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# NEWSLETTER

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## Free Online Anesthesia CME and MOCA QI with New APSF TEI Course on Manual External Defibrillation, Cardioversion, and Pacing

by Michael Kazior, MD; Christopher Samouce, PhD; Daniel Rosenkrans, MD; David Lizdas, BSME; Cole Dooley, MD; Nikolaus Gravenstein, MD; Jeffrey Feldman MD; and Samsun Lampotang, PhD

A 54-year-old male is undergoing an emergent exploratory laparotomy under general anesthesia. Shortly after the surgeon opens the abdomen, the heart rhythm changes to ventricular fibrillation and there is no longer a palpable pulse. The team is notified, there is a call for help, and chest compressions are started. The operating room nurse brings in the crash cart with the manual external defibrillator. Defibrillation is indicated, and time is of the essence to prevent a poor outcome. However, the anesthesia professional does not remember where to place the pads, which setting should be selected, and what to do if the first shock is unsuccessful in establishing a sinus rhythm.

The manual external defibrillator (MED) is a complex medical device used in emergency settings to provide defibrillation, synchronized cardioversion, or transcutaneous pacing. However, gaps in clinician knowledge and proficiency can compromise patient safety during use. Therefore, the APSF launched Technology Education Initiative (TEI) 3, Manual External

Defibrillation, Cardioversion, and Pacing in February 2025. The content aligns with Advanced Cardiac Life Support (ACLS) guidelines and encompasses eight topics with guided simulations where users receive instructions while navigating scenarios, detailed below.

Topic 1 serves as an introduction to the course. In topic 2, the technical aspects of defibrillators, including physics principles, are discussed. Sliders to adjust current and transthoracic resistance are connected to animated delivery of electricity in a simulated patient. In topic 3, monophasic and biphasic defibrillator waveforms are demonstrated and summarized. For topic 4, interactive placement of defibrillator pads in both anterior/lateral and anterior/posterior configurations is accompanied by real-time feedback to facilitate proper pad placement (Figure 1). Topics 5, 6 and 7 cover the three main functions of the MED: defibrillation, synchronized cardioversion, and transcutaneous pacing. In these topics, the user operates a generic MED user interface to apply

the indicated therapy (Figure 2). The final module, topic 8, evaluates users on applying the MED to Advanced Cardiac Life Support (ACLS) scenarios, including identification of arrhythmias, palpation for pulse, establishment of patient clinical status, and decisions on MED therapy (if any) to be delivered.

The free MEDCP course is available on the ASA Learning Management System and is accessed from the APSF TEI web portal at <https://apsf.org/tei>. The course is free and offers three (3) hours of AMA Category 1 Credits towards continuing medical education (CME). This activity also contributes to patient safety CME and the Quality Improvement (QI) component of Maintenance of Certification in Anesthesiology (MOCA). Although this education was designed for anesthesia providers, it is applicable to all health care professionals who use the MED. Anyone can take the course free of charge by creating an account on the ASA website, then use the course links provided above

See “New APSF TEI Course,” Next Page

### APSF TEI - Manual External Defibrillation, Cardioversion, and Pacing - Transcutaneous Pacing

About

Press the RATE up and down arrows to apply the pacing pulses at the indicated BPM.

**S4 TRANSCUTANEOUS PACING PRACTICE**

1/1. User action: Perform transcutaneous pacing at 80 BPM.

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Figure 1: Defibrillator pad placement practice in the MEDCP simulation.

## New APSF TEI Course, Cont'd

From "New APSF TEI Course," Preceding Page

### APSF TEI - Manual External Defibrillation, Cardioversion, and Pacing - ECG Identification and MED Therapy Selection

**ECG** 180 BPM

25 mm/s  
1 cm/mV

**Check Patient**

Patient has no pulse. Patient is unstable.

**Select Therapy**

☐ Defibrillation

☐ Synchronized Cardioversion

☐ Transcutaneous Pacing

☐ No MED Therapy Indicated

**Identify ECG**

☐ Normal Sinus Rhythm

☐ Ventricular Fibrillation (VFIB)

☐ Atrial Fibrillation (AFIB)

☐ Atrial Flutter

☐ Asystole

☐ 2<sup>nd</sup> Degree AV Block (Mobitz Type I)

☐ 2<sup>nd</sup> Degree AV Block (Mobitz Type II)

☐ 3<sup>rd</sup> Degree AV Block

☒ Ventricular Tachycardia (monomorphic)

☐ Ventricular Tachycardia (polymorphic)

☐ Supraventricular Tachycardia (SVT)

☐ Pulseless Electrical Activity (PEA)

Glossary

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**S2 ECG IDENTIFICATION AND MED THERAPY PRACTICE**

2/12. User action: Identify the ECG, check the patient, then select the MED therapy

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Figure 2. Performing cardioversion using the generic manual external defibrillator user interface in the MEDCP simulation.

through the APSF TEI web portal to enroll in the course. Providers can apply the CME offered by this course towards their own recertification requirements.

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