



Standard Operating Guidelines

SOG#: A102 – Site Automatic External Defibrillator Program

Created: 11/01/2012, Updated: June 8, 2020, Version 2.0

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Purpose

Prompt access to and use of an Automatic External Defibrillator (AED) on a cardiac arrest victim is a critical to survival. Use of an AED within three minutes of a witnessed cardiac arrest significantly increases the chance of survival. Work at emergency response and removal sites involves varying levels of chemical protective clothing and respirators in extreme temperatures and conditions. These sites are often in remote locations where access to EMS and an AED would be delayed. The Emergency Response, Removal, Prevention and Preparedness Branch (ERRPPB) maintains three (3) AED units for Superfund Removal Site Work. This operational guideline is based on the program requirements found in the current version of the *SNAFC AED Program Handbook*.

Program Coordination

The Branch Safety Officer is responsible for the ERRPPB AED program implementation under the direction of the Region 4 Safety, Health and Environmental Program (SHEMP) Manager. The Branch Safety Officer will assure that all required inspections are performed and submitted to the Region 4 SHEMP Manager. The ERRPPB AED Program will follow the requirements found in the current version of the *SNAFC AED Program Handbook*.

Approved ERRPB Personnel

ERRPPB personnel who meet the following requirements will be approved to check-out and use AED units(s):

- Met the requirements specified in the Training Section of this Standard Operating Guideline.
- Approved by Branch Management to checkout equipment from the EPA ERRPPB Equipment Regional Readiness Center.

AED Equipment and Checkout Procedure

Only General Services Administration approved AED equipment will be purchased and used in the field. ERRPPB maintains the *Philips HeartStart Onsite (HS1)™* unit. The United States Food and Drug Administration (FDA) approved this particular AED unit for use without a licensed physician's prescription.

Approved ERRPPB personnel may reserve and checkout the AED equipment following established ERRPPB Equipment Checkout Procedures. The ERRPPB Equipment Manager and the Regional Readiness Center (RRC) Staff shall be responsible for equipment maintenance and tracking.

The AED unit shall be under the control of the approved ERRPPB employee who checked out the equipment. This individual will assure that equipment is maintained, inspected, and available for use in the field.

In addition to the AED unit, the following will be provided when the AED is taken into the field:

- Extra set of adult electrode pads
- CPR Barrier Device
- Nitrile exam gloves
- Scissors (Trauma Shears)
- Razor
- Towel
- Hand sanitizer
- Biohazard Disposal Bags
- FOH AED Program Forms
 - Post Event Checklist Form
 - Event Documentation Form
 - Mock Cardiac Arrest Drill Form

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- Practice Session Tracking Form

Maintenance and Inspections

All AED Equipment will be inspected and maintained following the manufacturer's instructions.

The EPA ERRPPB RRC staff will complete the monthly inspections of the units stored there.

The ERRPPB employee who checked out the unit(s) from the RRC will assure that daily checks and monthly inspections occur on the unit(s) while under their control. The Regional Readiness Center staff or the Branch Safety Officer will send out reminder notifications when monthly inspections are due.

All inspections and daily checks will be documented using the inspection tag attached to the unit.

Equipment that fails a monthly inspection or a daily check will be tagged and taken out of service. The individual taking the equipment out of service must notify the Branch Safety Officer and the Equipment Manager immediately.

Training

All ERRPPB Field Personnel will maintain current (completed within the prior 24 months) CPR and AED training certification/completion.

The approved CPR/AED/First Aid Training Providers are:

- American Red Cross
- American Heart Association
- Health & Safety Institute
- National Safety Council

All personnel who checkout an AED unit will be provided refresher training on the specific unit including the following:

- Electrode Pad Replacement
- Battery Replacement
- Inspection Procedures/Requirements
- Download Procedures

A minimum of one trained AED user should be on site at all times during normal operating hours. The AED user can be any Site personnel who have completed the approved CPR/AED training.

All personnel on-site, including those not trained in AED use, shall be trained on the location of the AED and the site-specific medical emergency response plan which should include a general awareness briefing on the AED.

A training video on the HeartStart OnSite AED is found at <https://www.youtube.com/watch?v=z1cyRNgzyrQ>.

