GE Healthcare

CARESCAPE Central Station v1

Participant Notebook

Global Customer Education
CARESCAPE
Central Station v1

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Global Customer Education

Customer Support Center: 800-558-7044

Notice
Configurations available for this product depend on local market and standards requirements. Illustrations in this course may not represent all configurations of the product. This course does not cover the operation of every accessory.

The materials contained in this document are intended for educational purposes only. This document does not establish specifications, operating procedures or maintenance methods for any of the products referenced. Always refer to the official written materials (labeling) provided with the product for specifications, operating procedures and maintenance requirements.

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Note! This instructor guide is not intended to replace the User’s Manuals that you received with the system. Please refer to the disclaimer notice at the end of this participant guide for more information.

This training is intended for CARESCAPE® Central Station v1. The material contained in this training is intended for educational purposes only. Always refer to the official written materials provided with the CARESCAPE Central Station v1 for specifications, operating procedures, and maintenance requirements.

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1 Welcome

We would like to take a moment to thank you for choosing GE Healthcare for your patient care needs. Our goal is to provide you with the best training service available, while continuing to support you as you use our products in your workplace. The purpose of this Participant Notebook is to provide a place to write your notes regarding each chapter. These are your notes specific to what is important for you and your care area. This can be a valuable tool if you have further questions or need for clarification. You can use these notes and refer to the CARESCAPE Central Station v1 Instructor Guide that follows the chapter outline of this notebook. There will be copies of the Instructor Guide on your unit to be used as reference after the initial training sessions as well as copies used during the training session. These Instructor Guides are intended for educational purposes only. Always refer to the official written material provided with the CARESCAPE Central Station v1 for specifications, operating procedures and maintenance requirements.

Training Session Description and Objectives

The CARESCAPE Central Station v1 training session is designed to give participants the information and product knowledge needed to proficiently operate the CARESCAPE Central Station v1 System. The training session will use discussion, as well as extensive hands-on practice to teach the course objectives as they apply to the specific care area. Not all training sessions will cover all parameters. The training session parameters presented will depend on the specific care area needs. The following list of objectives is covered in the CARESCAPE Central Station v1 Instructor Guide.

- Identify the main components of the CARESCAPE Central Station system
- Identify specific areas on the screens and navigate through each area
- Set up the CARESCAPE Central Station for your individual preference, font size, color and number of waveforms
- Setup and initiate patient monitoring, resuming monitoring and starting/ending monitoring
- Navigate through multiple menus and return to the normal display
- Identify the waveform and parameter areas of the display
- Verbalize the alarm priorities for the CARESCAPE Central Station
- Manage alarms, including identifying alarm priorities and changing alarm limits
- Silence alarms; initiate smart alarms when patient is off the Telemetry Monitor
- Print an individual strip as well as for all patients displayed on the Central Station
- Configure full disclosure page
- Print a full disclosure strip
- View patient data, numeric trends, events, change sorting and interval for viewing
- Configure real-time trends window
- Change scale and time range of viewing graphic trends and change sorting groups
- Take measurements of ECG waveform using calipers feature
2 Hardware

Objectives: Hardware

By the end of this chapter, you should be able to:

• Identify components of the CARESCAPE Central Station System used in your care area
• Name the types of monitoring equipment that will be networked to the CARESCAPE Central Station used in your care area
• Identify the features of the CARESCAPE T4 and T14, ApexPro CH and ApexPro FH transceivers.

Terms You Should Know: Hardware

CARESCAPE Network: Establishes communication and allows patient data to be sent to another monitor or Central Station.

Mirror display: Allows users to:
  • Display a duplicate (mirror) view of the primary display on up to two additional displays.
  • Monitor patients from a primary central station at another location, including audible alarm notification.

Primary display: Configured to display the Multi-Viewer. It can be a standard or touchscreen display.

Remote display: Allows clinicians to:
  • Replicate the video output of a primary display up to 315 m (800 ft.) away on up to four additional displays.
  • Provide non-interactive access to the patients monitored on the primary display in a remote location.
  • Remote displays do not provide audible alarm notification.

Secondary display: Can be a standard or touchscreen display that allows clinicians to display the Single Viewer and data review tools in a half-screen or full-screen format. If configured for half-screen format, patient data from three data review tools display in the top and bottom halves of the screen. If configured for full-screen format, patient data from the most recently used data review tool displays on the entire screen. The Minimize/Maximize buttons can be used to toggle between the half-screen and full-screen formats.
## Skills Checklist: Hardware

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<tr>
<td>Identify Hardware component of Central Station</td>
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<td>Identify components of Telemetry transmitters</td>
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### Notes:
3 Preparing the Patient

Objectives: Preparing the Patient

By the end of this chapter, you should be able to:

• Describe how to perform proper skin preparation for electrode placement
• Discuss appropriate lead placement for lead set used

Quick Reference: Skin Preparation Guidelines

The quality of ECG information displayed on the monitor is a direct result of the quality of the electrical signal received at the electrode. Proper skin preparation is necessary for good signal quality at the electrode. Choose flat, non-muscular areas to place electrodes, and then follow the established preparation protocol for your unit.

