

Using the Defibrillator

This chapter provides information and instructions for using the defibrillator on a patient in cardiac arrest.

Warnings and Cautions	35
Responding to a Sudden Cardiac Arrest Emergency	36
Additional Training Resources	40
Troubleshooting Tips.....	40

Warnings and Cautions

To help ensure safe use of the defibrillator, familiarize yourself with the following warnings and cautions.

WARNING

Shock Hazard

When instructed **EVERYONE CLEAR**, do not touch the defibrillator, patient, electrode pads, or any material or fluids in contact with the patient. Make sure no one is touching the patient when the defibrillator shocks the patient.

WARNING

Possible Fire, Burns, and Ineffective Energy Delivery

During defibrillation, material in contact with the electrode pads can cause electrical sparks, skin burns, and divert important defibrillating energy away from the heart. Place electrode pads so that they adhere to the skin completely. Do not allow the electrode pads to touch each other, medication patches, dressings, metal objects, other electrodes, or any other material on the patient's chest.

WARNING

Shock hazard

Do not touch the patient and the USB connector on the back of the device simultaneously.

WARNING

Possible Skin Burns

During defibrillation, air pockets between the skin and electrode pads can cause skin burns. To help prevent air pockets, make sure electrode pads completely adhere to the skin. Do not use damaged, expired, or dried-out electrode pads.

WARNING

Possible Skin Burns and Ineffective Energy Delivery

Electrode pads that are dried out or damaged may cause electrical arcing and patient skin burns during defibrillation. Do not pull the red handle to open the electrodes until immediately before use.

CAUTION

Possible Equipment Damage

Prior to using this defibrillator, disconnect from the patient all equipment that is not defibrillator-protected.

Responding to a Sudden Cardiac Arrest Emergency

If not treated, sudden cardiac arrest will cause death. It is important to remember to immediately call for help and activate your emergency response system.

When you open the defibrillator, voice instructions (prompts) provide clear, step-by-step instructions for responding to a patient in cardiac arrest. For a complete list of voice instructions, see Voice Prompts (on page 93).

Basic Steps for Using the LIFEPAK CR2 Defibrillator

Responding to a cardiac emergency using the defibrillator involves these basic steps.



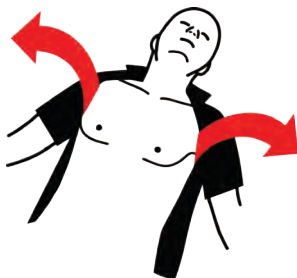
- 1 Tap the patient's shoulder and shout. A person in cardiac arrest will not respond.



- 2 Check for breathing by listening next to the patient's mouth and looking for chest movement. Use the defibrillator only if the patient is not responding, and not breathing or only gasping. If in doubt, use the defibrillator.



- 3 Place the defibrillator near the patient and on the side next to you. Open the lid to turn on the defibrillator. The defibrillator will guide you through the appropriate steps. **Note:** If the defibrillator does not turn on or the lid is missing, press the **ON/OFF** button.



- 4 Remove all clothing, including undergarments, from the patient's chest. If the chest is excessively hairy and a razor is readily available, quickly shave the hair in the area where you will place the electrode pads. If the chest is dirty or wet, wipe the chest clean and dry. If there are medicine patches on the patient's chest, remove them.



- 5 If the defibrillator is a dual-language model, a voice prompt occurs at this time in the secondary language. This voice prompt instructs you to press the **LANGUAGE** button to switch to the secondary language (if desired).



- 6 If the patient is a child less than 8 years old or who weighs less than 25 kg (55 lb), press the **CHILD MODE** button to enter Child mode. To switch back to Adult mode, press the **CHILD MODE** button again.

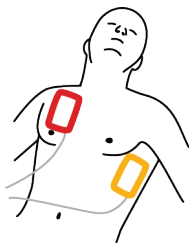
Note: In Japan, Child mode is recommended for children less than 6 years old.



