AUTOMATIC EXTERNAL DEFIBRILLATOR (AED) – 2010 ECC GUIDELINES

An Automatic External Defibrillator (AED) is a computerized battery-operated machine that is used to 1) analyze the heart rhythms of an unresponsive person; 2) recognize the abnormal rhythms that requires an electrical shock; 3) advise the operator through voice prompts and lighted indicators when a shock is needed; and 4) deliver the electrical shock to the heart. The prompt use of an AED after a sudden cardiac arrest greatly increases the victim’s chances of survival. During Cardiac Arrest, every minute that goes by without the use of an AED, the patient’s chance of survival decreases by 10%. The goal is to have an AED by the victim and have the AED delivering a shock within 3 minutes if it is available.

Steps for CPR and AED use with 2 rescuers
1. One person checks victim for responsiveness and evaluates for breathing. The rescuer initiates C-A-B. 2nd person activates emergency response team or calls 911 and gets AED if available and will initiate AED use if trained to do so. Use protected barrier equipment.
2. C = Check for definitive pulse. No pulse then begin chest compressions (30 chest compressions and 2 breaths, 5 sets every 2 minutes) until AED arrives onto the scene. Compression rate: at least 100 per minute. Compression depth: at least 2 inches for adult, full pressure release but keep hand placement and skin contact on upstroke.
3. A = Open airway with a head tilt-chin lift (use a jaw thrust with any suspected head and neck trauma).
4. B = Give 2 breaths if victim not breathing (use barrier devices and supplemental oxygen whenever available).
5. D = Defibrillate by following voice prompts regarding cardiac arrhythmias and shock deliverance.

Actions for the AED user
1. POWER ON. Turn on the AED first. (Note: some AEDs automatically “power on” when the lid is opened.) Listen and follow AED voice prompts.
2. ATTACH PADS. Check pictures on pads to ensure correct placement and attach the AED adhesive electrode pads to the victim. Try to attach the pads while CPR is in progress. Make sure cables are securely connected to AED.
3. "CLEAR" TO ANALYZE. Make sure everyone is not touching the victim before and during analysis, saying “I’m clear, you’re clear, everybody’s clear.” Visually scan the victim from head to toe to make everyone is cleared away.
4. "CLEAR" TO DELIVER SHOCK. Check again that the victim is clear of human contact, saying “I’m clear, you’re clear, everybody’s clear” and look to check that no one is touching the victim before pushing shock button.
5. NUMBER OF SHOCKS DELIVERED The AED may shock up to two more times if AED signals “shock indicated”. Clear the victim before every analysis and again before each shock is delivered. With the new AHA Guidelines 2010, AHA is recommending AED’s shock only once every 2 minutes. Follow the prompts of the AED.
6. NO SHOCK INDICATED MESSAGE. Begin compressions immediately after shock or no shock advised
   Resume CPR for 2 minutes. Switch rescuers to perform compressions every 2 minutes if available. Re-analyze rhythm and follow the voice prompts regarding shock deliverance steps. If victim is breathing normally, carefully turn the victim onto his side (recovery position) if there is no suspected head/neck injury. Otherwise do not move the victim and maintain an open airway.
7. Do not remove the AED pads once they are in place! Once EMS arrives, they may replace pads if needed to use their own medical equipment.

Special conditions to consider while using an AED
- It is currently recommended that adults, children, and infants in cardiac arrest have the AED applied. If using adult pads on children or infants, one pad may be placed on the chest and the other pad on the back (anterior – posterior placement)
- If victim is wet, dry the chest off before attaching and using AED. If victim is in water, remove them from water and dry the chest before using AED.
- If victim has an implanted defibrillator or pacemaker (a hard lump under the skin) do not put AED directly over the device - place the pad at least one inch away from any implanted machines.
- If victim has medication patch on skin, remove the patch and wipe skin dry before attaching AED pads.
- If victim has a very hairy chest, you may have to dry shave the area so the AED pads can be attached.