is preferred for this simulation so that perspectives can be provided from both a simulation expert and a graduate nurse educator who is aware of their scope and skillset. It also suits the Diamond Debrief as one debriefer can lead the description phase, while the second can lead the analysis and application.

Potentials points for debriefing

- What happened in the scenario?
- How did participants and observers feel about what happened in the scenario?
- Recognition of seizure type
- Management of the seizing patient and use of the A-E algorithm
- Escalation of care
- Timely administration of seizure medications
- Nursing considerations in the post-ictal phase
- Roles, teamwork and communication
- Any circumstances that were not predicted
- Can you use anything you've learnt today in your clinical practice?

**Assessment** *(ILO3, ILO4, ILO5)*
The aim of this simulation is to ensure graduate nurses have the knowledge, skills and qualities to manage a seizure in the ward environment. Assessment of ILO3, ILO4 and ILO5 will be formative and take place during the simulation. Faculty will observe participants and their response during the scenario. From this observation, it will be evident if there are any knowledge or skills gaps that need to be addressed in the debrief.

The debrief will also allow faculty the opportunity to perform formative assessment of simulation participants and observers alike. They will be able to assess learning through the use of advocacy enquiry questions to gauge understanding of seizure management and how it will be applied in the clinical environment.

The final question of the debrief will ask participants to reflect on their key take home learning.

**Feedback**
Verbal feedback will be provided by faculty during the debrief, based on formative assessment. This real time feedback will encourage active engagement and reflection from participants. Feedback will focus on what was done well, and any areas for improvement.

Peer observers will be given the opportunity to provide feedback during the debrief, and participants will be encouraged to self-reflect.

**Evaluation**
The following tools will be used to evaluate the effectiveness of the session -

- *Peer review* - as this is a new lesson plan, an experienced member of the simulation team will observe the session and provide feedback on whether the teaching and learning activities reflect the ILO's, if the formative assessment methods are an adequate assessment of learning, faculty teaching style and engagement of participants in each activity.
- Immediately following the session faculty will meet to discuss and brainstorm what went well, what didn't and what can be improved for next time.
- At the completion of the session, each participant will be asked to complete a Microsoft Forms survey via QR code to evaluate their experience and learning. The survey is based on Kirkpatrick's Model . **(Please see Appendix D: Microsoft Forms Evaluation)**

**References**

*Australian Commission on Safety and Quality in Healthcare*. Recognising and Responding to Acute Deterioration Standard. (2023). Retrieved June 2, 2024, from https://www.safetyandquality.gov.au/standards/nsqhs-standards/recognising-and-responding-acute-deterioration-standard

Brandon, A. F., & All, A. C. (2010). *Constructivism theory analysis and application to curricula*. Nursing education perspectives. Retrieved August 29, 2023, from https://pubmed.ncbi.nlm.nih.gov/20455364/

Center for Medical Simulation, Harvard Medical School. (2023). The Basic Assumption. Retrieved June 2, 2023, from https://harvardmedsim.org/resources/the-basic-assumption/

Epilepsy Action Australia. (2017). Seizure type and classification. Epilepsy Action Australia. Retrieved May 20, 2024, from https://www.epilepsy.org.au/about-epilepsy/understanding-epilepsy/

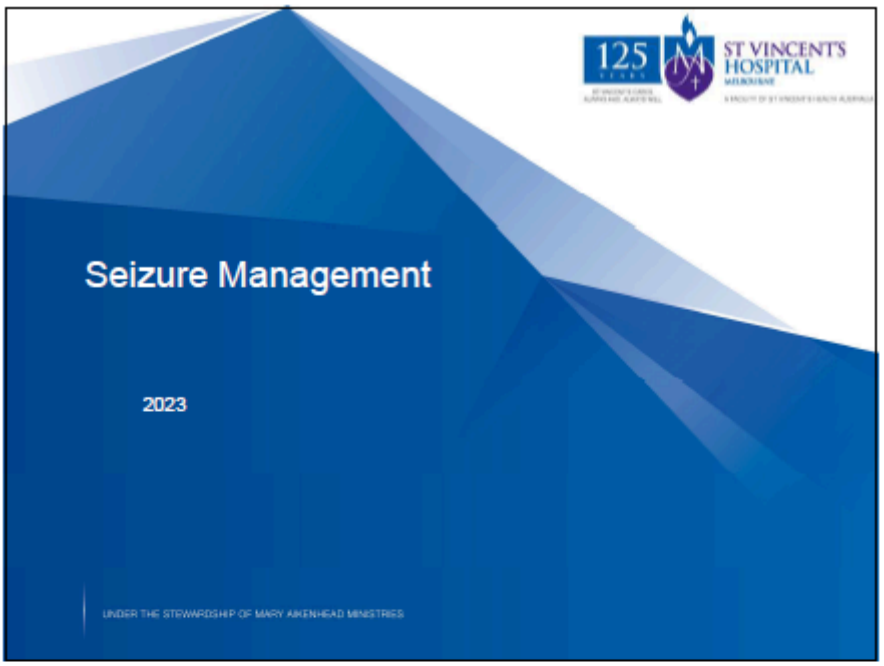
Levin, H., Cheng, A., Catena, H., Chatfield, J., Cripps, A., Bissett, W., Burgess, G., Landry, K., Assaad, M.-A., & Grant, V. (2019). Debriefing frameworks and methods. *Clinical Simulation*, 483–505. https://doi.org/10.1016/b978-0-12-815657-5.00035-8