- 7 Pull the red handle to reveal the electrode pads.



- 8 Pull the loops on the electrode pads to peel the pads from the tray.



- 9 Apply the pads to the patient's bare chest exactly as shown in the pictures on the pads. If possible, avoid placing the pads over broken skin. Be sure to press firmly so that the pads completely adhere to the patient's chest.

Note: Be sure you do not place the electrode pads over an implanted device such as implanted pacemaker or ICD. An indication of an implant is a protrusion in the chest skin and a scar. If you are in doubt, apply the pads as shown in the pictures.

Note: Ensure the pads are at least 2.5 cm (1 in) apart. If the patient's chest is too small, place the pads on the chest and back as shown in the child pictures on the pads.



- 10** Listen to the voice prompts and do not touch the patient unless instructed to do so.

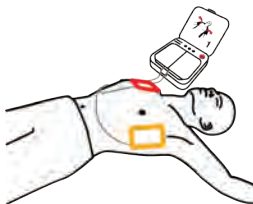


- 11** If the defibrillator heart rhythm analysis determines that a shock is needed you will hear **EVERYONE CLEAR**, followed by one of these two options.
- If you have a semi-automatic model, you will hear **PRESS FLASHING BUTTON**. Press the flashing **SHOCK** button to deliver a shock.
 - If you have a fully automatic model, you will hear **DO NOT TOUCH PATIENT** followed by **DELIVERING SHOCK**. The defibrillator will automatically deliver a shock without requiring further action.

- 12** Do not touch the patient while a shock is being delivered.
Regardless of which model you have, continue to follow the voice prompts.



- 13** The defibrillator will instruct you to begin chest compressions. The defibrillator will provide instructions for hand placement during chest compressions, and 'tocks' at the correct compression rate. You may also be instructed to provide rescue breaths, depending on the settings for the defibrillator.
- Note:** Do not remove the electrode pads from the patient's chest during chest compressions.

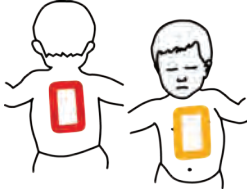


- 14** Continue to follow the voice prompts and provide chest compressions when instructed until one of the following occurs:
- The patient begins breathing regularly or moving
 - Emergency medical personnel arrive and tell you to stop.

Do not remove the pads or disconnect them from the defibrillator unless emergency medical personnel instruct you to do so.

Special Instructions for Use on Young Children

If the patient is a very young child or infant, place the electrode pads on the chest and back, as shown below. The pads must be placed so they are not touching each other. Illustrations showing this placement are also provided on the pads for quick reference during use.



What to Do After Emergency Medical Personnel Arrive

When emergency medical personnel arrive, continue performing CPR until they tell you to stop. Tell them what actions you have taken, how long the patient has been unconscious, if you delivered shocks, and the number of shocks delivered.

Do not worry if you cannot recall precisely what happened. Your defibrillator records heart rhythms, shocks, and other data that can be transferred to medical professionals during the event or at a later time. Contact your local Physio-Control representative or local authorized distributor for assistance with data transfer.

Emergency medical personnel may be able to disconnect the electrode pads from the defibrillator and reconnect them to another defibrillator that has a compatible cable. To disconnect the electrode pads, pull the electrode cable straight out from the defibrillator and close the lid to turn off the defibrillator.

What to Do After Using Your Defibrillator

After you use your defibrillator to respond to a cardiac arrest, complete the following tasks.

1. If the defibrillator is turned on, press and hold the **ON/OFF** button for approximately 3 seconds to turn it off.
2. Clean the defibrillator and its accessories according to the instructions provided in Cleaning the Defibrillator (on page 82). Use only the cleaning agents listed.
3. The QUIK-STEP electrode tray must be replaced after it is opened, even if the electrodes were not used. If you do not have a spare electrode tray, contact your Physio-Control representative or local authorized distributor to order a new electrode tray.
4. When the new electrode tray arrives, install it according to the instructions provided in Replacing the Electrodes (on page 79).
5. Close the lid and verify that the Readiness indicator flashes every 6 seconds.

