

Lake County Department of Utilities

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TITLE: Automated External Defibrillation Program

PURPOSE:

The purpose of this document is to establish consistent and effective guidelines for application, location, maintenance, and various other components described herein involving the early defibrillation program at Lake County Department of Utilities workplaces.

SCOPE:

This document describes guidelines for the Lake County Department of Utilities Automated External Defibrillator (AED) Program. This program utilizes employees who serve as trained volunteer responders in cardiopulmonary resuscitation (CPR) and automated external defibrillation therapy in the event of a medical emergency.

The organization is committed to the success of our written programs and strives for clear understanding, safe behavior, and involvement from every level of the organization. If after reading this program, you find that improvements can be made, please contact the Department Safety Manager.

RESPONSIBILITIES:

Department Program Administrator

It is the responsibility of the Department Program Administrator to oversee all aspects of the implementation of the AED Program, to review the program annually to evaluate effectiveness, and to designate an AED Site Coordinator who understands the importance of an AED Program. The Department Program Administrator is the Department Safety Manager.

Medical Director

It is the responsibility of the Medical Director to provide medical consultation and expertise, act as a liaison between the early defibrillation program site and EMS, review all incidents involving the use of the AED, and to provide post-event debriefing support. The Lake County Department of Utilities Medical Director is an independent third party contractor.

AED Site Coordinator

It is the responsibility of the AED Site Coordinator for each site to inspect and maintain the AEDs and related response equipment. The following employees have been designated as AED Site Coordinators: Mentor Water Reclamation Facility, Tom Moviel and Jim Binns; East End Service Center, Steve Doremus; Madison Wastewater Treatment Plant, Brad Pethel; Solid Waste, Bob Bates; Aquarius Water Plant, Mark Brenkus; West End Service Center, Lori Ross; Bacon Road Water Plant, Ken Stoneman; Administration, Scott Cole; and Customer Service, Matt Armand.

Volunteer Responders

It is the responsibility of the Volunteer Responders to successfully complete all mandatory training and skill evaluations and remain current on all certifications required by The American Red Cross, American Heart Association or any nationally recognized training institution.

DEFINITIONS:

1. *Automated External Defibrillator (AED)* - A semi-automatic computerized medical device programmed to analyze heart rhythm, recognize rhythms that require defibrillation, and provide visual and voice prompts for the device operator. The AED instructs the operator to deliver an electric shock if indicated after ensuring all personnel are clear.
2. *Volunteer Responder* – A volunteer employee of Lake County Department of Utilities who is trained in the use of an automated external defibrillator (AED) and cardio pulmonary resuscitation and who holds a current certification with any nationally recognized training institution such as The American Red Cross.
3. *Cardiopulmonary Resuscitation (CPR)* - Artificial ventilation and/or external cardiac compressions applied to a patient in respiratory and/or cardiac arrest.
4. *Emergency Medical Service (EMS)* - Professional responders who have been trained to provide pre-hospital healthcare for patients with real or perceived emergencies who arrive on scene to provide emergency care and to transport patients to a hospital.
5. *Risk* - The chance of injury or illness as determined by the presence of hazards and/or the probability of an adverse event occurring.
6. *Sudden Cardiac Arrest (SCA)* - A significant life-threatening event when a person's heart stops or fails to produce a pulse.

PROCEDURE:

I. Early Defibrillation Program Overview

- A. The goal of the Early Defibrillation Program is to participate actively in the Cardiac Chain of Survival (see figure 1) by providing effective early defibrillation to any victim of sudden cardiac arrest at Lake County Utilities facilities, when defibrillation is indicated.

Figure 1. Chain of Survival



II. AED Protocol

A. Initial Assessment

1. The first Volunteer Responder conducts an initial assessment to determine the level of response required.
 - a) This initial assessment includes:
 - (1) An assessment of the scene for safety of self and other potential responders.
 - (2) Use of gloves and other universal precautions prior to patient contact.
 - (3) Assessment of the victim – If no movement or response:
2. Ensure that 911 services have been notified and that the local EMS response agency is en-route.
 - a) Send a second Volunteer Responder (if available) to do this.
3. The following information should be relayed to 911:
 - a) Type of emergency.
 - b) Location of emergency.
 - c) Breathing/consciousness of victim and whether or not CPR is in progress
 - d) Any special access instructions to the facility or the location within the facility.
4. Get the AED device or send a second Volunteer Responder (if available).
5. Provide CPR/basic life support procedures.