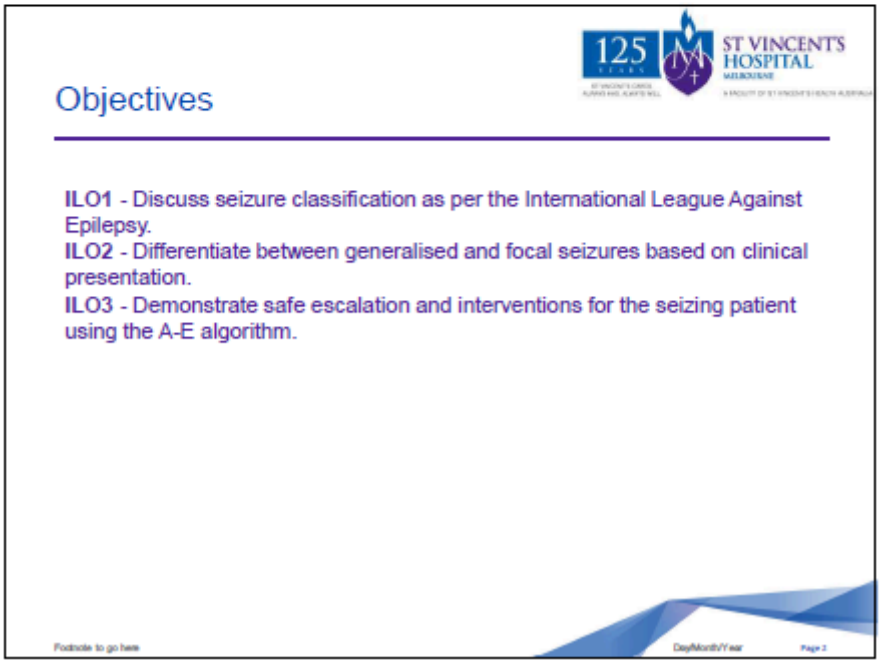
Morris, T. H. (2019). Experiential learning – A systematic review and revision of Kolb's model. *Interactive Learning Environments*, *28*(8), 1064–1077. https://doi.org/10.1080/10494820.2019.1570279

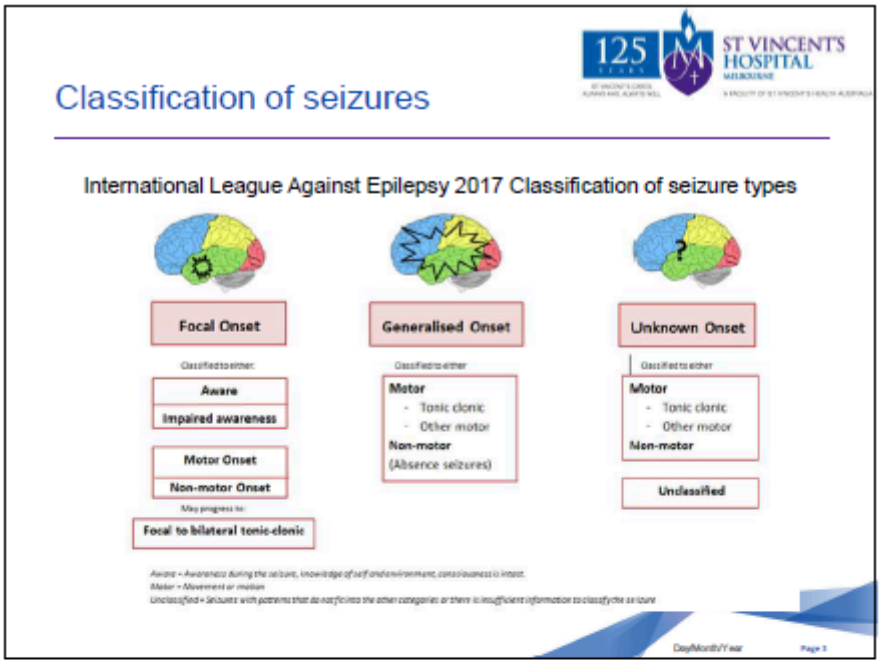
Taylor , L. (2015). *Educational theories and instructional design models: their place in simulation.* Retrieved June 2, 2024, from https://citeseerx.ist.psu.edu/document?repid=rep1&type=pdf&doi=d6b97df3b5d77a3358375badb3ecdcf35394ab6d.

