GE Healthcare

CARESCAPE Modular Monitors Alarm Management

Quick Reference Guide
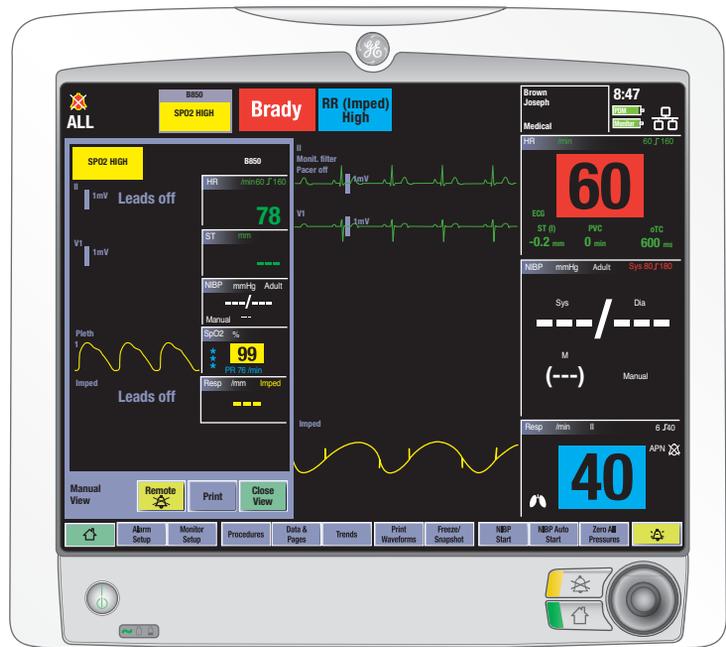
Global Customer Education

CARESCAPE Modular Monitor Alarm Management
Quick Reference Guide

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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Any similarity to actual persons is coincidental.

Note! *This 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.*

The materials contained in this document pertain to the CARESCAPE Modular Monitors, version 2 software and are intended for educational purposes only. Always refer to the official written materials provided with the CARESCAPE Modular Monitors for specifications, operating procedures, and maintenance requirements.
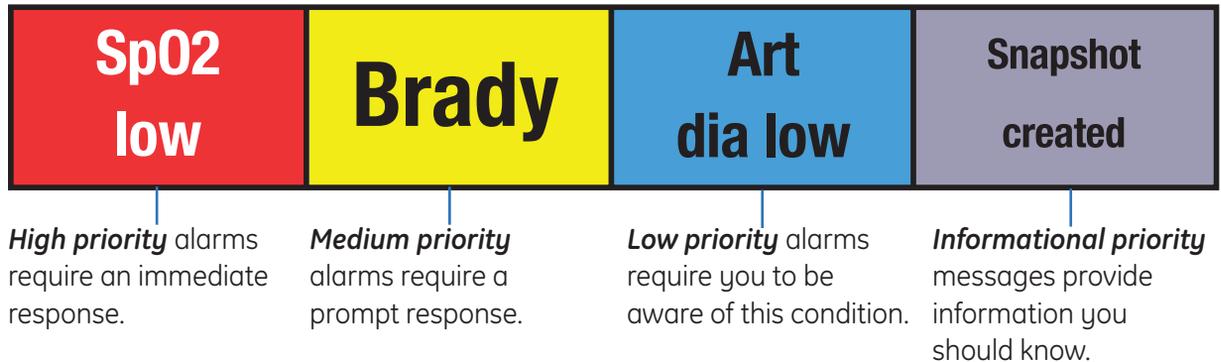
Contents

Alarm Conditions

Physiological alarm conditions: Triggered by a patient measurement being outside the parameter limits, by apnea, or by an arrhythmia condition.

Technical alarm conditions: Triggered by an electrical, mechanical, or other failure of the equipment, or by failure of a sensor or component. Technical alarm conditions may also be caused when an algorithm cannot classify or interpret the available data.

Alarm Priority Levels

Physiological and technical alarms are categorized by priority level.

SpO2 low	Brady	Art dia low	Snapshot created

High priority alarms require an immediate response.

Medium priority alarms require a prompt response.

