



Emergency Medical Dispatch Best Practice

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INTRODUCTION:

Cardiac arrest is an extremely time sensitive medical emergency. Prompt initiation of cardiopulmonary resuscitation (CPR) and defibrillation are critical elements in improving survival from out of hospital cardiac arrest. The role of the Dispatch Center extends beyond activating Emergency Medical Services (EMS). Current guidelines highlight the significant role dispatchers have in guiding the bystander to perform CPR, deploying public access automated external defibrillators (AEDs) and guiding EMS to the victim.

The American Heart Association (AHA) and European Resuscitation Council (ERC) both unequivocally recommend bystander Hands Only CPR (HO-CPR). Frequently, bystanders are reluctant to perform CPR due to panic, fear of hurting the patient, or inability to perform correctly. In one study, only 36% of bystanders who are CPR trained performed CPR. Bystanders are typically family or friends and confronted with a stressful, time sensitive situation. The role of the dispatcher to influence the initiation of HO-CPR and early defibrillation by providing dispatch assisted CPR (DA-CPR) serves as a critical component of the organized response to cardiac arrest. DA-CPR has been shown to effectively double the rate of bystander HO-CPR and improve survival from out-of-hospital cardiac arrest.

Emergency Medical Dispatchers (EMDs) are a vital component of an EMS system. Their role as the first link in the chain of survival (Early Access), recognition of cardiac arrest and rapid activation of EMS, is paramount for a victim's survival. A certified EMD program is a complex discipline. Components of this program are listed in this Best Practice. Continuous quality improvement of EMD DA-CPR is essential to improving cardiac arrest survival. Performance measures for benchmarking are included in this document.

A professional emergency dispatcher with EMD training can help the caller with a medical crisis. Community public awareness campaigns to inform on what to expect when calling 911 can help alleviate fear and helplessness. To ensure the right people with the right equipment are dispatched to the scene the caller should be prepared to explain the situation. A trained dispatcher will not ask unnecessary questions. The caller should be prepared to *LISTEN CAREFULLY* to the dispatcher's questions and *DO EXACTLY* what they ask you to do. Questions such as: state the emergency, provide a call back number, address, is the victim conscious, and are they breathing normally are critical to helping the victim. The caller should place their cell phone on speaker to hear and follow dispatcher instructions.

SCOPE:

This Best Practice contains the implementation and roles of an Emergency Medical Dispatcher (EMD). EMD is a pre-hospital medical professional. The EMD must consistently function within the recommended guidelines of an EMD certification. All 911 callers should have access to EMD, including DA-CPR. This should be provided either by the initial 911 public safety answering point (primary PSAP), or be transferred to a secondary site capable of EMD and DA-CPR (secondary PSAP). EMD and DA-CPR services should also be provided to non-English speakers.

This Best Practice includes reviewing 911 calls processed using EMD. A quality assurance/quality improvement (QA/QI) program should include the training, certification, continuing education, recertification, and performance of EMD. Agencies should implement EMD in conjunction with the physician medical director.

I. Dispatcher-Assisted CPR:

Bystander CPR and AED are often the critical bridge between collapse and arrival of trained responders. As the initial communication point between the public and the EMS system, trained 911 dispatchers have the potential to influence the most life-threatening phases of the cardiac arrest.

1. Survival Statistics:

- a. Dispatcher-assisted CPR includes the identification of cardiac arrest and providing CPR instructions to the 911 caller prior to the arrival of EMS. This critical phase represents a significant opportunity for improving survival outcomes.
- b. Organized and ongoing efforts to improve the rapid recognition of OHCA during a 911 call and engage individuals to perform bystander CPR are associated with statistically significant improvements in both bystander CPR and patient survival.
- c. Geo-location of cardiac arrests, volunteer responders and AEDs have been shown to improve rates of CPR and AED use in select communities. Programs such as Hearrunner, Pulse Point and others have shown potential benefit to communities and should be encouraged.

II. Best Practice for an Emergency Medical Dispatch Program:

1. Certification / Training:

The EMD dispatcher should receive specialized certified training with specific emergency medical dispatch knowledge. Proper certified training prepares the medical dispatchers with the correct use of Emergency Medical Dispatch procedures.

- a. The initial training should meet curriculum standard guidelines contained in Practice F1552 with a successful pass of the curriculum that evaluates the knowledge required to function as an EMD, outlined in Practice F1258 and F1552.
- b. Locally developed programs have been shown to increase T-CPR provision and CPR rates (Sanko, et al).

2. Re-Certification:

- a. The EMD dispatcher must be able to maintain continuing education regarding their role as an EMD with a recertification review every two years (as outlined by an EMD protocol provider).

3. Use of EMD:

When a medical related call for service is received by an EMD dispatcher, every call should adhere to the EMD process through the use of the approved EMD system.

