



EMS Program

IM EPI SD

(Epinephrine Alternative – Draw and Inject 1:1,000 from a single dose vial)



Instructor Training Manual

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Attachments (Also available on the EMS Program’s website, EMS.sd.gov)

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Introduction

Effective July 1st, 2022, SD Codified Law will allow South Dakota Emergency Medical Technicians (EMT) to draw up and inject Epinephrine 1:1,000 IM from a single dose vial for the patient having an anaphylactic reaction.

This manual will provide the necessary outline and guidance to complete training for the IM EPI SD Project which will allow EMTs (Emergency Medical Technicians) to draw-up and deliver Epinephrine by syringe to a patient having an anaphylactic emergency.

Your ambulance service Medical Director must approve (in writing) of this method for the EMT provider level for your service prior to implementation for your service.

This change takes effect July 1st, 2022.

Service Directors and/or Instructors (at the Paramedic level or higher) can begin training EMTs now. The Instructor will need to submit an application for this training from within his/her E-Licensing account as you would do for other continuing education or refresher courses you have taught in the past. If the Instructor does not have Instructor Permissions in his/her E-Licensing account, or the approved locations or services to teach at, please contact Lance Iversen with the EMS Program (605) 394-6027 or Lance.Iversen@state.sd.us. Once training has been completed and signed off by the Instructor, and reviewed by the ambulance service's Director and/or Medical Director, EMTs can begin using this alternative method of administering Epinephrine to the anaphylactic patient beginning July 1st, 2022.

The instructor should review the lesson plan before delivering the initial training. This will help to ensure that they have all the required materials, understand the skills required, and can effectively deliver the material to the EMTs in a consistent manner. All training materials and documents are located on the EMS Program's website: EMS.sd.gov.

Instructors must be at the Paramedic provider level or higher

National Education Standards

Pharmacology: The EMT will apply a fundamental knowledge of the medications that the EMT may assist/administer the patient during an emergency, specifically anaphylaxis.

Emergency Medication: The EMT will have a fundamental depth and simple understanding of knowledge, within the scope of practice of an EMT, of the names, actions, indications, contraindications, complications, routes of administration, side effects and interactions and dosages for the medications administered, specifically Epinephrine.

Medication Administration: The EMT will have a fundamental depth and foundational understanding of knowledge, within the scope of practice of an EMT, how to administer medication to a patient; specifically intramuscular.

Lesson Plan

Activities

Total training time: (2 Hours)

1. Introduction5 minutes
2. Didactic Presentation40 minutes
3. Q&A10 minutes
4. Skills Training25 minutes (groups larger than 20 may take longer)
5. Psychomotor Skills Testing30 minutes
6. Q & A10 minutes

Required Materials – provided by South Dakota Department of Health-EMS Program

(Available online at EMS.sd.gov)

1. Attendance Roster
2. Training PowerPoint
3. Skills Verification Checklist

Required Materials – provided by agency or instructor

1. South Dakota Anaphylaxis guidelines for skill station
2. Injection material (Lemons or other training device)
3. Gloves in assorted sizes for participants
4. Sharps container to dispose of used needles
5. Equipment:
 - 1cc syringes
 - Needles
 - 1ml vials filled with sterile water or normal saline
 - Alcohol wipes
 - Band-Aids

Activity 1: Introduction with Training Goals and Objectives (5 minutes)

Introduce yourself to the participants and, as appropriate, have participants introduce themselves to the group in attendance.

GOAL:

The goal of this training is to educate SD EMTs to draw and administer intramuscular Epinephrine safely and effectively to patients experiencing anaphylaxis in a pre-hospital setting, specifically to educate SD EMTs how to correctly administer Epinephrine using a syringe, needle, and vial of Epinephrine.

OBJECTIVES:

By the end of this training, participants will be able to:

Cognitive:

- List the signs or symptoms that indicate an anaphylactic reaction verses an allergic reaction.
- List the indications for Epinephrine administered via intramuscular injection.
- Identify the correct locations/sites for IM injection.
- Identify the possible side effects/adverse reactions of Epinephrine administered via intramuscular injection.

Psychomotor:

- Using a syringe & Epinephrine, prepare a correct adult dose of Epinephrine.
- Using a syringe & Epinephrine, prepare a correct pediatric dose of Epinephrine.
- Deliver an intramuscular injection into a training device.
- Verbalize the reassessment of a patient following Epinephrine administration.
- Document the process from patient contact until transfer of care.

Activity 2: Didactic Presentation (40 minutes)

Use the Power Point presentation provided and encourage the participants to take notes during the presentation. Instructors may choose to provide participants with copies of the slide-set in a note form to assist in this process.