Low priority alarms require you to be aware of this condition.

*Informational priority* messages provide information you should know.

Alarm priority escalation

An escalating alarm starts at a designated priority level (low or medium) and will escalate to the next higher priority level of alarm (after a set number of seconds) if the alarm condition has not been resolved. It is important to note that these escalate up to the next level but will not reset until the condition has been resolved.

Note! *Alarm priority escalation affects the currently ongoing alarm condition, not any future alarms of the same type. Any new alarms will alarm at their designated priority level, not at the escalated level.*
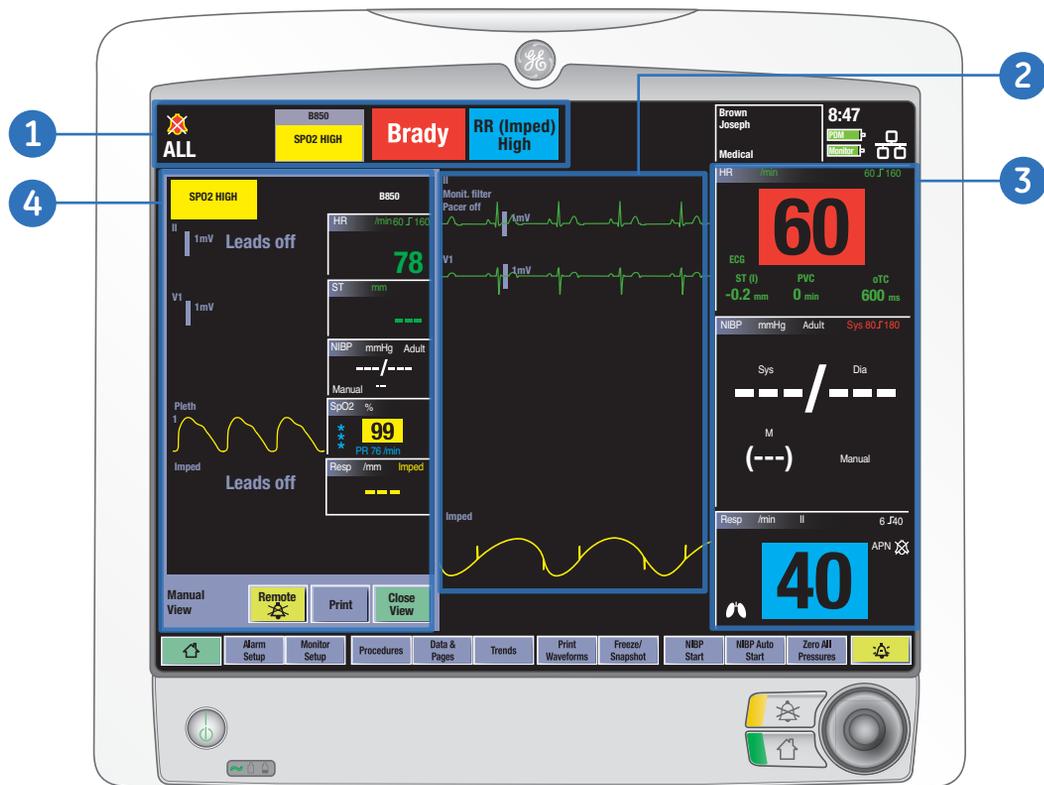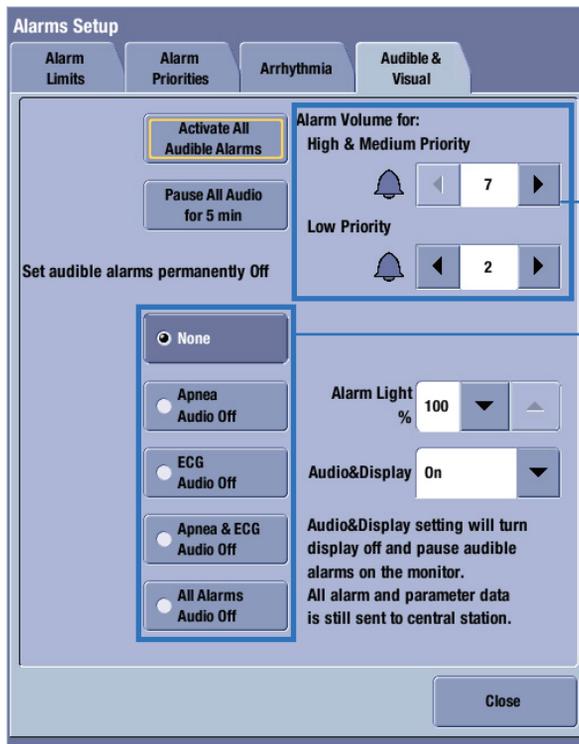
Alarm and information messages can be displayed in three areas:

