

# High Performance CPR

Applies to:	
E	EMT
P	Paramedic

## Clinical Indications:

All out-of-hospital cardiac arrests (OHCA) which results in the activation of the EMS System shall be managed using High Performance CPR (HP-CPR)

## Purpose:

The purpose of HP-CPR is to provide a structured, standardized, and choreographed approach to cardiac arrest management.

## Principles:

1. Resuscitation is based on proper planning and organized execution. Procedures require space and patient access. Make room to work. Utilize a team focused approach assigning responders to predetermined tasks.
2. The unit first on scene shall establish and follow the HP-CPR script. Efforts should be taken to ensure adequate timekeeping occurs throughout the resuscitation.
3. Cardiac arrest management efforts should be directed at high quality, continuous chest compressions with limited interruptions. The goal is to provide two (2) minutes of continuous compressions with a less than ten (10) second pause.
4. In cardiac arrest, drugs are of limited usefulness. High quality compressions and defibrillation are far more important.
5. Approach resuscitation with goal of preserving cerebral function through meticulous attention to procedure.
6. The patient should be ventilated using a BLS airway and BVM at a rate of ten (10) ventilations/minute (1:6 seconds) with continuous CPR. Placement of an advanced airway should be deferred unless a provider is unable to ventilate the patient with a BLS airway and BVM.
7. If transport is deemed appropriate or the patient has experienced a return of spontaneous circulation (ROSC) at any time throughout the resuscitation; transport to a STEMI receiving Center.



# High Performance CPR

Time (mins)	Non-Shockable Rhythm (Asystole/ PEA)	Shared Interventions	Shockable Rhythm (V-Fib/ Pulseless V-Tach)
<b>0-2</b>	<ul style="list-style-type: none"> <li>• Begin chest compressions</li> <li>• Stopwatch/ full code</li> </ul>	<ul style="list-style-type: none"> <li>• Apply defib pads</li> <li>• BLS airway: OPA, BVM, O<sub>2</sub> 15L</li> <li>• Set up IV/ IO supplies</li> <li>• Charge defibrillator</li> </ul>	<ul style="list-style-type: none"> <li>• Begin chest compressions</li> <li>• Stopwatch/ full code</li> </ul>
Shockable rhythm? DEFIBRILLATION at 200J or manufacturer recommendation			
<b>2-4</b>	<ul style="list-style-type: none"> <li>• EPI 1:10,000 IV/IO</li> </ul>	<ul style="list-style-type: none"> <li>• Continue chest compressions</li> <li>• Set up MCD; if V-Fib, apply 2<sup>nd</sup> set of pads</li> <li>• Continue ventilations at 10/ min</li> <li>• Establish IV/ IO</li> <li>• Charge defibrillator</li> </ul>	<ul style="list-style-type: none"> <li>• Consider H's and T's</li> <li>• Consider naloxone for OD</li> <li>• Consider sodium bicarb/ calcium for renal failure or hyperkalemia</li> </ul>
Shockable rhythm? DEFIBRILLATION at 300J or manufacturer recommendation			
<b>4-6</b>	<ul style="list-style-type: none"> <li>• Consider H's and T's</li> <li>• Consider narcan for OD</li> <li>• Consider sodium bicarb/ calcium for renal failure or hyperkalemia</li> </ul>	<ul style="list-style-type: none"> <li>• Continue compressions</li> <li>• Continue ventilations at 10/ min</li> <li>• If not in use, add EtCO<sub>2</sub></li> <li>• Charge defibrillator</li> </ul>	<ul style="list-style-type: none"> <li>• EPI 1:10,000 IV/IO</li> </ul>
Shockable rhythm? DEFIBRILLATION at 360J or manufacturer recommendation			
<b>6-8</b>	<ul style="list-style-type: none"> <li>• EPI 1:10,000 IV/IO</li> </ul>	<ul style="list-style-type: none"> <li>• Continue chest compressions</li> <li>• Continue ventilations at 10/ min</li> <li>• Place advanced airway</li> <li>• Charge defibrillator</li> </ul>	<ul style="list-style-type: none"> <li>• LIDOCAINE</li> <li>• Place second set of defib pads (A/L → A/P or A/P → A/L) and deliver all subsequent defibrillations in new vector.</li> </ul>
Shockable rhythm? DEFIBRILLATION at 360J or manufacturer recommendation			
<b>8-10</b>		<ul style="list-style-type: none"> <li>• Continue chest compressions</li> <li>• Continue ventilations at 10/ min</li> <li>• Charge defibrillator</li> </ul>	<ul style="list-style-type: none"> <li>• EPI 1:10,000 IV/ IO</li> </ul>
Shockable rhythm? DEFIBRILLATION*** at 360J or manufacturer recommendation			
<b>10-12</b>	<ul style="list-style-type: none"> <li>• EPI 1:10,000 IV/IO</li> </ul>	<ul style="list-style-type: none"> <li>• Continue chest compressions</li> <li>• Continue ventilations at 10/ min</li> <li>• Charge defibrillator</li> </ul>	<ul style="list-style-type: none"> <li>• LIDOCAINE</li> <li>• Consider transport to STEMI Receiving Center</li> </ul>
Shockable rhythm? DEFIBRILLATION at 360J or manufacturer recommendation			
<b>12-14</b>		<ul style="list-style-type: none"> <li>• Continue chest compressions</li> <li>• Continue ventilations at 10/ min</li> <li>• Charge defibrillator at</li> </ul>	<ul style="list-style-type: none"> <li>• EPI 1:10,000 IV/ IO</li> </ul>
Shockable rhythm? DEFIBRILLATION at 360J or manufacturer recommendation			

