



American
Heart
Association.

Cardiac Emergency Response Plan and Protocol Community



Table of Contents

Cardiac Emergency Response Plan	4
Purpose	4
Developing a Cardiac Emergency Response Team (CERT)	4
Automated External Defibrillators (AEDs) – Placement, Installation and Maintenance	5
Communication of CERP	7
Training in Cardiopulmonary Resuscitation (CPR) and AED Use	8
Local Emergency Medical Services (EMS) Integration with the School Plan	9
Conduct Practice Drills	10
Annual Review and Evaluation of the Plan	10
Activation of Cardiac Emergency Response Team During an Identified Cardiac Emergency ...	11
Protocol for Cardiac Emergency Response Team	12
Appendix	16

Cardiac Emergency Response Plan

(Last Reviewed: ***)

Purpose

- 1) This document provides direction and detailed guidance for responding to a sudden cardiac arrest (SCA) through a Cardiac Emergency Response Plan (CERP). This plan outlines Cardiac Emergency Response Teams (CERTs), AED maintenance and locations, and related staff training/certification. This document does not replace any local, state, or national regulations.
- 2) In the United States, it is estimated that annually 356,000 adults experience out-of-hospital cardiac arrest as well as 23,000 pediatric cardiac arrests (Mozaffarian, D, 2015; Okubo, M et al, 2020). Although approximately 90% of those people will not survive the event, the likelihood of survival increases with prompt intervention. According to the American Heart Association (AHA), early intervention that includes CPR and restoration of normal heart rhythm with the use of an AED increases the chance of survival.

1. Developing a Cardiac Emergency Response Team (CERT)

- 1) Designate one person as the Cardiac Emergency Response Team Coordinator who oversees CPR-AED program activities, training, education, and evaluation.
- 2) All individuals on CERT should have current CPR/AED training from a nationally recognized organization.
- 3) Designate one person to call 9-1-1 and direct EMS to the location of the sudden cardiac arrest (SCA).

Best Practice Considerations:

- a) Consider having the Cardiac Emergency Response Team comprise of at least 5 people or 10% of staff.
 - i. In recognition of periodic absences and overall staff turnover, a robust team of individuals trained to be part of the CERT is essential to ensure uninterrupted response activities.
- b) CERT members should be able to step away from their tasks to assist when CERP is activated.
- c) A list of these individuals and their CPR certifications should be maintained on-site in a readily accessible area.
- d) Consider medical coverage continues to be provided at the meeting or event if continued after the cardiac emergency.

Community and Workplace Considerations:

- a) Consider including individuals that are most often at the facility as members of the CERT.
- b) Consider including your organizational leadership as members of the CERT or trained in CPR and AED use.
- c) Include shared use partners and their leadership if the building or location is shared.

2. Automated External Defibrillators (AEDs) – Placement, Installation and Maintenance

- 1) Minimum recommended number of AEDs for [insert name of building or location] include inside a building and outside a building:
 - a) *Inside the building* – The number of AEDs shall be sufficient to enable a person to retrieve an AED and deliver it to any location within the building, ideally within 3 minutes of being notified of a possible cardiac emergency. AED should be clearly marked in a backpack or hard case.
 - b) *Outside the building* – The number of AEDs, either stationary or in the possession of an on-site qualified person, shall be sufficient to enable the delivery of an AED to any location outside of the building including any outside venues, ideally within 3 minutes of being notified of a possible cardiac emergency. AED should be clearly marked in a backpack or hard case.
- 2) Regularly check and maintain each AED in accordance with the AED’s operating manual and maintain a log of the maintenance activity including periods of time where the building or location will not be used for long periods of times (e.g., seasonal market locations or community centers opened only certain times of the year).
- 3) CERT coordinator should be responsible for verifying equipment readiness and maintaining maintenance activity.
- 4) Additional Resuscitation Equipment: A resuscitation kit shall be connected to the AED carrying case. The kit shall contain latex-free gloves, razor, scissors, towel, antiseptic wipes, a CPR barrier mask, and consider an extra set of AED pads.
- 5) AEDs should not be locked in an office or stored in a location that is not easily and quickly accessible at all times.
- 6) AEDs shall be accessible for responding to a cardiac emergency, during day and night in accordance with this CERP.
- 7) Each AED should have one set of AED pads connected to the device and one spare set.
- 8) Signage: All AEDs should have clear AED signage to be easily identified. These should be visible from the normal path of travel. A projecting (three-dimensional) universal AED sign shall be installed above cabinet or bracket/wall rack clearly marking the location of AED(s).
- 9) Recommend removing warning "for professional use only" on AED cabinets as AEDs provide instructions for use.
- 10) Locations of the AEDs are to be listed in the “Protocol for Cardiac Emergency Response Team” and Building Location Information, AED locations, and Maps (see appendix).

