

DBHDS

Virginia Department of
**Behavioral Health and
Developmental Services**

How to Administer Rectal Diazepam to Abort Life-Threatening Seizures

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I. INTRODUCTION AND COURSE INFORMATION

Introduction: This medication administration module is part of the medication administration curriculum that permits Medication Aides to administer the medication rectal diazepam to an individual who has uncontrollable seizures as specified in a prescriber's order (i.e., individualized seizure protocol). Upon completion of this module, as approved by the Board of Nursing, Medication Aides must be evaluated by a registered nurse, as having demonstrated competency in the administration of rectal diazepam to a person receiving services from a program licensed by the Department of Behavioral Health and Developmental Services. Thereafter, a registered nurse will evaluate continued competency of those Medication Aides on a semi-annual basis.

Instructor: The Instructor for this module is a licensed medical professional that has current certification as a Trainer for a Medication Management program authorized by the Regulations of the Board of Nursing (18VAC90-20-380).

Class Size: A maximum of 10 students .

Course Prerequisite: Current Medication Aides who have completed certification by a Medication Management Trainer authorized under the Drug Control Act and 18VAC90-20-370. Medication Aides will complete this module as part of the certification provided by a Medication Management Trainer.

This module builds on the basic skills acquired during the Medication Management Training Program and subsequent demonstration of competency.

Purpose: The purpose of this module is to familiarize Medication Aides with the identification of seizures and safe administration of rectal diazepam.

Upon completion of this training module, students will:

1. Have a basic understanding of seizures and the different characteristics of each type of seizure.
2. Understand the purpose of an individualized seizure protocol and the importance of calling 911 before the administration of rectal diazepam.
3. Understand the purpose of rectal diazepam, and the importance of proper storage and monitoring the expiration date.
4. Demonstrate how to respond to a seizure requiring the administration of rectal diazepam.

Teaching Techniques:

1. Handouts
2. Demonstration and Return Demonstration

Module Timeline:

Class Time – (2) two hours minimum

On-site Competency – (1) one hour minimum

Requirements for Certification:

Certification will be granted upon successful completion of a medication administration course. A registered nurse, the prescriber or a pharmacist may instruct the initial certification course or the semi-annual refresher. However, only a registered nurse can perform the competencies set forth in Appendix B.

Requirements include:

1. Pass the Written Test for this module with 85% accuracy.
2. Skills Competency Demonstration:
 - a. Care and safety precautions of the person during a seizure.
 - b. Administer rectal Diazepam.
 - c. Recognize and resolve common complications associated with use of rectal diazepam.
 - d. Correct placement and positioning.
 - e. Accurate counting, storage and checking expiration date.
3. Supervised Practice of rectal diazepam administration:
 - a. Each student is required to demonstrate competency in a home-like environment within thirty (30) days completion of the classroom training.
 - b. This will include a minimum of two (2) observations by a registered nurse of a student performing the tasks with an individual who is experiencing a seizure or simulation of a scenario when an individual receives rectal diazepam.

Maintaining Certification:

1. The staff administering rectal diazepam must attend a semi-annual refresher module with competencies. If a staff member fails to attend the semi-annual refresher module on time, they are no longer eligible to administer rectal diazepam. Staff who fail to complete the semi-annual refresher module and competencies within 60-days past the deadline are no longer eligible to take the refresher module. They must repeat the initial training and competency requirements.
2. Staff must also demonstrate ongoing competency by verbalizing key content of this module and demonstrating accurate technique for administration of rectal diazepam.

II. SEIZURE INFORMATION AND RECOGNITION

The Brain

The brain controls what the body does. The brain is divided into 2 parts: the right and left hemispheres. The right side of the brain controls the left side of the body and the left side controls the right. The brain sends information/commands to the rest of the body through nerves. Specific parts of the body are controlled by specific parts of the brain.

A nerve is made up of small cells called neurons. In order to see, feel and make the muscles move, the neurons send both electrical and chemical messages to each other.

