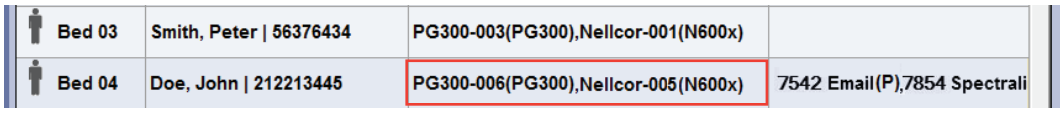
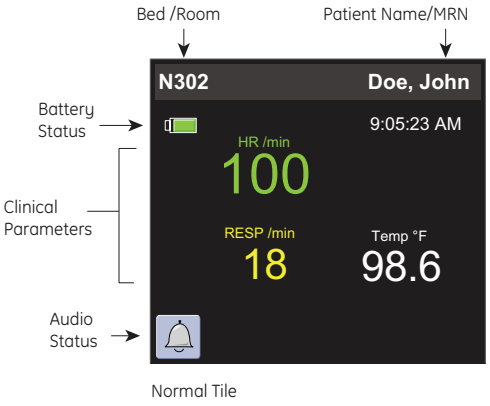
Save and confirm the assignment

To save assignments, click the ***Save*** button. ***Cancel*** exits the Device Assignment screen without saving.



Verify that the correct SpO2 device is displayed for the appropriate room in the Admin screen.

Step 7: Verify data on Surveillance Station



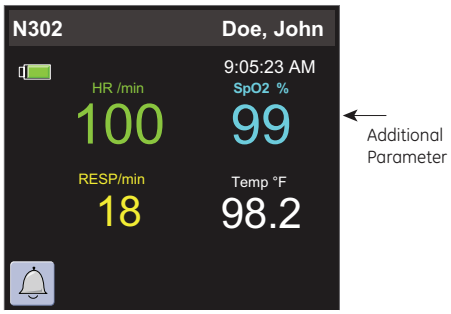
Once patient data is received at the Surveillance Station , measurements and data will be displayed in the patient room, on the Tile View. Clicking the Tile will display the Latest Patient Data tab in Single Patient View. Verify that acceptable ECG and respiration waveforms are being recorded.

CAUTION The displayed data is limited to that provided by the medical device.

NOTE For more information on devices supported, see the *CARESCAPE Surveillance Monitoring Service Manual*.

NOTE For detailed information on multiple device assignment, see the Chapter 6, Managing patients, device assignment section.

SpO_2 monitoring



Normal Tile with integrated SPO2%

On the Tile View, confirm the SpO_2 device has to be properly assigned to the Room/Bed. When data is received from the SpO_2 monitor, measurements will be displayed on the display.

4

Working with the system

Monitoring with the PG300 device

Once the PG300 device is successfully communicating with the Surveillance Station, monitoring begins. Based on the device's reporting interval, data will refresh every few minutes. A timestamp is displayed that indicates the last time data was sent from the device.

Last Updated timestamp

WARNING Do not ignore medical device audible alarms. Alarms indicate conditions that require immediate attention.

CAUTION Monitoring does not begin until a device has been assigned to a patient.

CAUTION Exceeding the recommended storage conditions and conditions for use can result in impaired system performance.

NOTE The PG300 device can be worn when the patient is asleep.

NOTE The PG300 device should only be operated at temperatures between 0 to 45 °C (32 to 113 °F).

Monitoring with the PG300 electrode array

WARNING The PG300 device must never be used on patients with a pacemaker or an ICD. It must be removed along with the electrode array prior to undergoing an MRI scan, CT scan, x-ray, defibrillation or surgical procedure.

- Excessive exercise will decrease the length of time that the PG300 electrode array can be worn due to perspiration.
- If there is a lack of adhesion, remove the PG300 electrode array and apply another one.
- Reddening or slight irritation of the skin from wearing the PG300 electrode array is normal.
- The PG300 electrode array should not be submerged in water, for example during a bath or while swimming.
- The PG300 electrode array can be worn in the shower (excluding power showers) with the PG300 device removed. The PG300 electrode array should be gently dabbed dry with a lint free cloth and the PG300 device cleaned and reconnected as soon as possible thereafter.

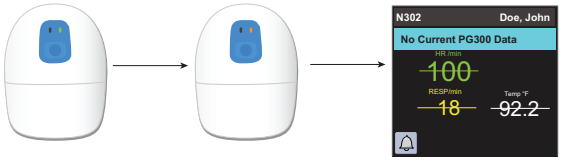
Device status	Leads LED status	Connection LED status	Visual indication	Sound indication	User action required
Device not properly connected to PG300 electrode array	Blue	Green or orange (dependent on connection status)		n/a	Re-connect device to PG300 electrode array

Out of Range Indicators

Device status	Leads LED status	Connection LED status	Visual indication	Sound indication	User action required
Normal operation	OFF	Solid green		n/a	None
Approaching out of wireless range	OFF	Flashing green (two flashes)		n/a	Return to WLAN coverage area
Out of WLAN range	OFF	Orange		One beep every two minutes	Return to WLAN coverage area

During the monitoring period, the LED on the PG300 device will be green to indicate that the wireless LAN and device connection are within range of each other. Should the PG300 device be approaching out of range, the LED will flash green twice. If the device goes out of WLAN range, the connection LED will turn solid orange and one beep will be heard every two minutes. When the device is back in range again, the LED will change to green and the beep will cease.

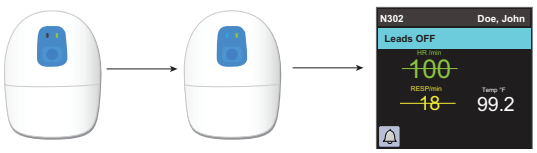
NOTE A ***No Current PG300 Data*** message will display on the Patient Tile at the Surveillance Station if the device is out of range, and measurements will strike-through to indicate the data may be old.



Leads OFF indication

If the PG300 device becomes disconnected from the PG300 electrode array during the monitoring period, the Surveillance Station will display a ***Leads OFF*** message and the blue LED on the device will be illuminated.

CAUTION The device should be reconnected to the PG300 electrode array as soon as possible after Leads OFF indication.

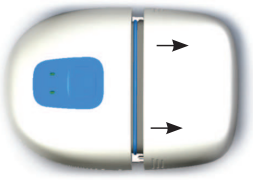


Replacing the battery during monitoring

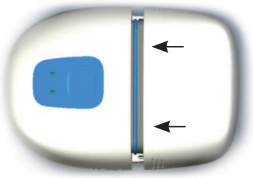
NOTE The PG300 device will not transmit data while the battery pack is removed. A ***Leads OFF*** message may also display at the Surveillance Station for the device.

The PG300 battery pack can be removed from the device during monitoring if necessary, to replace it with a fully charged battery pack.

To remove the battery from the PG300 device, with one hand hold the device firmly in place on the PG300 electrode array. With the other hand, hold the sides of the battery. Pull the PG300 battery pack away from the device, ensuring that the device remains in place on the PG300 electrode array.



Install a fully charged PG300 battery pack on the device by holding the device firmly with one hand and sliding the new PG300 battery pack firmly into place. Ensure that the device remains in firm contact with the magnetic connectors on the PG300 electrode array.



Switch on the device by holding down the ON/OFF button for two seconds until the LED indicator lights turn on. Approximately 15 seconds after the ON/OFF button is pressed, three beeps will be heard and the green LED will illuminate indicating that the PG300 device has wirelessly connected to the server and retrieved settings.

The battery removed from the device should be suitably cleaned and inserted into the PG300 battery charger.

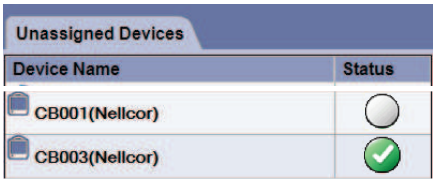
SpO_2 monitoring

SpO_2 monitoring devices can be assigned to a patient for additional monitoring. SpO_2 monitoring devices are registered with the Surveillance Station during initial setup. To begin, login to the Surveillance Station 's administration system by clicking the Admin button on the bottom navigation bar, and entering your username and password. In the ***Unassigned Devices***, all available devices (including SpO_2 monitors) will be displayed in this list. Locate the SpO_2 monitor you intend to use. The Client Bridge connected to the SpO_2 monitor will have a unique number (e.g., CB101) which is used for device assignment.

NOTE Devices are assigned to individual Units during setup. The Unassigned Devices list includes all devices from multiple Units. Assignment of a SpO_2 device to a room is determined by the Unit that the room is assigned to.

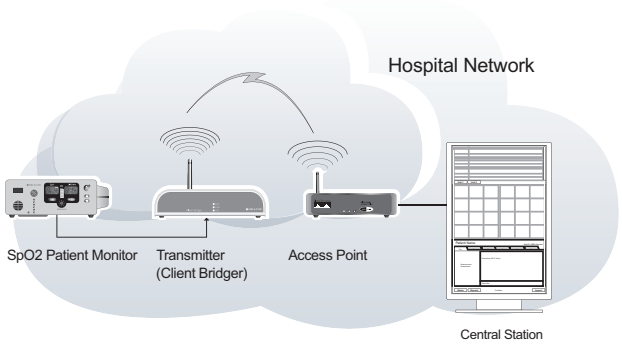
NOTE Devices with a green check arrow in the status column indicate the Client Bridge is turned on and connected to the network. Devices with a gray circle indicate the Client Bridge is OFF or not connected to the network. Either status is eligible for assignment to a patient.

NOTE Devices that are already assigned to a patient or room will not be displayed in the Unassigned Devices column.