Skin Preparation Guidelines

• Clip or shave hair from application sites that may interfere with electrode contact
• Gently rub the surface of the skin to increase capillary blood flow
• Cleanse the site with mild soap and water to remove all oily residue, dead cells or excess preparation material
• Dry skin completely
• Apply electrodes according to manufacturers’ recommendations

Skills Checklist: Preparing the Patient

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<th>Skills Checklist</th>
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<td>Describe how to perform proper skin preparation</td>
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<td>Preparing The Patient</td>
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<td>Demonstrate appropriate lead placement for lead set used</td>
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4 Screen Navigation

Objectives: Screen Navigation

By the end of this chapter, you should be able to:

• Identify the components of the Multi-Patient Viewer display
• Identify the Multi-Patient Viewer menu buttons
• Access the correct main menu for a specific task to be done
• Identify the components of the Single-Patient Viewer display
• Identify the components of dual display windows
• Identify the steps for adjusting the display settings

Terms You Should Know: Screen Navigation

Menu: A main component for handling the device. e.g. each parameter has a menu to perform actions related to it, like changing its alarm limits. The menu consists of a title, optional tabs and adjacent buttons to change the contents, buttons to perform actions on each content view and a button for closing the menu.

MultKM: Allows one mouse and keyboard to control data entry for a configured group of up to eight Central Stations.

Multi-Viewer: The Multi-Viewer displays parameter numerics and waveforms for up to 16 patients at a time. Up to four waveforms can be displayed per patient.

Parameter: A numerical representation of the specific physiological status of a body system or treatment device, e.g. blood pressure, heart rate, inhaled gases.

Single Viewer: The Single Viewer displays parameter numerics and waveforms, as well as historical data, for one patient at a time. Up to eight waveforms can be displayed per patient.

Waveform: A graphical presentation of a real-time measurement signal.
Quick Reference: Screen Navigation

Adjust Waveform Display
1. Right-click in the appropriate patient Multi-Viewer window.
2. Highlight Select Waveform #2. Select the waveform from the displayed list.
3. Highlight Select Waveform #3. Select the waveform from the displayed list.
4. Highlight Select Waveform #4. Select the waveform from the displayed list.

Adjust Waveform Color Control Settings
1. Right-click in the appropriate patient Multi-Viewer window.
2. Highlight Select Waveform #1 color. Select the color from the displayed palette.
3. Highlight Select Waveform #2 color. Select the color from the displayed palette.

Note! Repeat steps 1-3 for waveforms 3 and 4.

Adding a Real-Time Trend Graph Configuration
1. Right-click in the patient window and select Configuration.
2. Real-Time Configuration Window opens.
OR
3. Left mouse click in selected patient’s window to display single view.
4. Click Live View.
5. Click Configuration.

Adding Patient Multi-Viewer Window
1. From the Multi-Viewer menu, select Setup > Display Configuration.
2. Under Columns, select the number of patient windows to display as columns (right to left).
3. Under Rows, select the number of windows to displays as rows (top to bottom).
4. Select OK.

Note! This configuration is dependent on the number of view licenses purchased and if slots are unlocked or locked.
Rearranging Patient Multi-Viewer Windows
1. Right click in the appropriate patient window.
2. Select Select Care Unit then Bed Number.
3. Select the monitoring device from the list of care units and bed numbers.
4. Verify the appropriate patient is now displayed in the window.

Removing Unlocked Beds from Multi-Viewer Window
1. Right-click in the appropriate patient window.
2. Select Select Care Unit then Bed Number > None.
3. Check that the patient window was removed.

Note! Only applies to Unlocked beds.

Skills Checklist: Screen Navigation

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<tr>
<td>Identify the components of Single-Patient Viewer</td>
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<tr>
<td>Identify the steps for adjusting the display settings</td>
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5 Monitoring Basics

Objectives: Screen Navigation

By the end of this chapter, you should be able to:

- Admit a standard monitoring patient
- Admit a combination monitoring patient
- Enter and modify patient information
- Discharge a patient from a Bed, or Telemetry monitoring device
- Move a telemetry patient to another in-unit bed
- View other patients

Terms You Should Know: Screen Navigation

**Admit:** From the bedside monitor a patient is admitted when the monitor detects any of the following: Numeric Trends ECG/Impedance Respiration, Art, ABP, Fem, UAC, NIBP, SpO₂, or CO₂. Each vital sign has activation criteria that must be met before the vital sign is considered active. Can also be referred to as starting monitoring. Telemetry bedsides have to be admitted from the Central Station and there is now auto admit feature.

