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Ocean City Fire Department  
Standard Operating Guidelines

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## EMS Operations

Subject: High Performance CPR (HPCPR)/  
Cardiac Arrest Management

Revised: N/A

Effective: 01/16/2015

Approved: 01/14/2015

Section: 314.0

### 314.00 Purpose

- A. To provide effective management of cardiac arrest resuscitation events and ensure that effective, high quality CPR is provided during the attempted resuscitation of cardiac arrest patients.

### 314.01 Scope

- A. This policy shall apply to all cardiac arrest events in which resuscitation is attempted and two or more providers are on the scene of the event.

### 314.02 Definitions

- A. High Performance CPR (HPCPR): High quality CPR that has minimal interruptions of no more than ten (10) seconds and effective delivery of chest compression. Personnel performing CPR are rotated at 2 minute intervals.
- B. Code Resource ("Pit Crew") Cardiac Arrest Management: A cardiac arrest management strategy. "Pit Crew" methodology ensures the effective management of on-scene personnel and the effective delivery of CPR. In the "Pit Crew" approach, one person is responsible for ensuring that effective CPR is being performed at all times. A team leader ensures that correct actions are being performed in the proper sequence.
- C. Chest Compression Fraction (CCF): The CCF is the proportion of time that chest compressions are being performed during a resuscitation event. The CCF goal is a minimum of 0.85 or 85%.
- D. Maryland Medical Protocols: Refers to the current edition of the Maryland Medical Protocols for EMS Providers promulgated by MIEMSS.

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314.03 Policy

- A. All personnel shall manage cardiac arrest events consistent with all current applicable Maryland Medical Protocols, including the optional High Performance CPR Protocol.
- B. At the beginning of each shift, each on-duty crew shall define roles for the management of a cardiac arrest event.
- C. The OCFD “Pit Crew” Procedure: The first arriving unit shall confirm cardiac arrest and determine if resuscitation should be attempted. If resuscitation is attempted:
  - a. Provider 1 shall immediately begin CPR.
  - b. Provider 2 shall begin ventilating the patient via a BVM.
  - c. Provider 3, an ALS provider, will start a timer to track rotation of personnel providing compressions. Provider 3 shall serve as “Team Leader” to ensure that the appropriate Maryland protocols are followed and that CPR is performed effectively. Provider 3 shall attach the monitor to the patient, deliver electrical therapy when indicated, and be responsible for rotating personnel performing compressions every two (2) minutes. Upon arrival of additional personnel, Provider 3 shall direct and assign tasks as needed.
    - i. If CPR was initiated prior to the arrival of EMS, timing of the event shall be started by the first crew to arrive with a timing device.
- D. Upon the arrival of an OIC or a Chief Officer, the OIC or Chief Officer will begin gathering any pertinent patient information to deliver to the Team Leader. The OIC or Chief Officer will also keep the family informed of the progress of the resuscitation event and begin the “Break It To Me Gently” program as needed.
- E. Any members of the OCPD, OCBP, Fire Marshall’s office, or OCVFC can be utilized for any role by the Team Leader that they are qualified to perform.
- F. Unless contraindicated, an AutoPulse® device may be used to deliver chest compressions. However, use of the AutoPulse® device is not required. If the AutoPulse® device is used, it shall be deployed in a manner to minimize interruption of chest compressions during its application. Consider applying the AutoPulse® device in situations in which chest compressions will be continued (or are anticipated) during transport.
- G. In general, resuscitation of adult medical (non-trauma) cardiac arrest patients should be conducted on the scene of the event for the first 15 minutes of the attempted resuscitation. To maximize the effectiveness of CPR, immediate transport should not be initiated unless there is return of spontaneous circulation (ROSC) or

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there is a compelling situational, medical, or safety reason to promptly initiate transport.