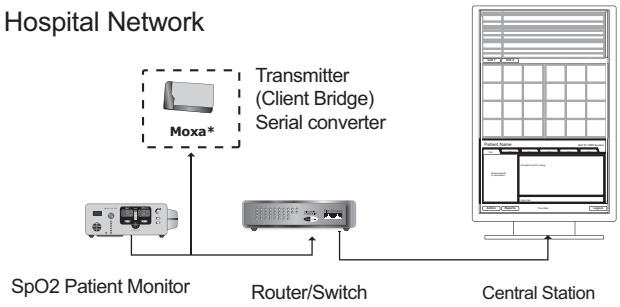
Wireless configuration

In a wireless configuration, SpO_2 patient monitors are connected to a Client Bridge. Each Wireless Client Bridge communicates with an access point to the Surveillance Station via the hospital network, where patient data is monitored.



Wired configuration

In a wired configuration, depending on the SpO_2 patient monitors in use, a serial conversion device is needed to convert device data for transmission across the hospital network. The conversion device is labeled accordingly (eg; CB201), and communicates directly to the Surveillance Station where patient data may be monitored.



Hybrid configurations (wired & wireless)

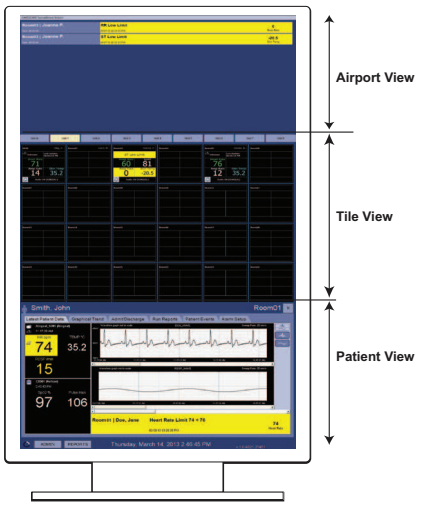
Hospitals may incorporate both wired (ethernet-based) and wireless configurations when adding SpO_2 monitoring. Wireless Client Bridges may move around from room to room, whereas Wired Client Bridges typically stay in one room with a dedicated (static) IP address.

Wired Client Bridge
Works with 10/100 Ethernet local area network (LAN)

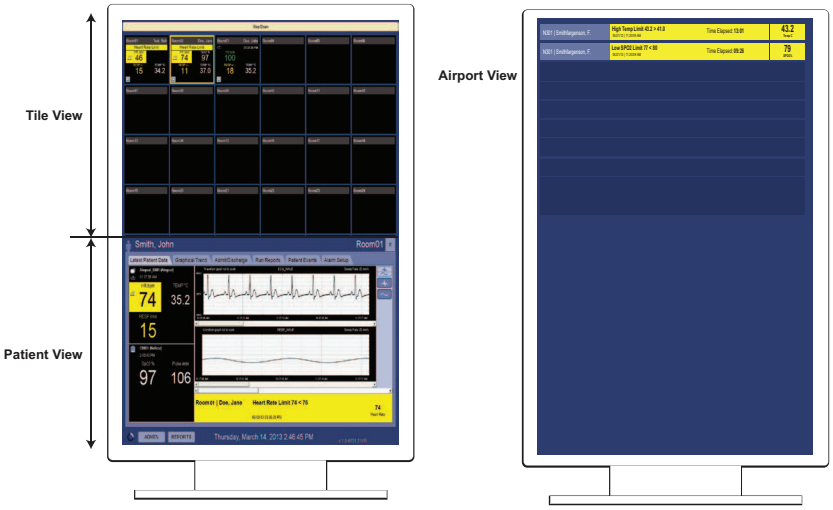
Wireless Client Bridge
Works with 802.11 b/g Wireless local area network (WLAN)

Surveillance Station views

The Surveillance Station incorporates three distinct viewing areas that perform different functions. These viewing areas are the Alarm Summary, Tile View, and Single Patient View, as shown below in two different configurations.



Single display configuration with
Alarm Summary, Tile View and Single Patient View.



Dual display configuration with one display showing only Alarm Summary and the other display showing Tile view and Single Patient View.

NOTE Left-clicking Alarm Bars in the Alarm Summary activates the Single Patient View area. Left-clicking Patient Tiles in the Tile View also activates the Single Patient View area.

Working with the Alarm Summary

WARNING High and Medium priority alarms need to be addressed by a clinician in order of priority. Low priority alarms will clear automatically once the alarm condition is no longer met.

The Alarm Summary is the primary display area used to list all alarms for devices and patients (rooms) monitored by the system. The Alarm Summary provides a timely listing of active patient alarms. When a patient alarm occurs, an Alarm Bar on the Alarm Summary view will be displayed. This bar contains data related to the alarm including Bed ID, Patient Name, alarm description, elapsed time of the alarm, and measurement of the parameter in alarm.

The Alarm Summary displays the ten most recent alarms received for the patient rooms monitored. If there are more than ten alarms to be displayed, scroll bars allow the user to view more alarms.

Alarm Bars

Alarm display bars provide the Room/Bed information and patient name. The alarm description (or alarm name) displays the condition violated and time of the occurrence. The total elapsed time will be displayed for the alarm. The alarm's elapsed time will only increment while the alarm is actively alarming. If the alarm stops alarming and begins again, the alarms' elapsed time displayed will be the total time calculated from the initial alarm time. The patient's current measurements for the associated alarm will be displayed if available.

Airport Alarm Bar

NOTE There is a 30 character limit to display the Room/Bed and Patient Name.

Alarm priorities

Alarms are defined into three primary groups; High, Medium and Low/Technical alarms. When an Alarm Bar is displayed for a particular alarm, the frame color of the Alarm Bar indicates its priority level. A different audible alarm tone will be associated for each priority level. Alarm Bars are ordered from top to bottom based on the following criteria;

• Active (currently alarming) alarms will be displayed above all inactive alarms, regardless of priority.

• Alarm priority will be displayed from highest to lowest;
  - High priority (top)
  - Medium priority
  - Low priority/Technical (bottom)

• The initial time of the alarm occurrence will be displayed from newest to oldest.

High Priority Alarms

High priority Alarm Bars are red, and the alarm condition is indicated by a five pulse audio tone. Active or inactive High priority Alarm Bars will remain on the screen until a user either resets or pauses the alarm.

Medium Priority Alarms

Medium priority Alarm Bars are yellow, and the alarm condition is indicated by a three pulse audio tone. Active or inactive Medium priority Alarm Bars will remain on the screen until the user resets or pauses the alarm.

Low Priority Alarms

Low/Technical priority Alarm Bars are cyan, and the alarm condition is indicated by a one pulse audio tone. Low/Technical priority Alarm Bars will remain on the screen only during the time it's alarming.

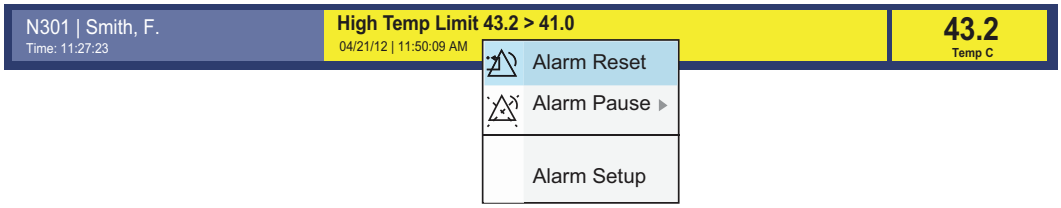
NOTE The Alarm Summary also displays system Technical messages. The message display area will inform the user of Surveillance Station services, connectivity and data provider issues.

Interacting with Alarm Bars

A **left-click** on a patient Alarm Bar will display the Patient Detail view.

A **right-click** on a patient Alarm Bar will display a pop-up menu for managing each alarm.

Alarm Reset



The Alarm Reset feature removes the Alarm Bar and suspends the audio immediately. Since patient data is received periodically however, the Alarm Bar may be re-added to the alarm list when new data is received.

Resetting a ***No Current PG300 Data*** alarm will suspend the alarm audio and will remove the Alarm Bar from the alarm list for the duration of time the alarm is active.

Device	Initiated from Alarm Summary	Alarm Summary	Tile Display
PG300	Right-click, Reset	Alarm Bar Removed	Visual and Audio alarm removed
SpO_2	Right-click, Reset	Alarm Bar Removed	Visual and Audio alarm removed.

In some cases, an alarm may correct itself, however the alarm remains on the Alarm Summary view until a clinician acknowledges the alarm. This is known as latching alarms, which in some cases need to be manually cleared.

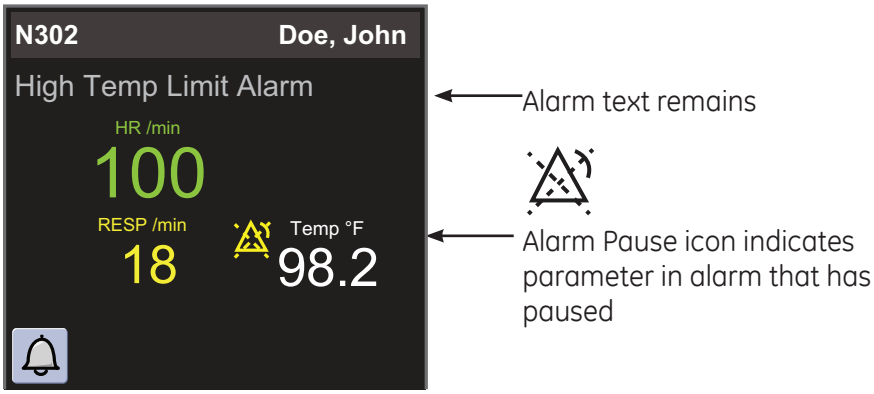
Alarm Pause

The Alarm Pause feature removes the Alarm Bar and suspends the audio for a pre-determined time interval. Since patient data is received periodically however, the Alarm Bar may be re-added to the alarm list when new data is received.