Mock AED Training Drills

When the AED unit is deployed in the field, mock AED emergency drill should occur. The specifics of the drill, including the frequency, must be listed in the site-specific health and safety plan. **During a drill, an AED unit shall not be used on a live person.** This is a simulated drill and does not need any special equipment or supplies. A drill should include the following:

- Simulated call to 911;

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- Notification to the Command Post that a person is unconscious and needs the AED, beginning and ending the notification with “this is a drill” or “exercise message”;
- Simulated response with the AED unit to the unconscious victim (**NOTE – During a drill, the AED shall not be used on a live person**).

Site-Specific Health and Safety Plans

When an AED unit is deployed in the field, the following information must be listed in the site-specific health and plan or in other site documents:

- AED Serial Number
- AED location on site
- Trained AED Response Team Members on site
- AED Emergency Response Plan
- Inspection/Daily Checks frequency and criteria
- AED Mock Emergency Drill Information

Hospital and Local Emergency Response Organizations

For all emergency and removal sites, the local hospital with emergency room services will be identified. Contact and location information, as well as maps or directions will be inserted in the site-specific health and safety plan. The map and directions will be posted or otherwise made available on site. It is recommended that the OSC, or their designee, contact the local emergency response organizations (Fire, EMS, HAZMAT and EMA) and provide them with a summary of site hazards, planned operations and that an AED is located on site.

Notification of an Emergency

For all medical emergencies, call 911. The following information should be given to the 911 Operator:

- Location of medical emergency;
- Nature of emergency;
- Gender and approximate age of victim;
- Victim’s responsiveness;
- CPR status; and
- AED status.

Emergency Procedures

The AED shall only be applied to victims who are unconscious and not breathing normally.

Before applying the AED, responders will assess the victim for unresponsiveness, call for help (call 911), and check for breathing. Additionally, responders must assess the area for additional hazards (e.g. chemical, electrical, physical, etc.) to determine if the victim needs to be moved to a safer location prior to using the AED. If the victim is not breathing and is in a safe area, the responder shall begin CPR. Following arrival of the AED unit, responders will stop CPR and utilize the AED.

Use of the AED and CPR should continue, as appropriate, during emergency care, until the patient resumes pulse and respiration, and/or local emergency medical services (EMS) arrive at the scene and assume responsibility for emergency care of the patient.



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See Appendix A for the Standing Order and Adult AED/CPR Treatment Algorithm for the Lay Responder.

Reporting Procedures

Once the victim is in the care of EMS, the AED unit shall be immediately secured and taken out of service. The following shall be completed before the unit may be placed back into service:

- Immediately notify Branch Management and the Branch Safety Officer.
- Clean and disinfect the AED unit as needed.
- Attached the IR download cable to a computer with the AED Download Software and download the Event Data from the AED unit in accordance with the manufacture's instruction.
- Complete the *Post Event Checklist* and the *Event Documentation Form* (see Appendix C).
- Send the completed *Event Documentation Form* along with the Event Data downloaded from the AED unit to receiving hospital if possible.
- Restock gloves, razor, barrier device, etc. as needed.
- Install a new set of electrode pads.
- Remove the battery and reinstall. If the ready light on the unit is not blinking after reinstalling the battery, install a new battery.
- Contact EPA ERRPB Regional Readiness Center and instruct them to send a spare set of electrode pads and/or a new battery (if necessary).
- Complete a monthly inspection. If the AED unit passes the inspection, place the unit back into service. A unit may be placed back in-service with only one set of pads and/or one battery provided the ERRPB Regional Readiness Center staff is sending replacements.



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Appendix A

AED Standing Orders

(Adapted from the *SNAFC AED Program Manual*)

Adult AED/CPR Treatment Algorithm for the Lay Responder (Adapted from the *2010 American Heart Association Guidelines*)



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AED Standing Orders

Persons on the scene will:

- **Shout for help** to alert nearby coworkers and the AED Training Responders.
- Direct someone to call **Emergency Medical Services** and inform them of the location and the nature of the emergency.
- Direct someone to notify all **On-Site Medical Personnel** (if applicable); inform them of the location and nature of the emergency.
- Direct someone to meet all **Emergency Responders** and direct to the victim.
- Begin any necessary **emergency HAZMAT decontamination** procedures. Remember, it is better to be contaminated and alive as opposed to decontaminated and dead. Only perform necessary lifesaving/protecting DECON procedures. Prompt CPR and AED use are paramount.
- Begin **CPR** if trained.