Note: If the Readiness indicator does not flash, open the lid. When the voice prompts start, press and hold the **LANGUAGE** and **CHILD MODE** buttons simultaneously for at least 2 seconds, until you hear **DEVICE READY** or **DEVICE NOT READY**. The defibrillator will provide voice prompts to help you determine what is wrong. See Caring for the Defibrillator (on page 75) for more information.

- Dispose of the used electrode tray according to the instructions provided in Recycling Information (on page 83).

Additional Training Resources

Physio-Control recommends that all identified defibrillator users attend formal CPR and AED training provided by a recognized training organization. Training should be repeated every 2 years.

Training videos for the LIFEPAK CR2 defibrillator are available on the Physio-Control website at www.physio-control.com. These short videos provide information about using and maintaining the defibrillator.

Physio-Control offers a training device to assist with training simulations. The LIFEPAK CR2 trainer simulates the LIFEPAK CR2 defibrillator, but does not deliver shocks. The trainer is recommended so users can practice using the LIFEPAK CR2 defibrillator in simulated cardiac arrest situations.

IMPORTANT! Do not use the LIFEPAK CR2 defibrillator for training. Doing so will reduce available battery charge, and could damage the electrodes.

To order the LIFEPAK CR2 trainer, contact your local Physio-Control representative or local authorized distributor. See the customer support contact list provided with the device for region-specific phone numbers.

Troubleshooting Tips

This section explains problem conditions that you may encounter while using the defibrillator.

OBSERVATION	POSSIBLE CAUSE	CORRECTIVE ACTION
CHECK PADS FOR GOOD CONTACT TO BARE SKIN or CHECK ELECTRODE TRAY CONNECTION voice prompts are heard	Electrode pads are not properly adhered to the patient's bare skin Inadequate connection to the defibrillator	<ul style="list-style-type: none">Clean, shave, and dry the patient's skin before placing pads on skin.Firmly press the pads on the patient's skin.Be sure that the electrode tray is completely inserted in the defibrillator.
Defibrillator cannot deliver the required shock	Low battery power	<ul style="list-style-type: none">Administer CPR.
Voice prompts sound faint or distorted	Low battery power Speaker system failure	<ul style="list-style-type: none">Follow voice prompts if possible.Administer CPR.Contact qualified service personnel.

OBSERVATION	POSSIBLE CAUSE	CORRECTIVE ACTION
MOTION DETECTED; STOP MOTION voice prompt is heard	Patient is being touched	<ul style="list-style-type: none"> Do not touch patient.
	Patient movement because of breathing	<ul style="list-style-type: none"> Check patient for normal breathing.
	Electrical/radio frequency interference	<ul style="list-style-type: none"> Move communication or other suspected devices away from the defibrillator when possible.
Defibrillator does not provide voice prompts or beeping tones after you open the lid (turn it on).	Depleted battery	<ul style="list-style-type: none"> Replace the battery immediately. If a replacement is not available, order a new battery immediately.
	Speaker system failure	<ul style="list-style-type: none"> Contact qualified service personnel.
Readiness indicator is not flashing	Low battery power or expired electrodes	<ul style="list-style-type: none"> Open the lid. When the voice prompts start, press and hold the LANGUAGE and CHILD MODE buttons simultaneously for at least 2 seconds. The defibrillator will provide voice prompts to help you determine what is wrong.
	Depleted battery	<ul style="list-style-type: none"> Replace the battery immediately. If a replacement is not available, order a new battery immediately.
	Electrode tray not connected	<ul style="list-style-type: none"> Be sure that the electrode tray is completely inserted in the defibrillator.
	Operating temperature is too low or too high	<ul style="list-style-type: none"> Operate the defibrillator within 0° to 50°C (32° to 122°F).
	Defibrillator self-test failed	<ul style="list-style-type: none"> Contact qualified service personnel.