Electrical Therapy
Double Sequential Defibrillation (MCA Optional Protocol)
Paramedic Only Protocol

Aliases: Dual sequential defibrillation

☑ Medical Control Authorities choosing to adopt this supplement may do so by selecting this check box. Adopting this supplement changes or clarifies the referenced protocol or procedure in some way. This supplement supersedes, clarifies, or has authority over the referenced protocol.

MCAs will be responsible for maintaining a roster of the agencies choosing to participate and will submit roster to MDHHS

Note: Double sequential defibrillation is considered an "off-label" intervention that is supported by scientific evidence, including a large randomized controlled trial which reported improved outcomes with this technique compared to standard defibrillation and was not found to be damaging to defibrillators.[1] While not currently indicated in the manufacturers' instructions for use for defibrillators typically used in Michigan, it is not known to be specifically prohibited in the instructions for use.

I. Indications

1. Consider for refractory ventricular fibrillation or pulseless ventricular tachycardia where ≥ 3 defibrillations have been delivered (including AED) **AND**
2. Availability of second defibrillator (may include 1 semi-automatic AED) **Do not delay defibrillation while awaiting second defibrillator**

II. Contraindications

1. Rhythm other than refractory ventricular fibrillation/pulseless ventricular tachycardia
2. Three (3) or more defibrillations not delivered.
3. Unable to place 4 defibrillation pads on patient without overlap of pads.

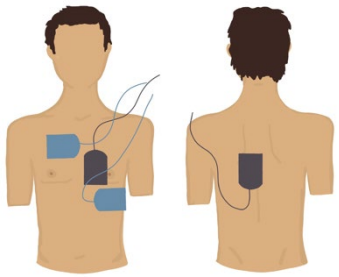
III. Procedure

1. Follow General Precautions per **Electrical Therapy-Procedure Protocol**
2. Ensure ongoing high-quality CPR that is interrupted only when absolutely necessary (and for ≤10 seconds) and anti-arrhythmic medication is

[1] Cheskes S, Verbeek PR, Drennan IR, McLeod SL, Turner L, Pinto R, Feldman M, Davis M, Vaillancourt C, Morrison LJ, Dorian P, Scales DC. Defibrillation Strategies for Refractory Ventricular Fibrillation. N Engl J Med. 2022 Nov 24;387(21):1947-1956. doi: 10.1056/NEJMoa2207304. Epub 2022 Nov 6. PMID: 36342151.

administered per Cardiac Arrest protocol.

3. Prepare sites for second pad set attachment and apply defibrillation pads as per the VF/VT protocol.
   A. Defibrillator 1: Pads in anterior/posterior (AP) position, with anterior pad just to patient's left of sternum (brown pads in diagram)
   B. Defibrillator #2: Pads in anterior/lateral (AL) position, with anterior pad to patient's right of sternum and lateral pad at the patients left anterior axillary line (blue pads in diagram)



   C. Consideration for pad placement – Assure optimal contact.
      1) Shave excessive chest/back hair, as needed.
      2) Assure pads are firmly in place.
      3) Ensure pads are not in contact with one another.
      4) For patients with implanted pacers/defibrillators, avoid placing paddles or pads directly above device.
      5) Assure pads are not placed under the piston of a mechanical CPR device
4. Set the appropriate energy level and assure controls for both defibrillators are accessible to **single paramedic performing defibrillation**.
5. Charge the defibrillators to the selected energy level.
   A. Continue chest compressions while the defibrillator is charging (may be limited if AED).
   B. If second defibrillator is an AED, allow the AED to analyze rhythm and charge while manual defibrillator charging, continuing chest compressions, as AED device permits.
6. When both defibrillators have reached selected energy setting:
   A. Assure that no one is touching the patient.
   B. Defibrillate patient with **single paramedic depressing the "shock" button in rapid sequence with short delay (<1 second) between shocks.** (If AED used, AED shock should be delivered first)
   C. Immediately resume chest compressions.
   D. Repeat double sequential defibrillations at 2-minute intervals if two defibrillators are still available and the patient remains in a shockable rhythm per protocol. Do NOT delay defibrillation, utilize single device/single defibrillation when two devices are not readily available.
   E. Continue to treat the patient according to the appropriate protocol.
7. Patients that convert to an unshockable rhythm or achieve ROSC, then subsequently return to a shockable rhythm, may continue to receive double sequential defibrillation.

IV. Documentation

1. Document as 2 defibrillations within the procedures (same time)
2. The words ‘double sequential’ or ‘dual sequential’ must be included in the narrative.

V. QI/QA Process

1. A 100% of the calls utilizing this protocol will be reviewed by the MCA.