**ADT Picklist:** Retrieve admit, discharge, and transfer data from a Hospital Information System.

**ADT Server:** A server that collects patient demographic information from the Hospital Information System (HIS) and transfers it when requested to the bedside monitor or Central Station. You must use a patient identifier such as a medical record number (MRN) or last name.

**Control Settings:** Non-password protected temporary and patient-specific setting; they apply immediately to the monitoring device and are returned to the custom default settings when the patient is discharged. When there is no custom default, the control setting initial value is the Central Station factory preset.

**Discharge:** The monitor resets to the defaulted settings, including alarm limits, and also removes all patient data and trend data from the monitor and connected acquisition modules. Can also be referred to as ending monitoring.
Quick Reference: Monitoring Basics

Admitting a Patient
1. From the multi-patient viewer, select an empty patient window displaying either the Admit button (unlocked bed) or a specific bed name (locked bed).
2. Under Patient Information, type the patient demographic information into the data entry fields. This includes patient Last Name, First Name, Age and Patient ID.
3. Under Bed, select the appropriate bed number.
4. In the ECG From field, choose either the telemetry transmitter/transceiver (TTX) number, or MONITOR to designate the ECG source.
5. Select Admit to admit the patient.

Changing Patient Information
1. Select the appropriate patient Multi-Viewer window.
2. From the Single Viewer menu, select Admit/Discharge.
3. Under the Patient Information window, place your cursor in any of the active fields and make the appropriate changes to the Last Name, First Name, Patient ID or Age.
4. Update Care Notes if necessary.
5. Select Save.

Discharging A Patient
1. Disconnect the patient monitoring cables.
2. Select the appropriate patient Multi-Viewer window.
3. Select the Admit/Discharge button in the Single Patient Viewer menu.
4. Select Discharge.
5. Select Yes to confirm the Discharge.

Discharging A Bedside Monitoring Patient (Ending Combo Monitoring)
1. Disconnect all patient monitoring cables or attach monitoring cables to the new device (telemetry transmitter).
2. Select the appropriate patient Multi-Viewer window.
3. From the Single Viewer menu, select Admit/Discharge.
4. Under Bed select the appropriate telemetry monitoring device bed number with an asterisk at the end (e.g., ICU4*).
5. Select Move to discharge a patient from the bedside monitor and revert to a telemetry monitoring device.
Discharging A Telemetry Monitoring Patient (Ending Combo Monitoring)
1. Disconnect all patient monitoring cables from the transmitter and attach to an ECG monitor cable.
2. Select the appropriate patient Multi-Viewer window.
3. From the Single Viewer menu, select Admit/Discharge.
4. Under ECG From select Monitor.
5. Select Save to discharge the patient from a telemetry monitoring device and revert to a bedside monitor.

Moving Telemetry Patients to Another In-Unit Bed
1. Select the appropriate patient Multi-Viewer window.
2. From the Single Viewer menu, select Admit/Discharge.
3. Under Bed, select a bed number with an asterisk at the end (e.g., ICU4*).
   Note! Be sure to choose the appropriate bed number. An asterisk after the number indicates telemetry, whereas absence of an asterisk indicates a monitor.
4. Select Move.
5. Select Yes to confirm the Move
6. Check that the correct patient displays in the patient Multi-Viewer window.

Replacing Telemetry Monitor Devices
1. Exchange the telemetry monitoring device.
2. Select the appropriate patient Multi-Viewer window.
3. From the Single Viewer menu, select Admit/Discharge.
4. Under ECG From, select the appropriate TTX number.
5. Select Save.
6. Check that the correct TTX number displays in the patient Multi-Viewer window.

Viewing Other Patients
1. From the Multi-Viewer menu, select Other Patients.
2. From the displayed list of devices, select the appropriate unit and bed number.
3. Select OK.
4. Check that the correct patient displays in the Single Viewer.
**Adjusting Parameter Control Setting**

**ECG Parameter Settings**
1. Select the appropriate patient Multi-Viewer window.
2. From the *Single Viewer* menu, select *Monitor Setup > ECG*.
3. Adjust appropriate ECG Settings.
4. Click *More ECG Setup* to adjust ST parameter alarm limit control settings.
5. Click *Previous Menu* to return to ECG Settings window.
6. Select *Close* to close the window.