1. Alarm Area

2. Waveform Area

3. Parameter Area

4. Remote/Viewed Bed Area

In the alarm area, up to five alarm or information messages may be displayed from left to right, from the newest highest priority alarm to the oldest lowest priority alarm. Up to four of the newest highest priority remote alarm messages display first, followed by the newest highest priority local alarm messages (if AVOA or remote alarm is enabled).

Adjust the alarm volume here

Alarm groups to silence

Note! *Eliminate Steps 1 and 2 by touching the upper left corner of the screen to quickly access the **Audible & Visual** menu for alarm silencing.*

Adjusting the Alarm Volume

1. Select *Alarm Setup* from the monitor's main menu.

2. Select the *Audible & Visual* Tab.

3. Adjust the volume according to what is available in the menu:

   • Adjust the *Alarm Volume* value. This is the volume for all alarms

   • Adjust the *Alarm Volume* separately for *High & Medium Priority* and *Low Priority* (as in the picture above)

   Note! *The selections in the Alarms Setup menu vary according to how the monitor has been configured.*

Turning Audible Alarms On/Off

Note! *The ability to turn off certain audible alarms will vary according to how the monitor has been configured.*

Turn on/off the audible physiological alarm tones for an alarm group or for all alarms:

1. Select *Alarm Setup* from the monitor's main menu.

2. Select the *Audible & Visual* tab.

Note! *Eliminate Steps 1 and 2 by touching the upper left corner of the screen to quickly access the Audible & Visual menu for alarm silencing.*

3. Select an alarm group. Choices are:

   - **None:** All audible alarms are on

   - **Apnea Audio Off:** Turns off audible alarms for apnea, $EtCO_2$, $FiCO_2$, respiration rate, Ppeak low, PEEPe, PEEPtot, PEEPi, and MVexp limit alarms

   - **ECG Audio Off:** Turns off audible alarms for all HR and PR source limit and arrhythmia alarms

   - **Apnea & ECG Audio Off:** Turns off audio alarms for all HR and PR source limit, arrhythmia, apnea, $EtCO_2$, $FiCO_2$, respiration rate, Ppeak low, PEEPe, PEEPtot, PEEPi, and MVexp limit alarms

   - **All Alarms Audio Off:** Turns off all audible alarms until turned back on by the user

4. To turn on all audible alarms again, select *Activate All Audible Alarms*, or select *None* as instructed above.

When Audible Alarms are Turned Off:

- The audio off bell icon displays in the upper left corner of the display screen

- The alarm light is solid blue when audible alarms are paused, and when Audio Off is selected for an alarm group or for all alarms.

Pausing Audio Alarms

Selecting the pause audio key results in different alarm behaviors depending on whether or not the alarms are active and/or latched. Acknowledging or pausing audio alarms does not affect other alarm indicators. They will continue to indicate alarms.

Use the pause audio key to pause audible alarm for 2 or 5 minutes according to the care unit settings.

Selection	Result
Active and/or latched alarms	
Select once	• Pauses all active audio alarms for 2 minutes. • Removes all latched alarms. • Deactivates some technical alarms.
Second selection of during the 2 minute pause	• Starts a 2 or 5 minute audio pause period for all alarms except the specified breakthrough alarms. The 2 or 5 minute duration is a care unit setting and password protected. • Removes all new latched alarms. • Some technical alarms may also be deactivated with this selection.
Select a third time	• Ends the audio pause period. • Restores all acknowledged and silenced alarms if the alarm condition still exists.
No active or latched alarms	
Select once	• Starts a 2 or 5 minute audio pause period for all alarms except the specified breakthrough alarms. The 2 or 5 minute duration is a care unit setting and is password protected.
Second selection of	• Ends the audio pause period. • Restores all acknowledged and silenced alarms if the alarm condition still exists.

