

**Community Best Practices**

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**The Community Response is Vital to Improving Cardiac Arrest Survival**

“The system of care starts with the average citizen. That person’s rapid action can be one of the most important parts of the whole system of care.” Clifton W. Callaway, MD, PhD

Immediate activation of the 911 system, bystander Hands-Only™ CPR (no mouth-to-mouth) and early use of an Automated External Defibrillation (AED) improves the victim’s chance of survival from out of hospital cardiac arrest (OHCA). Community public awareness campaigns to inform on what to expect when calling 911 in a medical emergency 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.

NOTE: In pediatric cardiac arrest breathing is advised.

SaveMiHeart (SMH) has identified the following Best Practices for enhancing community response to OHCA.

**Best Practices**

- Recognition of Cardiac Arrest
- Hands-Only™ CPR Training
- AED Use
- Increasing community awareness and knowledge
- CPR training resources
- Outcome measures

**Recognition of Cardiac Arrest**

Cardiac Arrest definition

Sudden disruption with the heart’s pumping action, the heart cannot pump blood to the brain, lungs and other organs.



**Victim becomes unconscious and unresponsive**, which many times happens suddenly and often without warning.

Victim often has **abnormal breathing** pattern such as:  
**Snoring or gasping for air**

Victims may also have jerking **motions that appear seizure-like**.

Treat any victim found **unconscious with absent or abnormal breathing as having a cardiac arrest**.

Call 911, start Hands-Only™ CPR (and don't stop), send someone to get an AED if one is close by.

### **Hands-Only™ CPR Training**

Hands-Only™ CPR is *as good as* conventional CPR for the untrained bystander [1].

Hands-Only™ CPR should be the primary method taught to the community for adult CPR.

The emphasis of community CPR training is to educate and empower the untrained bystander to learn and perform bystander Hands-Only™ CPR, call 911 for Telephone assisted CPR (T-CPR) and use an AED (if available).

Critical aspects of CPR training should include:

For someone who is unconscious with absent or abnormal breathing [2]

Immediately call 911 **and** simultaneously start chest compressions.

Perform high quality chest compressions

100 - 120 compressions per minute

Depth of compression 2.5 inches (5cm)

Allow for total recoil of the chest

Send someone to retrieve an AED if one is nearby and follow instructions for using it.

Citizens trained in CPR are more likely to perform bystander CPR in their communities [3].

CPR training registries should be developed and maintained at the local community level to identify the number of CPR trained individuals in the community.

Data should include home zip code along with other demographics.

### Specific Populations

CPR training should target specific population that may have higher risk of experiencing OHCA, historically low cardiac arrest rates, or special circumstances.

#### High risk for cardiac arrest

Family and friends of people with cardiac risk factors such as hypertension, high cholesterol, diabetes, smokers, or a family history of heart disease should be trained to perform Hands-Only™ CPR and AED use.

They can be identified at physician's offices, emergency departments, or health and wellness fairs at churches and community events.

#### Historically marginalized communities

Ethnic populations and women of all backgrounds often have poorer CPR outcomes from cardiac arrest [4].

Interventions should include information and take into consideration specific cultural and language variations within the target community with major input from the local communities themselves. In the United States, these include:

- LatinX
- African American
- Arab America
- Indigenous / Native Americans

#### Older Adults

Many high-risk older adults have older caregivers and training this population is important.

Targeting older caregivers through social groups, churches, senior organizations etc to reach this population.

#### High School students



Requiring hands-only CPR training as graduation requirement is recommended. Trained students increase the number of first responders in schools and communities. Students trained in Hands-Only™ CPR often educate their families about the importance of Hands-Only™ CPR training [5].

#### Rural and high-rise apartment communities

Many have longer EMS response times due to logistics and distance [6, 7]. Identify and train specific personnel (community CPR champions) who are able to respond prior to EMS arrival. AED maps and signage may help improve just-in-time locating of AEDs.

#### Women

CPR trainings have historically used mannequins with male chests. Societal concerns of appropriateness of touching female chests can lead to hesitancy in providing chest compressions or applying an AED [8]. Consider equal proportions of training mannequins with breasts.

#### **AED (Automated External Defibrillator) Use**

Increasing and improving public access to automated external defibrillators is critical to improving OHCA survival [9].

AEDs should be placed in optimal locations where cardiac arrest is expected to happen. Consideration should also be made for placing AED in a more optimal mathematically derived location depending on local characteristics [10].

#### High density public Considerations

- Health clubs
- Sports facilities
- Airports and transportation hubs (trains, buses)
- Office complexes
- Casinos
- Schools
- Any other public or private place with larger numbers of people or high-risk populations

Ensure that location of AED is easily accessible at all hours [11]



AED should not be locked in an office.

AED should be mounted or kept in a highly visible location (by fire extinguishers or elevators are some options).