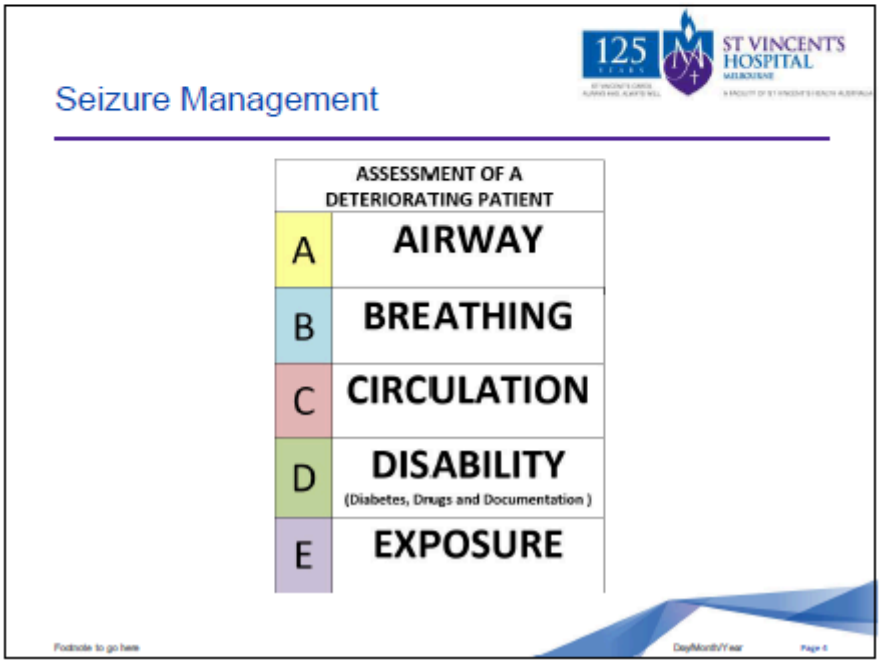
https://www.researchgate.net/publication/229039487_Educational_Theories_and_Instructional_Design_Models_Their_Place_in_Simulation

## **Appendix A:** A-E of Seizure Management tutorial




Classification of seizures
ST VINCENTS HOSPITAL
International League Against Epilepsy 2017 Classification of seizure types
Focal Onset
Aware
Impaired awareness
Motor Onset
Non-motor Onset
Focal to bilateral tonic-clonic
Generalised Onset
Motor
- Tonic clonic
- Other motor
Non-motor
(Absence seizures)
Unknown Onset
Motor
- Tonic clonic
- Other motor
Non-motor
Unclassified


Seizure Management
ST VINCENTS HOSPITAL
ASSESSMENT OF A DETERIORATING PATIENT
A AIRWAY
B BREATHING
C CIRCULATION
D DISABILITY
(Diabetes, Drugs and Documentation )
E EXPOSURE

## Seizure Management

**DANGER**

- Check for any hazards
- remove clutter, people
- Put cot sides up
- never restrain movements, gently guide or use pillows to avoid injury
- Start timing seizure, note characteristics

**RESPONSE**

- Try to elicit response from patient

Footnote to go here

Day/Month/Year

## SEND FOR HELP


**SEND FOR HELP**

- Stay with the patient
- Press emergency buzzer
- Call out for help, use phone
- Someone to notify treating team
- MET call if unexpected seizure, seizure lasting > 5mins, not regaining consciousness between seizures or any other concerns

Footnote to go here

Day/Month/Year

## AIRWAY

**AIRWAY**

- Most seizures self limited – don't need to intervene unless prolonged
- Do not put anything in mouth during ictal phase
- Can suction infront of teeth if secretions pooling or dribbling from mouth
- Loosen anything that is tight around the neck
- Recovery position when able
- Check for patent airway in post ictal phase
- Simple airway support – jaw thrust, chin tilt, guedel
- If ongoing concerns about airway: CODE BLUE