Device	Initiated from Alarm Summary	Alarm Summary	Tile View
PG300	Right-click, Alarm Pause (2min, 5min, 15min, one hr)	Alarm Bar Removed. Alarm Breakthrough can occur.	Audio Removed. Alarm text remains. No Color or Flashing. Icon displayed. Alarm Breakthrough can occur. 
SpO_2	Right-click, Alarm Pause (2min, 5min, 15min, one hr)	Alarm Bar Remains when initiated from device. Removed when initiated from Alarm Summary. Alarm Breakthrough can occur.	Audio Removed. Alarm text remains. No Color or Flashing. Icon displayed. Alarm Breakthrough can occur. 

CAUTION Alarm Pause cannot be undone or terminated. The paused alarm will not recur until the pause period has passed regardless of whether or not the alarm condition persists. Reset alarms will reoccur if the alarm condition persists.

NOTE An alarm of equal or higher priority that occurs during a two minute Audio Pause will breakthrough and enable alarm audio.



For more information, see Chapter 5, Alarms, Managing patient alarms.

Working with the Tile View

The Tile View is a patient monitoring and viewing area that displays up to 24 patients (Tiles), containing Room/Bed and patient information along with device status, clinical measurements, alarms and alarm messages. Each individual tile in the Tile View represents information and alarms for a single patient.

Care Units

Depending on your system configuration, up to eight tabs/buttons may be displayed on the top of the Tile viewing area enabling additional wards, or care Units to be displayed.

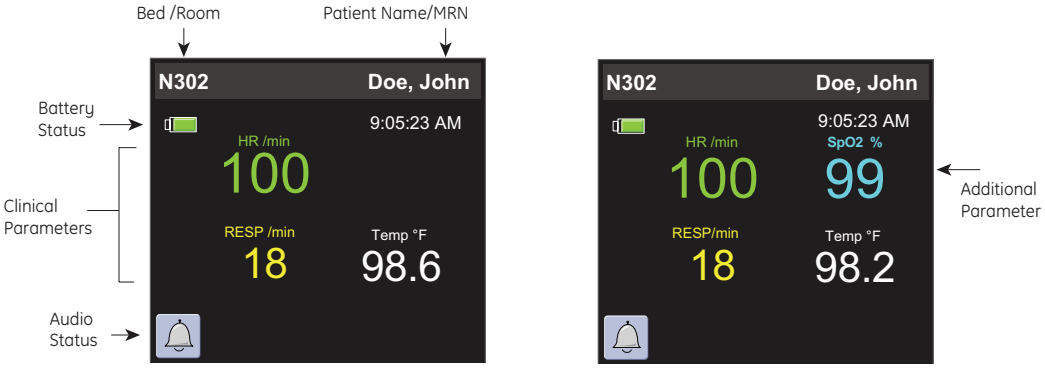
Once clinicians assign a device to a patient using the Administration system, the system acquires patient measurements and clinical data via the PG300 device. The system displays patient data in the Tile View within two minutes of when the PG300 device has been connected to the PG300 electrode array patch and the device has been associated with a patient. Data that is essential for proper monitoring is displayed in the Tile View, and includes battery information, Last Updated timestamp, and alarm messages.

Patient Tiles

Each tile has specific data regions and various elements change depending on the data that is received. Sections that DO NOT change include the Room Number or Bed ID, which is displayed in the upper left corner of the tile. The patient name (or MRN depending on configuration of the system) does not change, and is displayed in the upper right corner of the tile. The Audio status is positioned at the bottom of the tile and does not change.

The battery and Last Updated timestamp areas are displayed in a row below the patient name. When a SpO_2 parameter is detected, it is displayed in the Tile View with other parameters, as shown below.

Normal Tile View



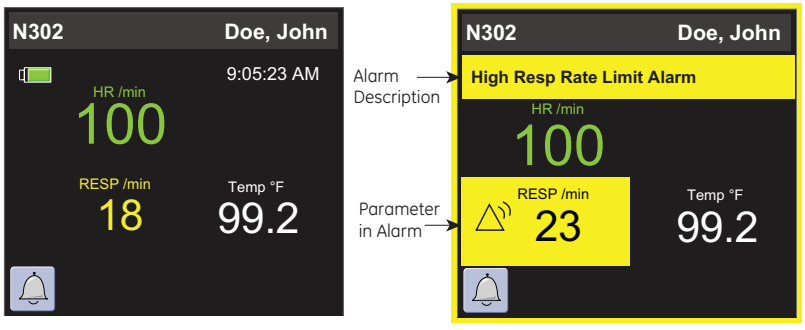
Normal Tile

Normal Tile with integrated SPO2%

Unit of measure is continuously displayed. The colors used for the parameters and alarms match the colors defined in the alarms section of this document.

Alarm Tile View

When an alarm occurs, an Alarm Bar replaces the battery and timestamp with a text description of the alarm as shown below. The parameter in alarm is highlighted with a blue, yellow, or red background.



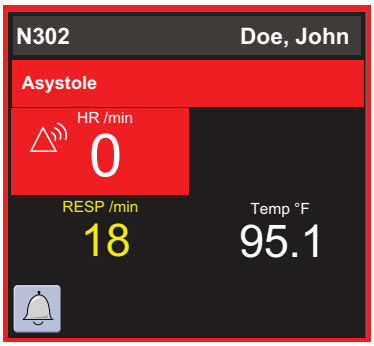
Normal Tile

Tile in Alarm

Tiles in alarm

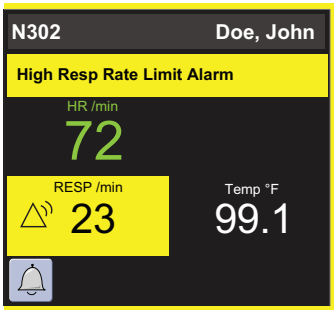
High priority alarms

Active alarms are displayed in the Tile View. When a measurement is in alarm, an audible tone sounds and the battery status and timestamp areas are replaced with a flashing red Alarm Bar containing an alarm description. The highest priority, most recent alarm for the patient is displayed below the patient name when the alarm is active. The border will flash the color associated with the priority level of the alarm. The parameter in alarm is also indicated by white text on red area as shown below (HR/min, 0).

 High Priority Alarm	Audio Indication: Five beep audio tone

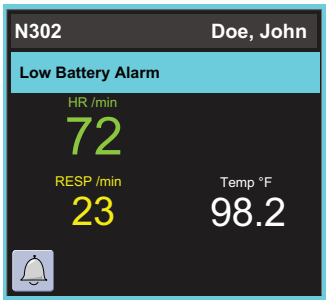
Medium priority alarms

When a Medium priority alarm is detected, it is visually indicated by a flashing yellow Alarm Bar and border, with the appropriate alarm description. The parameter in alarm is also indicated by black text on yellow area (RR/min, 23).

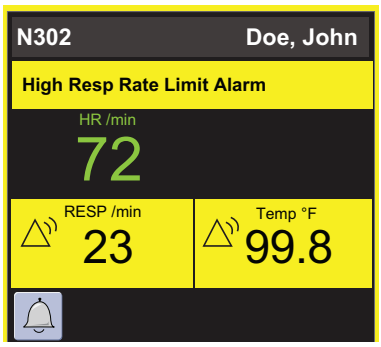
 Medium Priority Alarm	Audio Indication: Three beep audio tone

Low priority alarms

When a Low priority alarm is detected, it is visually indicated by a flashing cyan Alarm Bar with the appropriate description.

 Low Priority Alarm	Audio Indication: One beep audio tone

Multiple alarms occurring



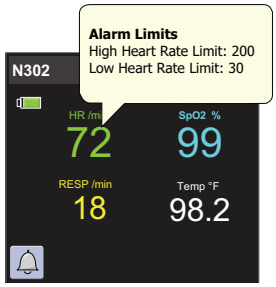
When multiple alarms are occurring, the message area on the Tile View is populated with the alarm text for the highest priority alarm. Alarm priorities are determined by the following display order:

1. Active alarm
2. High, Medium or Low priority alarm
3. Time since alarm began (New alarms have a higher priority than older alarms)

If the highest priority alarm was paused by the user, the alarm text is displayed in gray on a black background.

Tool-tip mouseovers

Alarm limits for specific parameters can be viewed by moving the mouse cursor over the parameter displayed. A tool-tip will be displayed detailing the High Limit and Low Limit for the selected parameter.



PG300 battery indicator

The system detects and displays the following battery conditions in the Tile View:

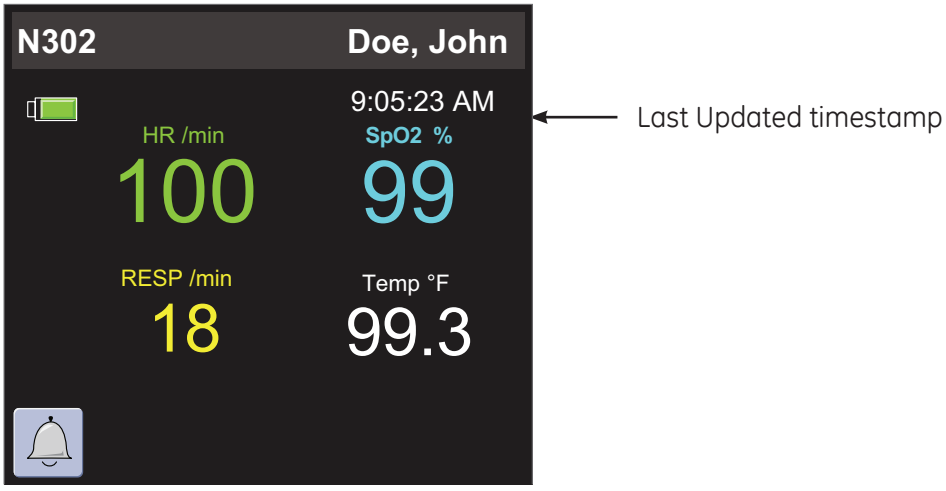
	Battery fully charged (acceptable operating level)
	Battery Low indication (30 or 120 minutes)
 Critical Battery	Battery critical indication
	Battery status unknown indication

NOTE The system will alert a Low battery condition in a Technical alarm (Tile View and Alarm Summary).

