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## 7 Data Management and Review

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### Overview

The HeartStart FR2+ is designed to make it easy to manage incident data. Some information is automatically stored in the internal memory of the HeartStart FR2+. More detailed data can be stored on a data card if desired. The incident information stored in the HeartStart FR2+'s internal memory, or a summary of the information recorded on the data card, can then be displayed on the HeartStart FR2+ screen for review. In addition, HeartStart Event Review software can be used on a personal computer to store and review the detailed recorded information from a data card.

### Recording incident data

The HeartStart FR2+ has two ways of recording information about an emergency incident so that it can be reviewed after the incident: in internal memory and on an optional data card.

#### Recording data in internal memory

Summary data for an incident is automatically recorded in internal memory by the FR2+ while you are using it.

#### Recording data on a data card

The M3854A data card can be used to store several hours of detailed incident data, including events, ECG, and, optionally, audio.

**IMPORTANT NOTE:** To record incident data on a data card, the data card must be installed *before* you turn on the FR2+.

**CAUTION:** The FR2+ is designed to be used only with Philips-approved accessories. The FR2+ may perform improperly if non-approved accessories are used.

Directions for installing a data card are provided in Chapter 2. To remove or replace a data card after use, be sure to turn off the FR2+ in order to ensure that no incident data are lost. Pull the data card tray out of the port in the FR2+ and

remove the card. Give it to the appropriate person in your organization. Either load a new data card into the tray or insert the empty data card tray into the port.

**NOTE:** Because it helps seal the FR2+ against moisture, the data card tray should always be reinserted into the port of the FR2+.

To avoid running out of data card space during an incident, it is recommended that each data card be used to record the information for only one incident and that it be replaced, or erased and reinstalled, after each use of the FR2+.

If you record information from more than one incident on a data card, it is important to review how much time is left on the used data card before recording a new incident. To do this, load the data card into the data card tray, insert the tray in the FR2+, then remove and reinstall the battery. The first screen displayed shows how much recording time remains on the card.

**NOTE:** During an incident, if for any reason you turn off the FR2+ *for less than five minutes*, the FR2+ considers this to be a “continued use” situation, and:

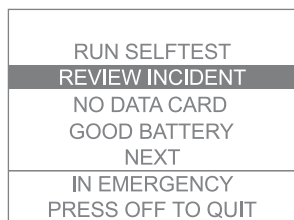
- the information stored about the incident is saved,
- additional events recorded after the device is turned back on will be treated as part of the same incident, and
- the selftest will *not* automatically run if the battery is replaced.

**IMPORTANT:** Do not remove the battery while incident data are being recorded to a data card. To ensure that no incident data are lost, turn the FR2+ off (return it to standby mode) before replacing the battery.

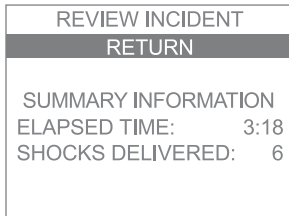
## Reviewing Incident Data

### Reviewing data from internal memory

Summary information from the last incident that is stored in the internal memory of the HeartStart FR2+ can be displayed on its screen for review. To review this information:



1. Remove the data card if one is installed and unplug the pads connector.
2. Remove and reinstall the battery. (Make sure you are using the gray M3863A FR2 standard battery or the blue M3848A rechargeable battery, not the yellow Training & Administration Pack.)
3. Select REVIEW INCIDENT from the menu. A new screen comes up.



4. Observe and record, if desired, the summary information displayed on the screen:
  - how long the incident recorded by the FR2+ lasted, and
  - how many shocks were delivered during the incident.

This information remains in the FR2+'s memory and can be displayed for review until the next time the FR2+ is used. At that time, the data from the new incident will be displayed. Summary data for the most recent use is always saved in the FR2+ memory until the FR2+ is used again.

### Reviewing data from a data card

If a data card is installed when the HeartStart FR2+ is turned on for use during an incident, the HeartStart FR2+ automatically records detailed information on the data card. To review this information on the HeartStart FR2+ screen:

1. Make sure the Training & Administration Pack is *not* installed.
2. Make sure the data card is installed. Unplug the pads connector.
3. Remove and reinstall the battery.
4. Select REVIEW INCIDENT from the menu. A new screen comes up. This screen displays:
  - ELAPSED TIME — how long the incident recorded by the FR2+ lasted,\*
  - SHOCKS DELIVERED — how many shocks were delivered during the incident, and
  - FIRST SHOCKS AT — the times at which the first three shocks were delivered.