**SPO₂/Resp Parameter Settings**
1. Select the appropriate patient Multi-Viewer window.
2. From the *Single Viewer* menu, select *Monitor Setup > SPO₂/Resp*.
3. Adjust appropriate SPO₂, Respiration and CO₂ settings as required.
4. Select *Close* to close the window.

**Pressures Parameter Settings**
1. Select the appropriate patient Multi-Viewer window.
2. From the *Single Viewer* menu, select *Monitor Setup > Pressures*.
3. Adjust appropriate NBP, AR1, PA2 and CV3 settings as required.
4. Select *Close* to close the window.

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**Skills Checklist: Monitoring Basics**

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<tr>
<td>Admit a patient</td>
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<tr>
<td>Change patient information</td>
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<td>Discharge a patient</td>
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<tr>
<td>Move Telemetry patient to another bed</td>
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<td>Adjust the ECG parameter control settings</td>
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<td>Adjust SPO₂/Resp parameter control settings</td>
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6 Alarm Management

Objectives: Alarm Management

By the end of this chapter, you should be able to:

- Define terms relevant to Alarm Management
- Define the different Alarm Conditions
- Define Alarm Priorities
- Recognize the different audible alarm tones
- Recognize the different visual alarm indicators
- Adjust the alarm volume
- Define the steps for pausing audible alarms
- Demonstrate how to adjust the alarm control settings

Terms You Should Know: Alarm Management

- **Alarm Escalation:** The monitoring device increases the priority of an alarm condition or increases the sense of urgency of an alarm signal.
- **Alarm Latching:** An alarm signal continues to be generated after its triggering event no longer exists until acknowledged by the user.
- **Alarm Limits:** Parameter high and low alarm values that result in alarm conditions when the measured physiological value is above or below the defined range.
- **Alarm Notification:** Audio alarm tones and visual indicators display when an alarm condition is present.
- **Alarm Priority Levels:** The urgency of the required user response or awareness of the situation that triggered the alarm condition.
- **Audio Alarm Pause:** A state of limited duration in which the alarm system or part of the alarm system does not generate audible alarm signals.
- **Audio alarm pause breakthrough:** Alarm pause breakthrough allows alarm conditions to break through or interrupt an audio alarm pause when an alarm condition of the configured alarm priority level occurs.
Quick Reference: Alarm Management

Alarm Settings (User Restricted)
1. Select **Setup**.
2. Select the **Central Defaults** tab.
3. Set the **Alarm Volume Current** and configurations.
4. Set the **Alarm Audio Off** Reminder. (User Restricted)
5. Set **IEC** or **legacy** alarm tones. (User Restricted)
6. Set **IEC** or **legacy Priority Nomenclature**. (User Restricted)
7. Enable **Allow Telemetry Alarm Audio OFF on this Central**. (User Restricted)
8. Enable **Allow Arrhythmia OFF on this Central**. (User Restricted)

Adjusting Alarm Volume
1. Select the alarm volume indicator in the Multi-Viewer menu.
2. Select the **Volume Current** percent from the displayed options.
3. Save your changes.
4. Check that the correct volume percentage displays under alarm volume.

Pausing Audio Alarms

**Note! This procedure is dependent on your system configuration.**

1. To pause the audio alarms for all patients press the **Audio Pause** keyboard key or select the **Multi-Viewer Audio Pause** button.
2. To pause audio alarms for a single patient, select the **Audio Pause** button in the appropriate Multi-Viewer window or select the appropriate patient Multi-Viewer window and select the alarm **Audio Pause** button in the **Single Viewer**.

Adjusting Bedside and Telemetry Monitoring Device Control Settings
1. Select the appropriate patient Multi-Viewer window.
2. From the **Single Viewer** menu, select **Monitor Setup > Alarm Setup**.
3. To adjust limits, priorities or arrhythmias:
   a. Select the field you wish to change.
   b. Adjust value with up/down arrows or type in the limits.
   c. Enter on the keyboard or select another field.
Telemetry Monitoring

1. Under **Alarm Audio On/Off**, select the appropriate option:

2. Select **Enable Transmitter Audio Pause** to allow audio alarms to be paused from telemetry monitoring devices.

3. Select **Recall Unit Defaults** to apply the Telemetry Unit Defaults to this telemetry monitoring device and overwrite the existing alarm control settings for this patient.

Skills Checklist: Alarm Management

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7 Patient Data

Objectives: Patient Data

By the end of this chapter, you should be able to:

- Identify how to select an Event Source
- Identify the elements of the Events Window
- Identify steps to Review Events
- Identify the steps to Delete Events
- Identify the steps to Annotate an Event
- Identify the steps to Printing Events
- Identify the steps to Creating Event Report
- Identify the elements of the FD Strip window
- Identify the elements of FD Page window
- Identify the steps to Print FD
- Identify the elements of the Graphic Trends window
- Identify the elements of the Numeric Trends window
- Identify the element of the Data Session window
- Identify the steps to measure a waveform using the Calipers
- Identify the elements of the ST Review window

Terms You Should Know: Patient Data

Calipers: Measures the horizontal (time) and vertical (voltage) distances along waveforms.

Data Review Tool: Any tool used to display and review stored patient data on the Central Station, including Graphic Trends, Numeric Trends, Calipers, etc.

Data Sessions: Provides access to historical data as patients move from monitoring devices, across units, and/or post-discharge.

Event Directory: Displays text only event data retrieved from the monitoring device, including event, time and date, alarm priority level, and review state.

Event Review: Waveform event data selected from the Event Directory to display, review, delete, print, or generate a report.

Full Disclosure: Full Disclosure collects patient data from the bedside monitor. The amount of data available per patient is determined by licensing.

FD Page: Displays Full Disclosure data for the selected time focus (up to five waveforms per row of data).

continued on next page
FD Strip: Allows review of multiple ten second waveforms of Full Disclosure data on one page.

Graphic Trends: Displays parameter numerics and compressed waveforms over a period of time in graph format, including AfiB trending with select monitoring devices.

Numeric Trends: Displays parameter numerics in a tabular format.

Time Focus: When parameter data is collected and stored, the historical data is linked to a specific time focus. When viewing an area of interest for one type of patient data, choosing another type of patient data will display for that same time focus.

Quick Reference: Patient Data

Selecting Event Source

**Note!** Selecting another source is only available if FD data is not available. If FD data is available the user will not be able to change the source.

1. Select the appropriate patient Multi-Viewer window.
2. From the Single Viewer menu, select Patient Data > Events.
3. Select Source and select the appropriate option.
4. Select the Refresh Event Source button to refresh the list of available Event Source options.

Viewing Events

1. Select the appropriate Multi-Viewer window.
2. From the Single Viewer window, select Patient Data > Events.
3. To filter the events displayed in the Event Directory, select Show and the select the appropriate event state to filter on.
4. To sort the event displayed in the Event Directory, place the cursor in the Event Directory header and select the ascending or descending arrow for the appropriate column.
5. To scan through the events in the Event Directory, click Scan and select to scan older or newer events.
6. To display a summary of the patient’s event history, select 24° Summary.
7. To view multiple events (up to 10) select events from the Event Directory by using the Ctrl keyboard key or Shift keyboard key. You may also select multiple events by selecting an event and holding the mouse down and dragging it over the remaining desired events.

Quick Reference: Printing Events

1. Select the appropriate patient Multi-Viewer window.
2. From the Single Viewer menu, select Patient Data > Events.
3. Select the event(s) in the Event Directory.
4. Select the Print button.
5. Under Select Type select Event Strip to print a single strip and notes for the selected event.
6. Select Ok.
Creating Event Reports

1. Select the appropriate patient Multi-Viewer window.
2. From the Single Viewer menu, select Patient Data > Events.
3. Select the event(s) in the Event Directory.
4. Select the Report button in Event Review.
5. Check that the selected events display as Report events.
6. Select the Print button.
7. Under Select Type, select Strip Report to create a events Strip Report containing the events currently marked for report.
8. From Destination, select the appropriate option.
9. In Report Comment, enter any applicable report notes or comments.
10. Select Ok.
11. Click the desire option to the message Clear all the report flags.

Using Graphic Trends

1. Select the appropriate patient Multi-Viewer window.
2. From the Single Viewer menu, select Patient Data > Graphic Trends.
3. Select Groups then select the trend group from the displayed list.
4. Select the Configuration button to display the parameters contained in each trend Group.
5. Select the time range of the displayed Graphic Trends.
6. Select the parameter button and select the appropriate scale from the displayed list. Scale options vary by parameter.
7. Select the Print button of the currently viewed Group and Range to the configured laser printer.

Using Numeric Trends

1. Select the appropriate patient Multi-Viewer window.
2. From the Single Viewer menu, select Patient Data > Numeric Trends.
3. Select the Sort by button, and then select a group from the displayed list to automatically sort the data.
4. Use the scroll bars to move through the displayed data.
5. Select the Print button.
Using FD Strip
1. Select the appropriate patient Multi-Viewer window.
2. From the Single Viewer menu, select Patient Data > FD Strip.
3. From the data type selection button, select the type of data to view. Options include Monitor and View All ECG.
4. Scan the data using the scan review buttons.
5. Click the cursor within waveform to focus on a point of interest.
6. Select the Print button to print the FD.