When the monitor is on the network, alarms can also be paused and acknowledged at the central station, depending on how the monitor is configured.

Pausing All Audio Alarms

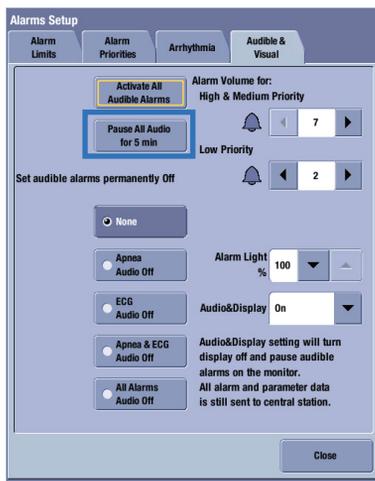To pause all alarms for 5 minutes through the *Alarms Setup* menu:

1. Select *Alarm Setup* from the monitor's main menu.

2. Select the *Audible & Visual* tab.

    Note! *Eliminate Steps 1 and 2 by touching the upper left corner of the screen to quickly access the* ***Audible & Visual*** *menu for alarm silencing.*

3. Select *Pause All Audio for 5 min.* This will pause all alarms, including the breakthrough alarms, except FiO$_2$ low, EtO$_2$ low<18%, FiN$_2$O low>82%, and Ppeak high. It also removes latched alarms.

Activating All Paused Audible Alarms

To activate all paused audible alarms before the 2 or 5 minute pause expires:

1. Select *Alarm Setup* from the monitor's main menu.

2. Select the *Audible & Visual* tab.

    Note! *Eliminate Steps 1 and 2 by touching the upper left corner of the screen to quickly access the* ***Audible & Visual*** *menu for alarm silencing.*

3. Select *Activate All Audible Alarms*. You may also use the pause audio key to activate all audible alarms.

Audio Pause with Combination Monitoring

When using combination monitoring, the pause audio behavior is the following:

*   If the telemetry transmitter is in pause audio state, the monitor will also be in the same state. You can cancel the pause audio at the bedside monitor by selecting the pause audio key. This will not affect the telemetry device.

*   If the monitor's own pause audio state ends before the telemetry transmitter's audio pause, the monitor will re-enter pause audio.

*   The pause audio started by the telemetry transmitter at the monitor will also end when the transmitter's pause audio ends.

Setting Alarm Limits
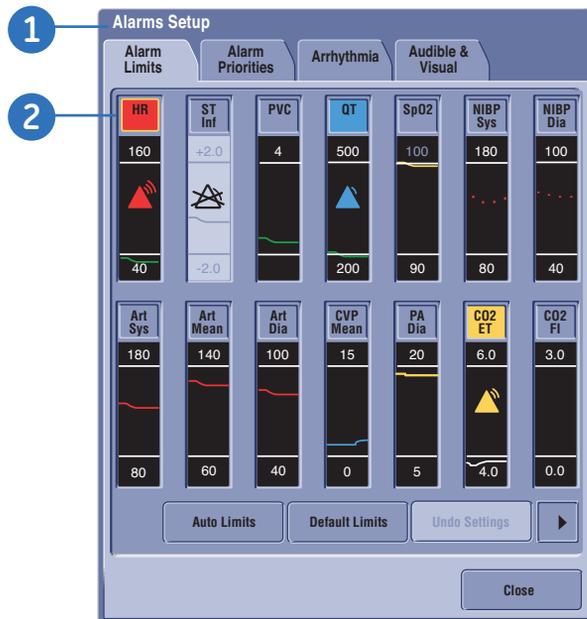
Set parameter alarm limits in the *Alarms Setup* menu, or in the parameter menus' own Alarms tab.