AED Responders will:

- Obtain the closest AED unit and proceed with it to the emergency site.
- All other AED responders will go directly to the site of the emergency.
- Follow the **Emergency Site Protocol**:
 - Verify that Emergency Medical Services have been called.
 - Assess the safety of the situation and environment.
 - Use Universal Precautions.
 - Assess the victim – assess responsiveness; tap or gently shake the victim and shout, “Are you OK?”
- IF AED use is indicated, the AED trained personnel will administer the AED and CPR according to established protocols (see the AED Treatment Algorithm that follows) until local Emergency Response Personnel arrive and assume care of the victim.

Post Event Guidelines:

- Ensure Universal Precautions are used when staff disposes of event-related waste.
- Place any contaminated items in a red biohazard bag for disposal.

After the victim care has been appropriately transferred to local medical professionals, follow the steps in the *Post Event Checklist* (see Appendix C) for further instructions.



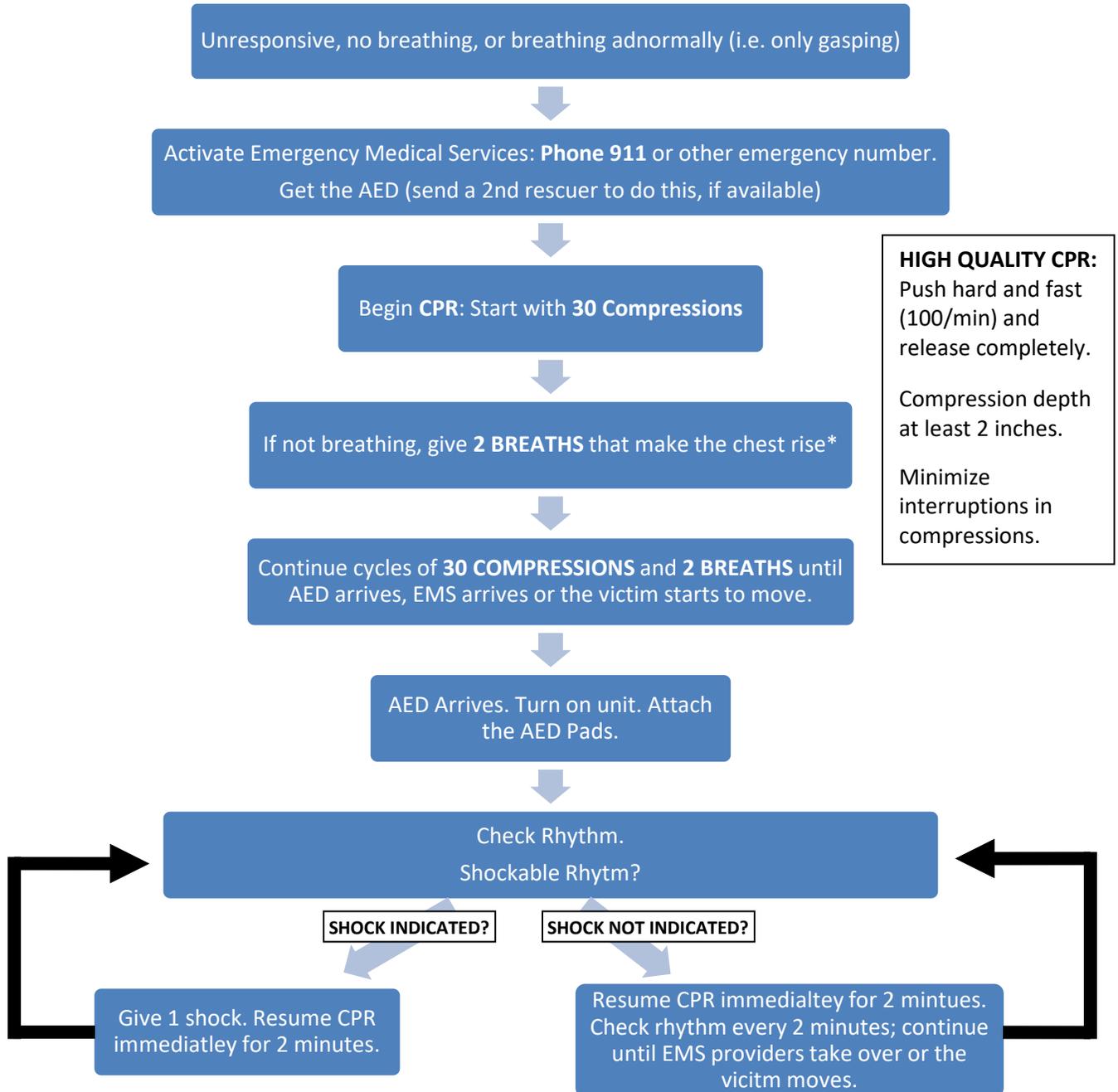
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Automated External Defibrillation (AED) Adult Treatment Algorithm for the Lay Responder