Footnote to go here DayMonthYear Page 7

## BREATHING AND CIRCULATION

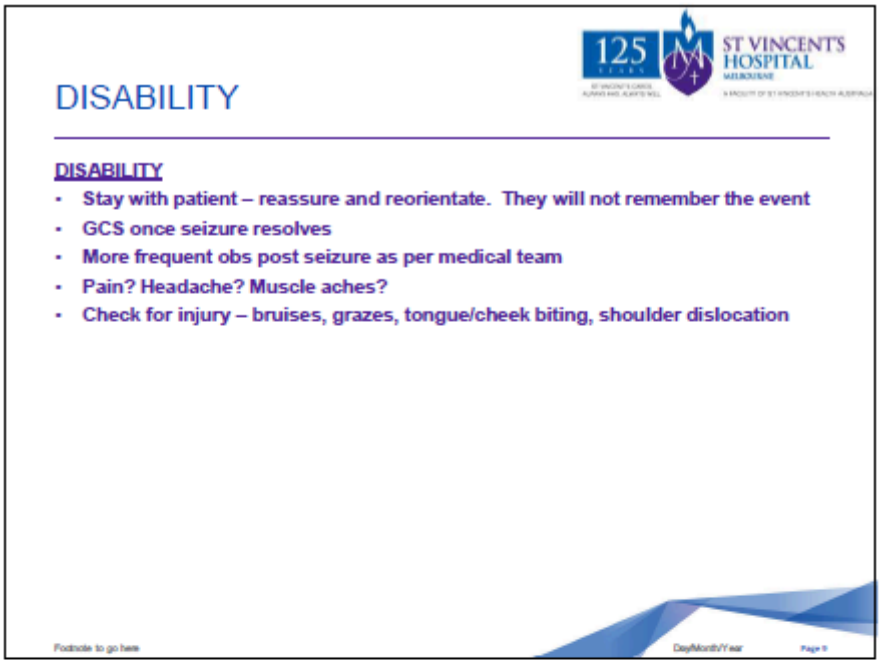

**BREATHING**

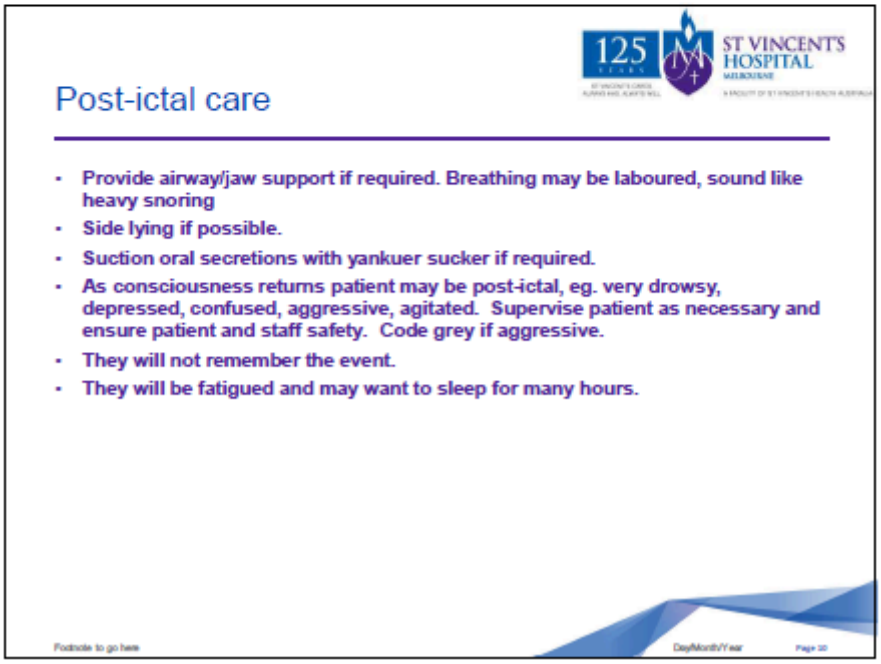
- Put pulse oximeter on finger if able
- Patient will get cyanosis ('blue lips') in tonic phase
- Oxygen – only if required
- Post-ictal – laboured breathing, heavy snoring