1. Select *Alarm Setup* from the monitor's main menu to open the Alarm Limits tab.

2. Select a parameter label.

> **Note!** *In addition to selecting the label, you can also touch the bar to activate the alarm limits.*

- If you are unable to find a specific parameter, select the right arrow to display additional labels. If the parameter limit has been turned off, the alarm limit will be grayed out.

- Selecting a parameter label takes you to that parameter menu's Alarms tab where you can select alarms on or off, and set their limits.

> **Note!** *Alarm limits should not be set beyond reasonable physiological boundaries in order to maintain patient safety. Setting outside of reasonable boundaries would cause the alarms to be ineffective.*

Setting Arrhythmia Alarms
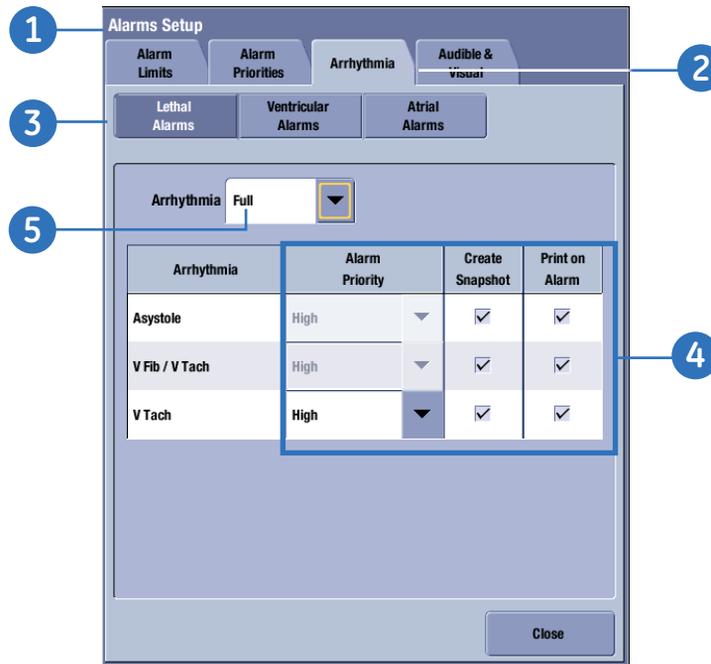
Set the arrhythmia alarms in the **Alarms Setup** menu, or in the ECG menu.

1. Select **Alarm Setup** from the monitor's main menu.

2. Select the **Arrhythmia** tab.

3. Select **Lethal Alarms.**

4. You can now select the **Alarm Priority, Create Snapshot,** and **Print on Alarm** options per arrhythmia.

5. If **Full Arrhythmia** license is enabled, you can also select options for the **Atrial Alarms** and **Ventricular Alarms**.

   - **Ventricular Alarms:** You can select the **Alarm Priority, Create Snapshot**, and **Print on Alarm** options.

   - **Atrial Alarms:** You can select the **Alarm Priority, Create Snapshot**, and **Print on Alarm** options. In addition, you can set the detection criteria for **SV Tachy: SVT Length, HR for SVT/min**, and **Pause Interval.**

**Setting
Parameter
Alarm Priority
Levels**
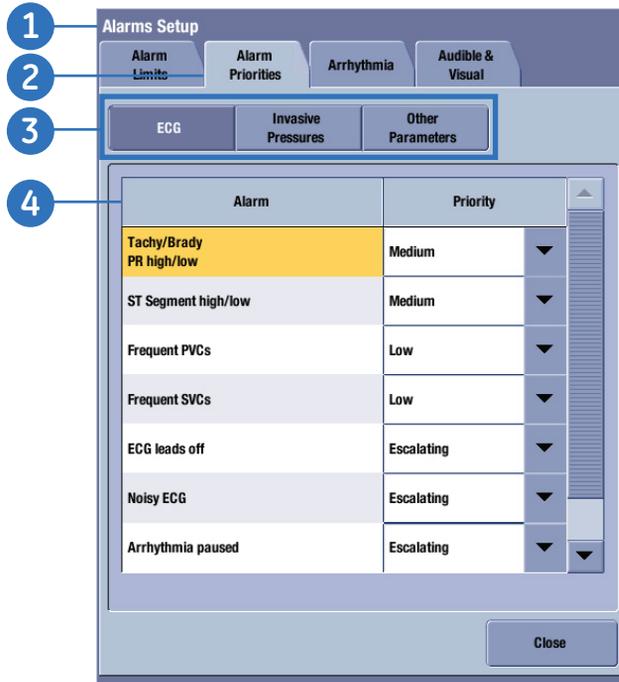
The allowed priorities for different alarm groups are defined in the **Care Unit Settings** and are password protected.