- H. Personnel may consider termination of resuscitation in accordance with the current Maryland Termination of Resuscitation (TOR) Protocol.
- I. Avoid on-scene termination of resuscitation in situations in which the patient is located on the beach or in an open public area.
- J. The following equipment is to be carried by the first two arriving EMS crews:

Unit	Provider	Equipment	Initial Role
EMS crew	1	Drug Bag	Compressions
	2	Airway Bag	BVM Vent.
	3	Monitor, Stopwatch and Suction	Team Leader
2nd EMS crew	1	Reeve's Sleeve	Compressions
	2	AutoPulse	Set up IV/IO
	3	Glide Scope/Airway bag	ALS airway setup
OIC/ Fire Officer			Family contact/ INFO
OCVFC/OCBP			Compressions/interventions
OCPD			Scene control/compressions

- K. In the event the first arriving crew is a 2-provider unit, roles are assigned as follows until additional resources arrive on the scene:
  - a. The airway bag, stopwatch, suction, and AED/manual defibrillator shall be carried to the patient's side.
  - b. Confirm cardiac arrest and determine if resuscitation should be attempted. If resuscitation is attempted:
    - i. Provider 1 shall immediately begin chest compressions.
    - ii. Provider 2 shall start the stopwatch, ventilate the patient with a BVM, attached/operate the AED/manual defibrillator, and assume the "Team Leader" role.
    - iii. Rotate positions every two minutes.

**314.04 QA&QI of Cardiac Arrest Events**

- A. A division officer shall be specifically designed to manage and oversee the HPCPR program. The officer shall coordinate HPCPR reviews, provide feedback to personnel regarding code management and compliance with CPR/HPCPR guidelines, and

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- submit any required reports to MIEMSS regarding the HPCPR Optional Program.
- B. Every cardiac arrest event in which resuscitation is attempted shall receive a QA/QI review. In addition to general protocol and documentation compliance review conducted by quality review staff, a review of the HPCPR and code management shall be conducted by the HPCPR program officer. As a part of the HPCPR review, the resuscitation event's chest compression fraction shall be determined and reported to the providers involved with the resuscitation.
  - C. Whenever possible, supervisors and personnel involved in a resuscitation event should conduct an informal review of the attempted resuscitation event at the conclusion of the incident.
  - D. In addition to completing an eMEDS report of the event, personnel shall follow any data collection procedures and complete any required data collection instruments as required by the HPCPR program officer.
  - E. The on-duty OIC shall notify the HPCPR officer of any cardiac arrest resuscitation events that have occurred on their shift. The notification shall be made by email and shall include the date of the call, location of the call, and the event incident number. Patient-identifying information shall not be included in the email.
  - F. Attempted cardiac arrest resuscitation events shall be reviewed by the HPCPR officer within 7 business days of the event. If extenuating circumstances prevent the HPCPR officer from reviewing a case within 7 business days, the HPCPR officer shall notify the Captain in charge of EMS operations and the Assistant Chief of the Career Division so alternative arrangements for case review may be made.
  - G. The HPCPR officer shall facilitate a formal QA/QI review of each cardiac arrest resuscitation event with the event "Team Leader" and as many of the participating crew members as is practical. This review shall be coordinated with the supervisor of the shift involved with the event and will be conducted within a reasonable time after the incident. During the review, the Team Leader and the participating crew members shall be provided with feedback about the management of the event, including review of CPR performance metrics including the CCF, medical management of the patient, and the code resource management of the event. As a formal QA/QI activity, the matters discussed during this review are confidential.
  - H. HPCPR officer shall be responsible for the administration of the department's Utstein cardiac arrest database.

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- 314.05 Collection of Data and Submission to MIEMSS
- A. The following information shall be extracted from the eMEDS Patient Care Report and HPCPR program data collection instruments for submission to MIEMSS on a quarterly basis by the HPCPR officer:

Date of the Event	Incident number	PCR Number	Age
Suspected Etiology	ROSC	Status at Arrival	Status at Discharge, including CPC score if available.
Receiving Hosp.	QA/QI review of CPR	Suspected Downtime	Initial and Final rhythm