Purpose
An automated external defibrillator (AED) is used to treat an individual who experiences symptoms of sudden cardiac arrest, has no pulse, is unresponsive and not breathing or not breathing normally. The AED for this site/school is a HeartStart FRx manufactured by Philips. This AED is self-testing, battery-operated, and rescue-ready in a cardiac emergency. The HeartStart FRx AED automatically analyzes the electrocardiogram, after the electrodes (pads) are applied to the victim’s chest. If a shockable rhythm is detected, the AED will charge to the appropriate energy level, advise the operator to deliver a shock, provide audible prompts and instructions to assist the rescuer with cardiopulmonary resuscitation (CPR) and operation of the AED.

AED Infant/Child Key
The AED infant/child key must be used for individuals under the age of eight or under 55 pounds. When the infant/child key is inserted into the slot at the top center of the front panel of the defibrillator and once the defibrillator is turned on it will announce “Infant/Child Mode”. The AED automatically reduces the energy from 150 joules to 50 joules. If the infant/child key is removed during use, the AED will announce “Adult Mode” and any shocks delivered thereafter would be at adult energy. This will alert the user to replace the infant/child key before continuing usage on the individual, if under the age of eight or under 55 pounds. The rescue should not be delayed to determine the victim’s exact age or weight.

Fast Response Resuscitation Kit with the AED
The AED will have one set of defibrillation Pads II that may be connected to the device and one spare set of pads with the AED. One resuscitation kit will be stored with the AED. The resuscitation kit contains:
1. Trauma scissors — for cutting the victim’s clothes if needed;
2. Disposable gloves (2 pairs, latex-free) — to protect the user;
3. A disposable razor — to shave the chest if hair prevents good pads contact;
4. A pocket mask or face shield — to protect the user;
5. A towel or absorbent wipes — to dry the victim's skin for good pads contact; and,
6. Infant/Child Key.

AED Location - Wall cabinet
The AED will be placed in a wall cabinet and located in an area allowing the device to be easily accessed. The wall cabinet’s alarm will be set to when the door is open.

Authorized AED Users and Training
The AED is intended to be used by individuals who have been trained in its operation. Authorized AED users are individuals qualified by completing a nationally recognized training program within the previous two years in CPR and use of AED; e.g., American Heart Association and American Red Cross.

Responsibilities
Medical Advisor
1. Provide medical direction for AED use.
2. Review and approve emergency procedures for CPR and use of AED.
3. Evaluate post-event incident report forms.

School Principal
1. Designate someone to:
   a. Maintain records of AED training, inspection, and scheduled maintenance;
   b. Clean the AED case post-resuscitation and order replacement supplies; and
   c. Contact the manufacturer if the AED is rendered unusable for replacement.
2. Designate a minimum of two (2) employees, in addition to the school nurse, to serve as an approved AED user and First Responder.
3. Assure all staff members are trained in the school’s emergency response protocol.
4. Review training records annually.

First Person on the Scene
1. Stay calm and overview scene for safe entry.
Automated External Defibrillator (AED) Guidelines – Philips HeartStart FRx

2. Determine basic information such as type of emergency, location, and how it occurred.
3. Direct someone to call 9-1-1 or contact 9-1-1.
4. Direct someone to notify a trained First Responder and take the AED to scene.
5. Sign the AED post event incident report form (Attachment A).

Administrative Staff
1. Assist in activating the Emergency Medical Services (EMS) system, alerting trained AED users, and school principal.
2. Assign someone to meet the responding EMS vehicle and direct the EMS team to the medical emergency site.
3. Update the victim’s condition to the 9-1-1 system unless a first responder at the scene assumes this responsibility.
4. Follow the school’s emergency response protocol.

Authorized AED User/First Responder
1. Determine that the area is safe to enter upon arrival.
2. Direct someone to call 9-1-1 or make the call if the call has not been made.
3. Get AED, turn AED on, and prepare the victim for placement of AED pads.
4. Determine need for adult or pediatric pads. (Adult if over age of 8 or greater than 55 lbs.)
5. Use the AED if the victim is unconscious and not breathing or not breathing normally.
6. Follow the automated AED instructions for CPR until EMS arrives.

Flow chart for use of AED and CPR

Assess scene for safe entry and for flammable gases. Do not use the HeartStart AED in the presence of flammable gases.

Victim: Unresponsive and not breathing or not breathing normally

Call 9-1-1.

Get AED → Turn on → Apply AED pads to chest.

Follow AED instructions for CPR until EMS team arrives.

