

Cardiac Management

(Dynamic Cardiology, Static Cardiology, and Cardiac Arrest Management/AED)

Instructions to Skill Examiners

Thank you for serving as a Skill Examiner at today's examination. Before you read the instructions for the skill you will be evaluating today, please take a few moments to review your general responsibilities as a Skill Examiner:

- Conducting examination-related activities on an equal basis for all candidates, paying particular attention to eliminate actual or perceived discrimination based on race, color, national origin, religion, gender, age, disability, position within the local EMS system, or any other potential discriminating factors. The Skill Examiner must help ensure that the EMT Assistant and/or Simulated Patient conduct himself/herself in a similar manner throughout the examination.
- Objectively observing and recording each candidate's performance
- Acting in a professional, unbiased, non-discriminating manner, being cautious to avoid any perceived harassment of any candidate
- Providing consistent and specific instructions to each candidate by reading the "Instructions to the Psychomotor Skills Candidate" exactly as printed in the material provided by the National Registry. Skill Examiners must limit conversation with candidates to the communication of instructions and answering of questions. All Skill Examiners must avoid social conversation with candidates or making comments on a candidate's performance.
- Recording, totaling, and documenting all performances as required on all skill evaluation forms
- Thoroughly reading the instructions for the assigned skill before actual evaluation begins
- Checking all equipment, props, and moulage prior to and during the examination
- Briefing any Simulated Patient and EMT Assistant for the assigned skill
- Assuring professional conduct of all personnel involved with the particular skill throughout the examination
- Maintaining the security of all issued examination material during the examination and ensuring the return of all material to the National Registry Representative

Both Intermediate/99 and Paramedic candidates complete both Dynamic and Static Cardiology Skills. Therefore, you should ask the candidate at which level he/she is testing and record the level on the evaluation sheet by checking the appropriate block on the evaluation form. Be sure to stop the scenario at the appropriate point for Intermediate/99 candidates so that you are not evaluating them to a standard outside the scope of his/her education.

Advanced Emergency Medical Technician (AEMT) candidates only complete the Cardiac Arrest Management/AED portion of these skills.

These skills are designed to verify a candidate's competence in recognition and treatment of cardiac arrhythmias in accordance *Emergency Cardiovascular Care (ECC) guidelines for Advanced Cardiac Life Support*. There are two separate and distinct parts tested in different manners, namely a dynamic, scenario-based portion and a static portion. Either of these two parts may be presented first. You should read the specific instructions for each portion just prior to evaluation of that portion. If multiple Cardiac Management Skills are set-up and divided into separate Dynamic and Static portions, **you must help ensure that each candidate is evaluated over the material from the same testing scenario in both parts**. For example, a candidate who completes the Dynamic Cardiology portion using Set #1006 testing materials must complete the Static Cardiology portion using Set #1006 testing materials as well.

Dynamic Cardiology

The dynamic portion evaluates the candidate's ability to deliver sequential care given prepared patient presentations, including proper setup and use of the manual ECG monitor and defibrillator (no automated, semi-automated or interpreting machines permitted). In this portion, the candidate will be evaluated utilizing a defibrillation manikin and ECG monitor/defibrillator. ***The manikin must be placed and left on the floor for this skill.*** Each candidate must physically demonstrate and actually perform all electrical interventions necessary. Prepared dynamic sequences will be provided; each candidate must be evaluated over one complete sequence. Each scenario contains four separate and sequential arrhythmias that **must** be presented in order and treated in accordance with the "Suggested Interventions" as noted in the scenario. **You are not permitted to alter any arrhythmia or sequence as outlined.**

Several important aspects of this evaluation format must be clarified. The progression of arrhythmias in all scenarios must be strictly followed. The progression of this skill is quite similar to a "megacode." However, you may not include additional arrhythmias, drugs, or introduce any problem-solving situations. Each candidate must "voice" his/her interpretation of each arrhythmia as well as all treatments and interventions (medications, IVs, intubation, etc.) he/she would provide for the patient. You will need to develop a dialogue with each candidate and should ask questions for clarification purposes. For example, if a candidate states, "I'd give a dose of atropine," you should ask him/her to explain how much atropine he/she would administer and by what route. You must also acknowledge that the treatments or interventions have been completed without difficulty immediately after the order has been given. If a candidate calls for, performs, or administers an inappropriate treatment or intervention at a point where the arrhythmia is to change, you must change to the next arrhythmia listed in the scenario even if a real patient would convert to some other arrhythmia or respond in another fashion. It is important to remember that the patient's response in these prepared scenarios is **not indicative of the appropriateness of a candidate's interpretations and/or treatments.** Be sure to emphasize this point in the instructions to each candidate. Any incorrect or inappropriate interpretation, treatment, or intervention must be documented in the space provided on the evaluation form.

Safety is an important consideration in this skill. Either hands-on or hands-off delivery of shocks is acceptable. **However, live shocks must be delivered by each candidate for verification purposes.** You must advise each candidate to leave the defibrillator turned to its lowest energy setting and verbally state the energy level to be delivered to the patient (see "Instructions to the Psychomotor Skills Candidate"). If the monitor/defibrillator does not sense appropriate transthoracic resistance and will not deliver a shock, please operate the equipment to simulate actual delivery of a shock as best as possible. To contain costs and help ensure safety, conductive medium (gel, pads, etc.) does not actually need to be applied to the paddles or manikin but may be verbalized by the candidate.

Please realize the Dynamic Cardiology skill is device-dependent to a degree. Therefore, give each candidate time for familiarization with the equipment in the room before any evaluation begins. You may need to point out specific operational features of the monitor/defibrillator unit but are not permitted to discuss patient treatment protocols or algorithms with any candidate. The equipment must be assembled so that all arrhythmias may be read through the manikin. The candidate is permitted to run a recording strip of any arrhythmia during the evaluation, but these tracings must be collected before permitting the candidate to leave the examination room.

Static Cardiology

In this portion, the candidate will be evaluated in his/her ability to interpret ECGs and verbalize the appropriate treatment protocol in accordance with current American Heart Association guidelines and algorithms. The candidate will be required to interpret and verbally treat four arrhythmias as presented on prepared tracings. A maximum time limit of six minutes for completion of this portion is allowed. Vital patient information is printed on the front of each arrhythmia card and you are not permitted to supply additional information not contained on the cards. Any incorrect or inappropriate interpretation, treatment, or intervention must be concisely documented in the space provided on the evaluation form.

You should individually hand each arrhythmia card in numerical order to the candidate. Candidates may pass on any card and come back to it if time permits. The candidate may either read the information out loud or to him/herself. The candidate will need to verbalize his/her interpretation of the rhythm/condition. It is assumed that the rhythm you see continues in each patient and does not change. If the interpretation is incorrect, you may not award points for any treatment. Verbal treatments need not be in-depth but should include manual, mechanical, pharmacological, and electrical interventions. At the point in which the candidate has demonstrated an acceptable performance, you should instruct the candidate to move on to the next card. Remember that the answers provided are suggested guidelines for acceptable responses but are not all encompassing. We also depend on your expertise and ability to make reasonable and consistent judgments when evaluating this skill. You may award one of the two possible points for treatment if partial treatment was correctly provided. If more than one set of strips was provided, the ECG strips must not be interchanged between sets.

Cardiac Arrest Management/AED

This station is designed to test the AEMT candidate's ability to effectively manage an unwitnessed out-of-hospital cardiac arrest by integrating scene management skills, CPR skills, and usage of the AED. The candidate arrives on scene to find an apneic and pulseless adult patient who is lying on the floor. ***The manikin must be placed and left on the floor for this skill.*** This is an unwitnessed cardiac arrest scenario and no bystander CPR has been initiated. After performing 5 cycles of 1-rescuer adult CPR, the candidate is required to utilize the AED as he/she would at the scene of an actual cardiac arrest. The scenario ends after the first shock is administered and CPR is resumed.

After arriving on the scene, the candidate should assess the patient and determine that the patient is unresponsive. The candidate should then assess the patient for signs of breathing and check pulse simultaneously. This simultaneous pulse and breathing check must take no more than 10 seconds. As soon as pulselessness is verified, the candidate should immediately begin chest compressions. The candidate should request additional EMS assistance after determining that the patient is in cardiac arrest and CPR has been initiated. All actions performed must be in accordance with the current *Emergency Cardiovascular Care (ECC) guidelines for Advanced Cardiac Life Support*. Any candidate who elects to perform any other intervention or assessment causing delay in chest compressions has not properly managed the situation. You should check the related "Critical Criteria" and document the delay.

Each candidate is required to perform 2 minutes of 1-rescuer CPR. Because high-quality CPR has been shown to improve patient outcomes from out-of-hospital cardiac arrest, you should watch closely as the candidate performs CPR to assure adherence to the current recommendations:

- Adequate compression depth and rate
- Allows the chest to recoil completely
- Correct compression-to-ventilation ratio
- Adequate volumes for each breath to cause visible chest rise
- No interruptions of more than 10 seconds at any point

After 5 cycles or 2 minutes of 1-rescuer CPR, the second rescuer arrives with the AED and places it next to the candidate. The second rescuer resumes chest compressions, while the candidate attaches the AED and follows all prompts. Even though an AED trainer should be used in this skill, safety should still be an important consideration. The candidate should make sure that no one is touching the patient while the AED analyzes the rhythm. The AED should then announce, "Shock advised" or some other similar command. Each candidate is required to operate the AED correctly so that it delivers one shock for verification purposes. As soon as the shock has been delivered, the candidate should direct a rescuer to immediately resume chest compressions. At that point, the scenario should end and the candidate should be directed to stop.

