LUCAS Device Chest Compression System

Effective: 12-19-2021

SCOPE OF PRACTICE

Standing Order for all Boston EMS providers

PURPOSE

The LUCAS device is designed to provide automated mechanical external chest compressions to patients in cardiac arrest.

INDICATIONS

- Cardiac arrest patients who will appropriately fit the device.
- Patients where chest compressions are actively ongoing by a first responder (i.e., Boston Fire Department, MassPort Fire, or another Boston EMS unit prior to ALS arrival).
- Patients requiring mechanical chest compressions during transportation to the emergency department.

CONTRAINDICATIONS

- Patients who are too large and with whom you cannot pull the pressure pad down 2 inches.
- Patients who are too small and with whom you cannot pull the pressure pad down to touch the sternum
- Patients who are obviously pregnant
- Patients under 12 years old

PROCEDURE

1. High quality manual chest compressions should be initiated immediately while the LUCAS device is being prepared and continued for 10 minutes until the LUCAS is placed on the patient.
2. Remove clothing from chest to ensure skin contact with pressure pad.
3. Turn the device on and remove from the case.
4. Place the yellow back plate under the patient, just below the patient's arm pits and centered at the level of the patient's nipples.
5. Continue manual compressions while attaching the Lucas to the back plate.
6. Limit interruptions of compressions to less than 10 seconds.
7. Ensure that defibrillation pads will be clear of the location of the suction pad.
8. Press the adjust mode button to position the compression arm to the chest. Align the lower edge of the pressure pad so that the suction cup is immediately above the end of the sternum.

9. Press the pause button to lock in the start position.
10. Press the Active 30:2 button or the Active continuous button to begin compressions.
11. Utilize the pause button as necessary during rhythm or pulse checks or upon ROSC.
    (If ROSC is achieved, consider leaving device in place, if safe to do so in case of repeated cardiac arrest.)
12. Place the neck roll behind the patient's head and attach the straps to the LUCAS device. This will prevent the LUCAS from migrating toward the patient's feet.
13. Place the patient's arms in the straps provided.
14. One crew member should be assigned to monitor the device and ensure that it remains in the correct position throughout the resuscitation.
15. Defibrillation can and should be performed with the LUCAS device in place and in operation
16. If disruption or malfunction of the LUCAS device occurs, immediately remove the device and revert to manual high-quality compressions.
17. Any patient requiring transport must have the LUCAS device in place prior to extrication assuring that mechanical compressions continue during extrication.
18. While transporting, ensure patient is adequately secured to the stretcher prior to departing the scene including the use of straps to secure the LUCAS device to the cot, if needed.
19. The device will be left in place until patient is transferred to the hospital bed and hospital staff are ready to take over compressions.
20. The device will then be cleaned prior to return to service, per manufacturer's instructions.
21. Units will be issued the Lucas device, hard backpack, 3 batteries and charger. 1 battery shall remain in the charger at the station, 1 in the unit, and 1 in the backpack.

CARE AND MAINTENANCE

Device shall be wiped down with disinfectant wipes after each use. Do not immerse any part of the device in water. Suction cup should be discarded if heavily soiled. Hand straps should be replaced if contaminated. Do not discard straps, return to supply for cleaning in a red bag. Batteries are expected to last for up to 4 hours of continuous use.

PAR LEVELS

Suction cups: 1 on the device, 3 on the ambulance shelf.

Hand straps: 1 set on device and 1 spare set in ambulance.

Replacements will be available at supply to reach par levels only.