

Title: ALS Assist Skills for the BLS Provider

Instructor: Danny Braitsch

Time: 1.5 hours

Equipment:

PowerPoint Presentation: ALS Assist Skills for the BLS Provider

IV start supplies

IV fluid administration supplies

LifePak (or other device that is capable of ECG acquisition) with lead cables and electrodes

Enabling Objectives:

- At the conclusion of instruction, the student should be able to discuss the importance of assisting advanced life support operations on scene of a critical medical incident.
- At the conclusion of instruction, the student should be able to identify the appropriate supplies necessary for establishing intravenous access in a patient.
- At the conclusion of instruction, the student should be able to appropriately assemble intravenous fluids for administration.
- At the conclusion of instruction, the student should be able to appropriately place electrodes and use the monitor for electrocardiogram acquisition.
- At the conclusion of instruction, the student should be able to elaborate on the importance of familiarizing oneself with the ambulance and its inventory.
- At the conclusion of instruction, the student should be able to discuss the importance of communicating with coworkers about how to successfully support one another.

Overview:

- I. Importance of ALS Skills Development
- II. IV Access Supplies
- III. IV Fluid Administration Set-Up
- IV. Electrode Placement for ECG Acquisition
- V. Ambulance Familiarization
- VI. Communication
- VII. Conclusion

Lesson Plan:

- I) Importance of ALS Skills Development
 - A) Patient care is team-oriented. Pre-hospital patient care is no different. The Basic Life Support (BLS) (e.g. EMT) and Advanced Life Support (ALS) (e.g. EMT-Paramedic) providers should work together as a team to care for their patient.
 - B) If the EMT can anticipate what the ALS provider may need or be able to assist with certain procedures, the care of the patient will be accomplished more quickly, efficiently, effectively.
 - C) Skills
 - 1) IV access supply set-up
 - 2) Spike an IV fluids bag
 - 3) ECG electrode placement and acquisition

- 4) Ambulance familiarization
- II) IV Access Supplies
- A) As a BLS provider per Maryland Medical Protocol, you cannot establish IV access yourself. However, it is possible to assist the paramedic by gathering the supplies needed to start an IV.
 - B) These supplies include:
 - 1) Intravenous cannula
 - (a) Different gauges corresponding to different lengths/diameters of needle and cannula
 - (b) The larger the gauge, the smaller the diameter of cannula
 - (i) Small gauges (22g, 24g) are used for fragile veins
 - (ii) Large gauges (14g, 16g, 18g) are for large volume replacement or for administration of viscous fluids (e.g. dextrose)
 - 2) Helpful to learn which gauge responds to which color
 - (a) This is standardized and should always be the same, despite manufacturer.
 - 3) Tape
 - 4) Commercial securing device (e.g. Tegaderm)
 - 5) Venous constricting band (also referred to as a tourniquet)
 - 6) Alcohol prep pads
 - 7) 2x2 gauze bandage
 - 8) Saline lock:
 - (a) Saline flush
 - (b) IV Extension Set or "J-loop"
 - C) Setting up an IV lock:
 - 1) Supplies include:
 - (a) Saline flush
 - (b) IV extension Set (referred to as J-Loop)
 - 2) Remove packaging
 - 3) Remove cap from saline flush and connect flush (male end) to extension set (female set)
 - 4) Push fluid to remove air space within extension set
 - 5) See video in PowerPoint Presentation for demonstration of set-up
 - D) There are various manufacturers of intravenous access supplies.

