Issued by: Fire Chief Scott E. Goldstein

Policy Number: 24-01

Authority: Montgomery County Code Section 21-3 (b)

Supersedes: Fire Chiefs General Order 14-05, *High Performance CPR* (April 7, 2014)

Effective Date: September 29, 2020

SECTION 1. Purpose:

Maximizing survival from Out-of-Hospital Cardiac Arrest **(OHCA)** is a key goal for the MCFRS. Although the *Maryland Medical Protocols **(MMP)** for Emergency Medical Services* guides the medical aspects of cardiac resuscitation, there are several practical considerations that are left up to the local EMS Operational Programs to define. This policy provides an operational framework to be used by the MCFRS when responding to **OHCA**.

SECTION 2. Applicability:

All MCFRS personnel while participating in MCFRS activities and personnel from other organizations while operating in Montgomery County.

SECTION 3. Background:

This Incident Response Policy (IRP) Appendix describes the MCFRS operational approach when responding to **OHCA**. It is based on the current state of medical science and industry recognized best practices, as applied to the unique operational environment of the MCFRS.

Nothing in this document is intended to contradict or supersede the **MMP**. These are operational principles that define roles and responsibilities of MCFRS personnel and an operational framework in which they should work.

The current body of medical evidence leads us to the following conclusions about the treatment of **OHCA**:

a. The most critical interventions in the management of cardiac arrest are chest compressions and defibrillation;

b. The urgency of transport of the **OHCA** patient to a hospital-based emergency department should be deemphasized in the current operational environment;

c. The urgency of Advanced Life Support (ALS) interventions should be de-emphasized in the current operational environment;

d. All operational efforts should focus on the establishment of a solid rhythm of 2-minute cycles of high-quality chest compressions and early defibrillation, prior to any other considerations; and

e. Organization and command presence during an **OHCA** resuscitation is just as essential as it is during a structure fire or other complex event.

SECTION 4. Definitions:

See Appendix Q

SECTION 5. Policy:

a. Distribution of responsibilities: The **Clinical Decision Maker** cannot be the **CPR Boss**. In most cases, the **CPR Boss** should be the unit officer of the first-arriving piece of heavy apparatus and the **Clinical Decision Maker** should be the first-arriving ALS clinician. The role of **CPR Boss** must be filled first. When the first arriving unit officer is also the first-arriving ALS clinician, that individual may either act as the **CPR Boss** and defer ALS interventions until the arrival of a second ALS clinician, or, when ALS interventions are critical, act as the **Clinical Decision Maker** and assign another clinician to act as the **CPR Boss**.

b. Assembly of Resources: MCFRS relies on an assembly of resources model whereby the response to an **OHCA** varies based on the capabilities of the units closest to the scene at the time of dispatch. Personnel must anticipate these variable responses and plan for role expansion during the assembly of resources. The following chart depicts responsibilities when operating with less than five personnel at the patient:

(Number of personnel at the patient) – *role*			
(1) – *Chest Compressions, CPR Boss, defibrillate if 2nd rescuer is delayed*	**(1)** – *Chest Compressions*	**(1)** – *Chest Compressions*	**(1)** – *Chest Compressions*
	(2) – *Ventilate, defibrillate, CPR Boss*	**(2)** – *Ventilate*	**(2)** – *Ventilate*
		(3) – *CPR Boss, defibrillate*	**(3)** – *CPR Boss*
			(4) – *Clinical Decision Maker, Defibrillate, Other ALS*

SECTION 6. Responsibility:

All personnel.