- a) Open the victim's **AIRWAY** and check **BREATHING**.
- b) If not breathing, give **2 BREATHS** that make the chest rise.
- c) Check for signs of circulation (coughing, breathing, signs of life).

(1) If signs of circulation are present, give **1** breath every **5** to **6** seconds.

(2) If normal breathing returns, stop rescue breathing.

(3) If no signs of circulation, give 5 cycles of **30 CHEST COMPRESSIONS** and **2 RESCUE BREATHS** until AED arrives or EMS takes over. Push hard and fast for chest compressions (100/min) and release completely after each compression. Minimize interruptions in compressions.

6. AED Arrives

- a) Turn on the AED and follow the prompts.
- b) It is vital that the AED pads are placed on the victim as soon as possible.

(1) If more than one Volunteer Responder is present, one can apply the AED pads while the other continues CPR until told to stop.

(2) Make sure that the AED pads are placed in their proper location and that they are making effective contact with the victim's chest.

(3) Perform any special procedures required (removal of medication patches or shaving of excessive chest hair).

(4) Do not place the AED pads over the nipple, medication patches, or implantable devices.

- c) AED Heart Rhythm Analysis

(1) When the AED pads are properly attached to the victim and connected to the AED, the device will automatically analyze the victim for a shockable rhythm.

(2) If **SHOCK ADVISED**:

(a) Clear the area.

(b) Press shock button to deliver a shock to the victim as prompted.

(3) Resume CPR immediately for 5 Cycles (30 chest compressions/2 breaths per cycle = approx. 2 minutes).

(4) Reevaluate circulation and heart rhythm

(5) If **NO SHOCK ADVISED**:

(a) Resume CPR immediately for 5 Cycles

(b) Check heart rhythm every 5 cycles

d) Continue until EMS takes over or victim starts to move

7. AED Shock Sequence

a) Administer a single shock to the patient, followed by two (2) minutes of CPR if needed.

b) Do not initiate CPR until prompted by the device, or the first shock has been administered.

c) After first shock has been delivered, and or analysis did not prompt to shock, verify there are no signs of circulation before continuing CPR.

8. Patient Monitoring

a) Once the AED has been applied to the patient, do not turn off the AED or remove the defibrillation pads unless so prompted by the device (i.e., “Replace battery” or “Replace pads”).

b) The AED will continue background monitoring of the patient’s heart rhythm and alert the rescuers if additional shocks are required.

9. Transfer victim care to EMS:

a) Upon arrival of EMS, transfer patient care to the EMS team.

b) If requested by EMS, assist in victim care, otherwise initiate Post Incident Procedures (see Appendix B)

III. AED Equipment

A. The equipment provided in support of the early defibrillation program is to be used in the event of a sudden cardiac arrest emergency.

B. This equipment shall not be used outside the parameters of the AED program or for personal use by the employees.

C. Each device should be maintained according to program and following the manufacturer’s guidelines.

D. Lake County Department of Utilities has selected to use the Zoll AED Plus for its AED program.

E. Lake County Department of Utilities has installed Zoll AED Plus units at each of the following areas:

1. Aquarius Water Plant

a) Operations Room

2. West End Service Center

a) Lunch Room

3. East End Service Center

- a) Near the Safety Communications Center
- 4. Bacon Road Water Plant
 - a) Operations Area
- 5. Mentor Water Reclamation Facility
 - a) Administrative Building Hallway
 - b) Operator’s Room
 - c) Maintenance Building Hallway
- 6. Madison Wastewater Treatment Plant
 - a) Administrative Building Hallway
 - b) Maintenance Building Bay
- 7. Solid Waste – Utilities Learning and Business Center
 - a) Hallway by secretary’s office
- F. Each AED location shall include the following items and must be inspected on a monthly basis, for readiness of use and integrity of the device:

Item Description	Quantity
Zoll AED Plus with battery installed	1
Carrying case	1
Installed in an alarm-activated cabinet	1
CPR-D Padz or Stat II Padz (installed in device)	1
Rescue essentials pack	1