NOTE Technical alarms are not latched. If the condition is no longer present, the visual indication will be removed automatically.

Last Updated timestamp

Data is received via the wireless network approximately every two to five minutes from each PG300 device. When an alarm occurs, the alarm message is transmitted immediately. The system keeps track of when data is received for each device. This is known as the Last Updated timestamp, shown below.



Device connection status

Users need to be aware of multiple scenarios when working with wireless devices and associating devices with patients. The following Tile View scenarios provide context.

Scenario one
A clinician applies a PG300 device to a patient. Once the device has been assigned to a patient at the Surveillance Station, data will be displayed on the corresponding Patient Tile, in the Tile View.

Scenario two
A PG300 device is applied to a patient, but a ***No Current PG300 Data*** message is displayed. Users can suspend the alarm by right-selecting Alarm Summary Alarm Bar and resetting, or selecting the alarm message on the Tile View. Measurements will be displayed with a strike-through. After a period of time the measurements will be removed.

NOTE The device is still assigned to a patient and when data is subsequently received, monitoring will resume.

Scenario three
Users may wish to assign a PG300 device to a patient at the Surveillance Station prior to applying the device on a patient. The device is communicating properly, so a user can make the association between device and patient. Since there is no data being received from the PG300 electrode arrays yet however, the Surveillance Station will not display data until it is received.

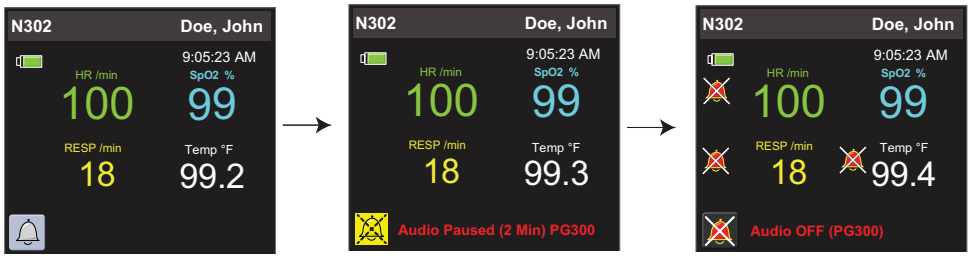
Audio controls

WARNING When audio is silenced or Audio OFF is enabled, alarm audio breakthrough DOES NOT OCCUR.

Users can interact with Patient Tiles to silence alarms or audio pause. The audio buttons on the bottom left corner can be selected. Clicking the Audio Button during normal monitoring will pause the audio for two minutes. Clicking the Audio Button a second time will silence the audio completely, and will display Audio OFF indicators for all parameters.

Audio ON		This button is displayed at the bottom left corner of a Patient Tile, indicating audio is ON for the PG300 device.
Audio Paused (PG300)		When a user selects the Audio ON button, the button changes to Audio Paused state.
Audio OFF (PG300)		When a user selects the Audio Paused button, the button changes to indicate Audio OFF.

The following scenario describes the behavior of the Audio Button on the Tile View during normal operation.



Normal Tile

User clicks Audio On icon

User clicks Audio Paused icon

Pausing audio

An Audio Button is displayed for each active Patient Tile, indicating audio is currently turned ON. When an alarm is detected, and a user wants to pause the audio, users can click the Audio Button. The Alarm Bars remain on the Tile View and Alarm Summary, but the audio stops (for PG300 alarms only) for a period of two minutes. The scenario is described below.

NOTE Tile alarms reset with each new alarm received.

NOTE Latched alarms remain only on the Alarm Summary.

NOTE An alarm of equal or higher priority that occurs during a two minute Audio Pause will breakthrough and enable alarm audio.

When an alarm condition exists, users may pause alarm audio. The following scenario outlines a situation when an alarm is received, and a user pauses the audio for two minutes (default), and a new alarm is received and Alarm breakthrough occurs.

- Alarm is received
- Alarm text describes alarm

- User clicks Audio Button
- Icon indicates parameter in alarm is paused

- New alarm is received (Alarm breakthrough)
- Existing icon is removed
- Audio re-occurs

- User Selects Audio Button AGAIN
- Both parameters Audio Paused

Silencing audio

An Audio Button is displayed for each active Patient Tile, indicating that audio is turned ON. When an alarm is detected, and a user wants to silence the audio, users can select the audio alarm icon twice. The Alarm Bars remain on the Tile View and Alarm Summary, but the audio stops (for PG300 alarms only). The scenario is described below.

- Alarm is received
- Alarm text describes alarm

- User selects Audio Pause button
- Icon indicates parameter in alarm is paused

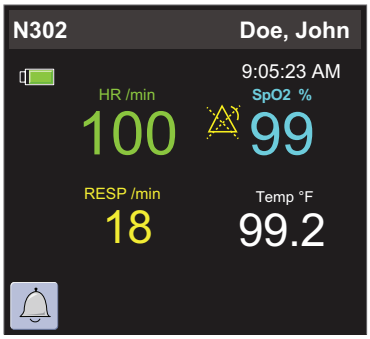
- User Selects Audio Pause AGAIN
- Button changes to Audio OFF
- *ALL parameters indicated as Audio OFF

- New Alarm is received
- Both parameters show Audio OFF indicator

NOTE Selecting the Audio OFF icon (third time) will TURN ON, or re-enable audio.

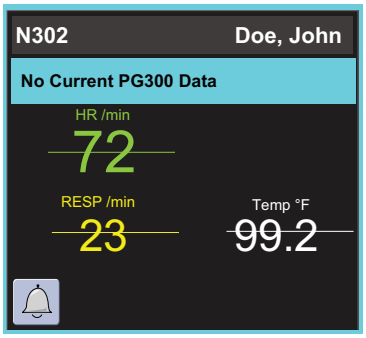
SpO_2 bedside audio silence

Users may silence audio on an SpO_2 bedside device manually. This will be indicated with an Audio OFF icon for the SpO_2 parameter only as shown below.



Technical alarms and loss of communication with device

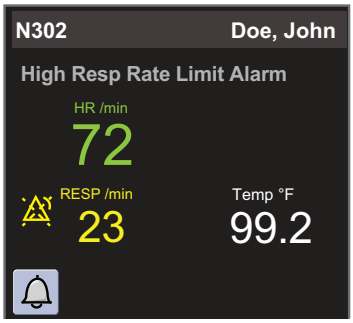
When communication with the PG300 device is lost, no new data is received. A strike through is displayed over the last known set of measurements, associated to the device that is no longer communicating. An alarm message will be displayed, and troubleshooting should begin (See Appendix D, Troubleshooting). The measurements with a strike-through will eventually disappear.



NOTE When a Technical alarm occurs, measurement value(s) displayed (associated to the device transmitting the alarm) are struck through. The strike through is used to inform the user that the measurement value(s) displayed are no longer current and cannot be relied on as an indication of the patients' current state.

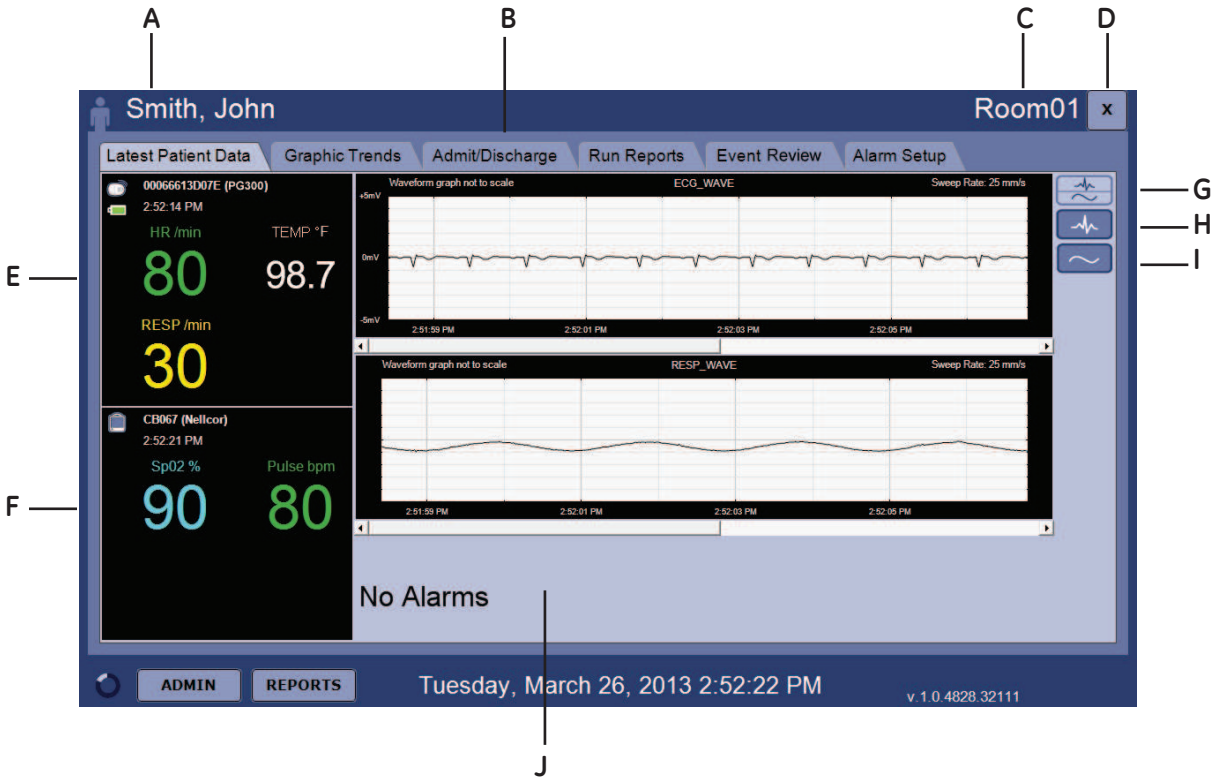
Tile View and Alarm Summary behavior

When an alarm is paused in the Alarm Summary, the Patient Tile for the patient that experienced the alarm condition, is marked with a Alarm Pause icon and Alarm text remains until the alarm is cleared or reset.