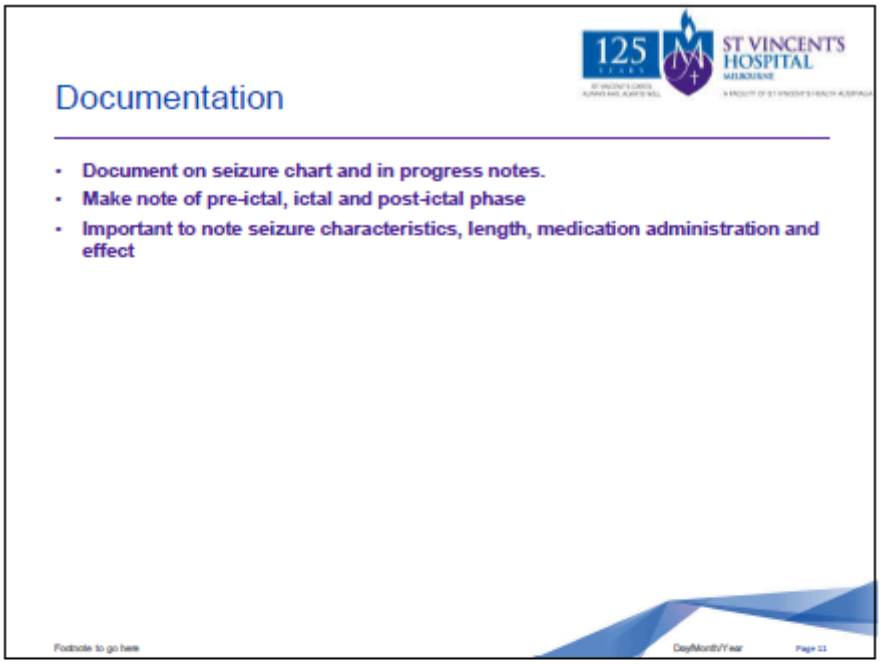
**CIRCULATION**

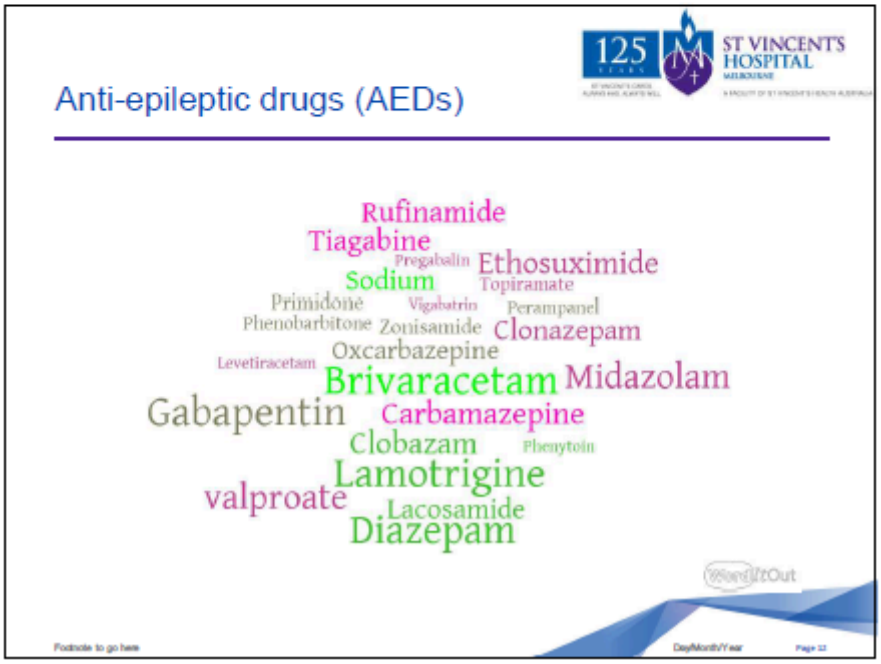
- Locate and flush PIVC
- Check for any prn anti-convulsants or benzodiazepines
- Administer IV medications if and when appropriate
- Vital signs completed at end of seizure
- BSL
- May be asked to do an ECG