- IV. AED Maintenance
 - A. See Appendix A for the Periodic Maintenance Checklist.
 - B. Reports of Damage
 - 1. Report any performance discrepancies, device defects, missing, expired, and/or damaged accessories to the Department Program Administrator immediately.
 - C. Required Maintenance Schedule
 - 1. A monthly check on each AED must be conducted to ensure it is in compliance.
 - D. Cleaning
 - 1. When necessary, clean the AED and AED cabinet using a mild soap and warm water solution.
 - 2. Avoid spilling or spreading water directly on the unit.
- V. Operational Guidelines
 - A. Volunteer Responders are to perform only to the level of their training while responding to sudden cardiac arrest.
 - 1. Immunity protection is only applicable to responding team members under these conditions.
- VI. Program Qualifications
 - A. An employee is considered a Volunteer Responder based upon meeting all of the following criteria:

1. Successful completion of the American Heart Association, American Red Cross and/or any other nationally recognized training entity's approved AED instructional program.
2. Utilization of the AED during work hours and/or at facility functions.

VII. Program Guidelines

- A. Once the AED is turned on and the pads applied to the patient, the Volunteer Responder does not remove the pads or turn off the device.
- B. The AED shall be applied only to patients who are at least eight (8) years of age or 55 pounds and unconscious/unresponsive with no signs of circulation and no respiration.
- C. If the device advises no shocks, the Volunteer Responder follows the step-by-step procedures of the Zoll AED Plus and approved protocols for patient care and CPR.
- D. If required for proper defibrillation pad adhesion, any excess hair on the patient's chest is shaved with a prep razor supplied in the AED Rescue Essentials kit.
 1. A smooth shave is not required.
- E. Using a gloved hand, remove any medication patches, if present, from the patient's chest prior to pad placement and wipe the skin clean with a cloth.
- F. If the patient has an implantable pacemaker and internal defibrillator, do not place the defibrillation pads directly over the implanted device.
 1. If the presence of an implanted device affects pad placement, place the defibrillation pad as close to the recommended pad site as possible.
- G. No abuse or vandalism of the AED will be tolerated.
 1. If abuse or vandalism is suspected, it is to be reported to the Department Program Administrator immediately so that the AED can be evaluated for proper operation.

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APPENDIX A - Periodic Maintenance Checklist

To check your AED:

1. Go to location in your facility where device is located, and check the screen on the upper right corner of the device to verify it contains a green “check.”
2. Check the expiration date on the electrode pads by viewing the tab that will be exposed from the front of the device. Check this tab to verify the pads have not expired.
3. Document and sign the inspection on the form.
 - a. Facilities conduct monthly AED inspections while performing their monthly fire extinguisher inspections. For this reason, inspections will be documented on a specific area of each facility’s fire extinguisher inspection form.

What if something is wrong with my device?

Contact the Department Program Administrator if your device does not have a “green check” status or the electrode pads are nearing expiration.

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Appendix B - AED Incident Report

Patient Name: _____

Patient DOB: _____ / ____ / ____ **Patient Age:** _____

Patient Sex: _____

Incident Date: _____ / ____ / ____ **Incident Time:** _____ (hour: minute)

Incident Location: _____

Event History:

Patient activity prior to event: _____

Patient complaints prior to event: _____

Was the event witnessed? No Yes, at _____ (time) / rescuer: _____

Was CPR started? No Yes, at _____ (time) / rescuer: _____

Assessment and Treatment

Were ABC's assessed? No Yes, at _____ (time) / rescuer: _____

Was CPR initiated? No Yes, at _____ (time) / rescuer: _____

Was shock #1 delivered? No Yes, at _____ (time) / rescuer: _____

Was shock #2 delivered? No Yes, at _____ (time) / rescuer: _____

Was shock #3 delivered? No Yes, at _____ (time) / rescuer: _____

Was respiration regained? No Yes, at _____ (time) / rescuer: _____

Was consciousness regained? No Yes, at _____ (time) / rescuer: _____

Was patient transferred to EMS? No Yes, at _____ (time) / rescuer: _____

Report Completed By: _____

Date: ____ / ____ / ____

NOTE: Use back of this sheet for additional comments.