System Medical Advisory
January 29, 2019

AED Questions & Responses

The Austin Fire Department will be transitioning to the Cardiac Science G5 AED. There are several aspects of this new AED that will require modifications of the Clinical Operating Guidelines which are underway. The following directives are applicable immediately until the COGs are updated to reflect these changes.

1. Is the metronome rate of the Cardiac Science G5, set at 110 acceptable?
   OMD: The published literature continues to support the higher rate within the range of 100 – 120. Therefore an AED with a metronome set within this range is acceptable. CPR should be performed at a rate consistent with the included metronome on the AED.

2. Is there a time line to hold off EMS before changing pads?
   OMD: This is best managed through effective communication. Under some circumstances, the paramedic may recognize the need for the patient to be quickly connected to the manual monitor/defibrillator. Since policy cannot address all the potential variations in patient circumstances, our focus should be on **minimizing interruptions to CPR** and avoiding delays in delivering shocks particularly when the patient is known to be in a shockable rhythm. Communication between providers can help direct whether the patient should remain on the AED for a brief period of time or should be immediately placed on the manual monitor/defibrillator quickly.

3. Is a two-person BVM operation still advised with the removal of the ITD?
   OMD: The two handed mask seal was not put into place solely due to the use of the ITD. Instead, published literature has demonstrated the improved mask seal obtained when one person uses both hands to achieve the seal versus using only one hand (Otten, 2011; Hart, 2013; Joffe, 2010). The practice of using 2 hands to achieve a mask seal remains the preferred method regardless of whether an ITD is used. When a mask seal is attempted, the preferred method for ventilation is for one provider to use 2 hands to obtain the seal while a second provider squeezes the bag. We anticipate no changes to the COGs regarding mask seal tasks.

4. Can we transition switching compressors to time instead of compression count since the AED now has a clock?
   OMD: Yes. Consistent with question 1 above, COG changes will reflect a broad, high level approach that allows for a measurement of time instead of compressions. The objective for this aspect of pit crew was to split the workload of performing compressions (approximately 1 minute of compressions each) between positions 1 and 2 in order to minimize fatigue and therefore improve compression quality.

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5. May someone be assigned to watch the time, not a specific position (is it required to assign it to specific position or can it just be assigned to someone)?
   OMD: It is reasonable for the team to reassign this specific timing role while at the patient's side if necessary. However, the task should NOT be assigned to the critical roles of positions 1, 2 and 3. These roles involve compressions, ventilations and AED use which are essential to successful resuscitation. Consider position 4, if available, for the timing task. Along the same lines, the communication between position 1 and 2 is important to allow for rapid, seamless transition of compressions from one provider to another.

6. Include the 3 – 6 foot rule in the Pit Crew COG. Does the 3-6 foot rule for radio operation and interference need to be included in the COG?
   OMD: First, it is not reasonable to remove or move all devices capable of creating radio frequency (RF) interference from near the patient throughout the resuscitation. It is important to keep in mind that this same distance and potential RF interference issue is present with EVERY AED currently on the market. Second, this issue is a part of a troubleshooting process for use when the AED refers to artifact detected or the analysis is interrupted. To assist in clarifying the troubleshooting steps the OMD will include some broad troubleshooting steps into the COGs including moving potential RF interfering devices at least 3 – 6 feet away when the AED prompts analysis interrupted or motion detected in addition to other troubleshooting steps. Steps specific to an individual AED model will not be included due to variation in AEDs used by agencies.

7. Pedi-pads cannot be used by a patient greater than 55 lbs., just want clear guidance and would like it if the COG's to fit our process?
   OMD: The bottom line is that providers should make a quick estimate of age and weight. If unsure, err on the side of the adult pads for AED defibrillation while ensuring the pads do not touch each other. Fortunately, cardiac arrest is extremely unlikely in the prehospital setting in the age group of 7 – 11 years and VF is even less likely in patients in this age group. So, the difference in defibrillation dosing in this narrow range of patients with a very low probability of arrest is low. Providers are asked to follow the COGs for guidance in determining when to use pediatric pads and should follow COGs anytime a conflict arises between other sources and the COGs.

8. The new AEDs state "do not touch the patient" when analyzing for a shockable rhythm, where the COGs state "position 1 checks pulse during rhythm analysis". This has been mentioned by several crews over the first two days of the AED training. I'm just pointing this out, but do we need clarification from the OMD or device manufacturer as to how/when they want a manual pulse assessed?
   OMD: Pulse checks that require compressions to stop are not recommended in the current CPR Guidelines except in specific circumstances. The reason for this is to minimize interruptions in CPR. The purpose of the COG Pit Crew pulse check during rhythm analysis is to verify pulselessness WITHOUT interrupting compressions since the interruption was already created for the AED rhythm analysis. The AED asks that the patient not be touched in order to avoid motion that could interfere with the analysis. A typical, correctly performed pulse check should not cause such motion. With respect to the conflict between the COGs and the AED statements, please recall that a DSHS certified/licensed provider should follow his/her medical director's direction when a conflict arises.

As stated above these questions were generated by AFD during their Cardiac Science G5 AED roll out training. The OMD responses to these questions in most cases, apply no matter what brand of AED you have. AFD is earnestly trying to improve System CPR survival performance and is striving for best practices as they implement their new AEDs. We applaud their efforts and, welcome these questions as it affords us another opportunity as a System to improve our Medical Practice.

Thanks for all you do and, please let us know if you have additional questions.

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