

AUTOMATIC EXTERNAL DEFIBRILLATORS

(For assistance, please contact EHS at (402) 472-4925, or visit our web site at <http://ehs.unl.edu/>)

This SOP provides general information regarding Automatic External Defibrillators (AEDs) and their use at UNL. AEDs are small, portable devices that can be used to treat heart attack victims. Because of their simple design and ease of operation, they can be safely used by members of the general public.

What is a Heart Attack?

A heart attack (also called a myocardial infarction) is the death of part of the heart muscle due to sudden loss of blood supply. Death of the heart muscle often causes chest pain and electrical instability of the heart muscle tissue. Electrical instability of the heart causes ventricular fibrillation (chaotic electrical disturbance). Rhythmic transmission of electrical signals in the heart is important for the regular beating (pumping) of the heart. A heart undergoing ventricular fibrillation simply quivers, and cannot pump or deliver oxygenated blood to the body. Permanent brain damage and death can occur unless oxygenated blood flow is restored within five minutes. The faster the normal heart rhythm is restored, the greater the chance of survival of the victim with less risk of other adverse effects. The maximum time for defibrillation is generally three to five minutes after the onset of cardiac arrest.

How Does an AED Work?

An AED contains a power pack and two electrodes. The electrodes are applied to strategic locations on the chest of the victim and the power pack delivers a shock when a button is pushed. If effective, the shock restores normal electrical rhythm to the heart. An AED will not deliver a shock unless it first detects an abnormal heart rhythm.

Where Are AEDs Located?

AEDs are often installed at strategic locations of public areas. For example, AEDs are located throughout most airports. Their location is often indicated with a wall sign. At UNL, AEDs are permanently installed or available in some, but not all buildings. In addition, portable AEDs are brought on-site during large events, such as graduation, athletic events, etc., by the American Red Cross and other external support organizations.

Who Purchases and Maintains AEDs at UNL?

Individual departments are responsible for purchasing, installing, and maintaining AEDs at UNL. If a department elects to purchase AEDs they must ensure that an on-going maintenance program is established, implemented, and funded. Central funding is not available for purchase or maintenance of AEDs.

After equipment is purchased and installed, contact local emergency response agencies and register the location of the unit with them. For equipment installed within Lincoln city limits, equipment may be registered on-line through the Lincoln Fire Department's website, <http://www.lincoln.ne.gov/city/fire/aed.htm>. The process is very simple and asks for basic information. To avoid confusion with other buildings on campus, please use "University of Nebraska – Lincoln, [building, room #, department]" as the Business/site name.

It is highly recommended to establish a departmental point person who is responsible for making sure the equipment is routinely inspected and properly maintained. AED's should be visually inspected monthly to make sure they are operational. Battery life of each unit varies by model and manufacturer. They should be routinely replaced as suggested by the manufacturer. Internal software, labels and printed information that gives audio and visual instructional prompts must match the latest guidelines. The American Heart Association updated its Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care Science in 2010 for implementation in 2011. Highlights of this guideline may be found at: http://www.heart.org/idc/groups/heart-public/@wcm/@ecc/documents/downloadable/ucm_317350.pdf. Contact the AED manufacturer directly for the latest updates and instructions on how to install them.

Who can Use an AED?

Any person acting in good faith can use an AED. While not required by regulation, training is encouraged and available through the American Red Cross and the Nebraska American Heart Association. Training may also be available through other organizations, including the University Health Center and Campus Recreation. Regardless of whether an AED is used, always call '911' to summon professional medical support.

What are the recommended practices when considering installing AEDs?

To provide consistency across campus in AED use and to promote awareness so they can be used when needed, please follow these guidelines for AEDs installed in buildings:

- AEDs should be in publically accessible locations.
- Each building equipped with an AED should have signage at its main entrances designating the presence of an AED in the building (signage can be obtained through the manufacturer or through University prime vendors for medical/lab equipment).

- AEDs should have prominent signage in the hallway visibly marking the location of the AED, at a height allowing visibility over crowds (signage can be obtained through the manufacturer or through UNL Prime Vendors). Signage should be similar to image shown below.
- AEDs are intended to be easy to use. To ensure AED's would be located and used properly, trained staff should be identified who would be on site during the buildings normal business hours and available to operate the equipment
- The department should keep up-to-date maintenance records on site. Logs are usually available from the manufacturer.



What Regulation Applies to AEDs?

Nebraska Health and Human Services, Regulation and Licensure, 172 NAC 14.