

# DEFIBRILLATION

EVERYONE CAN BE A LIFESAVER

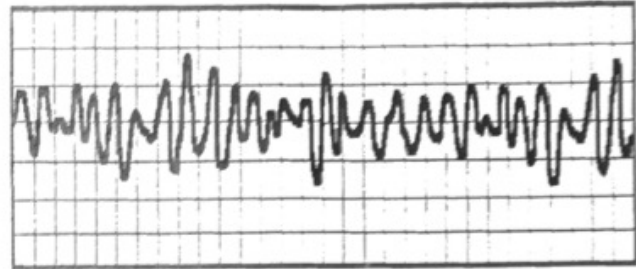


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## SUDDEN CARDIAC ARREST (SCA)

SCA is the abrupt loss of heartbeat. Ventricular Fibrillation is the abnormal or irregular rhythm of the heart. It is often very fast and the heart can not pump blood effectively around the body and to the vital organs. Victims may become unresponsive, not breathe normally, and show no signs of circulation. Defibrillation is the only effective treatment. AEDs can also be used on Ventricular Tachycardia



## AUTOMATED EXTERNAL DEFIBRILLATORS (AEDs)



Defibrillation is an electric shock to the heart which attempts to stop its uncoordinated activity. It allows the heart to resume normal heart rhythm and pumping action. The HeartStart Defibrillator is designed to be:

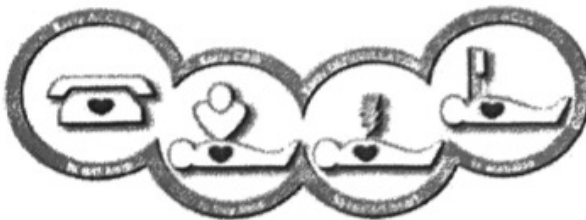
- Fast to learn and easy to use;
- On standby, alert and ready;
- Places the power to save a life in the hands of those responding first on the scene.

The HeartStart range of Defibrillators automatically prompts the user, interprets heart rhythm and advises of "shock" only if needed.

**The AED is also self testing and a verbal update on the current status is issued by clicking the blue 'I' button.**

## CHAIN OF SURVIVAL

Early Access to get help  
Early CPR to buy time,  
Early Defibrillation to restart heart.  
Early Advanced Cardiac Life Support.



## INFANT AND CHILD KEY

When Infant and child pads are inserted the AED uses 50 joules. These should be used for children under 25kgs or 8 years of age.



## SMART PADS II

The adhesive pads used with the HeartStart FRx defibrillator to defibrillate patients of any age or weight. The pads are applied to a patient's bare skin and used to detect the patient's heart rhythm and to transfer the defibrillation shock. These pads have a 2 years lifespan and their expiry date is indicated on the pads case.

## BATTERY

The AED has a typical four year battery life once installed and can deliver up to 90 shocks or 3 hours operating time.

## GREEN READY LIGHT

Located above the power button, this light when blinking indicates that the latest self testing was completed successfully and the unit is ready for use. A solid green light indicates the machine is in use.

If the green ready light is off, with or without chirping and the flashing blue button, means the unit needs attention – press the blue 'I' button for more information.

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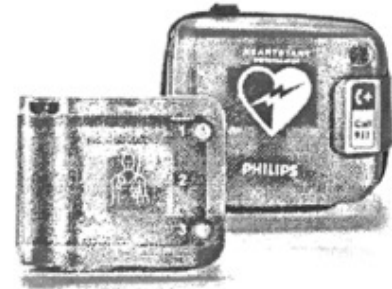
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## USING A HEARTSTART FIRST AID

### 1. Press the ON/OFF button on the FRx

- Voice instruction begins
- Remove all clothing from the chest

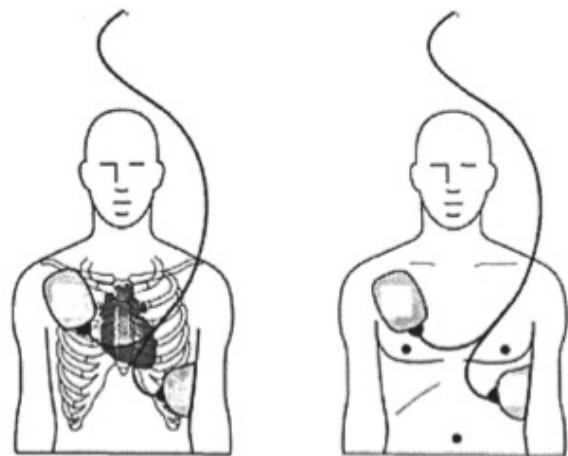


### 2. Remove the SMART Pads from the carry case

- Dry the chest if wet and clip hair if excessive
- Lift out pads and peel one pad from the case and place as shown on the icon.
- Repeat with second pad
- Press pads firmly on chest.