AED will analyze heart rhythm → shock, if indicated → instruct CPR

AED Instructions
There are four basic steps to using the defibrillator to treat someone who may be in sudden cardiac arrest:
1. Press the green on/off button to turn the AED on.
2. Place the pads on the patient’s bare skin. Shave chest hair if so excessive it will prevent a good seal between electrodes (pads) and skin. Chest must be dry and free of oil. Press pads to skin.
3. Follow the AED instructions.
4. Press the flashing orange shock button if instructed.

When Emergency Medical Services Arrive
Emergency Medical Services (EMS) may decide to apply another defibrillator to allow monitoring of the patient. The pads should be removed from the patient prior to using another defibrillator. Note: After the EMS team removes the
pads from the patient, remove the used pads and insert new adult pads before returning the AED to the storage cabinet, to be sure it is ready for use.

**Medical Response Documentation**
Each incident involving the use of the AED will be documented (Attachment A) to include name, date, time, and location, description of event, actions taken, outcome, responding EMS assistance, and equipment used.

**Reminders**
1. Remove any medicine patches and residual adhesive from the patient’s chest before applying the pads.
2. Do not allow the pads to contact other electrodes or metal parts that are in contact with the patient.
3. Avoid placing the pads directly over an implanted pacemaker or defibrillator. A noticeable lump with a surgical scar should indicate the position of an implanted device.
4. If the pads do not stick well, check that the pads adhesive has not dried out. Each pad has a layer of adhesive gel. If the gel is not sticky to the touch, replace the pads with a new set.
5. Keep the patient still and keep any movement around the patient to a minimum during rhythm analysis. Do not touch the patient or the pads while the caution light is on solid or flashing. If the AED is unable to analyze due to electrical “noise” (artifact), it will instruct to stop all movement, not to touch the patient, and will pause until the noise is eliminated, then resume analysis.
6. The AED will not deliver a shock unless the flashing orange shock button is pressed. If this instruction is not followed, the AED will disarm itself, and (for the first CPR interval) give a reminder to make sure emergency medical services have been called, then begin a CPR interval. This is designed to minimize interruption of CPR and help ensure ongoing patient support.
7. While waiting for the shock button to be pressed, the AED will continue to analyze the heart rhythm. If the patient’s rhythm changes before the shock button is pressed, and a shock is no longer needed, the defibrillator will disarm and instruct that a shock is not advised.
8. If for any reason the defibrillator needs to be turned off during a use, press the On/Off button – holding it down for at least one second – to return the device to standby mode.

**After Using the AED**
**After each use**
1. Prepare the AED for the next rescue.
2. Retrieve the rescue data stored in the internal memory of the AED by using the Event Review software installed on a PC. Give the data to EMS personnel within 24-48 hours of rescue. 
   Note: The stored data can be conveniently transferred to a personal computer or a handheld computer running the appropriate application in the Philips HeartStart Event Review data management software suite. Event Review software is for use by trained personnel only. Information about HeartStart Event Review is available online at www.philips.com.
3. Check the outside of the AED for signs of damage, dirt, or contamination. Contact Philips for technical support, if signs of damage are noticed. If the AED is dirty or contaminated, clean it according to the guidelines.
4. The single-use pads must be replaced after being used.
5. Remove new pads from its package and insert into the AED. Note: To prevent the pads adhesive gel from drying out, do not remove the film seal on the pads they are needed for use.
6. Check supplies and accessories for damage and expiration dates. Replace any used, damaged, or expired items.
7. Remove the battery for five seconds, and then reinstall it to run the battery insertion self-test to check the operation of the AED. When the test is complete, check that the green Ready light is blinking.
8. The AED will automatically run a self-test when the battery is inserted. Press the Shock button when instructed. Be sure to let the self-test run all the way to completion. When the self-test is over, the HeartStart will report the result, and instruct to push the green On/Off button in case of an emergency. *(Do not push the green button unless this is an actual emergency.)* Then the HeartStart will turn off and go to standby mode. The green Ready light will be blinking to show the HeartStart is ready for use.
   Note: Always store the HeartStart with adult pads and a battery installed, so it will be ready to use and can perform daily self-tests.
9. Return the HeartStart to its storage location so it will be ready for use when needed.
Cleaning the HeartStart AED

The outside of the HeartStart and its carry case can be cleaned with a soft cloth dampened with soapy water, chlorine bleach (2 tablespoons per quart or liter of water), or ammonia-based cleaners.

Reminders

1. Do not use isopropyl (rubbing) alcohol, strong solvents such as acetone or acetone-based cleaners, abrasive materials, or enzymatic cleaners to clean the HeartStart.
2. Do not immerse the HeartStart in fluids or allow fluids to spill onto it.
3. Do not sterilize the defibrillator or its accessories.