Please realize the Cardiac Arrest Management/AED Skill is device-dependent to a degree. Therefore, give each candidate time for familiarization with the equipment in the room before any evaluation begins. You may need to point out specific operational features of the AED but are not permitted to discuss patient treatment protocols or algorithms with any candidate. Candidates are also permitted to bring their own equipment to the psychomotor examination. If any enter your skill carrying their own AED, be sure that the National Registry Representative has approved it for testing, and you are familiar with its appropriate operation before evaluating the candidate with the device. You should also be certain that the device will safely interface with the manikin.

The manikin must be placed on the floor in this skill. It is not permissible to move the manikin to a table, bed, etc. This presentation most closely approximates the usual EMS response to out-of-hospital cardiac arrest and will help standardize delivery of the psychomotor examination. If any candidate insists on moving the manikin to a location other than the floor, you should immediately request assistance from the National Registry Representative.

Equipment List

These skills should be located in a quiet, isolated room with a desk or table and two comfortable chairs. Do not open these skills for testing until the National Registry Representative has provided you with prepared Dynamic Cardiology testing scenarios and Static Cardiology cards. The following equipment must also be available, and you must ensure that it is working adequately throughout the examination:

- Examination gloves
- Monitor/defibrillator (no automated, semi-automated or interpreting machines permitted) with freshly charged and spare batteries
- Arrhythmia generator compatible with manikin and monitor/defibrillator
- Defibrillation manikin
- Conductive medium (gel, pads, etc.)
- ECG paper
- Automated External Defibrillator (trainer model programmed with current *Emergency Cardiovascular Care (ECC) guidelines*) with freshly charged and spare batteries.
- CPR manikin that can be defibrillated with an AED Trainer

The Skill Examiner reads the following instructions to all Intermediate/99 and Paramedic candidates who complete the Dynamic and Static Cardiology skills:

Instructions to the Psychomotor Skills Candidate Dynamic Cardiology

This skill is designed to evaluate your ability to recognize and treat cardiac arrhythmias in accordance with current American Heart Association guidelines and algorithms. In this part, you will be evaluated utilizing the defibrillation manikin and ECG monitor/defibrillator. Four separate arrhythmias will be presented in which you must act as the team leader and voice your interpretation of each arrhythmia as well as all basic and advanced life support and pharmacological interventions you wish to administer. You must physically demonstrate and actually perform all electrical interventions necessary throughout this skill. Please leave the defibrillator turned down to its lowest energy setting and verbally state the energy level you would be delivering to the patient prior to shocking the manikin. Just as it sometimes occurs in the field, some patients do not respond favorably despite appropriate interpretation and treatment. The patient's response in these prepared scenarios is not meant to give any indication whatsoever as to your performance in this skill. Please take a few moments to familiarize yourself with the equipment before we begin, and I will be happy to explain any of the specific operational features of the monitor/defibrillator.

[After an appropriate time period or when the candidate informs you he/she is familiar with the equipment, the Skill Examiner continues reading the following:]

You will have eight minutes to complete this skill once we begin. I may ask questions for clarification and will acknowledge the verbal treatments you indicate are necessary. Do you have any questions?

You respond to a call and find this patient who is...

[The Skill Examiner must refer to the initial rhythm of the Dynamic Cardiology scenario provided to make the appropriate initial patient presentation.]

Instructions to the Psychomotor Skills Candidate

Static Cardiology

This skill is designed to evaluate your ability to recognize and verbally treat cardiac arrhythmias in accordance with current American Heart Association guidelines and algorithms. Four separate static ECG recordings with associated patient information will be presented. I am not permitted to supply any additional information not contained on the cards. I will individually hand you each of the four cards. You may read the patient information out loud or to yourself. You will first need to verbally inform me of your interpretation of the rhythm or condition. Then you must tell me all treatments and interventions you would provide this patient in the field. Assume that the rhythm you see continues in each patient and does not change. You may pass on any card and come back to it if time permits. You will have a total of six minutes to complete all four of the patient encounters. Do you have any questions?

The Skill Examiner reads the following instructions to all Advanced EMT candidates who must also complete the Cardiac Arrest Management/AED Skill:

Instructions to the Psychomotor Skills Candidate Cardiac Arrest Management/AED

This skill is designed to evaluate your ability to manage an out-of-hospital cardiac arrest by integrating patient assessment and management skills, CPR skills, and usage of an AED. You arrive on scene by yourself and you must begin resuscitation of the patient in accordance with American Heart Association Guidelines for CPR. You must physically perform 1-rescuer CPR and operate the AED, including delivery of a shock. The patient's response is not meant to give any indication whatsoever as to your performance in this skill. Please take a few moments to familiarize yourself with the equipment before we begin, and I will be happy to explain any of the specific operational features of the AED. If you brought your own AED, I need to make sure it is approved for testing before we begin.

[After an appropriate time period or when the candidate informs you he/she is familiar with the equipment, the Skill Examiner continues reading the following:]

You will have 10 minutes to complete this skill once we begin. I may ask questions for clarification and will acknowledge the treatments you indicate are necessary. Do you have any questions?

You respond to a call and find this patient lying on the floor.