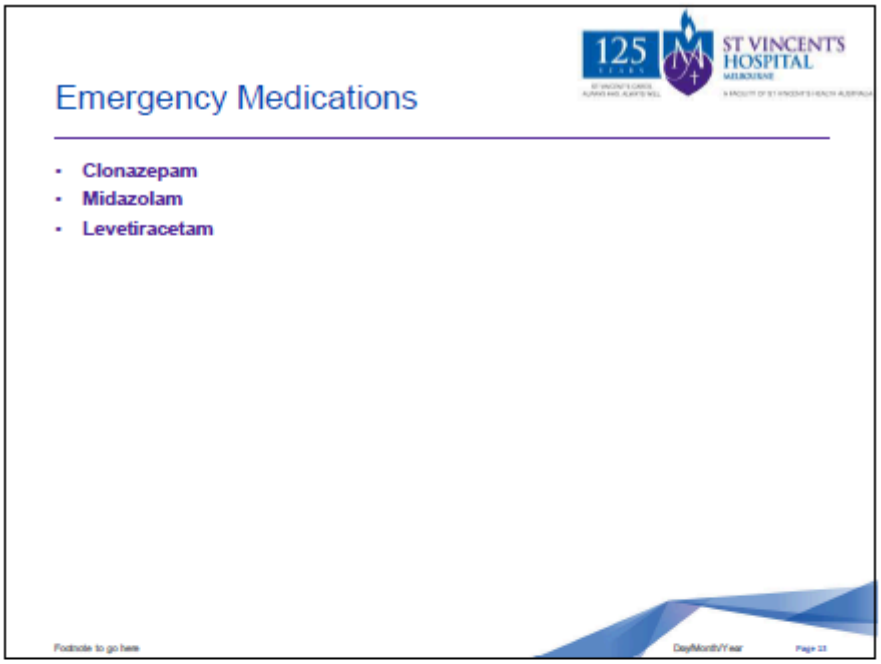
Footnote to go here DayMonthYear Page 8

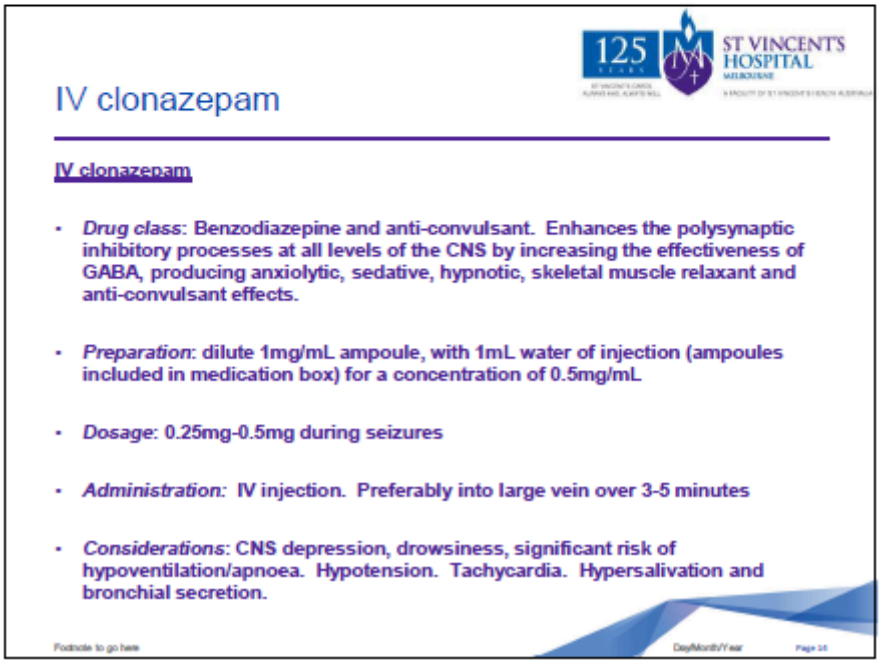

DISABILITY
DISABILITY
Stay with patient – reassure and reorientate. They will not remember the event
GCS once seizure resolves
More frequent obs post seizure as per medical team
Pain? Headache? Muscle aches?
Check for injury – bruises, grazes, tongue/cheek biting, shoulder dislocation
Footnote to go here
Day/Month/Year


Post-ictal care
Provide airway/jaw support if required. Breathing may be laboured, sound like heavy snoring
Side lying if possible.
Suction oral secretions with yankuer sucker if required.
As consciousness returns patient may be post-ictal, eg. very drowsy, depressed, confused, aggressive, agitated. Supervise patient as necessary and ensure patient and staff safety. Code grey if aggressive.
They will not remember the event.
They will be fatigued and may want to sleep for many hours.
Footnote to go here
Day/Month/Year


Documentation
Document on seizure chart and in progress notes.
Make note of pre-ictal, ictal and post-ictal phase
Important to note seizure characteristics, length, medication administration and effect
Footnote to go here
Day/Month/Year


Anti-epileptic drugs (AEDs)
Rufinamide
Tiagabine
Pregabalin
Ethosuximide
Sodium
Topiramate
Primidone
Vigabatrin
Perampanel
Phenobarbitone
Zonisamide
Clonazepam
Oxcarbazepine
Levetiracetam
Brivaracetam
Midazolam
Gabapentin
Carbamazepine
Clobazam
Phenytoin
Lamotrigine
valproate
Lacosamide
Diazepam
Footnote to go here
Day/Month/Year


Emergency Medications
Clonazepam
Midazolam
Levetiracetam
Footnote to go here
Day/Month/Year


IV clonazepam
IV clonazepam
Drug class: Benzodiazepine and anti-convulsant. Enhances the polysynaptic inhibitory processes at all levels of the CNS by increasing the effectiveness of GABA, producing anxiolytic, sedative, hypnotic, skeletal muscle relaxant and anti-convulsant effects.
Preparation: dilute 1mg/mL ampoule, with 1mL water of injection (ampoules included in medication box) for a concentration of 0.5mg/mL
Dosage: 0.25mg-0.5mg during seizures
Administration: IV injection. Preferably into large vein over 3-5 minutes
Considerations: CNS depression, drowsiness, significant risk of hypoventilation/apnoea. Hypotension. Tachycardia. Hypersalivation and bronchial secretion.
Footnote to go here
Day/Month/Year

## Buccal Midazolam

*Drug class:* Benzodiazepine. Thought to suppress seizures by affecting the way GABA acts in the brain

*Preparation:* use 5mg/mL plastic ampoule

*Dosage:* 5mg (0.3mg/kg). Repeat once after 5-1 minutes if necessary. Max dose 10mg.