Working with the Single Patient View

The Single Patient View displays detailed patient-related content. The Single Patient View is displayed when a user selects a Patient Tile from the Tile View, or an Alarm Bar from the Alarm Summary. The Single Patient View provides an in-depth assessment of a patient's condition, including the latest patient data, waveform images, and alarm conditions. The Single Patient View uses a Tab concept for categorizing information, with the default (starting) Tab being Latest Patient Data. This default view shows the latest measurements and parameters from any medical device detected for this patient or Room ID. The layout for the default view consists of a Device data area, Waveform area, and Alarm Bar area.



A	Patient ID and/or Name
B	Tab views
C	Bed ID/MRN
D	Close button
E	Available Device data from PG300 (HR, RR, Temp)
F	Available Device data from SpO_2 patient monitor (SpO_2, Pulse)
G	Combined ECG and RESP Waveform display indicator
H	ECG Waveform display indicator
I	RESP Waveform display indicator
J	Alarm condition (identical to that presented on the Alarm Summary)

Tab views

The default Tab or starting view for a patient is Latest Patient Data. This default view contains the patient's measurements derived from the PG300 device or from an SpO_2 monitor (or both), along with waveform data and alarm data.

Additional Tab views include Graphic Trend, Admit/Discharge (authorization required), Run Reports (authorization required), Event Review and Alarm Setup.

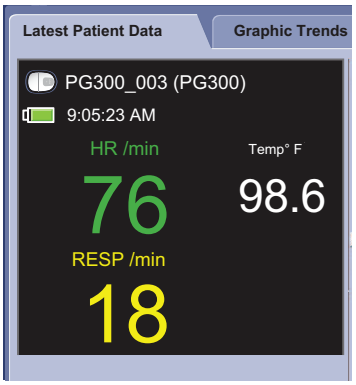
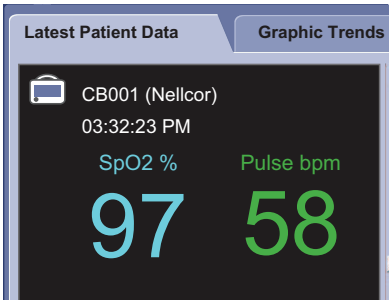
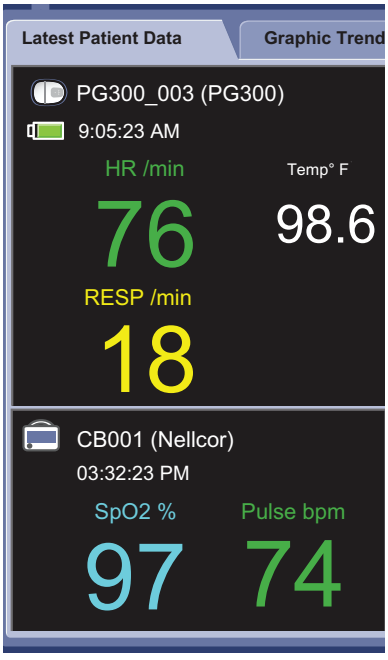
Latest Patient Data view

This area may contain one or two devices. Each device may have two or four measurements. The number of devices assigned determines how many devices to display. The maximum number of allowed assigned devices is two.

Device data area

Each patient device is indicated by the device's name and Last Updated timestamp. Patient measurements, including measurement name, associated value, alarm limits and units of measure (if available), are displayed according to each patient device.

The Latest Patient data view automatically updates with the latest data available. Numeric values are time stamped.

Data Display	Parameters	Example
PG300 device (Wireless)	Three parameters • Heart Rate (HR/min) • Respiration Rate (Resp/min) • Skin Temperature (Temp ° C or ° F)	
SpO_2 (Wired)	Two parameters • Oxygen Saturation (%) • Heart Rate (Pulse bpm)	
Both PG300 and SpO_2	Five parameters • Heart Rate (HR/min) • Respiration Rate (Resp/min) • Skin Temperature (Temp ° C or ° F) • Oxygen Saturation (%) • Heart Rate (Pulse bpm)	

Waveforms

The waveform area displays both ECG and respiratory waveforms. Waveforms are generated and displayed when a physiological alarm occurs for a selected patient, and the system receives data from the PG300 device.

The length of wave data stored before an alarm occurs is a configurable setting with a minimum of four seconds, and a maximum of 20 seconds. The length of wave data stored after an alarm occurs is also a configurable setting, with a minimum of one second, and a maximum of five seconds. The minimum area allocated for the waveform graph is 44 mm (1.75 in) high and 200 mm (7.875 in) wide. The dimensions of the graphed area are fixed, and cannot be adjusted by the user, however horizontal scrolling can occur. Three buttons on the right side of the graph allow a user to change the current view of the graphs.

	The top (ECG and RESP) default view button displays both ECG and RESP waveforms in equal size.
	When the middle (ECG) view button is selected, the ECG waveform expands to fill the entire display area, temporarily hiding the other graph.
	When the bottom (RESP) view button is selected, the RESP waveform expands to fill the entire display area, temporarily hiding the other graph.

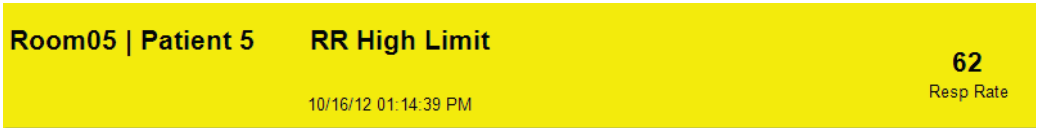
Each waveform displays the corresponding sweep rate, defining the speed at which the waveform is updated and re-drawn on the screen. ECG and respiratory waves both have a sweep rate of 25 mm/s. When expanded, ECG and RESP waveforms will also be scaled so that the graph displays 10mm/mV on the Y-axis.

A warning label informs the user that waveform graphs are not to scale when displayed together. When no waveform data is present, a message No Waveform is displayed.

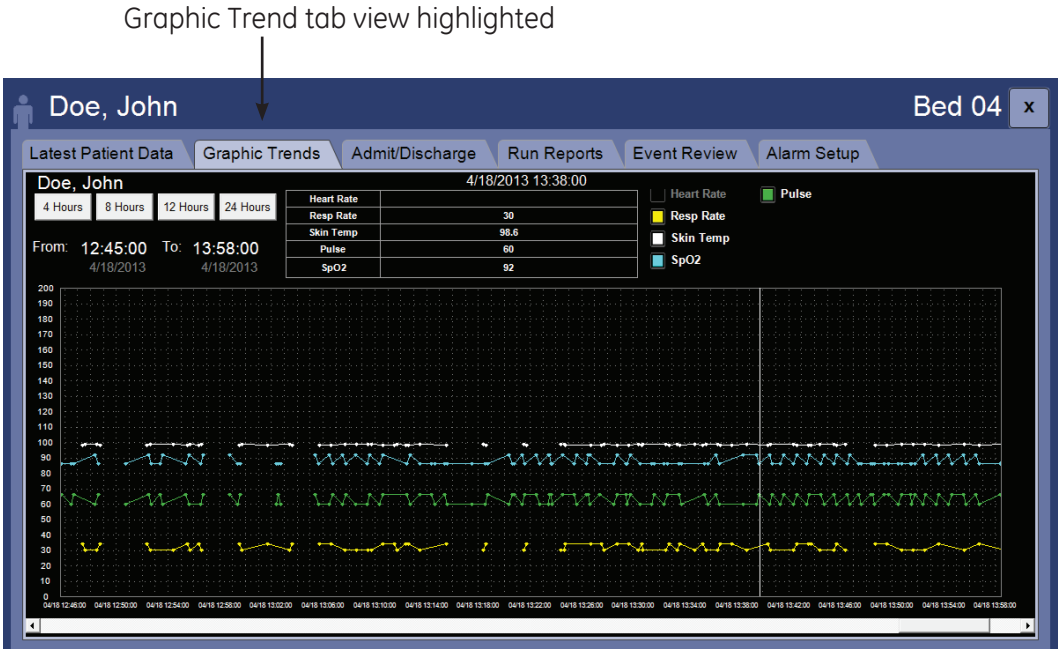
WARNING Waveform grid is not to scale.

Alarm Bar

The Latest Patient Data View displays a similar Alarm Bar located on the Alarm Summary, containing the patients' alarming measurement condition. The Alarm Bar displays text describing the alarm condition and the last known reading for the measurement.