- E) It is important to become familiar with the brands stocked in your ambulance and your jurisdiction, as packaging and presentation may vary.
- III) IV Fluid Administration Set-Up
- A) Also referred to as "spiking a bag"
 - B) These supplies include:
 - 1) Intravenous fluids
 - (a) Three most commonly used intravenous fluids in pre-hospital care:
 - (i) Lactated Ringer's
 - (i) Isotonic solution
 - (ii) Contains sodium chloride, potassium chloride, calcium chloride, and sodium lactate in water
 - (ii) Normal Saline
 - (i) Isotonic solution
 - (ii) 0.9% sodium chloride in water
 - (iii) D5W
 - (i) Hypotonic solution
 - (ii) 5% dextrose in water
 - 2) Administration tubing
 - (a) Components include:
 - (i) Spike: a sharp plastic device that is covered in plastic to maintain sterility and is inserted into the administration set port of the IV fluid bag
 - (ii) Drip chamber: Clear chamber that allows provider to view the drip rate
 - (iii) Drop former: Inside the drip chamber, what creates the drip.
 - (iv) Tubing
 - (i) Ports for drug infusion
 - (v) Clamp: Allows for fluid administration to be controlled, slowed, and stopped whenever necessary
 - (vi) Medication injection port: Port without a cap, self-sealing, through which medications can be injected into fluids
 - (b) Microdrip (e.g. 60gtt/mL)
 - (c) Macro drip (e.g. 10gtt/mL)
 - 3) IV Extension Set (if saline lock is not already established)
 - 4) See video in PowerPoint Presentation for demonstration on set-up

- C) There are various manufacturers of intravenous fluids and administration tubing.
- D) It is important to become familiar with the brands stocked in your ambulance and your jurisdiction, as packaging and presentation may vary.

IV) Electrode Placement for Electrocardiogram Acquisition

- A) As a BLS provider per Maryland Medical Protocol, and EMT (BLS provider) cannot acquire ECGs without EMT-Paramedic oversight or interpret ECGs on behalf of the Paramedic.
- B) However, appropriately placing electrodes on a patient to assist in acquiring an ECG is an essential ALS assist skill that can allow the Paramedic to complete other ALS skills, such as establishing IV access or administering medication.
- C) Skin preparation prior to electrode placement is an important first step. Ensure patient's skin is dry and remove excessive hair from patient using issued razors.

D) 3-Lead Electrode Placement

- (a) RA – Place on patient's right arm
- (b) LA – Place on patient's left arm
- (c) RL – Place on patient's right leg
- (d) LL – Place on patient's left leg

2) Place electrodes on muscular area of patient's extremity, rather than a boney area.

3) Dry skin and remove hair, as necessary.

E) 12-Lead Electrode Placement

- (a) V1: 4th intercostal space, right side of sternum
- (b) V2: 4th intercostal space, left side of sternum
- (c) V3: directly between V2 and V4
- (d) V4: 5th intercostal space, midclavicular
- (e) V5: 5th intercostal space, anterior axillary
- (f) V6: 5th intercostal space, midaxillary

2) Dry skin and remove hair, as necessary.

V) Ambulance Familiarization

- A) Familiarization with ambulance inventory, stock, and location of supplies and medications within the ambulance you're operating is imperative to smooth operations.
- B) The ability to identify and retrieve supplies and medications quickly as requested will reduce delays in patient care.
- C) Ensuring the ambulance has the appropriate items stocked each morning is crucial in ensuring all patient needs can be treated as they arise.

VI) Communication

- A) Management of patient care and incident scene may vary from provider to provider, and not every provider has the same preferences or expectations from their partner.
 - 1) For BLS providers: Ask your ALS partner what assistance they prefer and expect. Be transparent about what you are unsure of.
 - 2) For ALS providers: Find time to address your expectations with your BLS partner prior to running incidents. Don't set impossible expectations. Offer to assist your partner on BLS medical incidents.
- B) Effective communication helps ensure incidents run more smoothly.

VII) Conclusion

- A) While the ALS assist skills that were reviewed are not comprehensive, these few skills will help save crucial time on critical calls.
- B) Increasing communications, reviewing expectations, and building partnerships amongst co-workers will aid in improving incident operations.

VIII) Overview:

- Importance of ALS Skills Development
- IV Access Supplies
- IV Fluid Administration Set-Up
- Electrode Placement for ECG Acquisition
- Ambulance Familiarization
- Communication
- Conclusion

References

- Bledsoe, B. E., Cherry, R. A., & Porter, R. S. (2017). *Paramedic Care Principles & Practices, Introduction to Advanced Prehospital Care, Vol. 1, fifth ed.* Pearson, Boston, MA.
- EMT University (15 March 2014). *Advanced Life Support (ALS) Assist for the EMT Lecture*. Retrieved from: <https://www.youtube.com/watch?reload=9&v=-eRAWwyTi90>.