

### Use Case 1: Power On

Primary Actor: User

Scope: AED device

Level: Activates the AED device for readiness

Preconditions: The AED is turned off, and there is a need to use the device.

Main Success Scenario:

1. The user presses the power button to turn on the AED.
2. The AED initiates a self-test to ensure that all critical components are functional.
3. The self-test includes verifying battery capacity, electrode connection, ECG circuitry, charge/discharge circuitry, microprocessor hardware/software, CPR circuitry, and audio circuitry.
4. If the self-test passes, the AED becomes operational.
5. The AED displays a status indicating that it is ready for use.

Extensions:

If any component fails the self-test, the AED displays an error message, and the user is prompted to contact support or replace the AED.

Postconditions:

The AED is powered on and ready for use.

In case of a failed self-test, the AED displays an error message and remains in a powered-off state.

### Use Case 2: Electrode Placement

Primary Actor: User

Scope: AED device

Level: Prepares the AED for defibrillation

Preconditions: The AED is powered on, and there is a need to use the device for defibrillation.

Main Success Scenario:

1. The AED is powered on and ready for use.
2. The user initiates the process of electrode placement by selecting the appropriate option on the AED interface.
3. The AED provides visual and/or audible prompts to guide the user in placing the defibrillation electrodes on the patient's bare chest.
4. The electrodes are placed in the correct positions as per the AED instructions.
5. The AED monitors the connection and placement of electrodes.
6. If the electrode placement is successful, the AED indicates that it is prepared for defibrillation.

Extensions:

4a. If the electrode placement is incorrect or unsuccessful, the AED provides guidance to reposition the electrodes.

6a. If the AED detects a critical issue with the electrode placement, it may display an error message and prompt the user to address the issue before proceeding with defibrillation.

Postconditions:

The defibrillation electrodes are correctly placed on the patient's chest.

The AED is ready to analyze the heart rhythm and deliver a shock if necessary.