It is important to adhere to the prescribed 2-minute interval as closely as possible.

\*Lidocaine is only indicated in shockable rhythms refractory to two (2) shocks.

\*\*\*Early transport to a STEMI Receiving Center is indicated under the following circumstances:

- Witnessed arrest with suspicion of pulmonary embolism; or
- V-Fib arrest resistant to four (4) shocks (refractory V-Fib).



# High Performance CPR

Time (mins)	Non-Shockable Rhythm (Asystole/ PEA)	Shared Interventions	Shockable Rhythm (V-Fib/ Pulseless V-Tach)
<b>14-16</b>		<ul style="list-style-type: none"> <li>Continue chest compressions</li> <li>Continue ventilations at 10/ min</li> <li>Charge defibrillator</li> </ul>	
Shockable rhythm? DEFIBRILLATION at 360J or manufacturer recommendation			
<b>16-18</b>		<ul style="list-style-type: none"> <li>Continue chest compressions</li> <li>Continue ventilations at 10/ min</li> <li>Charge defibrillator</li> </ul>	
Shockable rhythm? DEFIBRILLATION at 360J or manufacturer recommendation			
<b>18-20</b>		<ul style="list-style-type: none"> <li>Continue chest compressions</li> <li>Continue ventilations at 10/ min</li> <li>Charge defibrillator</li> </ul>	
Shockable rhythm? DEFIBRILLATION at 360J or manufacturer recommendation			
<b>20-22</b>		<ul style="list-style-type: none"> <li>Continue chest compressions</li> <li>Continue ventilations at 10/ min</li> <li>Charge defibrillator</li> </ul>	
Shockable rhythm? DEFIBRILLATION at 360J or manufacturer recommendation			
<b>22-24</b>		<ul style="list-style-type: none"> <li>Continue chest compressions</li> <li>Continue ventilations at 10/ min</li> <li>Charge defibrillator</li> </ul>	
Shockable rhythm? DEFIBRILLATION at 360J or manufacturer recommendation			
<b>24-26</b>		<ul style="list-style-type: none"> <li>Continue chest compressions</li> <li>Continue ventilations at 10/ min</li> <li>Charge defibrillator</li> </ul>	
Shockable rhythm? DEFIBRILLATION at 360J or manufacturer recommendation			
<b>26-28</b>		<ul style="list-style-type: none"> <li>Continue chest compressions</li> <li>Continue ventilations at 10/ min</li> <li>Charge defibrillator</li> </ul>	
Shockable rhythm? DEFIBRILLATION at 360J or manufacturer recommendation			
<b>28-30</b>		<ul style="list-style-type: none"> <li>Continue chest compressions</li> <li>Continue ventilations at 10/ min</li> <li>Charge defibrillator</li> </ul>	
Shockable rhythm? DEFIBRILLATION at 360J or manufacturer recommendation			
<b>30</b>	Termination of efforts: If asystolic confirmed by 12-Lead ECG, apneic, and $\text{EtCO}_2 < 20 \text{ mmHg}$ , consider termination of resuscitation		Consider transport for patients with multiple rhythms, intermittent perfusing rhythms, or when scene conditions warrant transportation for safety issues

Reference Policy 507 – Determination of Death



**SAN MATEO COUNTY HEALTH  
EMERGENCY  
MEDICAL SERVICES**

Field Procedure

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