Activity 3: Question and Answer Period (10 minutes)

Instructors should solicit questions from the group. An important resource for answering participant questions is the FAQ document at the end of the training manual. Any questions that the instructor is unable to answer should be referred to the service's Medical Director.

Activity 4: Skills Training (25 minutes)

It is important that instructors are aware of the state guidelines for administration of Epinephrine in the setting of anaphylaxis. The Epinephrine draw and inject method is only intended to replace the Epinephrine auto injectors with a single dose vial and syringe. **All decisions to administer Epinephrine to an anaphylactic patient remain at the discretion of the service's Medical Director.**

EMTs will use their local or state **ANAPHYLAXIS Guidelines** to assist in the determination the need for Epinephrine administration. Instructors should direct participants to the appropriate guidelines for their practice session.

Preparation: (Recommended student to evaluator ratio not to exceed 6:1)

Prepare a table with the following materials for each station:

- Pair of gloves for each provider
- Epinephrine training kit or 1 cc syringe, needle, 1ml vial of sterile water or normal saline, alcohol wipes, and Band-Aid.
- Lemon (or other acceptable injection training device)
- Copy of local or state guideline for anaphylaxis
- SD Epinephrine Skills Verification Checklist
- Sharps container for each table/station

Typical Skill Station Set-up



Skill Demonstration:

It is recommended that instructors begin with a demonstration which progresses step-by-step. This will allow the providers to see the entire process and ask questions before they are attempting the skill themselves, minimizing the time and interruptions during the actual skills demonstration by the participants.

Following the demonstration, providers should now be guided through the steps listed on the next page, ensuring that everyone keeps pace with the instructions being given. Do not allow students to advance ahead of the group, even if they have previous experience with intramuscular injections.

Ensure that every provider has gloves before they begin the skills verification process, and that they wear them while completing the entire skills session of the training.

Each provider is required to have a completed Psychomotor Skills Exam Check-Off sheet documenting the completion of their skills, which the instructor will email to the EMS Program for processing and generation of a training certificate for the EMT.

Skill Demonstration – Drawing Epinephrine into syringe

1. Check for expiration date / seal on Epinephrine vial.
2. Review the supplies
 - 1 ml vials of “Epinephrine” (sterile water or normal saline)
 - Syringes
 - Needles
 - Alcohol pads
 - Band-Aids
3. Demonstrate site selection only on another student or mannequin (anterolateral thigh)
5. Wipe the injection surface with alcohol pad in circular motion – allow to dry
6. Verify the drug – correct drug, expiration date has not passed, clear in color
7. Review the volume required for adult and pediatric doses (Adult 25kg or more = 0.3mg), (Pediatric less than 25kg = 0.15mg)
8. Instruct participants to plan for administration of both an adult and pediatric doses
9. Practice preparing (drawing) the dose into the syringe
 - a) Remove syringe and needle from packaging
 - b) Assemble syringe and needle
 - c) Pull plunger out until stopper passes desired dosing mark
 - d) Uncap vial, clean top of vial with alcohol pad, invert vial, and insert needle just through stopper (visible inside vial)
 - e) Depress plunger, injecting air into vial. *Caution:* Plunger may push back slightly
 - f) Draw the plunger back beyond the desired dose
 - Drug should fill the syringe
 - Minimizing air in syringe by keeping needle tip immersed in fluid
 - g) Remove needle from vial
 - h) Holding the syringe with needle upright, tap syringe to move air to the top (needle end)
 - i) Expel air and/or excess drug until plunger returns to the desired dose
 - j) Check to ensure no air is present in the syringe
 - If air is present, return to (step c) and repeat the process, using the original vial
 - k) Explain procedure if needle becomes contaminated after drawing medication and before injection.

– PAUSE –

DO NOT ALLOW ANY PROVIDER TO ADMINISTER INJECTION UNTIL ALL PROVIDERS HAVE DEMONSTRATED THE ABILITY TO PROPERLY DRAW AN ADULT AND PEDIATRIC DOSE OF EPINEPHRINE INTO THEIR SYRINGE.

Activity 5: Skill Demonstration (Psychomotor) – Administer IM injection (30 Minutes)

DO NOT ADMINISTER THE MEDICATION INTO ANOTHER PERSON FOR ANY REASON DURING TRAINING

Use of a lemon or other acceptable injection training device for practice must be used to demonstrate the actual injection and administration of the drug.