Using FD Page
1. Select the appropriate patient Multi-Viewer window.
2. From the Single Viewer menu, select Patient Data > FD Page.
3. Select the Configuration button.
4. Under Display Setup, select the appropriate configuration options for Time per Line and Zoom Window.
5. Under Configure Waveforms, select the waveforms available for display from Available and move them to Selected with the right/left arrows. Use the up/down arrows under Selected to change the waveform display order.
6. Select the Close button to close the window.
7. Use the scroll bar or scroll arrows to move backward or forward in time to find a waveform area of interest.
8. Select the waveform area to view in more detail. A small blue-colored zoom box moves to this waveform location.
9. To view this waveform area in more detail in the floating zoom window, click and hold down the left mouse button inside the small blue-colored zoom box to display an enlarged view of the waveform segment.

Printing FD Page
1. Select the appropriate patient Multi-Viewer window.
2. From the Single Viewer menu, select Patient Data > FD Page.
3. Select the Print button.
4. Select the Start and End times.
5. From Time Per Line, select the amount of data to be printed in each report line.
6. Under Waveform Selection, select up to eight waveforms from the displayed list to include in the report. Use the up/down arrows to select the waveform print order. The waveforms print in the order displayed.
7. Select Refresh Preview to update the print preview.
8. Select Print to print the report.
Using Data Session

Patients Displayed in Multi-Viewer
1. Select the appropriate patient Multi-Viewer window.
2. From the Single Viewer menu, select Patient Data > Data Sessions. All Data Sessions for the selected patient identification number will be automatically displayed.

Patients not displayed in the Multi-Viewer

Note! The following steps may vary slightly depending on your system configuration.
1. From the Multi-Viewer menu, select Other Patients.
2. Select Prior Data Search.
3. To search for a patient, enter the search criteria.
4. When Include Active Sessions is enabled, all sessions are displayed. To show only inactive (post-discharge) sessions, disable Include Active Sessions.
5. Choose session(s) by selecting the row and enabling the check box for each session, then select Select.
6. Select one of the sessions from the list to display the selected data.

Using Calipers
1. Select the appropriate patient Multi-Viewer window.
2. From the Single Viewer menu, select Patient Data.
3. Locate the waveform segment or waveform strip by finding the time focus with FD Strip, FD Page, Graphic Trends, or Numeric Trends.
4. Select Calipers to display up to ten seconds of waveform data
5. To adjust the waveform display, select the appropriate options including Grids, Zoom, and Speed.
6. To March out calipers, first select Rate or R-R from the Measurement table. Select Marching Calipers. Adjust the Caliper width using the right and left arm drag bar. Use caliper drag bar to reposition the calipers over the waveform.
7. Select Apply to calculate the measurement and display the measurement in the table.
8. To clear measurements from the measurement table select Clear Value to clear a specific value or Clear All to remove all measurements.
9. Select Print button to print report to the laser printer.
Using ST Review

1. Select the appropriate patient Multi-Viewer window.
2. From the **Single Viewer** menu, select **Patient Data > ST Review**.
3. To select the time range, select the appropriate option from **Range**.
4. To change the data displayed, select the appropriate option. Choices include:
   - **View All ECG**: Display all ECG data for the current ST record.
   - **View Medians**: Displays 12 median complexes for the current ST record (blue) and the 12 reference median complexes for the current ST record (orange). Also displays a 3x magnified median complex.
   - **View 12 Lead**: Display 12 lead data for the current ST record.
5. To view Graphic Trends for specific ST records, select the appropriate option. Choices include:
   - **Current ST Record Cursor**: Select this cursor type to set (mark) the Current ST record time focus in the Graphic Trend. The cursor will be in blue.
   - **Reference ST Record Cursor**: Select this cursor type to set (mark) the Reference ST record in Graphic Trends. The cursor displays as orange.
6. Change the Reference if desired. To do this:
   a. Select Reference.
   b. Move the cursor to the appropriate position and select Save Reference to save the new ST reference or overwrite and existing reference.
   