1. Select **Alarm Setup** from the monitor's main menu.

2. Select the **Alarm Priorities** tab.

3. Select the alarm group: **ECG, Invasive Pressures**, or **Other Parameters**.

4. Select the alarm and its priority from the list.

Note! *Escalating an alarm priority increases the priority of the alarm condition or increases the sense of urgency of an alarm signal. The alarm priority is based on clinical considerations.*

Sleep Mode

Note! *This feature is not available with OR and PACU software packages.*

If sleep mode (Audio & Display Off Allowed) is enabled in Care Unit Settings, it allows all local alarm indicators to be turned off until Audio & Display is turned back on. Patient monitoring is occurring; however, the monitor is not displaying patient data or indicating patient alarms locally. Local printing is also inactive. Alarms are logged and trended. If the monitor is connected to the network, alarms and alarm printouts, and parameter data (and nurse call signals with B850) will continue to be sent over the network during sleep mode.

1. Select *Alarm Setup* from the monitor's main menu.

2. Select the *Audible & Visual* tab.

Note! *Eliminate Steps 1 and 2 by touching the upper left corner of the screen to quickly access the **Audible & Visual** menu for alarm silencing.*

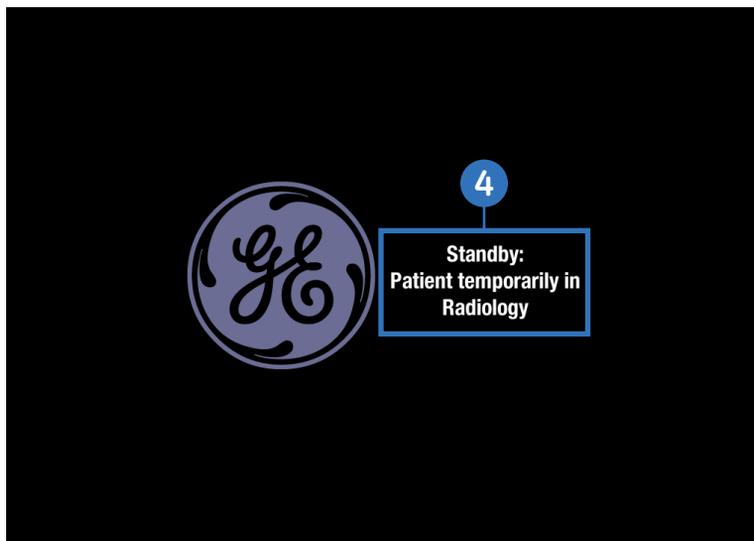3. Select *Audio&Display > Off*.