Graphic Trend Tab view

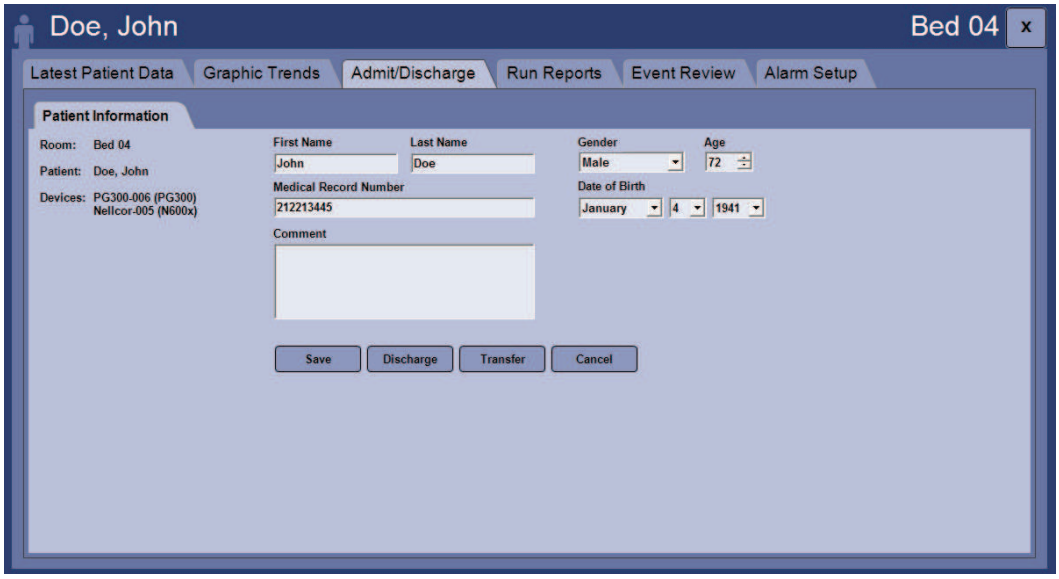


Clinicians can review Graphic Trends for clinical parameters over time. The default view is a 12 hour trend, and options include 4 hour, 8 hour, 12 hour and 24 hour (if applicable). Users can turn parameters ON and OFF interactively, for trending on the graph, or customize the default view through a configuration setting.

The Graphic Trend displays data trended by the Surveillance Station. The graph trend utilizes a web service in order to acquire data to display in the trend. The web service is responsible for providing data to all the display controls and obtaining the data from the database.

NOTE For more detailed information on using the Graphic Trend feature, see Chapter 7, Viewing Patient Data.

Admit/Discharge Tab view



CAUTION To change Room/Bed, patient information, assigned devices and assigned pagers, users need to use the Administration system.

NOTE By default, this feature requires a login.

ADT Systems

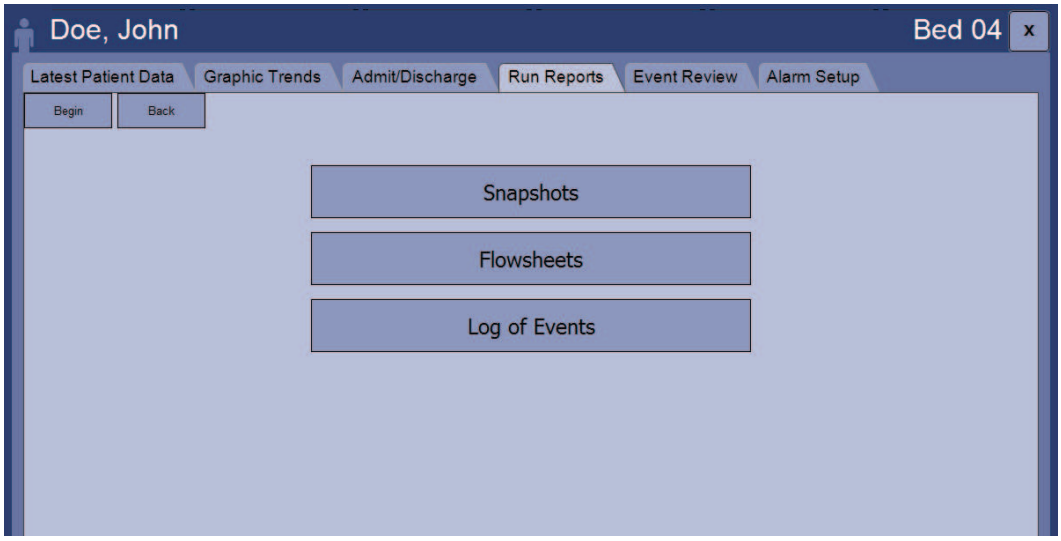
ADT system integration is a licensed feature. Authorized users can retrieve ADT data associated with a patient. If licensed, the Admit/Discharge Tab displays a read-only view of the selected Patient Name, Medical Record Number, Age, Gender, and Date of Birth. The Comments field will be the only editable field.

Manual ADT

Users can enter a Patient Name, Medical Record Number, Age, Gender, Date of Birth and may also enter a Comment if required. Users are required to select the ***Save*** button for the changes to take effect.

NOTE For more detailed information on ADT and managing patients, refer to Chapter 6, Managing Patients.

Run Reports Tab view



Users can select the ***Run Reports*** Tab view to access and retrieve detailed information used for reviewing patient data, clinical and Technical alarms, settings, setting changes and alarm notifications.

The following reports are available:

- Snapshots
- Flow Sheets
- Log of Events

NOTE Log of Pager Messages is a system-wide report. Select the Reports button on the bottom of the screen to run that specific report.

NOTE For more detailed information on Patient Reports, see Chapter 7, Viewing Patient Data.

Reporting features

All reports generated by the system contain a header with the patient name, Medical Record Number (MRN) and reporting timeframe. All reports are printable and downloadable. Users may decide to run reports for the following reasons:

Device setting change(s)
Patient measurements and alarms associated with any setting changes.

Smart Alarms and device alarm activations
Patient measurements and settings associated with any alarms received.

System configured (scheduled) snapshots
System-generated timestamps that include measurements, settings and/or alarms.

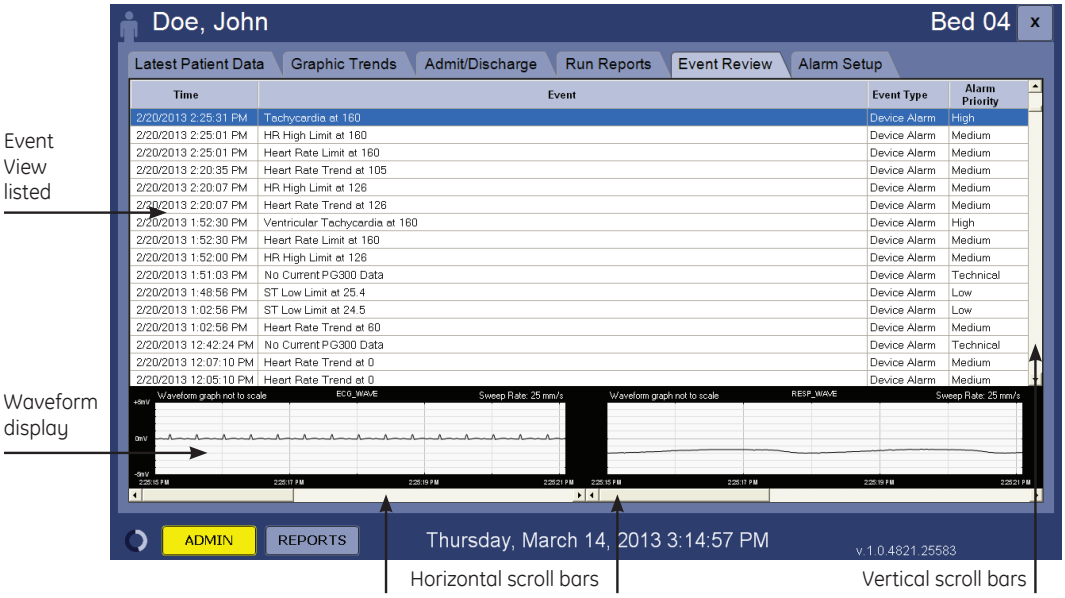
Patient admit and discharge status
Measurements, settings and/or alarms associated with patient status changes.

NOTE Every event (settings change, alarm, snapshot) recorded by the system is timestamped (system date and time precision of at least one second).

Running Reports
Users can select on the Report type they wish to run for a selected patient. For Log of Events, Flowsheets and Snapshots, the user is required to specify a report timeframe, and event types to be included in the report, by enabling or disabling various report option filters, such as Alarms, Setting Changes, Events, and Snapshots

NOTE For more detailed information on reporting features and options, see Chapter 7, Viewing Patient Data.

Event Review Tab view



The Event Review Tab serves as a quick reference for patient and device alarm-related events and settings. Instead of running a report, users may wish to quickly view alarms recorded by the system for a patient. The Event Review displays the alarm event time, description, and type in chronological order, with the most recent alarm events displayed first. Selecting the ***Time*** or ***Event Type*** column headers will sort the list based on the selected column. Should the list of events grow longer than the size of the page, scroll bars are displayed on the right side of the page allowing the user to view the full list. Located at the bottom of the page, the navigation panel allows the user to navigate through the pages of events. The left and right side of the panel displays the previous and next buttons respectively. The current page number is located in the middle of the panel.