AED Maintenance

1. The AED will perform a self-diagnostic test every 24 hours that includes a check of battery strength and an evaluation of the internal components.
2. The school nurse will:
   a. Perform and document a monthly AED check (Attachment B).
   b. Designate a back-up/secondary individual employed 12 months to assist with AED checks.
   c. Contact the Student Health Coordinator immediately if the green light is not flashing on the AED readiness display.
3. The status Indicator will be checked monthly (Attachment B).
   a. If anything other than a flashing green light is seen, the battery will be removed and reinstalled to run the self-test.
   b. If the self-test passes and the status indicator shows a flashing green light, the FRx is ready to use.
   c. If the self-test fails, a new battery will be installed and the self-test initiated. If the self-test passes, the FRx is ready to use. If the self-test fails, Philips Medical Systems will be contacted.
4. The AED supplies and accessories shall be checked for damage and expiration dating (Attachment B).
   a. Damaged or expired accessories will be replaced immediately.
   b. If a LOW BATTERY or REPLACE BATTERY message is displayed, the battery will be replaced and a self-test initiated. The Athletic Director will maintain an operator’s checklist for each machine.
5. The outside and the connector sockets of the AED shall be checked for cracks or other signs of damage (Attachment B). Philips Medical Systems will be contacted if any signs of damage are noted.


Cross References: OSHA AED Standards; Philips HeartStart FRx Product Owner’s Manual; 2010 AHA/ERC Guidelines AED Defibrillation CPR; NRMPS Bloodborne Pathogens Exposure Control Plan

Issue Date: 4/1/2009
Revised: 8/25/2014
Forms: AED Post-Event Incident Report Form, AED Maintenance Checklist, and AED Training Record Form
Approvals: Charnette H. Shade, M.D., Medical Advisor
Anthony Jackson, Ed.D., Superintendent, Nash-Rocky Mount Public Schools
## Automatic External Defibrillator (AED) Post Event Incident Report

<table>
<thead>
<tr>
<th>Date:</th>
<th>Time:</th>
<th>Location:</th>
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<tbody>
<tr>
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<table>
<thead>
<tr>
<th>Name of victim:</th>
<th>Student [ ]</th>
<th>Employee [ ]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address:</td>
<td>Phone #:</td>
<td></td>
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</tbody>
</table>

### Description of Event:

### Witnesses of the Event:

### Description of the first aid that was administered and other actions taken:

### Names of personnel involved:

### Responding EMS unit and team members:

### Outcome after using AED: Successful [ ]  Unsuccessful [ ]

### Indicate if AED equipment was replaced after usage: Yes [ ]  No [ ]

### Was data from the AED sent to the responding EMS Department within 24-48 hours? Yes [ ]  No [ ]

### Name of hospital where victim was transferred:

## Additional Notations

Use the space below to provide additional information – Add signature.

## Signatures

Signatures below indicate this report and first response actions were reviewed.

<table>
<thead>
<tr>
<th>School Principal</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Athletic Director</td>
<td>Date</td>
</tr>
</tbody>
</table>

Send original report to Angie Miller, Central Office.

Attachment A
Inspections made below will ensure that the AED battery is charged, the AED electrodes (pads) are not expired, and the AED will be rescue ready and function properly in the event of a cardiac arrest.

<table>
<thead>
<tr>
<th>Inspection Item</th>
<th>Date/Initials</th>
<th>Date/Initials</th>
<th>Date/Initials</th>
<th>Date/Initials</th>
<th>Date/Initials</th>
<th>Date/Initials</th>
</tr>
</thead>
<tbody>
<tr>
<td>AED: Clean, not damaged</td>
<td></td>
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<td></td>
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<tr>
<td>Status Indicator:</td>
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<tr>
<td>Adult Electrodes:</td>
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</tr>
<tr>
<td>Wall Cabinet Alarm:</td>
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<td></td>
</tr>
<tr>
<td>Resuscitation Kit:</td>
<td></td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Item</th>
<th>Problem</th>
<th>Corrective Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>AED</td>
<td>Signs of contamination</td>
<td>Clean according to manual.</td>
</tr>
<tr>
<td></td>
<td>Signs of damage</td>
<td>Contact manufacturer, Philips.</td>
</tr>
<tr>
<td>Status Indicator</td>
<td>Green, not blinking</td>
<td>Follow trouble-shooting guidelines; remove battery for 5 seconds and reinstall to run a self test; if no resolution, contact Philips.</td>
</tr>
<tr>
<td>AED Pads</td>
<td>Date expired</td>
<td>Replace expired electrode cartridge packets.</td>
</tr>
<tr>
<td>Resuscitation Kit</td>
<td>Missing contents</td>
<td>Replenish needed contents.</td>
</tr>
<tr>
<td>Cabinet Alarm</td>
<td>Not working properly</td>
<td>Contact Vendor, e.g., AED Brands.</td>
</tr>
</tbody>
</table>

Describe problems/corrective actions, date/initials: