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## ***EMERGENCY MEDICAL SERVICES POLICIES and PROCEDURES***

### **TRANSCUTANEOUS PACING (TCP)**

**I. Purpose:** To define the indications, procedure and documentation for the use of transcutaneous pacing (TCP) by Advanced Life Support (ALS) Personnel.

**II. Authority:** Health and Safety Code, Sections [1797.220](#) and [1798](#). California Code of Regulations, Title 22, Sections [100145](#) and [100169](#).

**III. Definitions:** None

**IV. Policy:**

- A. Paramedics may utilize transcutaneous cardiac pacing (TCP) on adult patients (Age > 14 or greater) in accordance with Santa Barbara County [Policy 533-12: Symptomatic Bradycardia](#).

**V. Procedure:**

- A. Training
  - 1. Prior to using TCP, the paramedic must successfully complete a training program approved by the SBCEMSA Medical Director, which includes operation of the device to be used.
- B. Indications
  - 1. Symptomatic bradycardia (heart rate < 40bpm with one or more of the following signs or symptoms):
    - a. Altered Level of Consciousness/Altered Neurological Function;
    - b. Chest Pain;
    - c. Abnormal Skin Signs (for example, pallor/mottled skin);
    - d. Profound Weakness;
    - e. Shortness of Breath;
    - f. Hypotension (Systolic BP < 90mmHg);
    - g. High-Degree Heart Block
- C. Contraindications
  - 1. Absolute
    - a. Asystole
  - 2. Relative
    - a. Hypothermia – Patient warming measures have precedence. Base Hospital contact is required prior to initiation of TCP in situations involving/suspected hypothermia.
- D. Patient Treatment
  - 1. Patient assessment and treatment per [Policy 533-12: Symptomatic Bradycardia](#) treatment protocol. If IV/IO access is not promptly available, proceed directly to pacing.
  - 2. Explain procedure to the patient.
  - 3. Place pacing electrodes and attach pacing cable to pacing device per manufacturer's recommendations.
  - 4. Set pacing mode to "Demand Mode" pacing rate to 70 beats-per-minute (BPM) and current at 40 milliamps (mA), or manufacturer recommendation.

### **APPROVAL:**

SIGNATURE ON FILE  
Nicholas Clay, EMS Agency Director

SIGNATURE ON FILE  
Daniel Shepherd, MD, EMS Agency Medical Director

## SANTA BARBARA COUNTY EMERGENCY MEDICAL SERVICES AGENCY

**TRANSCUTANEOUS PACING (TCP)**

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5. If required, provide patient pain relief per [Policy 533-03: Pain Control](#). Patients with profound shock and markedly altered level of consciousness/altered neurological function may not require pain relief.
6. Activate pacing device and increase the current in 10mA increments until capture is achieved (i.e. pacemaker produced pulse with each Paced QRS complex).
7. Assess patient for mechanical capture and signs of clinical improvement (evaluate BP, pulses, skin signs, LOC, etc.).

**NOTE:** Patients with a high-grade AV Block (second-degree Type-II or third-degree blocks) who do not have symptoms DO NOT require pacing. However, equipment should be immediately available if symptoms arise.

**E. Documentation**

1. The use of TCP must be documented in the Santa Barbara County Patient Care Report (PCR).
2. Vital signs must be documented every 5 minutes.

**VI. References:**

- A. [SBCEMSA Policy 533-12: Symptomatic Bradycardia](#)

**VII. Attachments:**

- A. None

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