*Administration:* Tear top from ampoule and slov drop into mouth between gums and cheek.

*Considerations:* drowsiness,

NOTE: IV midazolam not to be administered in ward environment unless by ICU/code blue team in emergency situation

Footnote to go here

DayMonthYear

Page 23

## IV Levetiracetam

*Drug class:* Anti-convulsant. Exact mechanism unknown. "Calm the brain" by preventing nerve cells from becoming hyperactive and to do so without affecting normal electrical impulses. May modulate neurotransmission by binding to synaptic vesicle protein 2A

*Preparation:* draw up vial (500mg/5mL) and inject dose into 100mL N/Saline or glucose

*Dosage:* Usually 'keppra loaded' with 1gram, then regular order of 500mg BD. Can be increased to maximum of 1.5g BD if required.

*Administration:* IV infusion over 15 minutes.

*Considerations:* hypersensitivity to keppra, behavioural effects, drowsiness, rash, vertigo, ataxia, insomnia, anorexia, amnesia, renal impairment


Footnote to go here

DayMonthYear

Page 24

## References


Epilepsy Action Australia., (2017). Seizure types and classification. *Epilepsy Action Australia*. Retrievedv from https://www.epilepsy.org.au/about-epilepsy/understanding-epilepsy/seizure-types-and- classification/

Falco-Walter, J., Scheffer, I., & Fisher, R. (2018). The new definition and classification of seizures and epilepsy. *Epilepsy Research, 139*, 73-79. Doi: 10.1016/j.eplepsyres.2017.11.015

Fisher, R., Cross, H., French, J., Higurashi, N., Hirsch, E., Jansen, F., Lagae, L., Moshé, S., Peltola, J., Perez, E., Scheffer, I., & Zuberi, S. (2017). Operational classification of seizure types by the international league against epilepsy: position paper of the ILAE commission for classification and terminology. *Epilepsia, 58*(4), 522-530. Doi: 10.1111/epi.13670

Hickey, J. (2014). *The clinical practice of neurological and neurosurgical nursing (7th ed.)*. Philadelphia, Pennsylvania: Lippincott Williams & Wilkins.





International League Against Epilepsy. (2017). Operational Classification of Seizure Types. Retrieved from https://www.ilae.org/guidelines/definition-and-classification/operational-classification-2017

Kiriakopoulos, E., & O. Shafer, P. (2017). Types of seizures. *Epilepsy Foundation*. Retrieved from https://www.epilepsy.com/learn/types-seizures

## Appendix B - Microsoft Forms Quiz: Seizure Classification and Management

1. **What are the three main types of seizures as classified by the International League Against Epilepsy?**

a) Focal, generalised, tonic clonic
b) Focal, generalised, unknown
c) Focal, generalised, pseudo seizures

2. **A focal seizure can spread to a generalised seizure?**

a) True
b) False

3. **A seizure occurs**

a) When neurons send abnormal electro-chemical signals to the brain
b) When the brains stops working altogether
c) When someone has a mental health condition

4. **Generalised seizures include**

a) Generalised tonic clonic
b) Myoclonic, atonic, tonic clonic, clonic and absent
c) Absent seizures

5. **How would you classify a seizure if the patient is unresponsive and has left arm twitching?**

a) Complex partial seizure
b) Generalised seizure
c) Focal unaware seizure

6. **Seizures can be caused by**

a) Genetic influences
b) Stroke or head trauma
c) Metabolic imbalance
d) All of the above

7. **How would you classify a seizure if your patient was stiff, jerking all limbs and had blue lips**

