



Emergency Medical Dispatch Best Practice

Co-chairs: Robert Swor DO, FACEP
Cherie Bartram, MM, ENP

INTRODUCTION:

Prompt initiation of cardiopulmonary resuscitation (CPR) by bystanders, is a key element in improving cardiac arrest survival. EMS response and arrival to the scene encounter particular barriers (travel time, activation of response units, or 911 processing) delaying CPR by professional rescuers. Bystander CPR (BCPR) has been shown to double the odds of patient survival if performed prior to EMS arrival. BCPR also has significant obstacles to its provision. Often times the bystander is reluctant to perform CPR, commonly due to panic, fear of hurting the patient, or inability to correctly perform. In one study, only 36% of bystanders that are CPR trained actually performed CPR. Bystanders are typically loved ones, and in the moment are faced with an incredibly stressful, situation. In such situations, the provision of dispatch assisted CPR (DA-CPR) serves as a critical component of response to cardiac arrest, providing instruction and encouragement for the bystander to act. DA-CPR has been shown to effectively double the rate of BCPR provision, and improve survival rates for out-of-hospital cardiac arrests.

Emergency Medical Dispatchers are an essential component of an EMS system. Certified EMD is a complex discipline, and essential components of this discipline are listed in this best practice document. EMD's are crucial for the provision of DA-CPR, and efforts to evaluate and improve EMD provision of dispatch CPR instructions is a vital element of improving cardiac arrest survival in Michigan. We also present performance measures that may be used for benchmarking.

SCOPE:

This Best Practice recommendation covers the implementation and functions of an Emergency Medical Dispatcher (EMD). The EMD must consistently function within the recommend guidelines of an EMD certification through the prompt and accurate processing and resource allocation for calls of a medical nature.

The recommendation also covers the review of calls processed using EMD. This quality assurance/quality improvement (QA/QI) includes the training, certification, continuing education, recertification, and performance guidelines of the EMD. The EMD is clearly defined as a pre-hospital medical professional, and it is necessary to establish sound medical management process through the practice of EMD as a full program. As an EMD program, agencies should implement in a standardized approach to quality assurance in conjunction with the physician medical director.

I. Dispatcher-Assisted CPR:

Bystander CPR and AED use are often the crucial 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 guide the preliminary and most critical phases of the cardiac arrest response.

1. Survival Statistics:

- a. Dispatcher-assisted CPR involves the identification of cardiac arrest and the provision of CPR instructions to the 911 caller prior to the arrival of EMS providers at the scene of the cardiac arrest and represents an important area of opportunity for improving outcomes.
- b. Organized and ongoing efforts to improve the early 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

II. Best Practice:

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 for 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.

2. Re-Certification:

- a. The EMD dispatcher must be able to maintain continuing education regarding his/her 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 transferred to a secondary PSAP that can provide them.

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
 - a. **No-No-Go Rule**

Time of Recognition includes obtaining the address of the patient and the phone number of the caller. Rapid Dispatch and Immediate CPR instructions begin after these two questions have received a negative answer:

 - 1) Is the patient conscious ➡ No
 - 2) Is the patient breathing ➡ No
 - 3) Go immediately to Rapid Dispatch and CPR instructions:
2. Recommended Metrics for Rapid Dispatch and Cardiac Arrest
 - a. Within 30 seconds 75% of the time
 - b. Within 45 seconds 80% of the time
 - c. Within 60 seconds 90% of the time
 - d. Within 90 seconds 100% of the time
3. Recommend Metrics for EMD of Presumed Cardiac Arrest

- 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
 - 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 guidelines 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, 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).

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
3. Swor RA, Jackson RE, Compton S, Pascual RJ, Kuhn GJ, Zalenski RJ, Domeier R, Honeycutt L. Public vs Private Location Cardiac Arrests: Different Strategies are Needed to Improve Outcome. *Resuscitation* 2003; 58:171-176
4. Swor, R. Khan, I. Domeier, R. Honeycutt, L. Chu, K. Compton, S. CPR training and CPR performance: do CPR-trained bystanders perform CPR? *Acad Emerg Med* 2006;13(6): 596-601
5. Rea TD, Eisenberg MS, Culley LL, Becker L. Dispatcher-assisted cardiopulmonary resuscitation and survival in cardiac arrest. *Circulation*. 2001;104(21):2513-2516.
6. Bobrow B; Panczyk M; Stolz Uwe; Sotelo M; Vadeboncoeur T; Sutter J; Langlais B; Spaite D. Statewide Implementation of a Standardized Prearrival Telephone CPR Program Is Associated with Increased Bystander CPR and Survival from Out-of-Hospital Cardiac Arrest. *Circulation*.
7. Lewis M, Stubbs B, Eisenberg M. Dispatcher-Assisted Cardiopulmonary Resuscitation: Time to Identify Cardiac Arrest and Deliver Chest Compression Instructions. *Circulation*. 2013;128(14):1522-1530. doi:10.1161/circulationaha.113.002627.
8. McNally B, Robb R, Mehta M, Vellano K, Valderrama AL, Yoon PW, Sasson C, Crouch A, Perez AB, Merritt R, Kellermann A. Out-of-hospital cardiac arrest surveillance --- Cardiac Arrest Registry to Enhance Survival (CARES), United States, October 1, 2005--December 31, 2010. *MMWR Surveill Summ*. 60(8):1-19.014;130:A1
9. <http://www.resuscitationacademy.org/index.php/t-cpr/>
<http://www.emergencydispatch.org/CertEMDCourse>

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.