

# Emergency Medical Responder: A Skills Approach

Fifth Canadian Edition



FIFTH CANADIAN EDITION

## EMERGENCY MEDICAL RESPONDER

A SKILLS APPROACH

MEETS PARAMEDIC ASSOCIATION OF CANADA'S  
NATIONAL OCCUPATIONAL COMPETENCY PROFILE



DANIEL LIMMER • EDWARD T. DICKINSON  
JOHN MACKAY • MICHELLE MACKAY



Pearson

Copyright © 2019 Pearson Canada Inc.

9 - 1

## Chapter 9

### Automated External Defibrillation

## Objectives (1 of 2)

- Define defibrillation and describe the indications for and purpose of automated external defibrillation.
- Identify the two types of automated external defibrillator (AED).
- List the contraindications for the use of automated external defibrillation.



Pearson

Copyright © 2019 Pearson Canada Inc.

9 - 2

## Objectives (2 of 2)

- Explain how to operate an automated external defibrillator.
- Demonstrate how to integrate CPR procedures and automated external defibrillation procedures.
- Explain how to adapt the AED procedure to unconscious patients.
- List the eight components of an AED that should be checked every shift.

## EMS Systems with EMR AED Usage

- All EMS links to Chain of Survival
- Medical direction
- Quality improvement programs to monitor AED's in the field
- Mandatory continuing education for AED users

## Types of Defibrillator (1 of 2)



**Figure 9-1a** Example of a fully automated external defibrillator.

Copyright © 2019 Pearson Canada Inc.



**Figure 9-1b** Example of a semi-automated external defibrillator.

Copyright © 2019 Pearson Canada Inc.

## Types of Defibrillation (2 of 2)

- Manual defibrillation
  - used by paramedics
- Semi-automated external defibrillator
  - used by EMRs and PAD programs

## Operating an AED

- Become familiar with AED you are using
- Ensure batteries are fully charged
- Follow local AED protocols
- Ensure no one touches patient while AED is analyzing heart rhythm or delivering shock
- Do not apply AED to patient with pulse

## Process for Patients with CPR in Progress

- Turn on the AED power
- Apply the appropriate-sized adhesive pads
- Stop CPR and instruct everyone to stay clear of the patient
- Press the analyze button
- Deliver the shock
- Resume chest compressions immediately

## Using a Semi-Automated Defibrillator (1 of 3)



**Figure 9-5a** Determine that the patient is breathless and pulseless.

Copyright © 2019 Pearson Canada Inc.



**Figure 9-5b** One rescuer initiates CPR, while the other prepares the AED.

Copyright © 2019 Pearson Canada Inc.

## Using a Semi-Automated Defibrillator (2 of 3)



**Figure 9-5c** Place adhesive pads on the patient's chest.

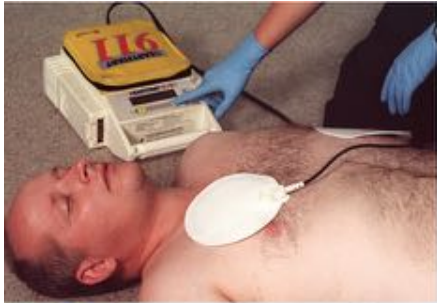
Copyright © 2019 Pearson Canada Inc.



**Figure 9-5d** Turn on the AED.

Copyright © 2019 Pearson Canada Inc.

# Using a Semi-Automated Defibrillator (3 of 3)



**Figure 9-5e** Stop CPR and get clear of the AED as it analyzes the heart rhythm.

Copyright © 2019 Pearson Canada Inc.



**Figure 9-5f** If a shock is advised, clear all others from the patient and deliver the shock.

Copyright © 2019 Pearson Canada Inc.

# Alternative Pad Placement



**Figure 9-4a** Defibrillator pad placement.

Copyright © 2019 Pearson Canada Inc.



**Figure 9-4b** Alternative pad placement, front view.

Copyright © 2019 Pearson Canada Inc.



**Figure 9-4c** Alternative pad placement, back view.

Copyright © 2019 Pearson Canada Inc.

## Post Resuscitation Care

- Monitor pulse
- Ventilate as necessary
- If patient is uninjured and has a pulse. Place in recovery position
- Apply high concentration oxygen
- Keep AED attached to patient
- Continue to assess

## Call Review

After AED use

- Upload data
- The call should be reviewed by a quality improvement committee

## Figure 9–6 Operator’s Shift Checklist for an AED (1 of 2)

AUTOMATED DEFIBRILLATORS: OPERATOR’S SHIFT CHECKLIST		
Date: _____	Shift: _____	Location: _____
Mfr/Model No.: _____	Serial No. or Facility ID No.: _____	
At the beginning of each shift, inspect the unit. Indicate whether all requirements have been met. Note any corrective actions taken. Sign the form.		
	Okay as found	Corrective Action/Remarks
<b>1. Defibrillator Unit</b>		
Clean, no spills, clear of objects on top, casing intact		
<b>2. Cables/Connectors</b>		
a. Inspect for cracks, broken wire, or damage		
b. Connectors engage securely		
<b>3. Supplies</b>		
a. Two sets of pads in sealed packages, within expiration date	*g. Spare charged battery	
b. Hand towel	*h. Adequate ECG paper	
c. Scissors	*i. Manual override module, key or card	
d. Razor	*j. Cassette tape, memory module, and/or event card plus spares	
*e. Alcohol wipes		
*f. Monitoring electrodes		
<b>4. Power Supply</b>		
a. Battery-powered units		
(1) Verify fully charged battery in place		
(2) Spare charged battery available		
(3) Follow appropriate battery rotation schedule per manufacturer’s recommendations		
b. AC Battery backup units		
(1) Plugged into live outlet to maintain battery charge		
(2) Test on battery power and reconnect to line power		

Figure 9–6 Operator’s shift checklist for an AED.

## Figure 9–6 Operator’s Shift Checklist for an AED (2 of 2)

<b>5. Indicators/*ECG Display</b>		
*a. Remove cassette tape, memory module, and/or event card	*e. "Service" message display off	
b. Power on display	*f. Battery charging; low battery light off	
c. Self-test okay	*g. Correct time displayed – set with dispatch centre	
*d. Monitor display functional		
<b>6. ECG Recorder</b>		
a. Adequate ECG paper	b. Recorder prints	
<b>7. Charge/Display Cycle</b>		
*a. Disconnect AC plug – battery backup units	*e. Manual override functional	
b. Attach to simulator	f. Detach from simulator	
c. Detects, charges and delivers shock for "VF"	*g. Replace cassette tape, module, and/or memory card	
d. Responds correctly to non-shockable rhythms		
<b>8. *Pacemaker</b>		
a. Pacer output cable intact	c. Inspect per manufacturer’s operational guidelines	
b. Pacer pads present (set of two)		
<input type="checkbox"/> Major problem(s) identified (OUT OF SERVICE)		
*Applicable only if the unit has this supply or capability		
Signature: _____		

Figure 9–6 Continued