AED should be available after hours (not locked in a building).

AED need to be accessible for after school events and sporting activities.

Optimal location would allow for AED to reach the victim within 3 minutes of collapse.

High-visibility signage directing bystanders to nearest AEDs.

## AED Registry

Local AED registries should be frequently maintained and easily disseminated through common applications available to community.

Registries should provide location, accessibility and directions via GPS coordinates via cell phone technology.

Registries should identify local entity that will be responsible for appropriate battery and pads maintenance.

## **Increasing community bystander awareness and knowledge**

### Message development

Proper messaging needs to include common themes that improve knowledge, overcome perceived barriers, encourage self-efficacy & confidence, and enhance message retention.

Any message (written, verbal, video) should be developed with Diversity Equity and Inclusion guidelines to ensure messages encourage inclusion of all people within the community.

The message must teach how to recognize a cardiac arrest.

Commonly, cardiac arrest victims will have:

Abnormal breathing such as gasping or snoring respirations.

Muscle jerking that may appear like a seizure.

Any unconscious person with absent or abnormal breathing should be considered as having a cardiac arrest.

Message should address common barriers to performing bystander CPR

Fear of injury to victim from compressions or defibrillation

- Data show that very little harm if any is done if CPR is provided to a person not in cardiac arrest.
- Messaging should inform the public that when cardiac arrest occurs, the victim will die if nothing is done.
- Encourage immediate citizen action as this is the victim’s only chance of survival.

Fear of legal consequences

- Messages should include the protections that are in place for Good Samaritan laws.

Fear of infection

- Message should include assurances of low infection risk to bystanders and that for lay person bystander CPR mouth-to-mouth is no longer needed and that Hands-Only™ CPR is the preferred CPR method.

Prevalence of COVID-19 infection in victims of public OHCA are low and transmission risk to bystanders is even lower[12, 13].

Infection transmissions of any kind are low in bystander Hands-Only™ CPR.

Utilize self-efficacy techniques within messaging and provide queues to make citizens act immediately.

Examples:

- “Don’t wait to let someone else do CPR”
- “You can do Hands-Only™ CPR”
- “You are the victim’s only chance of survival”
- “You can stop the deadly heart rhythm”

Repeating ending with a simple message may improve retention.

Examples:

3 C’s 1. Check the victim, Call 911, Chest Compressions

Brief messaging and videos effective in conveying useful information to the community

Brief self-directed on-line videos have been shown to be useful in teaching Hands-Only™ and AED techniques.

Message dissemination

### Community leaders

Develop relationships with local community organizations such as local health departments, religious institution, grassroots community organizations to understand local needs and partnership with how best to serve their community

### Social Media

Utilize organizational websites, Facebook, twitter, and Instagram to disseminate links to brief videos teaching Hands-Only™ CPR and AED use.

### Op-Ed

Write an op-ed and send it to news outlets.  
Have the op-ed piece ready and send to news outlets following a news report of a cardiac arrest in the community or of a prominent individual may be particularly useful to increasing citizen awareness and knowledge.

### Earned Media

Inform the mass media of any large events centered around cardiac arrest and CPR, such as mass CPR trainings or presentations.  
Provide experts / trained speakers who can do on-camera interviews and make statements.

### Direct Mailings

Develop and distribute information about Hands-Only™ CPR and AED use through community newsletters, newspapers, and utility bills.

### Celebrity Engagement

Encourage prominent figures such as sports leaders, celebrities, community leaders, politicians and religious leaders to help distribute the message as the message may have more importance coming from these trusted members of the community.

### Cardiac arrest survivors and rescuer spokesperson



Addition of stories from cardiac arrest survivors and rescuers can have a big impact on the importance of the message as the public sees the real-life impact of improving immediate action by bystanders.

## **Resources**

American Heart Association <https://www.heart.org/> <http://handsonlycpr.org/>

American Red Cross <https://www.redcross.org/>

SaveMiHeart <https://www.savemiheart.org/>

Heartsafe Communities <https://citizencpr.org/heartsafe/>

Michigan Heart Safe Schools <https://migrc.org/patients-families/mi-heartsafe-schools/>

Downloadable Apps for Smart Devices. Free apps are available in English and Spanish from LearnCPR.org at the Apple Store, Android Market, and the Google Play Store through searching for the keyword CPR.

Survivor Network <https://suddencardiacarrest.org/>

## **Outcome measures**

Encourage local groups to submit data to Cardiac Arrest Registry to Enhance Survival (CARES) <https://mycares.net/>

Common measurements that would allow for comparisons with national statistics would include:

Report bystander CPR rates or non-response rates by community

AED registry for each community

Location

Availability

Identify person / organization responsible for maintaining AED

Reporting to larger Statewide registry

Survey community knowledge / willingness to perform Hands-Only™ CPR



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