- a. Use of plain language at all times during the EMD process is critical, and considered Standard Procedure. Use of codes, acronyms, slang, medical terminology, and abbreviations is not advised.
- b. Transferring a medical call to a non-EMD facility is considered abandonment and is not advised.

4. At a minimum for every medical call, the Public Safety Answering Point (PSAP) should consistently obtain the following:

- The location of the emergency
- A brief description of the emergency
- The number of patients (if known)
- Known scene safety concerns
- The chief complaint of the patient(s)
- The life status of the patient
- If present, any coding related to the EMD services, abbreviations and other related information (medical terminology, street, highway, hazardous material signage, etc..) using plain language description of any related abbreviations and coding
- Use of plain language for all information transfer and communications
- Changes in patient conditions

This list is not intended to address all information

5. At a minimum for every medical call, the PSAP should consistently be able to provide the following:

- Assurance that first responders have been sent
- Post-Dispatch instructions to the caller
- Response designation to the first responders

6. At a minimum, for all calls received indicating a life altering condition or conditions indicating questionable life status, the PSAP personnel should immediately provide pre-arrival instructions to assist the caller:

- Pre-Arrival Instructions(PAIs) to assist the caller in the following types of calls (not intended to be an exhaustive list)
 - Bleeding Control
 - Child Birth

- Choking
- Drowning
- Hanging
- Submerged Vehicle
- Person on Fire
- Presumed cardiac arrest
 - Identification, retrieval and utilization of AED
 - CPR
- For PSAPs that don't have resources to provide PAIs, administration should assure that calls can be promptly transferred to a secondary PSAP that can provide them.

7. Dispatch Assisted CPR

- a. Dispatchers should utilize an “All Caller Interview” to triage the patient, conduct a rapid assessment of the patient’s status of consciousness and breathing and identify if the patient is in cardiac arrest. Every 911 call should be treated as a cardiac arrest until proven otherwise and DA-CPR should be expeditiously initiated when indicated. **(No No Go Method. If the patient is unconscious and not breathing normally, DA-CPR instructions should be initiated without delay.)**

No – Conscious
No – Breathing Normally
Go - CPR Instructions

- b. Dispatchers will be affirmative that 911 callers of presumed cardiac arrest will initiate CPR “based on what I’m hearing, we’re going to start compressions together”, *rather than* asking the caller if they wish to start CPR.

III. Recommended Metrics for dispatch and Cardiac Arrest:

1. At a minimum, Rapid Dispatch Goals for calls received indicating a life-altering condition should include a dispatch of first responders from the time of recognition of the call classification. Recommend Metrics for EMD of Presumed Cardiac Arrest (Kurz, et al)
 - a. Identification of Cardiac arrest correctly by PSAP in 75% of calls
 - b. Identification of Cardiac arrest calls with identifiable data in 95% of calls
 - c. Initiation of CPR instructions in 75% of calls
 - d. Initiation of instructions within 120 seconds of recognition
 - e. Initiation of compressions by the caller within 120 seconds of address acquisitions

IV. Quality Assurance/ Quality Improvement

At a minimum, the PSAP should manage and review the incoming cases on a regular basis. The selection of cases to be reviewed should provide a perspective of the individual’s performance over the entire spectrum of call-types received.

1. The review process should include a minimum of 7 to 10% of the calls received.

- a. Individuals performing the dispatch case reviews must have received the specialized EMD training as well as training for the process of EMD case review.
- b. All calls with cardiac arrest suspected by dispatchers, and EMS confirmed cardiac arrest should be reviewed. Whenever possible to enhance information exchange across disciplines, EMS agencies should be included in this QI process.
- c. Each review should be evaluated on a standardized case review template that objectively measures and quantified the parameters.
- d. At a minimum, the following areas of compliance should be retained:
 - Compliance to the standardized interrogation questions
 - Compliance to the systematic pre-arrival instructions
 - Compliance to the correct classification code
2. The **SaveMiHeart** Initiative uses the CARES™ registry to measure and improve cardiac arrest performance. We recommend that agencies use the CARES™ dispatch module that collects data elements to calculate the above referenced metrics. <https://mycares.net/>

V. Risk Management

The following attitudinal philosophy of risk management within a quality assurance program is derived from the Guidelines for Quality Assurance (3) from the Council on Medical Service of the American Medical Association and deals mainly with risk management-type issues. These ten components should be utilized in any medical dispatch system, whether private or governmental operated and whether conducted by medical directors, administrators, supervisors, peers, or governmental agencies. The elements are listed in the appendix.