Best Practice Considerations:

- a) Back-up AEDs – One or more AEDs shall be held in reserve for use as a replacement for any AED which may be out-of-service for maintenance or other issues. The back-up AED(s) should also be available for use when traveling to off-site locations. If unable to have a backup AED, have a plan on what AED you will use if an AED is out of service.
- b) AEDs to be installed using a cabinet or bracket/wall rack approved for such purpose and be surface mount or wall recessed.
 - i. Regardless of which mount is chosen, AEDs shall be placed so that the AED’s readiness indicator faces outward.

- ii. During installation, it is important to make sure that screws, bolts, and wall anchors will not penetrate electrical wires or pipes inside the wall.
 - iii. Installation Height: Placed at an unobstructed height of forty-eight (48) inches from the floor (it may be lower) to provide optimum accessibility in compliance with American Disabilities Act (ADA). ADA Accessibility Guidelines (ADAAG) specify that objects such as automated external defibrillator wall cabinets shall not protrude more than 4 inches from the wall into walks, corridors, passageways, or aisles.
- c) Keep copies of event documentation with AED and first responder kits.
 - d) CERT coordinator should register their AED with the manufacturer and supplier to receive notifications of potential recalls or alerts.
 - e) If only adult pads are available: adult AEDs may be used on children. If the pads are too large for standard positioning without touching, Pads can be placed with one pad on the center of the chest between the nipples and the other pad on the back of the child between their shoulder blades.
 - f) If pediatric pads are available: the small pads or child key/switch will deliver a shock with a lower energy dose than the larger pads will. If a child is very small, you may need to put one pad on the child's chest and the other on the child's back.
 - g) Consider having an AED readily available during meetings or events outside the normal operating hours.
 - h) Consider posting AHA Simplified Adult BLS diagram from the AHA near AED cabinet (see appendix).

Community Considerations:

- a) Consider revising the current organizational funding priorities or plan for future funding to acquire the appropriate number of AEDs.
- b) Understand your local resources and organizations that can support your organizational efforts to prepare for and respond to an out-of-hospital cardiac arrest. Local resources can include the following:
 - o Community organizations, such as local offices of the [American Heart Association](#) or [Project Adam](#).
 - o Emergency Medical Responders such as your local fire department.
 - o Local government, such as local health department or elected officials.
- c) Regardless of the number of AEDs in place, educate as many people as possible in Hands-Only CPR (see [Training in Cardiopulmonary Resuscitation \(CPR\) and AED Use](#)).
- d) Learn more about AED maintenance and placement at: www.heart.org/AED

3. Communication of CERP

- 1) The Cardiac Emergency Response Plan (CERP) should be posted broadly in places such as (but not limited to):
 - a) Cafeteria, restrooms, health room, break room and in all offices or spaces.
 - b) Adjacent to each AED.
 - c) Adjacent to each public telephone.
 - d) In the gym, near the swimming pool, and in all other indoor locations where athletic activities take place.
 - e) At other strategic locations, including outdoor venues and facilities.
 - f) Attached to all portable AEDs.

- 2) The Cardiac Emergency Response Plan should be distributed to:
 - a) The CERP should be made available to all staff (including administrators and management) annually and when updates are made.
 - b) All staff or volunteers (as applicable) should be educated on the Cardiac Emergency Response Plan in their site on an annual basis.
 - c) New staff members or volunteers (as applicable) should receive CERP in their orientation materials.

Best Practice Considerations:

- a) A copy of the Cardiac Emergency Response Protocol should be provided to any organization using the building or location. The organization using the building or location should then adapt the CERP to the needs of their group/organization.
- b) Consider having a plan in place for after-hour events or off-site meetings or events.
- c) Consider a modified Cardiac Emergency Response Protocol which takes into consideration the nature and extent of the use and shall meet the spirit and intent of this Protocol to ensure that preparations are made to enable a quick and effective response to a cardiac emergency on-site after standard business hours.
- d) A building or location user or renter should have their own plan, especially those using the building or location after normal operation hours.