#### Position and Location

- Pad on Victim's right:
  - Below collar bone
  - Right of sternum
- Pad on Victim's left:
  - On rib cage
  - Below breast
  - Wrapped towards back
- Adult pads on infant or child
  - One in the middle of the chest (anterior)
  - One in the middle of the back (posterior)



### 3. Rhythm Analysis

- As soon as the FRx detects that the pads are attached the triangular Caution light will flash advising not to touch the patient.
- Caution light goes solid if a shock is advised
- Outcome of analysis:
  - Shock advised, OR, shock not advised

### 4. Press the Shock button

- The defibrillator will advise a shock only when needed.
- The FRx will advise you make sure no one is touching the patient.
- Press the flashing orange button to deliver the shock.

#### If No Shock is advised:

- The defibrillator will tell you it is safe to touch the patient.
- The triangular caution light will turn off
- The Defibrillator will tell you to check the patient and perform CPR if required.

#### CPR Voice Coaching

- Press the flashing blue i-button to activate CPR coaching.
- Provides instruction in basic CPR, including rate and depth of compressions

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## Additional Information

Below are some common queries, please always refer to the user guide for details specific to your unit.

### What is Sudden Cardiac Arrest and how does it differ to a heart attack?

Sudden Cardiac Arrest (SCA) is the abrupt loss of a normal heartbeat into an irregular rhythm. One of the common types is known as Ventricular Fibrillation and is an abnormal or irregular rhythm of the heart.

A heart attack is the constriction of blood to the heart muscle caused by blocked arteries, commonly linked to unhealthy lifestyles and old age.

### Blue information Button

You can press the blue 'i' information button on the front of the HeartStart FRx Defibrillator to give you the current status of the machine where it will normally respond with "ready for use". Alternatively, it may provide you with other feedback like "check pads", etc.

### Poor Pad contact with skin

If the pads are not firmly to the skin, are not removed from the plastic liner or are touching clothing the heart start will not continue. Make sure the pads are sticking completely to the patient's skin by drying the skin and shaving or clipping as necessary. The FRx will verbally remind you of the correct technique to apply the pads until they are successfully applied.

### Battery Power Low

The HeartStart FRx will chirp or the 'i button' will flash when the battery power is low. The recommended actions include; pressing the blue 'i button' to identify the problem, replace battery, then remove the battery for five seconds and reinstall it to start the battery insertion self test.

### Touching the casualty

The proprietary algorithm is used by the HeartStart FRx Defibrillator to analyse the patient's heart rhythm and determines whether the rhythm is shockable. Analysis difficulty may result from the patient being touched during this analysis. The FRx will tell you that no one should be touching the patient, and the caution light will begin to flash as a reminder.

### Rhythm Analysis Difficult

The FRx will tell you to stop all motion if the rhythm analysis is proving to be unsuccessful. Possible causes include: the patient being moved or jostled, a dry environment causing ECG interference via static electricity, or radio or electric sources interfering with the ECG analysis. The recommended action include, minimising motion, particularly in dry environments; and checking for possible causes of radio and electrical interference.

### Chirping

Chirping from the FRx indicates a problem. The possible causes include; low battery power, SMART Pads need changing, the FRx being turned off without pads being installed, cover on the pads is not in place, the training pads cartridge has been left in the FRx or the FRx has been stored outside the recommended temperature range.

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## **Pacemaker or implanted defibrillator**

Avoid placing the pads directly over an implanted pacemaker or defibrillator. A noticeable lump with a surgical scar should indicate the position of an implanted device.

## **Trauma**

Avoid attaching pads directly to open wounds.

## **Metal Surface**

Before delivering a shock, it is important to disconnect the patient from other medical electrical equipment, such as blood-flow meters, that may not incorporate defibrillation protection. In addition, make sure the pads are not in contact with metal objects such as a bed frame or stretcher.

## **In Water**

Remove the patient from free standing water and dry their chest prior to connecting the Smart Pads.

## **Pregnancy**

There is no evidence that shocks from a defibrillator have adverse effects on the heart of the fetus. Therefore, apply correct CPR technique on a pregnant woman and use defibrillation as required.

## **No infant and child key**

If the patient is under 25 kg or 8 years old, but you do NOT have an Infant/Child Key, do not delay treatment. Remove all clothing from the torso, to bare both the chest and the back. Apply the FRx using the adult pads, but place one pad in the middle of the chest between the nipples, and the other in the middle of the back (anterior-posterior positions).

## **Data Collation**

The FRx automatically stores data about its last clinical use in its internal memory. The stored data can be transferred to a personal computer or a hand held computer running the appropriate application in the Philips HeartStart Event Review data management software suite. The information automatically stored by the FRx includes a summary of information about the last clinical use. You can get a voice summary by holding down the i-button until it beeps once. It will tell you how many shocks were delivered and how long since the machine was turned on. Removing the battery erases the summary data from its last use.