SECTION 7. Procedure:

a. Pre-Response Planning:

1. In stations where crews are assigned and static for extended periods of time, the unit officer of each piece of heavy apparatus will pre-designate a **Runner** and a **CPR Boss**. Unit officers of heavy apparatus with ALS capabilities will also designate a **Clinical Decision Maker.**

b. Response Phase:

1. While responding to a reported **OHCA**, the expected first-arriving unit officer will designate a **Runner**, a **CPR Boss**, and a **Clinical Decision Maker** if these functions were not previously designated.
2. While responding to a reported pediatric **OHCA**, the anticipated **Clinical Decision Maker** will, when possible, use either a commercially available (e.g., Handtevy™) application or the **MMP** and the patient's reported age to determine and announce to the crew the following information *prior to arrival*:
   A. The patient's predicted weight;
   B. The dose and volume of epinephrine appropriate for the patient;
   C. The defibrillation dose appropriate for the patient; and
   D. The size of the Endotracheal Tube (ET) appropriate for the patient.

c. On-scene Phase:

1. First-arriving unit:
   A. The **Runner** will immediately report to the patient to assess the patient and begin hands-only CPR if indicated;
   B. The balance of the crew will assemble the appropriate equipment and report to the patient's side to establish the **Floor of Care** using the **SPASM** mnemonic;
   C. The **CPR Boss** will ensure that the elements of the **SPASM** checklist have been completed;
   D. The **CPR Boss** will manage timekeeping as follows:
      i. Time will be kept on a count-up timer, examples of which are the stopwatch app found on the issued apparatus smart phone or ePCR computer. Time will be started as soon as possible and left to run continuously throughout the resuscitation.

ii. Other methods such as two-minute count-down timers or the use of a digital clock that only displays minutes are not acceptable.

iii. Two-minute cycles of CPR revolve around either even or odd whole minutes on the stopwatch or count-up timer.

iv. The **CPR Boss** will announce to the entire team when there are thirty (30) seconds left prior to a **Rhythm Check**, fifteen (15) seconds left prior to a **Rhythm Check**, and when the **Rhythm Check** is supposed to occur.

v. The **CPR Boss** will ensure that any break in chest compressions occurs only at the end of a two-minute cycle.

vi. The **CPR Boss** will ensure that any **Rhythm Check** lasts for no more than ten (10) seconds in duration.

2. Roles are expanded based upon the number of personnel available as they arrive on the scene.
3. Therapies other than defibrillation, chest compressions, and ventilations must not be considered until the **Floor of Care** has been established, the resuscitation has developed a steady pattern of two-minute cycles of CPR, and adequate personnel are on scene to fill the role of **Clinical Decision Maker**.
4. Once the **Floor of Care** has been established, it must not cease until the resuscitation has been terminated, the patient achieves **Return of Spontaneous Circulation (ROSC),** or care of the patient has been transferred to the hospital.
5. If no **mCPR** device is available after all resources have assembled on the scene, the **CPR Boss** will request that one be dispatched.
6. Pulseless patients with resuscitations in progress will not be moved without the benefit of **mCPR** unless:

   A. There is a contraindication to the use of **mCPR**; or,

   B. An **mCPR** device is genuinely unavailable; or

   C. A clear and compelling reason for relocation of the patient exists (e.g. physical barriers to resuscitation or scene safety concerns).

      i. In these cases, the patient should only be moved enough to resolve the concern prior to the establishment of a high-quality resuscitation.

d. When personnel arrive to find a patient in cardiac arrest who was not initially dispatched as one OR when a patient in our care suddenly experiences **OHCA**:

   1. Personnel will announce the **OHCA** via radio and call for additional resources.
   2. If transporting, the driver will stop the unit in a safe location and move to the patient compartment and the crew will establish the **Floor of Care** until more help arrives.

e. Treatments, transport decisions, and termination of resuscitation should be consistent with applicable sections of the **MMP.**

SECTION 8. Cancellation:

a. Rescinds Fire Chiefs General Order 14-05, *High Performance CPR* (April 7, 2014)

SECTION 9. Attachments:

1. **SPASM** Infographic
2. MCFRS Video illustrating the principles of this IRP: https://youtu.be/qxJF0saiuhU

Approved:

Scott Goldstein

Fire Chief

September 29, 2020

Date