Community Considerations:

- a) Consider sharing the CERP with volunteers.
- b) Educate as many people as possible in Hands-Only CPR (which can be used for teens and adults). If feasible, include information on rescue breathing and/or conventional CPR (see [Training in Cardiopulmonary Resuscitation \(CPR\) and AED Use](#)).
- c) Most people that are not medically trained are not used to responding to emergencies. Education on Hands-Only CPR, sharing the plan, and practice is vital.

4. Training in Cardiopulmonary Resuscitation (CPR) and AED Use

- 1) Staff training
 - a) A sufficient number of staff or volunteers (in addition to the medical providers or safety coordinator) should be trained in cardiopulmonary resuscitation (CPR) and in the use of an AED. It is recommended that at a minimum, at least 10% of staff or volunteers (as applicable) should have current CPR/AED certification. Training shall be renewed at least every two years. The absolute minimum number of people trained is 3 to ensure that CPR is initiated, AED is retrieved, and 911 is notified.
 - b) The organization should designate the person responsible for coordinating staff training and the medical contact for AEDs, if available.
 - c) Training may be traditional classroom, on-line or blended instruction but should include cognitive learning, hands-on practice, and testing.
 - i) Consult local regulations to ensure your plan meets any additional local requirements.
 - d) All staff or volunteers (if appropriate), regardless of if they are a CERT member, should receive annual training on SCA and understand how to recognize a cardiac arrest, how to initiate the response team, and where the AEDs are located.

- 2) Cardiac Emergency Response Drills:
 - a) Cardiac Emergency Response Drills are an essential component of this Plan. The building or location should perform at least 2 successful Cardiac Emergency Response Drills each year with the participation of staff, safety officials and other targeted responders. A successful Cardiac Emergency Response Drill is defined as full and successful completion of the Drill in 5 minutes or less. One drill may include a tabletop exercise with all the staff and CERP members present.
 - b) Include as many other people as possible (staff, volunteers, members, clients, etc.) who can receive additional CPR/AED education and awareness of the plan.

Best Practice Considerations:

- a) Consider utilizing a checklist outlining response steps to ensure all actions are being completed. An observer can time the event and check off steps as they occur.
- b) Save time after the drill to debrief with staff about how the response can be improved, if the CERP needs to be edited, and that the team feels confident in a real response.

Community Considerations:

- a) Provide training on CPR and AED use for your organizational leadership and individuals that are most often at the facility.

- b) Understand your local resources and organizations that can support your organizational efforts to prepare for and respond to an out-of-hospital cardiac arrest. This is most important when resources are limited. Local resources can include the following:
- Community organizations, such as local offices of the [American Heart Association](#) or [Project Adam](#), or your local university.
 - Emergency Medical Responders such as your local fire department.
 - Local government, such as local health department or elected officials.
 - Paid training and certification can be found at www.heart.org/cpr
- c) Regardless of the number of people trained and certified, all staff (and volunteers when appropriate), should receive annual education on sudden cardiac arrest and how to recognize a cardiac arrest, how to initiate the response team, and where the AEDs in the building are located.

5. Local Emergency Medical Services (EMS) Integration with the School Plan

- 1) Provide a copy of this Plan to local emergency response and dispatch agencies (e.g., the 9-1-1 response system), which may include local police and fire departments and local Emergency Medical Services (EMS).
- 2) The development and implementation of the Cardiac Emergency Response Plan shall be coordinated with the local EMS Agency, organization safety officials, on-site first responders, organization leadership, onsite medical staff, and/or community medical team.
- 3) Work with local emergency response agencies to 1) coordinate this Plan with the local emergency response system and 2) to inform local emergency response system of the number and location of AEDs in the building or location.

Best Practice Considerations:

- a) When possible, invite local EMS and first responders to the Cardiac Emergency Response Drills. They can give meaningful feedback and provide information about realistic situations.
- b) Speak with your local EMS team to see if training supplies are available for education and to use for the CERP drill.

Community Considerations:

Creating or strengthening partnerships with local emergency medical services will enhance all areas of your organization's preparation and response to an out-of-hospital cardiac arrest. If you are not familiar with your local emergency response system, you can start by contacting your closest fire department or local public health department.