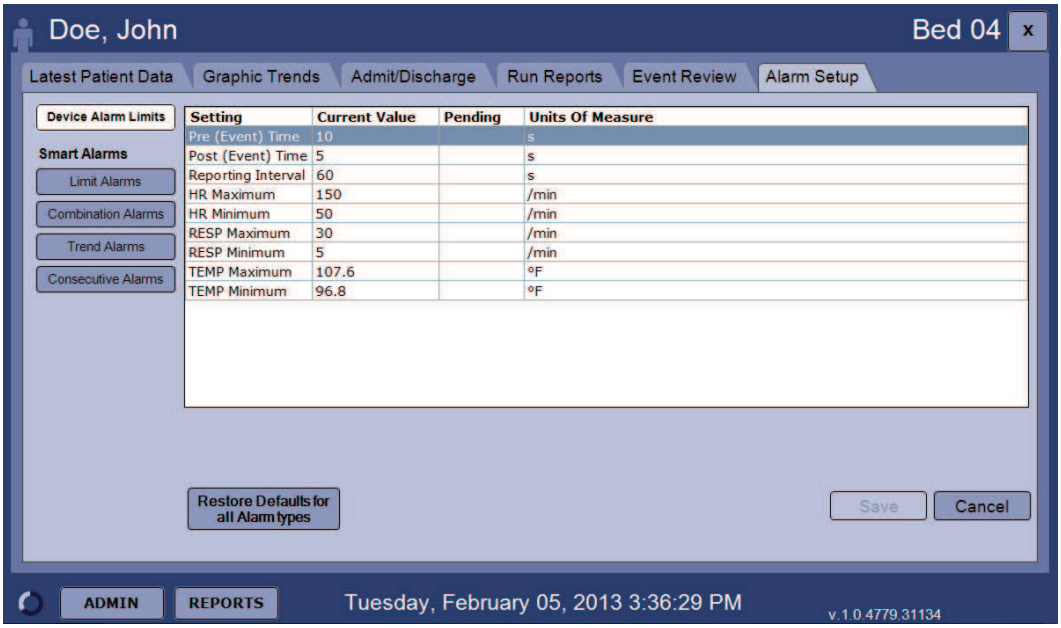
Waveform Display

Two waveform graphs are displayed next to one another below the events table. Selecting on an ***Event*** row will display the corresponding waveforms for that event.

NOTE Waveforms are only available for physiological events. Full disclosure of every periodic waveform is not available.

NOTE For more detailed information on Log of Events Report, see Chapter 7, Viewing Patient Data.

Alarm Setup Tab view



NOTE This feature requires a login, and is only available to authorized users.

The Alarm Setup Tab serves as a dashboard for setting patient alarm limits and creating Smart Alarms. High and Low alarm limits for the PG300 device parameters can be set.

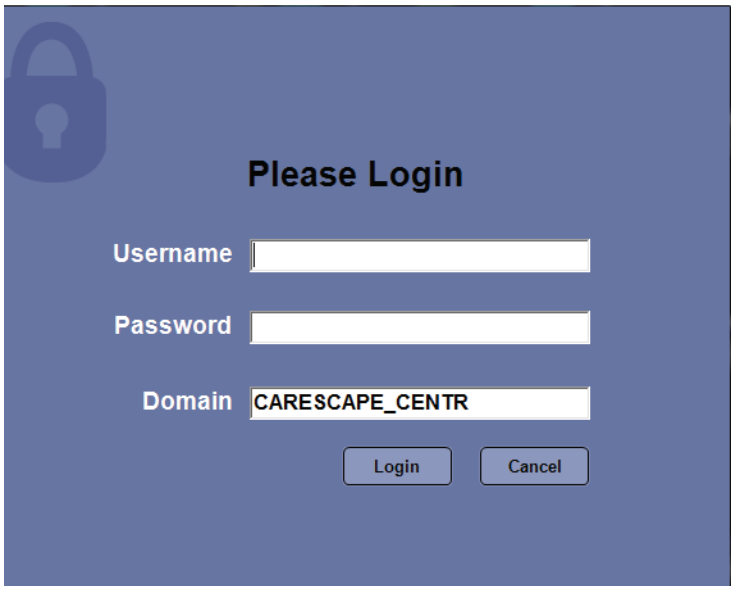
Alarm priority (High/Medium/Low) for PG300 alarms are configurable by the clinical user on a device basis (exceptions: Asystole, VFib and VTach shall be High priority and not changeable) on the Surveillance Station.

Smart Alarms include:
- Limit Alarms
- Combination Alarms
- Trend Alarms
- Consecutive Alarms

NOTE For more information on Smart Alarms, see Chapter 5, Smart Alarms.

Surveillance Station security

Security controls are applied to the user interface to limit access to service functions. When the service user selects a defined function key, they will be prompted with a security login window.



The clinical and/or service user is required to provide a valid user name, password and domain in order to access the secure screen. If invalid credentials are used, the security login window will display an ***Authentication Failed*** message.

Login accounts

The login privileges are managed through the local workstation windows user accounts or domain accounts. The workstation or domain username account is not limited by format. The username can be comprised of alphanumeric and/or symbols text. The password field text entered is case-sensitive and supports up to 32 characters. The password field accepts alphanumeric and/or symbol text. When the user enters their password, each key pressed is displayed as an asterisk * in the password text box.

5

Alarms

Overview

Patient alarms and device messages are processed and distributed in real-time. During normal monitoring, data is received at predetermined reporting intervals, but when an alarm is detected from a device, the Surveillance Station will immediately alert (both audibly and visually) at the Surveillance Station (Alarm Summary, Tile View and Single Patient View).

The system is also capable of enabling authorized personnel to configure patient alarm settings such as maximum and minimum limits for specific device parameters. In addition to these device alarm limits, combination of parameters and trend alarms are also possible.

WARNING The CARESCAPE Surveillance Monitoring System is not intended to be a substitute for direct clinical supervision. Do not operate unless qualified personnel are in attendance to promptly respond to alarms, inoperative conditions, or sudden malfunctions. Patients on life-support equipment should be visually monitored at all times. Do not rely on the pagers as the sole source of Surveillance Station alarms.

WARNING It is essential that the Surveillance Station be visually and audibly monitored at all times to assure prompt response to alarms.

WARNING Do not ignore medical device audible alarms. Alarms indicate conditions that require immediate attention.

WARNING No alarms will be displayed until the PG300 device has been connected to the PG300 electrode array and the PG300 device is associated with a patient at the Surveillance Station.

WARNING Acknowledgement of a message may not correct the underlying cause of the alarm. Messaging will continue until the condition which causes the alarm is cleared.

Alarm display

The Surveillance Station displays two very distinct type of alarms. Patient alarms are important and should be addressed immediately. System alarms are also important and should be addressed as soon as possible, for uninterrupted operation.

NOTE No Alarms are displayed for a patient until a patient is admitted to the Surveillance Station.

Alarm priority

Priority	Color code	Audio tone
High priority	Red	Five pulse tone
Medium priority	Yellow	Three pulse tone
Low priority	Cyan	One pulse tone

Getting started with alarms

Alarms can be addressed using the following features, required by medical device alarm system standards, IEC 60601-1-8. Clinicians should become familiar with each option, and customize their workflow accordingly.

Action	Initiated by	Description	Indication
Alarm Pause	Right-click Alarm Bar, Alarm Summary	Removes visual alarm, text description remains, and icon is displayed next to parameter in a alarm	
Alarm Reset	Right-click Alarm Bar, Alarm Summary	Removes visual alarm, silences alarm tones	None
Audio Pause	Left-click Audio button on Patient Tile once	Visual alarm remains, audio alarm tone is silenced for two minutes	
Audio Silence	Left-click Audio button on Patient Tile twice	Visual alarm remains, audio alarm tone is silenced until another alarm occurs	

Patient alarms

The system has two different patient alarm types. Threshold alarms are alarms that get triggered when a measurement gets exceeded, such as heart rate greater than 150 beats per minute. The default limit settings are applied upon system startup, and each patient's limits can be set individually.

The second type of alarm is an algorithmic alarm which uses a combination of parameter limits, and trending of limits exceeded over time. These are referred to as Smart Alarms.

PG300 device alarms

The following alarms are received by the system.

High priority alarm messages	Audio
Bradycardia	Five pulse tone
Tachycardia	Five pulse tone
Asystole	Five pulse tone
Ventricular Fibrillation	Five pulse tone
Critical Battery	Five pulse tone

Medium priority alarm messages	Audio
HR High Limit	Three pulse tone
HR Low Limit	Three pulse tone
RR High Limit	Three pulse tone
RR Low Limit	Three pulse tone
Temp High Limit	Three pulse tone
Temp Low Limit	Three pulse tone

Low/Technical priority alarm messages	Audio
Leads OFF	One Pulse Tone
No Current PG300 Data	One Pulse Tone
Low Battery (120min)	One Pulse Tone
Low Battery (30min)	One Pulse Tone

Nellcor SpO_2 alarms

Devices supported include N-295, N-395, N-595, N-600 SpO_2 patient monitors. The following alarms are received by the system. For detailed information on the use of the device, see the manufacturer's operators manual.

Medium priority alarm messages
Pulse Rate High
Pulse Rate Low
High Saturation
Low Saturation

Low/Technical priority alarm messages
Sensor Disconnected
Sensor Off
Low Battery
Loss of Pulse with Motion

Loss of Pulse
Motion
No Current Pulse Ox Data
Pulse Search

Masimo SpO_2 Alarms

Devices supported include Radical, Rad-7, Rad-8, Rad-9 SpO_2 patient monitors. The following alarms are received by the system. For detailed information on the use of the device, see the manufacturer's operators manual.