1. Practice intramuscular (IM) injection
 - a) Cleanse the injection site with an alcohol wipe
 - b) Insert needle at 90-degree angle, with a quick, dart-like action
 - c) Push plunger to administer dose slowly
 - d) Remove needle quickly (being careful not to accidentally stick yourself or others)
 - e) Dispose of needle and syringe in proper sharps container
 - f) Massage site for 30 seconds
 - g) Place adhesive bandage on site

2. Reassess and document – provider must verbalize the following steps
 - a) Reassure patient, observe response, and observe/look for side effects
 - b) Continue to follow anaphylaxis guidelines
 - c) Access Vital Signs every 5 minutes
 - d) Update ALS, since ALS was called immediately upon arrival.
 - e) Document
 - Date, dose, and time
 - Lot # and expiration date of vial of Epinephrine
 - Location of injection and patient response

Resetting the training station:

ONLY QUALIFIED INSTRUCTORS SHOULD RESET THE TRAINING STATIONS

NOTE: A needle and syringe must be made available to refill the training Epinephrine vial after each skills demonstration. Any syringe and needle combination may be used.

Only a qualified instructor should handle this needle, which will need to remain unsecured throughout training.

1. Resupply with a new

- syringe
- needle
- 2 alcohol pads
- Band-Aid

2. Refill each training vial with saline/water

Attempt to limit the amount of fluid in the vial to as close to 1 mL as possible

Activity 6: Question and Answer Period (10 minutes)

Instructors should solicit questions from the group. An important resource for answering participant questions is the FAQ document at the end of the training manual. Any questions that the instructor is unable to answer should be referred to the service's Medical Director or State EMS Program.

Completion

At the end of this training, the Instructor will:

- Log into his/her E-Licensing account and sign the EMTs off who took and passed the training (classroom and hands-on training) in their “Manage Courses” section with the Completion Date and change their status to Pass. This will then record the training into the EMT’s E-Licensing account and generate a pdf certificate of the training for them, which will be in their Documents section of their E-Licensing account.
- Give original psychomotor (hands on training) testing form for each EMT student, and the course sign-in roster, to the Ambulance Service Director for his/her records.
- Keep a copy of all student training documents for your records in case of audit.

At the end of this training, the Ambulance Service Director or Training Officer will:

- Review their EMT’s training documents for successful completion of this training.
- Keep the training records on file for verification or in case of audit by the SD EMS Program.

The Ambulance Service Director will also need to send the EMS Program the completed and signed Medical Director Verification/Approval Form to Lance.Iversen@state.sd.us for review. A copy of the signed form will be placed in the Ambulance Service’s “Documents” section in their E-Licensing account. This form can be completed by your service’s Medical Director prior to training for your EMTs, and prior to when this goes into effect on July 1st, 2022.

Questions? Contact Lance Iversen at: Lance.Iversen@state.sd.us or 605-394-6027.

*** Annual refresher training is recommended to maintain knowledge and competency.**

Frequently Asked Questions

1. Does our service need the Medical Director's approval for this skill?

YES. You will need to obtain your Medical Director's written approval to use the syringe method of delivering Epinephrine prior to implementing this procedure/skill, and the EMT will need to have the required training completed and registered prior to being allowed to administer Epinephrine via this method.

2. I have several EMRs in my agency. Can they participate?

Only an EMT or higher can participate in the hands-on training. The project does not authorize any EMR to administer Epinephrine. However, anyone may attend the training sessions for the information provided, and to better understand how this project may affect the agency.

3. Can we use ampule of Epinephrine instead of a vial?

No. EMTs can only use 1ml vials of Epinephrine. Many manufacturers have Epi Draw-and-Inject kits you can purchase, or you can make your own kits.

4. Can I use a multi-dose vial/bottle of Epinephrine?

No. You're only allowed to use a 1ml vial of Epinephrine for EMTs to use. This will reduce dosage and cross contamination errors.

5. If I am unable to expose my injection site, can an Epi dose be delivered through clothing?

It is recommended that the injection site be exposed and visible before delivering an injection. However, since Epinephrine is known to be lifesaving in anaphylaxis, the epi dose by syringe and needle can be administered through a reasonable amount of clothing, much like EAI's are delivered currently.

6. My agency is only BLS (no ALS personnel), and no one in our agency is comfortable teaching the IM EPI SD training to my agency. Can someone else do the training for us?

If you have an affiliation with an agency within your region who would be willing to assist you in your training, that is acceptable. It will remain the responsibility of the training officer or service director for your agency to maintain those training records once they are completed. It will also remain the responsibility of the agency to ensure all new members/employees are trained moving forward and their paperwork submitted to the EMS Program for processing.

7. How can I figure out how many kilograms my patient weighs?

*Weight in pounds can be converted to kilograms using the following formula:
weight in pounds / 2.2 = weight in kilograms.*