A screen saver replaces the display of patient data. Any user input (touchscreen, button, Trim Knob, keyboard key, mouse click) reactivates the alarms and the monitoring screen.
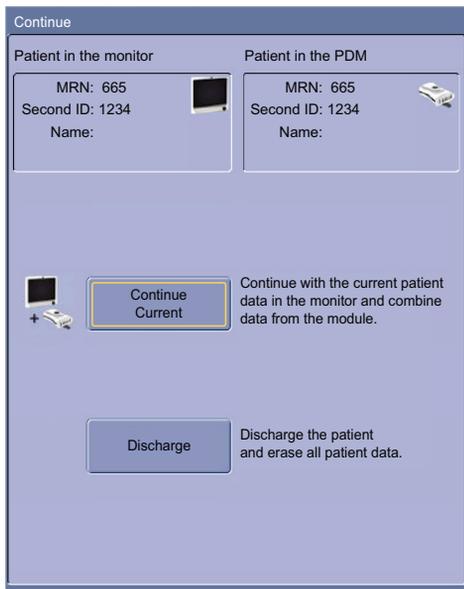
Standby Mode
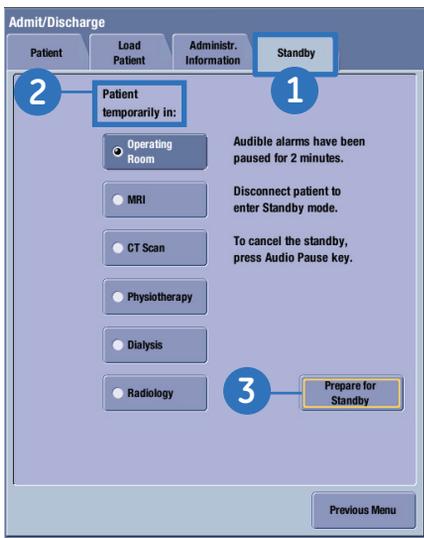
Standby Menu

Standby Screen

When the patient is temporarily removed from the monitor, the monitor can be placed in **Standby**.
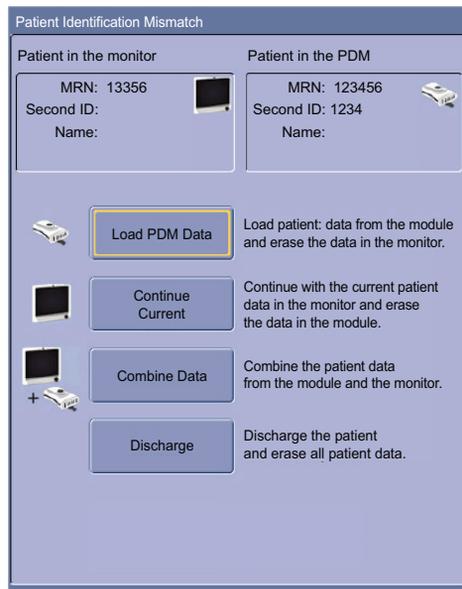
Starting Standby

Select the Patient Information area on the screen or select **Data & Pages** to access the **Admit/Discharge** menu.

1. Select the **Standby** tab.

2. Choose the standby location under **Patient temporarily in**.

3. Select **Prepare for Standby** which activates the alarm pause for 5 minutes or 2 minutes depending on the Care Unit setting.

4. By disconnecting the patient from the monitor during the time period chosen the screen will automatically go blank and the GE logo with the text **Patient temporarily in XXX** (location according to your selection) appears.

Continue	
Patient in the monitor	Patient in the PDM
MRN: 665 Second ID: 1234 Name:	MRN: 665 Second ID: 1234 Name:

	Continue Current	Continue with the current patient data in the monitor and combine data from the module.
	Discharge	Discharge the patient and erase all patient data.

Menu with matching
Medical Record Numbers (MRN)

Patient Identification Mismatch	
Patient in the monitor	Patient in the PDM
MRN: 13356 Second ID: Name:	MRN: 123456 Second ID: 1234 Name:

	Load PDM Data	Load patient: data from the module and erase the data in the monitor.
	Continue Current	Continue with the current patient data in the monitor and erase the data in the module.
	Combine Data	Combine the patient data from the module and the monitor.
	Discharge	Discharge the patient and erase all patient data.

Menu with Medical Record Numbers (MRN)
that do not match, or if the MRN is absent

Ending Standby

The monitor ends the standby mode automatically when any of the following conditions occur:

- Any of the following patient's vital signs are detected as active: ECG, Imp Resp, Art, ABP, Fem, UAC, NIBP, SpO_2, CO_2, EEG, BIS or Entropy

- Any user input is received (e.g., a keyboard key is pressed, Trim Knob is pressed or rotated, primary mouse button is pressed, touchscreen is pressed)

- A CARESCAPE Patient Data Module (PDM) is connected

When reconnecting a PDM to a monitor that has been in standby mode, one of the two menus above will be shown.

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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imagination at work