1. Basic Training Program

Depending on individual program design _ internal training, nationally certified training program, or SaveMiHeart on line training, <https://www.savemiheart.org/> the basic training required to allow dispatchers to provide emergency telephone CPR instructions will vary, however, any training can include the following:

- a. Anatomy & physiology of the circulatory and cardiovascular system.
- b. Relationship between the circulatory system and the respiratory and nervous systems.
- c. Signs and symptoms of ACS – acute coronary syndrome.
- d. Signs of life recognition.
- e. Early recognition of the need for CPR.
- f. Agonal respirations.
- g. Pathophysiology - sudden cardiac death/cardiac arrest.
- h. Explanation of DA CPR and value of program.
- i. Practice in the use of the instructions.
- j. Physiology behind the performance of the instructions.
- k. AEDs and how they fit in the picture of resuscitation.

- l. Difference between instructions for children, infants, pregnant patients, obese patients, patients with a stoma.
- m. Mechanism for practice and both practical and written evaluation (test).
- n. Discussion regarding unique circumstances such as end of life directives, drug overdoses or traumatic cardiac arrest

2. Risk Management Elements

- a. The specific policies and procedures to be utilized for performance evaluation activity must be carefully explained to the EMDs whose performance will be measured. All procedures must be objectively and impartially administered.
- b. Any formal corrective activity related to an individual EMD should be triggered by concern for that individual's overall practice, rather than by deviation from specified criteria in single cases.
- c. The institution of any corrective action or activity should be preceded by discussion with the EMD involved
- d. Emphasis should be place on retraining and modification of unacceptable practice patterns rather than on sanctions.
- e. The employing agency must provide the appropriate educational resources needed to affect the desired practice modifications whether they be peer consultation, continuing education, retraining or self-learning and self-assessment programs.
- f. Feedback mechanisms should be established to monitor and document needed changes in practice patterns and allow for assessment of the effectiveness of any remedial activities instituted by or for an EMD.
- g. Restrictions, sanctions or disciplinary actions should be imposed on those dispatchers not responsive to remedial activities, whenever the employing agency or medical director, or both, deem such action necessary to protect the public.
- h. The imposition of restrictions, sanctions or disciplinary actions must be timely and consistent with due process.
- i. Quality assurance systems for medical dispatch should be structured and operated so as to ensure immunity for those conducting or applying such systems who are acting in good faith.
- j. To the fullest degree possible, quality assurance systems should be structured to recognize care of high quality as well as correcting instances of deficient practice. Commendations, awards, advancements and other forms of positive reinforcements are important facets of quality assurance.

Appendix

Referenced Documents:

1. ASTM Standards:
 - a) F 1258 Practice for Emergency Medical Dispatch (2)
 - b) F 1552 Practice for Training, Instructor Qualification, and Certification Eligibility of Emergency Medical Dispatchers (2)
2. 56-509 v1 NENA/APCO Best Practices Model for Providing 3rd Party Emergency Medical Dispatch Services
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11. <https://www.alamance-nc.com/ccom/calling-911/what-to-expect-when-you-call-9-1-1/>
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J Am Coll Cardiol . 2020 Jul 7;76(1):43-53. doi: 10.1016/j.jacc.2020.04.073.

14. Berglund E, Claesson A, Nordberg P, Djärv T, Lundgren P, Folke F, Forsberg S, Riva G, Ringh M. A smartphone application for dispatch of lay responders to out-of-hospital cardiac arrests.

Resuscitation. 2018 May;126:160-165. doi: 10.1016/j.resuscitation.2018.01.039. Epub 2018 Feb 1. PMID: 29408717

Terminology:

1. *Case review template*-a structured performance evaluation document containing all necessary input and output actions required of dispatchers that parallels the EMDs' on-line protocols, policies, and procedures related to call-taking and processing. It contains check-off lists and compliance scoring mechanisms that objectively rate the EMDs' performance on a single call.
2. *Dispatch life support*-the knowledge, procedures, and skills used by trained EMDs in providing care through pre-arrival instructions to callers. It consists of those BLS and ALS principles that are appropriate to application by medical dispatchers.
3. *Emergency medical dispatch agency*-any organization or a combination of organizations working cooperatively, that routinely accepts calls for emergency medical assistance and facilitates the dispatch of prehospital emergency medical resources/personnel and provides medically oriented pre-arrival instructions pursuant to such requests.
4. *OHCA* – Out of Hospital Cardiac Arrest
5. *Performance evaluation*-the documented, objective, quantitative measure of an individual emergency medical dispatcher's performance based upon compliance to departmental protocols, policies and procedures.
6. *Pre-arrival instructions*-telephone-rendered, medically approved written instructions provided by trained EMDs through callers which help to provide aid to the victim and control of the situation prior to arrival of prehospital personnel.
7. *Quality assurance/quality improvement (QA/QI)*-the comprehensive program of prospectively setting standards; concurrently monitoring the performance of clinical, operational and personnel components; and, retrospectively improving these components in the emergency medical dispatch agency when compared with these standards.