Medical Procedure **Date: 07/01/2023**

Mechanical CPR Device Use **Policy #7030**

I. Purpose:

A. To establish indications, guidelines, and the standard procedure for approved mechanical CPR device application and use in the prehospital setting.

II. Authority:

A. Health and Safety Code, Section 1797.220, 1798. Title 22, Section 100170.

III. Policy and Overview:

A. Mechanical CPR devices (e.g. LUCAS) are being used by select ACP, CCP, and Paramedic Specialist crews for medical cardiac arrests.

B. The use of mechanical CPR devices can be an effective perfusion tool with rapid and accurate placement of the device.

C. Cardiac arrests should have compressions without interruption as the main prehospital intervention priority. Application of a mechanical CPR device should be able to be completed in ten seconds or less.

D. It is critical to understand that mechanical CPR devices can worsen patient outcomes if application delays cardiac compression or is misplaced. Often manual CPR can provide superior results to mechanical CPR, especially in the untrained users' hands.

IV. Indications:

A. Mechanical CPR devices may be used for **medical (e.g. non-traumatic)** cardiac arrests in the following circumstances:

1. To ensure the safety of crews when conveying patients with CPR in progress in a moving motor vehicle or aircraft
2. As part of an approved clinical trial (e.g. ECPR trial)
3. In transfers with appropriately trained medical teams
4. Search & rescue or retrieval/conveyance purposes
5. If an approved device is already in place after being applied by an appropriately trained person
6. The device may be left in place if the appropriately trained person is able to travel with the patient to hospital; if this is not possible, the device should be removed and manual CPR commenced for conveyance

V. Contraindications include:

A. **Mechanical CPR devices are NOT indicated for patients in traumatic cardiac arrest**

1. Patients in traumatic cardiac arrest should receive manual CPR in addition to other interventions as required for the patient's clinical situation; priority in these situations is expedited conveyance if the patient meets criteria for continuation

B. Patient is too small: the suction cup is not being completely compressed when it is lowered

C. Patient is too large: the support legs of the device cannot be locked into place without compressing the patient

VI. Procedure:

A. **Assembly and Application of the approved CPR Device:**

1. Start manual compressions while another provider unpacks the device. Press and hold 'ON/OFF' button on the user panel for one second. The device will perform a self-test.
2. Cease chest compressions to apply the back plate. As a team, lift the patient's upper body and lay the back plate below the armpits. If the upper portion of the device is not immediately available, resume compressions until the upper portion is ready.
3. Resume manual chest compressions (continue them through steps 4 and 5).
4. Place the upper portion of the approved device over the patient's chest so that the claw locks of the support legs can engage the back plate. Ensure that the patient's arms are outside the device.
5. Engage one support leg at a time starting with the closest one. **Confirm that both support legs are locked.**
6. Using two fingers, lower the suction cup until the pressure pad inside the cup touches the patient's chest. The lower end of the suction cup should be just above the xiphoid process.
7. Push 'PAUSE' (position 2) to lock the start position.
8. To start compressions, push 'ACTIVE' (30:2) (Position 3). Confirm that the device is working properly and check for central pulses upon compression.
9. To stop chest compressions, push 'PAUSE' (position 2).

B. **Attaching the Stabilization Strap:**

1. Lift the patient's head and place the support cushion under the patient's neck as close to the shoulders as possible.
2. Ensure that both device straps have been secured to the devices support legs.
3. Tighten the buckles on the support cushion strap as required.

4. Ensure that the device remains properly positioned.

C. **Cleaning After Use:**

1. Clean all outer surfaces of the device, backboard, and neck strap with Accel disinfectant wipes. Be sure to clean the claw locks as well. Ensure a wet-contact time of 3 minutes.
2. Suction cup: unless grossly contaminated, continue with standard cleaning procedure above and put back in equipment bag for re-use.
3. Allow the device and accessories to dry before packing back into the bag.

VII. Certification Requirements:

A. Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure.

B. Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate by the Imperial EMS System.

C. Assessment should include direct observation at least once per certification cycle.

VIII. Troubleshooting:

A. If placement is unsuccessful, remove the device, and re-commence manual compression.

APPROVED:
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