6. Conduct Practice Drills

- 1) Please refer to the CERP Drill section on the [American Heart Association page](#) for more information (see appendix).

7. Annual Review and Evaluation of the Plan

- 1) Conduct an annual internal review of the Cardiac Emergency Response Plan (CERP). The annual review should focus on ways to improve the response process, to include:
 - a) A *post-event review* following an event. This includes review of existing documentation for any identified cardiac emergency that occurred at the location or at any sanctioned function. There should be a designated person responsible for establishing the documentation process.
- 2) Post-event documentation and action shall include the following:
 - a) A contact list of individuals to be notified in case of a cardiac emergency.
 - b) Determine the procedures for the release of information regarding the cardiac emergency.
 - c) Date, time, and location of the cardiac emergency and the steps taken to respond to the cardiac emergency.
 - d) The identification of the person(s) who responded to the emergency.
 - e) The outcome of the cardiac emergency. This shall include but not be limited to a summary of the presumed medical condition of the person who experienced the cardiac emergency to the extent that the information is publicly available. Personal identifiers should not be collected unless the information is publicly available.
 - f) An evaluation of whether the CERP was sufficient to enable an appropriate response to the specific cardiac emergency. The review shall include recommendations for improvements to the Plan and in its implementation if the plan was not optimally suited for the specific incident. The post-event review may include discussions with medical personnel to help in the debriefing process and to address any concerns regarding on-site medical management and coordination.
 - g) An evaluation of the debriefing process for responders and post-event support. This shall include the identification of aftercare services including aftercare services and crisis counselors.
 - h) A review of the documentation for all Cardiac Emergency Response Drills performed during the year. Consider pre-established Drill report forms to be completed by all responders.
 - i) A determination, at least annually, as to whether additions, changes or modifications to the Plan are needed. Reasons for a change in the Plan may result from a change in established guidelines, an internal review following an actual cardiac emergency, or from changes in buildings or locations, equipment, processes, technology, administration, or personnel.

Best Practice Considerations:

- a) Consider events or meetings after normal operating hours.

8. Activation of Cardiac Emergency Response Team During an Identified Cardiac Emergency

1. Activate the Cardiac Emergency Response Team immediately when a cardiac emergency is suspected.
2. The Protocol for responding to a cardiac emergency should be posted and readily accessible to anyone.

Best Practice Considerations:

- a) All Cardiac Emergency Response Team members should be able to step away from their tasks without risking harm to others.
- b) All members should be alerted uniformly via overhead page, radio, text, or phone.

References

Mozaffarian, D., Benjamin, E. J., Go, A. S., Arnett, D. K., Blaha, M. J., Cushman, M., ... & Turner, M. B. (2015). Heart disease and stroke statistics—2015 update: a report from the American Heart Association. *circulation*, *131*(4), e29–e322.

Okubo, M., Chan, H. K., Callaway, C. W., Mann, N. C., & Wang, H. E. (2020). Characteristics of pediatric out-of-hospital cardiac arrest in the United States. *Resuscitation*, *153*, 227–233

Protocol for Cardiac Emergency Response Team

[Organization, building or location name]

Sudden cardiac arrest events can vary greatly. All staff and Cardiac Emergency Response Team (CERT) members must be prepared to perform the duties outlined below. Immediate action is crucial in order to successfully respond to a cardiac emergency. Consideration should be given to obtaining on-site ambulance coverage for high-risk athletic events. One should also identify the closest appropriate medical facility that is equipped in advanced cardiac care.

Follow these steps in responding to a suspected cardiac emergency:

- 1) Recognize the following signs of sudden cardiac arrest and act quickly in the event of one or more of the following:
 - a. The person is not moving, unresponsive, or unconscious.
 - b. The person is not breathing normally (has irregular breaths, gasping or gurgling, or is not breathing at all).
 - c. The person appears to be having a seizure or is experiencing convulsion-like activity. Cardiac arrest victims commonly appear to be having convulsions. If it's a true seizure, the AED will not deliver a shock.
 - d. If the person received a blunt blow to the chest, this can cause cardiac arrest, a condition called commotio cordis. The person may have the signs of cardiac arrest described above and is treated the same.