   **Note**: Selecting Show Saved Reference displays the Reference ST Record Cursor at the time of the saved reference record in the Graphic Trends.
7. Change the Graphic Trends parameters, scales, and waveform format if desired.
8. **Push to MUSE**: Transfer an ST record file to MUSE (if available). ST records generated with 12RL based data cannot be pushed to the MUSE server; only ST records generated with purely measured data can be pushed.
9. Select the **Print** button.
10. Select the appropriate print report option.
11. Select **OK**.
## Skills Checklist: FD Page

<table>
<thead>
<tr>
<th>Skills Checklist</th>
<th>Skill Completed (Yes)</th>
<th>Skill Not Completed (No)</th>
<th>Skill not required</th>
<th>Comment</th>
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<tbody>
<tr>
<td>Use Events and Event Review</td>
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<tr>
<td>Print Event Review Report</td>
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<tr>
<td>Use Graphic Trend</td>
<td></td>
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<tr>
<td>Use Numeric Trend</td>
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<tr>
<td>Use FD Strip and FD Page</td>
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<tr>
<td>Customize FD Page</td>
<td></td>
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<tr>
<td>Print FD Report</td>
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<td></td>
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<tr>
<td>Retrieve historic patient data using Data Sessions</td>
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<tr>
<td>Use Calipers to measure QTc</td>
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<td></td>
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<tr>
<td>Use ST Review</td>
<td></td>
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</tbody>
</table>
8 Post Test

1. Which of the following are standard hardware components of the CARESCAPE Central Station? (Select all that apply)
   a. Writer
   b. Processing Unit
   c. Primary Display
   d. Keyboard

2. To initiate a 5 minute alarm pause on the Telemetry T4 Transmitter, you must:
   a. Simultaneously press the Event Marker and Verify Leads buttons
   b. Simultaneously press the Verify Leads and Graph buttons
   c. Press the Event Button
   d. Press the Verify Leads button twice

3. How often is it recommended to replace electrodes on a patient?
   a. Every 12 hours
   b. Every 12-24 hours
   c. Every 24-48 hours
   d. Every 48-72 hours

4. The proper lead placement for V1 is:
   a. Fourth intercostal space, right of the sternum
   b. Fourth intercostal space, left of the sternum
   c. Just below the right clavicle
   d. Fifth intercostal space, midclavicular line

5. What is the maximum number of patients that can be displayed on the multi-patient viewer?
   a. 6
   b. 8
   c. 12
   d. 16
6. The title bar and border of the Multi-Viewer Patient window: (Select all that apply)
   a. Displays the patient first and last name
   b. Changes color to match the highest priority visual alarm from the monitor device
   c. Shows the alarm text of the highest alarm
   d. Displays the ST Monitoring status indicator

7. To manually save an ECG waveform to the Event Directory you must select:
   a. Relearn
   b. Sample
   c. Configuration
   d. View All ECG

8. Arrange the steps for admitting a patient in proper order.
   1. Enter Patient Data
   2. Select the appropriate Bed Number
   3. Select an empty patient window
   4. Select the ECG Source
   5. Select Admit

   a. 1,2,3,4,5
   b. 3,1,2,4,5
   c. 3,2,1,4,5
   d. 3,1,2,5,4

9. Arrange the steps for discharging a patient in proper order.
   1. Select Admit/Discharge
   2. Select patient to discharge
   3. Select Discharge
   4. Confirm Discharge message

   a. 1,2,3,4
   b. 2,3,1,4
   c. 2,1,3,4
   d. 1,3,2,4
10. Which of the following ECG settings can be adjusted under Monitor Setup? (Select all that apply)
   a. Display Lead
   b. PVC Limit
   c. SPO₂ Rate
   d. ST Settings
   e. Lead Analysis

11. What alarm is broadcasted across the network if a monitor becomes disconnected or leaves the networked coverage area?
   a. Medium Alarm
   b. High Alarm
   c. NO COMM
   d. Low Alarm

12. Which of the following is the visual indicator for High Priority alarm?
   a. ![High Priority Visual Indicator]
   b. ![High Priority Visual Indicator]
   c. ![High Priority Visual Indicator]
   d. ![High Priority Visual Indicator]

13. Which of the following may be true about pausing audio alarms? (Select all that apply)
   a. Out-of-unit bedside monitors will display the Audio Pause button if an audio alarm is present for that bedside monitor
   b. All active alarms silence up to 2 mins
   c. When alarms are paused there will be Audio Reminder tone sound every 2 mins
   d. The system can be configured to allow an alarm pause breakthrough for designated alarm conditions

14. The Event Directory: (Select all that applies)
   a. Displays text only event data retrieved from the monitoring device
   b. Can be filter by Review State, Alarm Severity, and Event notes
   c. Displays parameter numerics in a tabular format
   d. Can be sorted by Review State, Date and Time, Alarm Priority and Event
   e. Displays Full Disclosure data for the selected time focus
15. How many graphic trends can you view in split screen mode?
   a. 2
   b. 4
   c. 6
   d. 8