Seizures and Epilepsy

Abnormal electrical activity in the brain is the basis of seizures. A seizure is the physical findings or changes in behavior that occur after an episode of abnormal electrical activity in the brain.

Epilepsy or a seizure disorder is a chronic condition that is characterized by spontaneous recurrent seizures. The area of the brain that is affected will cause distinct presentation of a seizure. For example if the area controlling a specific muscle is affected, that muscle may become motionless or contract and relax uncontrollably.

Causes of Seizures

The cause for about half of all seizures remains unknown. Some of the known causes are issues encountered during brain development, brain injury, medications, fever, poisoning, or diseases of the brain. Some seizures may result from an acute medical illness or injury and cease once the illness or injury is treated.

Types of Seizures

Based on the type of behavior, brain activity and which part of the brain is affected, seizures are divided into two broad categories: **generalized** (both sides) and **partial** (also called local or focal). Classifying the type of seizure helps doctors diagnose whether or not a patient has epilepsy.

a. **Generalized Seizures:** Generalized seizures are produced by electrical impulses from throughout the entire brain. The following are examples of generalized seizures:

- **Generalized tonic-clonic seizures:** Loss of consciousness and falling to the ground if ambulatory. The loss of consciousness is followed by generalized body stiffening (called the "tonic" phase of the seizure) for 30 to 60 seconds, then by violent jerking (the "clonic" phase) for 30 to 60 seconds. The individual may become incontinent of stool and urine as his/her muscles contract and relax. The individual's breathing may slow down or stop briefly. After the clonic phase, the individual goes into a deep sleep (the postictal or after-seizure phase). During generalized tonic-clonic seizures, injuries and accidents may occur, such as tongue biting or falls
- **Absence seizures:** Causes a short loss of consciousness (just a few seconds) with few or no symptoms. The individual, most often a child, typically interrupts an activity and stares blankly.

These seizures begin and end abruptly and may occur several times a day. The individual is usually not aware that they are having a seizure, except that they may be aware of 'losing time'.

- **Myoclonic seizures** Consists of sporadic jerks, usually on both sides of the body. The individual sometimes describe the jerks as brief electrical shocks. When violent, these seizures may result in dropping or involuntarily throwing objects.
- **Clonic seizures** Repetitive, rhythmic jerks that involve both sides of the body at the same time.
- **Tonic seizures** Characterized by stiffening of the muscles.
- **Atonic seizures** Consist of a sudden and general loss of muscle tone, particularly in the arms and legs, which often results in a fall. A mild atonic seizure may cause a sudden, brief head drop. During a more severe atonic seizure, the individual may suddenly fall to the ground, lose consciousness briefly, and then get up as if nothing happened. A helmet is usually worn to prevent injury to the head or face.

b. Partial Seizures: Partial seizures are produced (at least initially) by electrical impulses in a relatively small part of the brain. The following are examples of partial seizures:

- **Simple Partial Seizures (awareness is retained):** Manifestations are dependent on the area affected and tend to be localized. The individual may or may not lose consciousness and may be aware of the seizure.

Simple Motor: Jerking, muscle rigidity, spasms, head-turning

Simple Sensory: Unusual sensations affecting either the vision, hearing, smell taste, or touch

Simple Psychological: Memory or emotional disturbances

- **Complex Partial Seizures (Impairment of awareness):** The most common type of seizure. These seizures often begin with an aura or warning that the seizure is about to occur. Most commonly, the aura is described as a strange feeling in the pit of the individual's stomach that rises up to the throat. Often this sensation is accompanied by odd or unpleasant odors or tastes, auditory or visual hallucinations, or feelings of strangeness. The individual may cry or scream during this period. After the aura, the individual may suddenly become limp or stiff, appear dazed, and confused and apathetic. Automatism may also occur. Automatism consist of involuntary but coordinated movements that tend to be purposeless and repetitive. The most obvious behaviors may be lip smacking, repeating words, chewing, drooling, swallowing, and nausea and abdominal pain followed by stiffness, a fall, and sleep. Complex partial seizures may spread and become generalized. **Consciousness is always impaired.**
- **Partial seizure with secondary generalization:** The third kind of partial seizure is one that begins as a focal seizure and evolves into a generalized convulsive seizure. Most people with partial seizures have simple partial, complex partial, and secondarily generalized seizures. In about two-thirds of people with partial epilepsy, seizures can be controlled with medications. Partial seizures that cannot be treated with drugs can often be treated surgically.