- 2) Facilitate immediate access to professional medical help:
 - a. Call 9-1-1 as soon as you suspect a sudden cardiac arrest. Provide the building or location address, cross streets, and patient's condition. Remain on the phone with 9-1-1. (Bring your mobile phone to the patient's side and put on speaker, if possible.) Give the exact location and provide the recommended route for ambulances to enter and exit and escort the victim.
 - b. Immediately contact the members of the Cardiac Emergency Response Team (CERT) using your organization's designated communication system (i.e. walkie talkies, overhead page, phones).
 - c. Give the exact location of the emergency (office or room number, cafeteria, etc.). Be sure to let EMS know which door to enter. Assign someone to go to that door to wait for and flag down EMS responders and escort them to the exact location of the patient.
 - d. If you are a CERT member, proceed immediately to the scene of the cardiac emergency.
 - e. The closest team member should retrieve the automated external defibrillator (AED) in route to the scene and leave the AED cabinet door open as a signal that the AED was retrieved.

3) Start CPR

- a. Begin continuous chest compressions and have someone retrieve the AED if not at the scene. Referred to simplified adult BLS graphic below.
 - i. Press hard and fast in the center of the chest, at 100-120 compressions per minute. (Faster than once per second, but slower than twice per second.)
Use 2 hands: The heel of one hand and the other hand on top (or one hand for children under 8 years old), pushing to a depth at least 2 inches (or 1/3rd the depth of the chest for children under 8 years old). Follow the 9-1-1 telecommunicator's instructions, if provided.
 - ii. If you are able and comfortable giving rescue breaths, please use a barrier and provide 2 rescue breaths after 30 compressions.

4) Use the nearest AED:

- a. When the AED is brought to the patient's side, press the power-on button, and attach the pads to the patient as shown in the diagram on the pads. Then follow the AED's audio and visual instructions. If the person needs to be shocked to restore a normal heart rhythm, the AED will deliver one or more shocks. Be familiar with your school's AED and if you will need to press the shock button or if it will deliver automatically.
 - i. Note: The AED will only deliver shocks if needed; if no shock is needed, no shock will be delivered.
- b. Minimize interruptions of compressions when placing AED pads to patient's bare chest.
- c. Continue CPR until the patient is responsive or a professional responder arrives and takes over. Make sure to rotate persons doing compression to avoid fatigue.

5) Transition care to EMS.

- a. Once EMS arrives, there should be a clear transition of care from the CERT to EMS.
- b. Team focus should now be on assisting EMS safely out of the building or location.
- c. Provide EMS a copy of the patient's emergency information sheet.

6) Action to be taken by administrative staff:

- a. Confirm the exact location and the condition of the patient.
- b. Activate the Cardiac Emergency Response Team and give the exact location.
- c. Confirm that the Cardiac Emergency Response Team has responded.
- d. Confirm that 9-1-1 was called. If not, call 9-1-1 immediately.
- e. Assign a staff member to direct EMS to the scene.
- f. Perform "Crowd Control" – directing others away from the scene.
- g. Notify other staff: safety director, safety manager, or leadership, etc.
- h. Consider medical coverage to continue to be provided at the athletic event if continued after the event.
- i. Consider having people in the location stay in place (i.e. delaying area traffic, services provided in the area, or other changes) to facilitate CPR and EMS functions.