**NOTE:** If the data card does not contain event data, only the summary information from FR2+ internal memory will be displayed when REVIEW INCIDENT is selected.

5. To review the events that occurred during the incident, select REVIEW EVENTS. A new screen comes up. This and following screens, accessed by



4. Select REVIEW INCIDENT from the menu. A new screen comes up. This screen displays:
  - ELAPSED TIME — how long the incident recorded by the FR2+ lasted,\*
  - SHOCKS DELIVERED — how many shocks were delivered during the incident, and
  - FIRST SHOCKS AT — the times at which the first three shocks were delivered.

\* The FR2+ displays elapsed time to a maximum of 99:59 minutes. If the elapsed time of use extends beyond this figure, the minutes are represented by “??” but the seconds are displayed. However, total elapsed time will be recorded on an installed data card for later review with HeartStart Event Review data management software.

REVIEW EVENTS	
RETURN	
NEXT EVENTS	
POWER ON	0:00
PADS ON	0:04
SHOCK ADVISED	0:13
ARMED	0:18
SHOCKED	0:22

selecting NEXT EVENTS, display elapsed time information for critical activities in using the FR2+. These include:

- POWER ON — when the FR2+ was turned on,
- PADS ON — when the defibrillator pads were connected,
- SHOCK ADVISED — when a shock was advised,
- ARMED — when the FR2+ is fully charged for shock delivery,
- SHOCKED — when a shock was delivered,
- PAUSE FOR CPR — when a pause occurred
- POWER OFF — when the FR2+ was turned off

Additional information may be displayed if your FR2+ is using a revised setup allowing advanced mode operation.



REVIEW INCIDENT	
RETURN	
REVIEW EVENTS	
REVIEW ECG	
ELAPSED TIME:	3:18
SHOCKS DELIVERED:	6
FIRST SHOCKS AT:	00:18 01:10 01:49

- To review the first six seconds of the recorded ECG for the incident, select REVIEW ECG. A new screen comes up. This screen displays a three-second segment of the presenting ECG from the incident.
- Select NEXT ECG SEGMENT to review the second three-second segment of the presenting ECG.

REVIEW ECG	
RETURN	
NEXT ECG SEGMENT	

Data cards can be reused if desired. Using a personal computer running HeartStart Event Review software and an appropriate card reader for your computer, you can copy the information from a data card, then erase the card and reuse it in the FR2+.

## A Accessories for the HeartStart FR2+

**NOTE:** The HeartStart FR2+ is an enhanced version of the defibrillator previously sold as the Heartstream FR2. The FR2+ has all the features of the FR2. All accessories compatible with the FR2 are compatible with the FR2+. However, the FR2+ can be used with certain accessories (labeled FR2+) that are not compatible with the FR2.

Accessories\* for the HeartStart FR2+ available separately from Philips Medical Systems include the following:

- Batteries
  - Spare FR2 standard battery (recommended) [REF: M3863A]
  - FR2+ rechargeable battery† [REF: M3848A]
  - Charger, for the M3848A FR2+ rechargeable battery only; includes power cord [REF: M3849A]
  - FR2 battery for aviation applications [REF: 989803 | 3629 | ]
- Pads
  - Adult defibrillator pads [REF: DP2/DP6]
  - FR2 infant/child reduced-energy defibrillator pads [REF: M3870A]
- Carry cases
  - Fabric carrying case [REF: M3868A]
  - Vinyl carrying case [REF: M3869A]
  - Hardshell waterproof carrying case [REF: YC]
  - Temperature-control carrying case [REF: 989803 | 3317 | ]
- Data cards and tray
  - Spare data card tray [REF: M3853A]
  - Data card and tray [REF: M3854A]
- Cabinets and mounts
  - Wall mount bracket [REF: M3857A]
  - Defibrillator cabinet, semi-recessed [REF: PFE7023D]
  - Defibrillator cabinet, wall surface mount [REF: PFE7024D]
  - Defibrillator cabinet, basic [REF: 989803 | 3653 | ]

\* Certain accessories require a prescription in the United States.

† The M3848A FR2+ rechargeable battery is designed for environments in which the FR2+ Defibrillator is expected to see frequent use. This battery is not designed for use in aircraft. It is recommended that this battery not be used as a spare or backup battery and, due to its shorter standby life, that it not be used as the primary or spare battery in applications where the FR2+ Defibrillator is infrequently used.