c. Cluster: Cluster seizures, also known as acute repetitive seizures, are a marked increase in a person's normal seizure activity. If an individual's seizure protocol requires staff to administer rectal diazepam for cluster or acute repetitive seizures, staff must be able to distinguish between cluster seizures or acute repetitive seizures, and, ordinary seizures. Cluster and Acute Repetitive seizures will vary from person-to-person, but in general:

1. Cluster or Acute Repetitive seizures are when two or more seizures occur over a brief period of time, (usually within minutes), and the seizure activity is not typical for the individual.
2. With cluster or acute repetitive seizures, the individual recovers or regains consciousness between the seizures.

d. Status Epilepticus: Prolonged or clustered seizures sometimes develop into non-stop seizures, a condition called *Status epilepticus*. Status Epilepticus is a series of seizures with each successive one occurring before the individual has fully recovered consciousness that lasts more than 5-minutes. Status epilepticus is a medical emergency and requires emergency medication and hospital treatment to bring the seizures under control.

III. INDIVIDUALIZED SEIZURE PROTOCOL

General Information: A seizure protocol is developed by the individual's prescriber. It is usually in the form of a written order and generally describes what workers need to do to respond to an individual's seizure. It is tailored to the individual and will include instructions to administer diazepam rectally for seizures lasting a defined period of time.

Information Specific to the Individual's Seizure Protocol: This portion of the training is specific to the individual and focuses on three components:

1. Events or mannerisms that precipitate the onset of seizures for the individual.
2. The characteristics of the individual's seizures to include video of the individual seizing when available and possible.
3. The written seizure protocol, emphasizing when to administer rectal diazepam (i.e., from time of seizure onset), **call 911 EMS** then administer the rectal diazepam.

IV. INFECTION CONTROL

Hand Hygiene: Hand hygiene is an important component of any patient care, particularly the administration of medication. Hand hygiene includes the use of soap and water, or, the use of an alcohol-based hand sanitizer gel.

Soap and Water: With soap and water, wet hands with warm water. Apply soap to the hands and vigorously rub them together for 20-seconds, covering all surfaces of the hands and fingers. Dry hands with a paper towel and then turn off the faucet using the paper towel. Staff must use the soap and water method of hand hygiene when hands are visibly dirty or soiled.

Hand Sanitizer: Review the directions on the packaging. In general, when using hand sanitizer, place the gel on the palm and distribute the gel over all surfaces of the hands and fingers. Rub hands together briskly until the gel has dried.

Examples of when you need to perform hand hygiene include:

- When visibly dirty or contaminated with blood or bodily fluids
- Before and after each individual's medication administration
- Before donning gloves and after removing gloves
- After contact with body fluids, mucous membranes, skin, and wound dressings
- When moving from a contaminated body part/site to a noncontaminated body part/site
- After contact with contaminated inanimate objects or surfaces in the immediate vicinity of an individual
- Before eating
- After using a restroom, after smoking, and after sneezing or coughing into your hands
- Upon arrival in the morning and before leaving to go home
- Each time you enter the home

Glove Use: Disposable gloves are worn when it is reasonably anticipated that contact with blood or other potentially infectious materials, mucous membranes, nonintact skin, or potentially contaminated intact skin (e.g., of an individual incontinent of stool or urine) could occur. Gloves are also worn when administering medications and handling chemicals.

Gloves are not worn for more than one individual or cleaned for the purpose of re-use. Gloves may need to be changed multiple times for one individual (e.g., when moving from a contaminated-body site to a clean body site).

Gloves are removed in a manner to prevent contamination of clothing and skin and discarded in a covered trash receptacle as soon as possible.

