

COUNTY OF VENTURA HEALTH CARE AGENCY		EMERGENCY MEDICAL SERVICES POLICIES AND PROCEDURES
Policy Title: Mechanical CPR		Policy Number 631
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- I. PURPOSE: To define the indications, procedure, and documentation for use of a mechanical CPR device by Ventura County prehospital personnel.
- II. AUTHORITY: California Health and Safety Code, Section 1797.220, and 1798. California Code of Regulations, Title 22, Section 100170.
- III. DEFINITIONS:
 - A. LUCAS: Lund University Cardiopulmonary Assist System. A device that provides mechanical chest compressions.
 - B. Staged application: A two stage method where application of the LUCAS device is done during rhythm checks to minimize pauses in chest compressions. Stage 1-the backplate is positioned under the patient and manual compressions are resumed. Stage 2- the LUCAS device is applied over the patient, secured to the backplate, and mechanical compressions initiated.
 - C. Pause: Interruption in chest compressions greater than or equal to 3 seconds.
 - D. ROSC: Return of spontaneous circulation.
- IV. POLICY:
 - A. The priorities when treating a cardiac arrest patient are high quality CPR, immediate defibrillation if indicated, and expeditious administration of epinephrine.

- B. Mechanical CPR devices have the potential to improve the quality of CPR, but do not increase the rate of survival, or the percentage of patients who survive with a good neurologic outcome.
- C. Successful application of a mechanical CPR device requires a methodical, coordinated approach.
- D. The LUCAS device (Stryker) is the only mechanical CPR device approved for use by prehospital personnel in Ventura County.
- E. The LUCAS device, if available, MAY be applied to patients if the “triangle of life” has been established, defibrillation has been performed (if indicated), the initial dose of epinephrine has been administered, no immediate airway interventions are indicated, and at least two cycles of CPR have been completed.
 - 1. The LUCAS device may not be applied to pediatric patients. If utilizing the adult cardiac arrest protocol, LUCAS is authorized. LUCAS is NOT authorized if using a pediatric protocol.
- F. The LUCAS device, if immediately available, MAY be applied earlier than outlined above in the following circumstances:
 - 1. **ROSC:** The device, if available, shall be applied after ROSC, prior to patient movement.
 - 2. **TRAUMATIC ARREST:** The patient must be \geq 18 years of age and meet criteria for initiating resuscitation. Consider needle-T insertion prior to device application. The application/operation of LUCAS shall not delay transport or interfere with necessary treatment.
 - 3. **LOCATION:** the patient is in a location that prohibits quality CPR **AND** immediate movement to a workable space is not possible. Routine movements (e.g. bed to floor, hallway to room) do not apply.
- G. Agencies utilizing LUCAS shall evaluate performance prospectively and shall report to VCEMSA the following information, per cardiac arrest, on a quarterly basis:
 - 1. Whether mechanical compressions were provided.
 - 2. Whether compressions type was documented correctly in the Patient Care Report
 - 3. Date and Time of first manual chest compression
 - 4. Date and Time of first mechanical chest compression.
 - 5. Duration of CPR pause immediately prior to LUCAS application.

6. Binary (yes/no) for tasks completed prior to LUCAS application: vascular access, defibrillation, and epinephrine administration.
7. Total number of pauses in chest compressions.
8. Longest pause in chest compressions.
9. Total compression fraction.
10. Whether chest compressions were provided during transport.

V. PROCEDURE:

- A. The “team leader” or “primary patient caregiver” on scene remains responsible for determining when, and coordinating how, the device should be applied.
- B. A staged application process should be used whenever feasible.
- C. All LUCAS devices utilized in Ventura County must be programmed to power on in “continuous mode,” not 30:2 or 50:2 modes.
- D. Cardiac monitor data (.zol and .PCO files) must be transmitted and attached to the patient care report. LUCAS data files and compatible cardiac monitor data files (.PCO files) will also be transmitted to the VCEMS CODE-STAT database.
- E. In the event of a device failure or other malfunction, the device will be removed immediately, and manual CPR resumed.
- F. Agencies must notify VCEMS, within 24 hours, of any device failures or other malfunctions using the procedure outlined in VCEMSA Policy 121 Safety Event Review.
- G. All providers must receive initial and ongoing training on the device, its application, troubleshooting, reporting, and documentation prior to use on patients.
- H. Patients who are transported after application of a mechanical CPR device must be accompanied by at least one provider from the agency who applied the device.