* if unable/unwilling to provide rescue breaths, provide **Hands Only CPR** consisting of chest compressions at the rate of 100/min

Adapted from the 2010 American Heart Association Guidelines

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Appendix B

Branch AED Quick Guide



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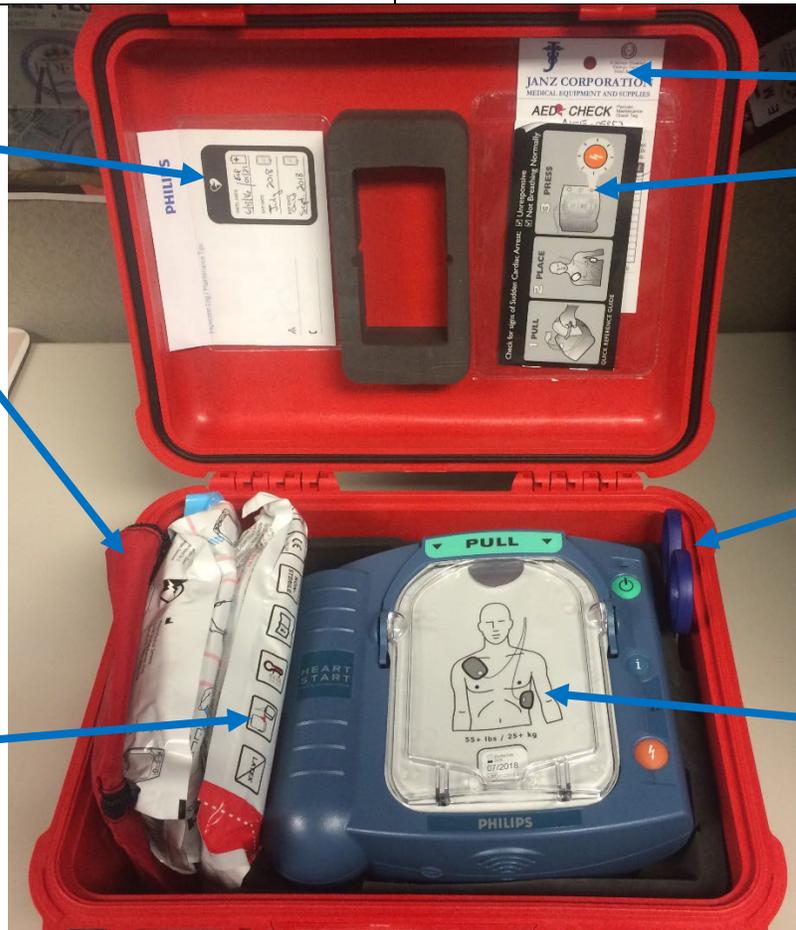
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Branch AED Equipment

PHILLIPS HEARTSTART ONSITE DEFIBILLATOR (AED M5066A)

Branch maintains 3 units at the RRC

- Unit #1:
 - EPA Decal#: SK4126
 - Serial #: A15F-09952
- Unit #2:
 - EPA Decal#: SK4127
 - Serial #: A15F-09658
- Unit #1:
 - EPA Decal#: SK4128
 - Serial #: A15H-05743



Electro-Pads and Battery Expiration Information

Equipment Pouch w/ towel, biowaste bag, face shield, spare gloves

Spare Adult Electro-Pads

Inspection Tag

Quick Guide

Scissors

AED Unit



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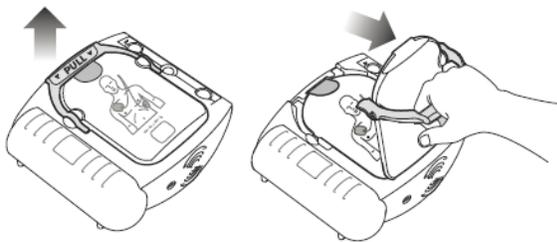
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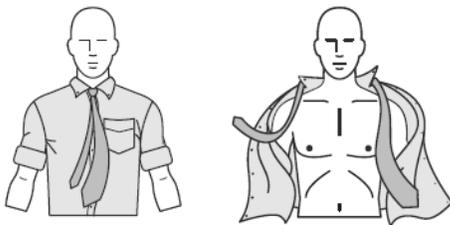


STEP 1: PULL THE GREEN HANDLE

Turn on the HeartStart by pulling the SMART Pads Cartridge's green handle.* Remove the hard cover from the pads cartridge and set it aside. Remain calm and follow the HeartStart's instructions.