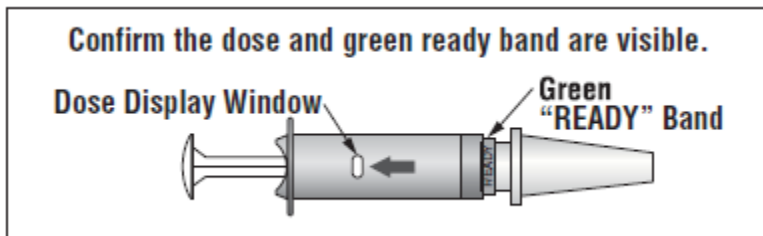
V. RECTAL DIAZEPAM GEL

Information: Rectal diazepam is a benzodiazepine (Valium). The medication is a gel that is usually supplied in a prefilled delivery system, such as a syringe container with a flexible molded tip. The syringes are generally dialed and locked to the prescribed dose. Examples of rectal diazepam manufactures include Teva's Diazepam Rectal Gel and Diastat AcuDial.

Side Effects: The most common side effect of rectal diazepam is sleepiness. Rectal diazepam may cause breathing to slow down, but this is rare. Stay with the individual who has received the rectal diazepam and monitor their respirations. An ideal respiration count is 12 - 20 respirations per minute. If a person who has received rectal diazepam stops breathing, start CPR immediately.

Receipt of Medication from the Pharmacy: As soon as you receive the rectal diazepam gel, you will need to do the following:

- a. Review the storage requirements located on the package insert.
- b. Inspect the administration syringe for cracks, breaks, etc.
- c. Review the dose in the dose display window and confirm it is consistent with the individual's seizure protocol.



- d. Read the packaging to check the expiration date.

Rectal Diazepam Monitoring: The applicable home agency will need to develop a system for staff to monitor the following with respect to the rectal diazepam:

- The correct amount of medication (i.e., number of syringes) is available.
- The medication is stored correctly in accordance with the manufacturer's specifications as well as with facility protocol for controlled substances.
- The medication is handled in accordance with the controlled substances protocol of the facility.
- The condition of the syringe (e.g., the syringe is not cracked, broken, etc.).
- The expiration date of the medication.

VI. ADMINISTRATION OF RECTAL DIAZEPAM

Before Administration:

Only administer rectal diazepam if you know the individual's protocol, particularly the time to administer the medication from the onset of the seizure, and, the dose.

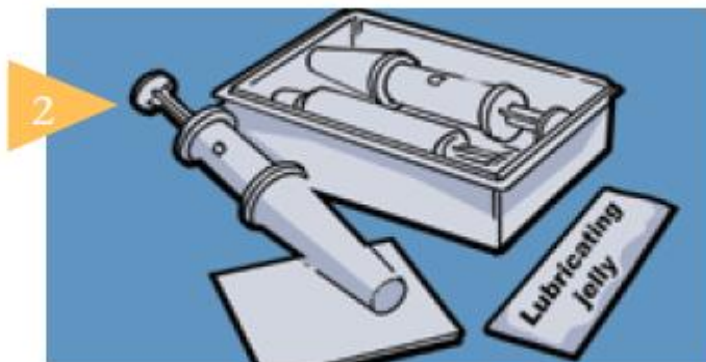
Call 911 EMS before administration of rectal diazepam.

Pull the rectal diazepam syringe out of the packaging. Confirm the dose is consistent with the individual's protocol and visible through the dose display:

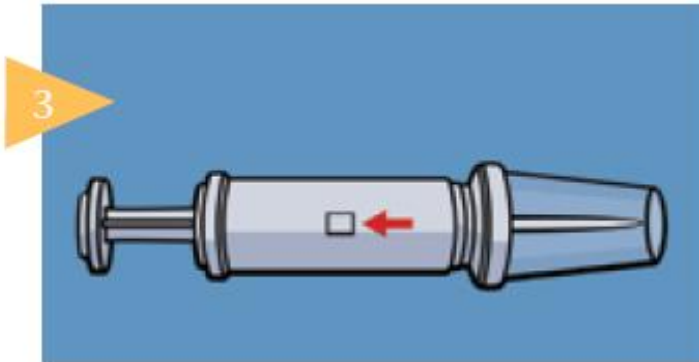
Step by Step Demonstration



Make sure the person is on his/her side



Get the rectal diazepam kit, including the lubricating jelly. Don gloves.