a) Focal seizure
b) Generalised tonic clonic seizure
c) Atonic seizure

8. **What is a complication of a generalised seizure**

a) Obstructed airway
b) Bitten tongue
c) Dislocated shoulder
d) All of the above

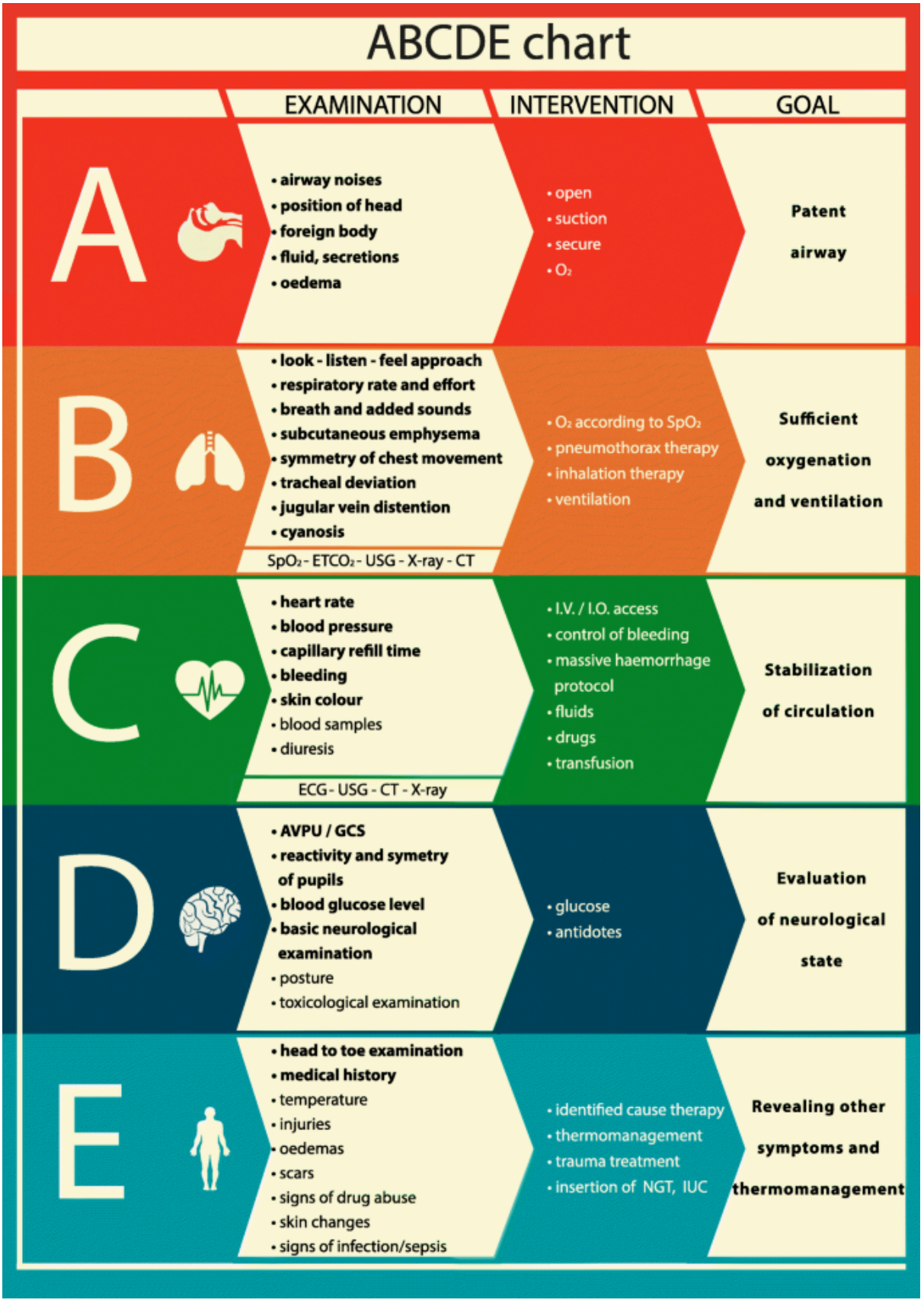
**9. You find your patient having a seizure. What is the first thing you do**

a) Lie them in the recovery position
b) Insert a guedel airway
c) Call for help

**10. There are different types of seizures that affect**

a) Only a small part of the brain
b) Only the whole brain
c) Both a small part of the brain and the whole brain

## Appendix C- A-E sign



## Appendix D- Microsoft Forms Evaluation

1. **Prior to attending the session today, how would you rate your knowledge on Seizure management?**

- ☐ Poor
- ☐ Fair
- ☐ Good
- ☐ Very Good
- ☐ Excellent

2. **Following today's session, how would you rate your knowledge on Seizure management?**

- ☐ Poor
- ☐ Fair
- ☐ Good
- ☐ Very Good
- ☐ Excellent

3. **This session was an effective use of my time.**

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neutral
- ☐ Agree
- ☐ Strongly agree

4. **This session covered enough content on the topic of Seizure management.**

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neutral
- ☐ Agree
- ☐ Strongly agree

5. **This session was well suited to my level of experience. It was not too basic, not too advanced.**

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neutral
- ☐ Agree
- ☐ Strongly agree

6. **I understand the major concepts covered in this session.**

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neutral
- ☐ Agree
- ☐ Strongly agree

7. **This session has motivated me to pursue more learning and practice in seizure management.**

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neutral
- ☐ Agree
- ☐ Strongly agree

8. **I have gained knowledge and skills during this session that I can apply to my daily work as a graduate nurse.**

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neutral
- ☐ Agree
- ☐ Strongly agree

9. **Do you feel that patient care will improve as a result of you attending this session?**

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neutral
- ☐ Agree
- ☐ Strongly agree

10. **Do you think this session has addressed a knowledge or skill gap in the nursing team?**

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neutral
- ☐ Agree
- ☐ Strongly agree

**Is there anything else you would like to tell us?**