

# Virginia Beach Department of Emergency Medical Services Supplementary Protocol

## LUCAS DEVICE

### Protocol Statement

The LUCAS-2 is a device made to provide consistent automatic chest compressions to victims of cardiac arrest. The device may only be used in accordance with this protocol and may only be applied by those trained and authorized by the Department of EMS (DEMS). Proper device usage should include proper documentation as applicable in electronic medical reporting.

### Applicability

All Virginia Beach Department of EMS affiliated personnel at the level of EMT or higher, who have been trained and authorized to use the LUCAS device by the DEMS.

### Indications

The LUCAS may be used in adult patients (>12 years old) who have suffered cardiac arrest, where manual CPR would otherwise be used. The LUCAS device should be used in accordance with device specific instructions (included as an attachment to this protocol).

### Contraindications

1. Patients < 12 years of age.
2. Patients who do not fit within the device.
  - a. Patients who are too large and with whom you cannot press the pressure pad down 2 inches.
  - b. Patients who are too small and with whom you cannot pull the pressure pad down to touch the sternum
3. Do not use if it is not possible to position LUCAS safely or correctly on the patient's chest.

### Notes

1. All therapies related to the management of cardiopulmonary arrest should be continued as currently defined.
2. Manual chest compressions should be initiated **immediately**, while the LUCAS device is being placed on the patient.
3. Limit interruptions in chest compressions to 10 seconds or less.
4. Do not delay manual CPR for the LUCAS. Continue manual CPR until the device can be placed.
5. Do not delay transport waiting for the LUCAS Device to arrive on scene.
6. LUCAS should only be deployed by providers who have received proper training on the device and a trained provider should accompany any patient who the device is being used on for the duration of transport.
7. Upon arrival at the hospital, the LUCAS device should be left in place and active until the receiving ED staff advises otherwise. The LUCAS trained EMS provider should provide assistance and/or guidance (as needed) in deactivating and removing the LUCAS device.

## **Procedure**

1. Activate the LUCAS by pushing the ON/OFF button for 1 second to start the self-test and power up the LUCAS.
2. Pause manual CPR and carefully put the back plate under the patient, below the armpits.
3. Attach the LUCAS to the back plate by pulling the release rings once; then let go of the release rings. Listen for the click when attaching to the back plate and then pull up once to ensure attachment.
4. Center the suction cup over the chest.
5. The lower edge of the suction cup should be immediately above the end of the sternum.
6. Push down the suction cup (with two fingers, making sure it is in the ADJUST mode) until the pad is touching the patient's chest. If the pad does not touch or fit properly, continue manual compressions.
7. Push PAUSE to lock start position, and then remove our fingers from the suction cup.
8. Start LUCAS compressions by pushing ACTIVE button (play symbol) in either continuous mode or 30:2 mode.
9. Attach the LUCAS stabilization strap.

## **Defibrillation**

1. Defibrillation can and should be performed with the LUCAS device in place and in operation.
2. One may apply the defibrillation electrodes either before or after the LUCAS device has been put in position.
3. The defibrillation pads and wires should not be underneath the suction cup.
4. If the electrodes are already in an incorrect position when the LUCAS is placed, you must apply new electrodes
5. Defibrillation should be performed according to TEMS protocols.
6. If the rhythm strip cannot be assessed during compressions, one may stop the compressions for analysis by pushing the PAUSE BUTTON (The duration of interruption of compressions should be kept as short as possible and should not be > 10 seconds. There is no need to interrupt chest compressions other than to analyze the rhythm).
7. Once the rhythm is determined to require defibrillation, the appropriate ACTIVE BUTTON should be pushed to resume compressions while the defibrillator is charging and then the defibrillator should be discharged.

## **Pulse Checks/Return of Spontaneous Circulation (ROSC)**

1. Pulse checks should occur intermittently while compressions are occurring
2. If the patient moves or is obviously responsive, the LUCAS Device should be paused and the patient evaluated.
3. If there is a ROSC, then resuscitation efforts (including use of the LUCAS) should be continued /discontinued in accordance with post-arrest procedures and/or notes.

## **Disruption or Malfunction of the LUCAS device**

If disruption or malfunction of the LUCAS device occurs, immediately revert to manual CPR.

## **Care of the LUCAS device after use**

1. Remove the suction cup and the stabilization strap (if used, remove the patient straps).
2. Clean all surfaces and straps with a cloth and warm water with an appropriate cleaning agent.

3. Let the device and parts air dry.
4. Replace the used battery with a fully-charged battery.
5. Remount (or replace) the suction cup and straps.
6. Repack the device into the carrying bag.
7. Make sure that the charging cord is plugged into the LUCAS device.
8. The LUCAS device in the carrying bag should be charging and secured while stored in a vehicle.