Get the pre-filled syringe.
NOTE: The seal pin is attached to the cap



Push up with the thumb and pull to remove the cap from the syringe. IT IS IMPORTANT TO MAKE SURE THE SEAL PIN IS REMOVED WITH THE CAP.



Lubricate the rectal tip of the syringe with the lubricating jelly.



Turn the person on his or her side facing you.



Bend upper leg forward to expose rectum.






Separate the buttocks to expose the rectum.



Gently insert the tip of the syringe into the rectum. The rim of the syringe should be snug against the rectal opening.

SLOWLY... **COUNT OUT LOUD TO THREE...1...2...3**



10 Slowly count to 3 while gently pushing plunger in until it stops.

11 Slowly count to 3 before removing syringe from rectum.

12 Slowly count to 3 while holding buttocks together to prevent leakage.

VII. SEIZURE RESPONSE WITH RECTAL DIAZEPAM

Responding to a seizure requires protecting the individual from injury, timing and observing the seizure, administering rectal diazepam when indicated, calling 911, and remaining with the individual until emergency medical technicians arrive. Staff responding to a seizure need to do the following

- Remain calm.
- Create the safest possible environment for the individual and start timing the seizure.
- If the individual is standing or sitting, gently lower individual to the ground to avoid a fall. Clear the area of anything that could hurt the individual. **Do not attempt to restrain individual** or use force.
- Place the individual on his or her side. If possible, put something flat and soft (like a folded blanket or jacket) under the individual's head. *This positioning prevents the tongue from blocking airway and prevents the individual from choking on secretions.*
- Do not place anything in the individual's mouth. *Padded tongue blades and airways are not accepted practice because they may induce vomiting, cause potential damage to teeth, and may be aspirated.*
- Loosen tight clothing, especially around the individual's neck.
- Do not give the individual any oral medications, food or drink during a seizure.
- If the administration of rectal diazepam is indicated, **call 911 EMS (or have another staff member call 911), then** get your medication and follow the administration steps.
- Stay with the individual until the ambulance and EMS arrive. If the individual stops breathing, immediately start to perform CPR.
- Complete the seizure documentation required by your agency.

APPENDIX A ADDITIONAL RESOURCES AND REFERENCES

RESOURCES

http://www.tevagerics.com/assets/base/diazepam/PDFs/SeizurePreparedness_Diazepam_8766.pdf

http://www.tevagerics.com/assets/base/diazepam/PDFs/TearSheets_Adult_Diazepam_8763.pdf

<http://www.diastat.com/Portals/16/Pdf/AdultAdmin.pdf>

On-Line Video Resources (Current as of 11/1/2013)

http://www.publichealthtools.com/videos?task=viewvideo&video_id=19

http://www.youtube.com/watch?v=R6qVnyi34_g

REFERENCES

Teva Pharmaceuticals. Teva's Diazepam Rectal Gel. Retrieved from <http://www.tevagerics.com/diazepamrectalgel> on December 9, 2013.

Valeant Pharmaceuticals North America. Retrieved from <http://www.diastat.com/> on December 9, 2013.

APPENDIX B STAFF COMPETENCY EVALUATION

Staff Name: _____ Job Title: _____

		Rating	
		S	U
1.	Have the trainee first read a sample seizure protocol.		
2.	Started timing the seizure and initiate the process of keeping the individual safe.		
3.	Safety: Lowered individual to the ground if applicable		
4.	Safety: Cleared the area of anything around the individual		
5.	Safety: Placed the individual on his/her side		
6.	Safety: Placed flat soft item under the head		
7.	Safety: Loosened clothing		
8.	Verbalized the need to administer rectal diazepam at the correct time		
9.	Asked someone else to call 911, or if alone, called 911, then administered the rectal diazepam.		
10.	Gathered supplies and ensured that the correct dose was dialed		
11.	Performed Hand Hygiene; Donned gloves		
12.	Removed cap and checked that seal pin was removed		
13.	Lubricated the rectal tip		
14.	Bent the top leg of the person		
15.	Separated the buttocks		
16.	Inserted tip of the syringe to the rim		
17.	Counted to three while pushing the plunger		
18.	Counted to three before removing the syringe		
19.	Counted to three while holding the buttocks together		
20.	Remained with the individual until EMS arrived		