16. Which interval time is not an option to view in Numeric Trends
   a. 1 minute
   b. 10 minutes
   c. 30 minutes
   d. 60 minutes

17. Full Disclosure Page: (Select all that apply)
   a. Displays up to 5 waveforms per page for a selected time focus
   b. Displays a 10 seconds of a single waveform on one page
   c. Allows you to create a magnified view of a selected area.
   d. Is configurable to show 15 seconds, 30 seconds or 1 minute of data per row of waveform

18. Which of the following statements are true about Data Sessions? (Select all that apply)
   a. The current session displays in grey blue
   b. Prior session display in orange
   c. Numeric and Graphic Trends are not available post discharge
   d. To access Data Session, select Patient Data from the Single Viewer menu

19. What values must you enter to automatically get the QTc calculation? (Select all that apply)
   a. PR
   b. QRS
   c. R-R interval
   d. QT

20. Which of the following statements are true about ST Review? (Select all that apply)
   a. Used to detect subtle changes in the ST segment over time and to enable a more detailed review of cardiac monitoring
   b. Requires a secondary display and an enabled license
   c. Requires that the monitor device has 12 SL or 12 RL programs enabled
   d. Allows you to use Calipers to measure ST deviation
Please complete the following survey. The information you provide will help us to improve the course for future learners.

Rate the training by circling the appropriate number.

<table>
<thead>
<tr>
<th>Instructor Delivery</th>
<th>10 = Strongly agree</th>
<th>1 = Strongly disagree</th>
<th>NA = Not applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>The instructor was knowledgeable about the course content.</td>
<td>10 9 8 7 6 5 4 3 2 1 NA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The instructor was able to transfer their knowledge to you.</td>
<td>10 9 8 7 6 5 4 3 2 1 NA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The instructor was prepared for the training session.</td>
<td>10 9 8 7 6 5 4 3 2 1 NA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The instructor was able to effectively present content and respond to questions.</td>
<td>10 9 8 7 6 5 4 3 2 1 NA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rate the overall effectiveness of the instructor.</td>
<td>10 9 8 7 6 5 4 3 2 1 NA</td>
<td></td>
<td></td>
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</table>

Comments about instructor delivery:

<table>
<thead>
<tr>
<th>Course Content</th>
<th>10 = Strongly agree</th>
<th>1 = Strongly disagree</th>
<th>NA = Not applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>The relevance of the course content enables you to do your job.</td>
<td>10 9 8 7 6 5 4 3 2 1 NA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The content covered the topics adequately and clearly.</td>
<td>10 9 8 7 6 5 4 3 2 1 NA</td>
<td></td>
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<tr>
<td>The activities/exercises helped you to learn the content presented.</td>
<td>10 9 8 7 6 5 4 3 2 1 NA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The content was easy to follow.</td>
<td>10 9 8 7 6 5 4 3 2 1 NA</td>
<td></td>
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<tr>
<td>The knowledge checks and/or assessments in this course were effective in helping you to validate your existing or acquired knowledge.</td>
<td>10 9 8 7 6 5 4 3 2 1 NA</td>
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<tr>
<td>Rate the overall effectiveness of the course content.</td>
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Comments about course content:

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<th>Course Experience</th>
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<th>NA = Not applicable</th>
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</thead>
<tbody>
<tr>
<td>I would recommend GE Healthcare to a friend or colleague.</td>
<td>10 9 8 7 6 5 4 3 2 1 NA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>It is easy to do business with GE Healthcare Services.</td>
<td>10 9 8 7 6 5 4 3 2 1 NA</td>
<td></td>
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<tr>
<td>The on-line course registration process was clear and easy to use.</td>
<td>10 9 8 7 6 5 4 3 2 1 NA</td>
<td></td>
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</tr>
</tbody>
</table>

If applicable, is there anything you would change about the course registration process?
Would you like to be contacted in the future for further inputs on our training development, delivery, and operations processes?

☐ No  ☐ Yes  If yes, please provide your name and email ID here: ________________________________

Any additional comments?
Healthcare Re-imagined

GE is dedicated to helping you transform healthcare delivery by driving critical breakthroughs in biology and technology. Our expertise in medical imaging and information technologies, medical diagnostics, patient monitoring systems, drug discovery, and biopharmaceutical manufacturing technologies is enabling healthcare professionals around the world to discover new ways to predict, diagnose and treat disease earlier. We call this model of care “Early Health.” The goal: to help clinicians detect disease earlier, access more information and intervene earlier with more targeted treatments, so they can help their patients live their lives to the fullest. Re-think, Re-discover, Re-invent, Re-imagine.

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