**Purpose**

To provide guidance for use of external cardiac pacing equipment when indicated.

**Indications**

Hemodynamically unstable bradycardias (heart rate <60, blood pressure <90) that are unresponsive to ATROPINE. Some cases of bradycardic arrests, including post-defibrillation asystole that are unresponsive to ACLS drug therapy.

**Pediatric Pacing**

Non-invasive pacing of pediatric patients is done using pediatric pads and in an identical manner to adult pacing.

**Procedure**

1. Apply external pacing electrode in the proper position and connect to Zoll E or X Series via dual purpose cables. The 4 lead monitoring patches must be on and the lead selector must be in Lead I, II or III.
   a. **NOTE:** The pacer will not function if using fast patch system for monitoring in "pads" mode.

2. Apply external pacing pads according to the instructions on the product. Ensure that all electrodes are making good contact with the patient's skin and are not covering any part of the other electrodes. Shave excess hair if needed.

3. If pacing a conscious patient, pain/discomfort from the pacing current may be excessive.


5. Press green button labeled PACE or turn selector switch to PACER.

6. Set PACER OUTPUT to 0 mA. If the unit has just been turned on, the PACER OUTPUT will automatically be set to 0 mA.

7. Set PACER RATE to a value of 60-70/minute, increase to maintain adequate blood pressure.

8. Increase PACER OUTPUT mA until stimulation is effective (capture).

9. Determine capture.
   a. **Electrical capture** is determined by the presence of a widened QRS complex, the loss of any underlying intrinsic rhythm, and the appearance of an extended, and sometimes enlarged T-wave.
b. **Mechanical capture** is assessed by palpation of a peripheral pulse. In order to avoid mistaking muscular response to pacing stimuli for arterial pulsations, the FEMORAL and RIGHT BRACHIAL or RADIAL arteries are the ONLY recommended locations for palpating a pulse during pacing.

10. Determine optimum threshold. The ideal output current is the lowest value that will maintain capture. This is usually about 10% above threshold. Typical threshold currents are between 40 and 80 mA. Location of pacing pads will affect the current required to obtain capture.

11. Constant monitoring for loss of capture should be performed

12. If battery requires changing during pacing:
   a. Plug monitor into wall outlet
   b. Remove battery and replace with new one
   c. Once new battery is placed, it is safe to unplug monitor from wall outlet