Initial Retest

Key: S – Satisfactory/U – Unsatisfactory

REGISTERED NURSE OBSERVING PROCEDURE(S):

The staff person named above has successfully completed the skills necessary to respond to a seizure and administer rectal diazepam.

Date	Task	RN Initial
	Staff Competency Checklist	

COMMENTS:

Registered Nurse Signature:		Initials:		Date:	
Staff Signature:				Date:	

APPENDIX C TEST

1. True or False: A seizure is caused by abnormal electrical activity.
2. What are the two categories of seizures?
3. List three types of generalized seizures and describe each.
4. List three types of partial seizures and describe each.
5. Describe a cluster seizure.
6. True or False: Status Epilepticus is a medical emergency.
7. True or False: A seizure protocol describes how to respond to an individual's seizures.
8. Name the three most important things to know about an individual's seizure protocol:
9. What is the most common side effect of rectal diazepam?
10. Where can you find storage instructions for the rectal diazepam?
11. What date on the medication is important to check on a regular basis?
12. True or False: When you first receive the rectal diazepam from the pharmacy, one of the first things you need to do is check the dose in the dose display window on the syringe and compare it to the dose in the seizure protocol.
13. True or False: You must be familiar with the individual's seizure protocol before you administer rectal diazepam.
14. True or False: If you cannot gently insert the tip of the medication syringe into the rectum, you need to force it.
15. Once an individual starts to have a seizure, what are two important concepts to remember?
16. What are three examples of things you can do to keep someone safe during a seizure?
17. When do you know that you will need to administer rectal diazepam during a seizure?
18. True or False: It is OK to give someone water by mouth while they are seizing.
19. What is the difference between a cluster seizure and other seizure types?

TEST ANSWER KEY

1. TRUE
2. GENERALIZED AND PARTIAL
3. GENERALIZED TONIC-CLONIC, PETIT MAL, MYOCLONIC, CLONIC, TONIC, ATONIC
4. SIMPLE, COMPLEX, PARTIAL WITH SECONDARY GENERALIZATIONS
5. TWO OR MORE SEIZURES OCCUR OVER A BRIEF PERIOD OF TIME.
6. TRUE
7. TRUE
8. CALL 911 BEFORE ADMINISTERING THE RECTAL DIAZEPAM
WHEN RECTAL DIAZEPAM IS TO BE ADMINISTERED AFTER SEIZURE ONSET
THE DOSE OF THE RECTAL DIAZEPAM
9. SLEEPINESS
10. ON THE PACKAGE INSERT
11. THE EXPIRATION DATE
12. TRUE
13. TRUE
14. FALSE
15. START TIMING THE SEIZURE
MAKE SURE THAT THE PERSON IS SAFE DURING THE SEIZURE
16. LOWER INDIVIDUAL TO THE GROUND IF APPLICABLE
CLEAR THE AREA OF ANYTHING AROUND THE INDIVIDUAL
PLACE THE INDIVIDUAL ON HIS/HER SIDE
PLACE FLAT SOFT ITEM UNDER THE HEAD
LOOSEN CLOTHING
17. WHEN THE LENGTH OF THE SEIZURE MEETS THE CRITERIA IN THE SEIZURE
PROTOCOL.
18. FALSE

19. A CLUSTER SEIZURE IS TWO OR MORE SEIZURES OCCURING OVER A BRIEF PERIOD OF TIME WITH THE INDIVIDUAL RECOVERING OR REGAINING CONSCIOUSNESS BETWEEN SEIZURES.