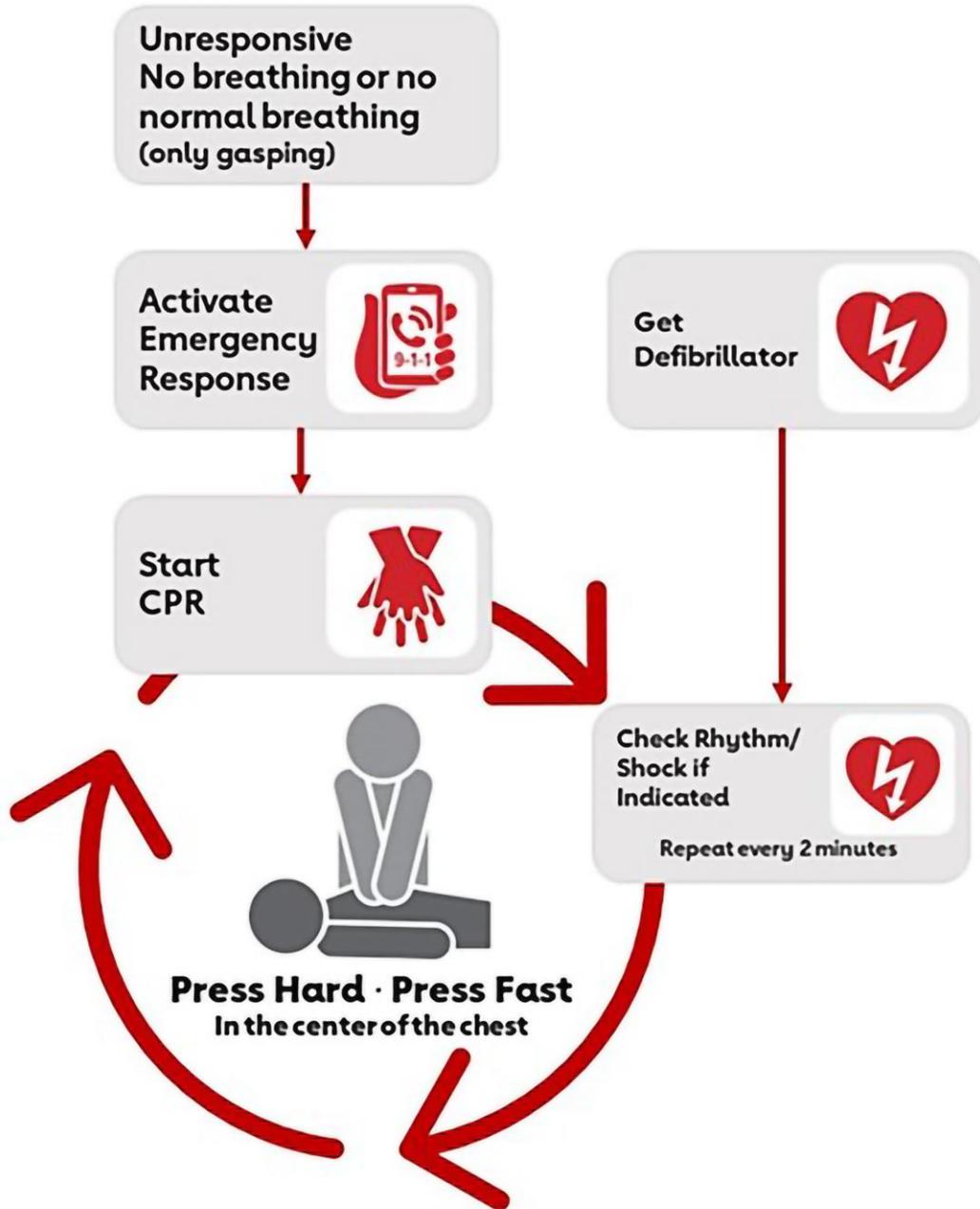
- j. Designate people to cover the duties of the CPR responders.
- k. Copy the patient's emergency information for EMS.
- l. Notify the patient's emergency contact (parent/guardian, spouse, etc.).
- m. Notify staff, volunteers, members, clients, and other individuals in the location when to return to the normal schedule or services.
- n. Contact organization leadership, human resources, or other management.

7) Debrief

- a. Discuss the outcome of the cardiac emergency. This shall include but not be limited to a summary of the presumed medical condition of the person who experienced the cardiac emergency to the extent that the information is publicly available. Personal identifiers should not be collected unless the information is publicly available.
- b. An evaluation of whether the CERP was sufficient to enable an appropriate response to the specific cardiac emergency. The review shall include recommendations for improvements to the Plan and in its implementation if the plan was not optimally suited for the specific incident. The post-event review may include discussions with medical personnel to help in the debriefing process and to address any concerns regarding on-site medical management and coordination.
- c. An evaluation of the debriefing process for responders and post-event support. This shall include the identification of aftercare services including aftercare services and crisis counselors.

IMPORTANT: This is a resource document intended for use in formulating a plan for adoption by a school/school district. Medical and legal counsel for the school/school district should review this Plan before implementation. It is the responsibility of the school/school district to ensure that the Cardiac Emergency Response Plan as adopted is consistent with local, state, and federal law.

Simplified Adult BLS



Appendix

[CERP Implementation Guide](#)

[CERP Resources by Evidence-based Core Element](#)