The HeartStart starts by directing you to remove all clothes from the patient's chest. If necessary, rip or cut off the clothing to bare the person's chest



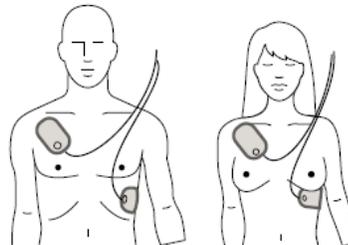
STEP 2: PLACE THE PADS

Pull the tab at the top of the pads cartridge to peel off the film seal. Inside are two adhesive pads on a plastic liner. Remove the pads from the cartridge.



Peel one pad off the liner. Place the pad on the patient's bare skin, exactly as shown in the picture on the pad. Press the pad down firmly. Then repeat this with the other pad. Be sure the pads have been removed from the liner before placing them.

Where to place pads on adults and children over 25 kg/55 pounds or 8 years old (anterior-anterior).



Where to place pads on infants or children under 25 kg/55 pounds or 8 years old (anterior-posterior).





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STEP 3: PRESS THE SHOCK BUTTON

As soon as the HeartStart detects that the pads are attached to the patient, it begins analyzing the patient's heart rhythm. It tells you that no one should be touching the patient, and the Caution light  begins flashing as a reminder.

If a shock is needed:

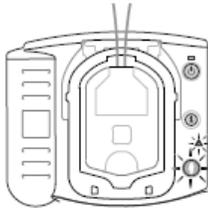
The Caution light  goes from flashing to solid, the orange Shock button  starts flashing, and the defibrillator tells you to press the flashing orange button. Before you press the button, make sure no one is touching the patient. When you press the Shock button, the defibrillator tells you that the shock has been delivered. Then the HeartStart tells you it is safe to touch the patient, instructs you to begin CPR, and invites you to press the flashing blue i-button  for CPR Coaching if desired.

If a shock is not needed:

The HeartStart tells you it is safe to touch the patient and instructs you to perform CPR if needed. (If CPR is not needed – for example, if the patient is moving or regaining consciousness – follow your local protocol until emergency medical personnel arrive.) Then the HeartStart invites you to press the flashing blue i-button  for CPR Coaching, if desired.

For CPR Coaching:

Press the flashing blue i-button  during the first 30 seconds of the patient care pause to activate CPR Coaching.* (If the Infant/Child SMART Pads Cartridge is inserted, CPR Coaching will provide coaching for infant/child CPR.) When the pause is over, the defibrillator tells you to stop CPR, so it can analyze the patient's heart rhythm. The motion caused by CPR can interfere with analysis, so be sure to stop all motion when instructed.





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Appendix C

AED Program Forms

1. Post Event Checklist
 - Use to aid with completion of the *Event Documentation Form* and return the AED to service after use.
2. Event Documentation Form
 - Use to document any situation in which an AED unit is applied to a victim.
 - Keep a copy of the completed forms with the Health and Safety Plan. Send the original to the Region 4 SHEMP Manager when completed.
3. Mock Cardiac Arrest Drill Form
 - Use as an example checklist for mock cardiac arrest drill.
4. Periodic Practice Session Tracking Form
 - Used to document periodic practice sessions and attendance.

POST-EVENT PROTOCOL CHECKLIST

Following a Sudden Cardiac Arrest (SCA) event, use of the AED and transfer of the victim from the site, complete the following checklist:

- Assure Agency management has the appropriate information to notify victim's family of the event.
 - Provide the name and location of the hospital where the victim was transported (if available)
- By close of business of the same day, notify the FOH AED Program Staff of event by phone or fax. See **QUICK CONTACTS** under **PROTOCOL** tab for current numbers.
- Check with those involved for any immediate need for support. Contact the Employee Assistance Program provider to initiate support intervention, as necessary.
- Complete the "**Event Documentation Form**" with as much information as possible including the contact information for all responders and witnesses.
 - Fax the completed form to the FOH AED Program Staff.
 - See **QUICK CONTACTS** under the **PROTOCOL** tab for current contact information.
- Transmit the AED Event Data and a legible copy of "**Event Documentation Form**" to the FOH AED Program Staff by a rapid, traceable means.
 - For AED equipment utilizing a data card, please remove the used data card and replace with a spare card.
 - For AED equipment utilizing an internal memory, Agency may request a loaner unit from the FOH AED Program while AED event data is retrieved and the Agency unit is returned.
 - See **QUICK CONTACTS** under the **PROTOCOL** tab for current shipping information.
- Order supplies needed to replace those used during the course of the event. Use the "**AED Supply Order Form**" to procure supplies from FOH AED Program. Mark "Event Replacement" on the Order Form. Fax with "**Event Documentation Form**" or include with AED Unit/ data card.
- If any AED Responders had exposure to the victim's body fluids, including contact with blood or vomit without protection of mask or gloves, please initiate follow-up as prescribed in Agency's Bloodborne Pathogens Program.
- Complete any requirements for unusual or emergency events as required by your agency.

EVENT DOCUMENTATION FORM

Please fax this completed form to the FOH AED Program Staff. Then send the AED Data* by a rapid, traceable means, to: FOH AED Program Staff. See **QUICK CONTACTS** under the **PROTOCOL** tab for current contact information

NOTE: Complete as much information as possible. To protect the privacy of the people involved, do not email Personally Identifiable Information (PII).

***Please contact FOH AED Program for instructions on how to retrieve and send the AED Data from your specific unit.**

Date of Event: _____

Location of Event: _____

(complete address & location with the facility) _____

Victim's Name: _____

Gender: M F Age: _____

Victim Is: A Visitor
 An Employee of your Agency
 An Employee of another Agency
(which agency): _____

Description of victim's condition prior to event if known: _____

Event Witnessed: No Yes

Names of Witnesses:

if available _____



Names of Responders: _____
(include phone numbers) _____

CPR attempted: No Yes

Shock Indicated: No Yes

Patient Outcome at site: Return of pulse & breathing
 Return of pulse with no breathing
 No return of pulse or breathing
 Became responsive
 Remained unresponsive

TIME of RESPONSE

(If exact times are not available please approximate time between events.)

ENTER TIMES

Witness/Discovery of Victim: _____

EMS Notified: _____

Call Received by AED Responder: _____

AED Responder Arrival on Scene: _____

CPR started: _____

AED Applied: _____

First Defibrillation: _____

EMS Arrival: _____

Patient Transported: _____

Name of facility (if known) patient transported to: _____

Patient outcome (if known) after transport: _____

AED Program Staff notified: _____
(enter date and time notified)

Responding Organization: _____

Date: _____

MOCK CARDIAC ARREST DRILL FORM

Use as a checklist for each mock cardiac arrest drill (1st 30 day drill and annual mock drill).

Agency Name: _____

Date and Time: _____

Location of Drill: _____

Number of Responders: _____

Site Coordinator Name: _____

Signature: _____

Phone: _____

Email: _____

Equipment for Mock Drill

- AED trainer set to a shockable rhythm
- Manikin
- Manikin face shield or other barrier device
- Stopwatch or watch with a second hand
- Attachment 5 from Protocol

Mock Drill Instructions

1. Locate specific site to perform mock arrest (vary this location each drill).
2. Place manikin and mask on floor with AED trainer nearby.
3. Notify employee near by to activate the emergency response team and state clearly.
“This is a mock cardiac arrest drill for training purposes only”

4. Start timer _____ (00:00)

Time Elapsed to:

_____ Notification to employee of the emergency

_____ First AED Responder present

_____ CPR Begun

_____ AED unit arrives

_____ AED /Trainer unit placed on victim and turned on

_____ First Shock given

5. Stop timer _____.

Assessment of Drill

Yes No Were the Standing Orders of the PROTOCOL followed?

Yes No Was the response time within three (3) minutes? If no, please explain:

Please fax this completed form to your FOH AED Program at 303-236-0093.

Note: If the drill exceeded a 3 minute response time, please review your protocol immediately and run a second drill. Please fax the results of both drills to the number above.

Responder Names:

Completed form is to be returned to FOH AED Program Staff.
See **QUICK CONTACTS** under **PROTOCOL** tab for current contact information.