Medium priority alarm messages
High SpO_2
Low SpO_2
High Pulse Rate
Low Pulse Rate

Low/Technical priority alarm messages
Low Battery
No Sensor
Interference
Ambient Light
Unrecognized Sensor
Low Signal IQ
Defective Sensor
Low Perfusion
Sensor OFF
Pulse Search
No Current Data

System alarms

Battery alarms

The system detects the following battery conditions, and displays a technical alarm:

- ***Low Battery Warning*** (120 minutes remaining)
- ***Low Battery Warning*** (30 minutes remaining)
- ***Critical Battery Warning*** (15 minutes remaining)

Technical alarms

Device Alarms

- ***No Current PG300 Data*** (see Appendix D, Troubleshooting)
- ***Leads OFF***

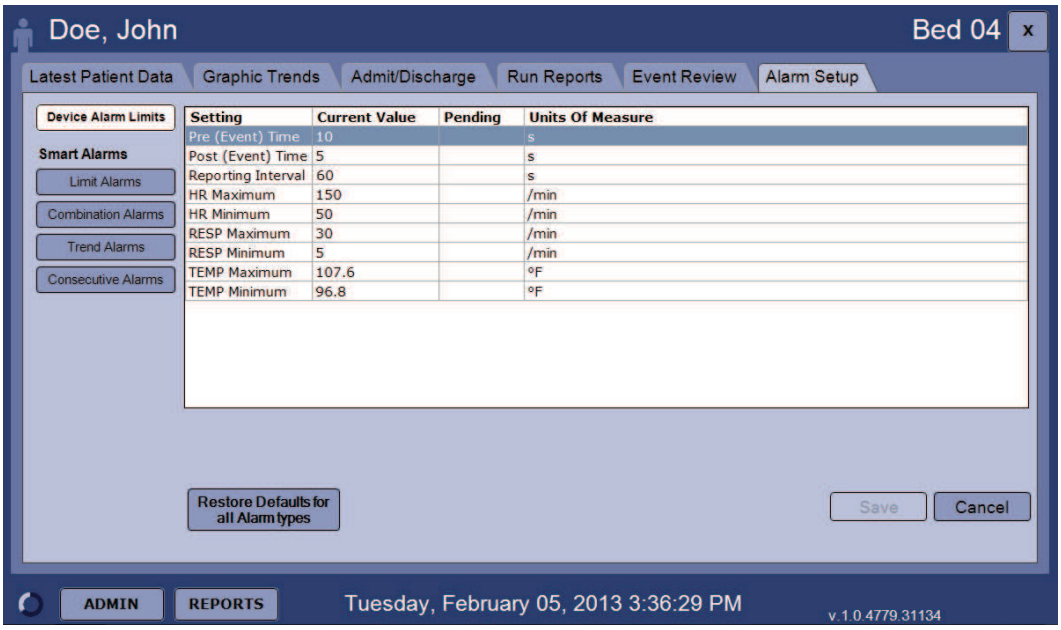
System Alarms

- ***Connection lost to the Central Authority***
- ***Connection lost to the Local Authority***
- ***Connection lost to the Configuration Service***
- ***Connection lost to data feed (IP Address of data feed)***
- ***Connection lost to the NHS (Network Health Service)***

Network Delay Alarms

- ***Network interruption. Data and alarms will be delayed.***

Alarm setup



WARNING The Alarm Setup feature is an application to be used by trained administrative users only. Use of the system should be carefully understood, and an institutional procedure should be established that outlines required training and approvals when editing alarm setup.

Authorized users can click on the ***Alarm Setup*** Tab view in the Single Patient View to access a patient's alarm setup. After login, a listing of PG300 device alarm limit settings and additional links are displayed.

NOTE Smart Alarms are typically created during installation and apply to the entire system. Parameter limits for Smart Alarms can be adjusted on a per patient basis.

Default alarm limits

The default view for the Alarm Setup feature is the Device Alarm Limits view. This interactive table represents the alarm limits currently set for the PG300 device (at a Unit level) that is assigned to a patient.

Setting Name	Default Value	Units of Measure	Description
PreTime	5	s (Seconds)	Data capture time before a patient event (alarm)
PostTime	10	s (Seconds)	Data capture time after a patient event (alarm)
HRMax	150	/min (Beats per minute)	Maximum heart rate
HRMin	50	/min (Beats per minute)	Minimum heart rate
RRMAx	30	/min (Breaths per minute)	Maximum respiration rate
RRMin	5	/min (Breaths per minute)	Minimum respiration rate
TempMax	42.0 / 107.6	° C (Celsius) or ° F (Fahrenheit)	Maximum skin temperature
TempMin	36.1 / 96.98	° C (Celsius) or ° F (Fahrenheit)	Minimum skin temperature

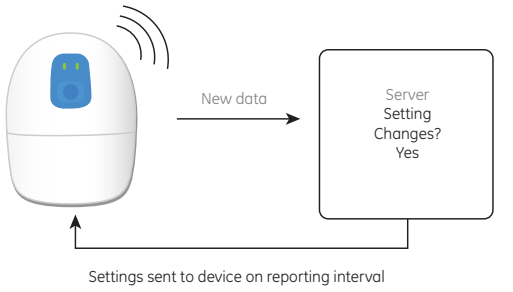
NOTE If a patient exceeds a value (Min or Max) for any parameter, then a limit alarm will be generated at the Surveillance Station.

Adjusting Alarm Limits

WARNING When new alarm settings are created, there is a delay of up to two minutes in transferring these setting changes to the PG300 device. The new settings will only be transferred during the normal data reporting interval cycle.

The maximum and minimum values for specific parameter limits can be adjusted as required. Select on a Current Value for a specific parameter limit, and change it as applicable.

NOTE User must hit Save, for the changes to take effect.



Selected

Once a setting change has been made, the status changes to ***Pending***, until it has been downloaded to the device.

Pending
Current
Current
Current
Pending
Current
Current
Current
Current

The new alarm values will then be displayed in the Pending column. When the change is initiated, it has to be downloaded to the PG300 device, which may take a few minutes due to the reporting interval. The values have been successfully applied when the status changes from Pending to Current.

NOTE If alarm setup is incorrect, the Restore Defaults button will restore the alarm limits back to pre-determined Unit-level alarm limit defaults.

Smart Alarms

In addition to default device alarm limits, the system has the capability to further define, group and categorize parameters that are independent of the device, for more advanced clinical monitoring.

WARNING Smart alarm settings and features may create additional (or unwanted) alarms and should be carefully considered before implementing.

NOTE Smart Alarms are created by a separate process. Please see the *CARESCAPE Surveillance Monitoring Service Manual* for adding unique Smart Alarms. The ones discussed in this section are for reference only.

Smart Limit Alarms

WARNING When new alarm settings are created, there is a delay of up to two minutes in transferring these setting changes to the PG300 device. The new settings will only be transferred during the normal data reporting interval cycle.

CAUTION By default, device alarm limits provide the basic layer of surveillance. Smart Limit Alarms may not be needed in many cases.

Device limit alarms occur when a given value (patient measurement) violates either an upper or lower limit (eg: HR > 140, or HR < 30).

Smart Limit Alarms work the same way. When implementing smart alarm limits, to avoid getting duplicate alarms, users may wish to keep the device alarm limits high, and set smart alarm limits as needed. Clicking the Limit Alarms link on the left column of the Alarm Setup Tab view brings up a list of additional Smart Limit Alarms.

Example Smart Limit Alarms

Setting Name	Value	Units of Measure	Description
HRMax	140	/min (Beats per minute)	Maximum heart rate
HRMin	55	/min (Beats per minute)	Minimum heart rate
RRMAx	55	/min (Breaths per minute)	Maximum respiration rate
RRMin	7	/min (Breaths per minute)	Minimum respiration rate
TempMax	41.5 / 106.7	° C (Celsius) or ° F (Fahrenheit)	Maximum skin temperature
TempMin	37.5 / 99.5	° C (Celsius) or ° F (Fahrenheit)	Minimum skin temperature

To change a limit alarm, select a value, and it will highlight. Change the value to the desired value, and click ***Save***.

NOTE Default limit values for each Unit are setup during initial system configuration and setup. Users can override these default values as needed, on a per patient basis.

Smart Combination Alarms

WARNING When new alarm settings are created, there is a delay of up to two minutes in transferring these setting changes to the PG300 device. The new settings will only be transferred during the normal data reporting interval cycle.

Combination alarms occur when two values (patient measurements) violate pre-determined limits, either High or Low simultaneously. After logging in to the patient's Alarm Setup panel, click the ***Combination Alarms*** link.

A list of pre-defined Combination Alarms for the selected patient will be displayed. Users can edit the limits on the Combination Alarms.

Example combination alarms

Name of the Alarm	Param 1	Variable	Value	Param 2	Variable	Value
High HR & Low Resp	HRMax	>	150	RRMin	<	2
Low HR & High Resp	HRMin	<	30	RRMax	>	10

To change a combination alarm, select a value, and it will highlight. Change the value to the desired value, and click ***Save***.

NOTE Default Smart Combination Alarms for each Unit are setup during initial system configuration. Users can override these default values as needed, on a per patient basis.

Smart Consecutive Alarms

WARNING When new alarm settings are created, there is a delay of up to two minutes in transferring these setting changes to the PG300 device. The new settings will only be transferred during the normal data reporting interval cycle.

Consecutive alarms occur when a value (patient measurement) goes in and out of a limit violation a given number of times, over a specified time period. After login to the Alarm Setup panel, click the ***Consecutive Alarms*** link. A list of pre-defined Consecutive Alarms for the selected patient will be displayed. Users can edit the options on the Consecutive Alarms.

Example consecutive alarms

Name of the Alarm	Value	Variable	Time interval	Violation Count
Consecutive High HR	200	>	60	3
Consecutive High Resp	45	>	60	3

To change a consecutive alarm, select a value, and it will highlight. Change the value to the desired value, and click ***Save***.

NOTE Default Smart Consecutive Alarms for each Unit are setup during initial system configuration. Users can override these default values as needed, on a per patient basis.

Smart Trend Alarms

WARNING When new alarm settings are created, there is a delay of up to two minutes in transferring these setting changes to the PG300 device. The new settings will only be transferred during the normal data reporting interval cycle.

Trend alarms occur when a given value (patient measurement) violates an upper or lower percentage compared with the average value (normal) for a patient. After login to the Alarm Setup panel, click the ***Trend Alarms*** link. A list of pre-defined Trend Alarms for the selected patient will be displayed. Users can Edit the options on the Trend Alarms.

Example Smart Trend Alarms

Name of the Alarm	% Variation	Default interval	MIn. interval	Max. interval
HR Trend	90	4	1	60
Resp Trend	90	4	3	60

To change a Trend alarm, select a value, and it will highlight. Change the value to the desired value, and click ***Save***.

NOTE Default Smart Trend Alarms for each Unit are setup during initial system configuration. Users can override these default values as needed, on a per patient basis.

Restore Defaults

Device alarm limits are configured during initial system configuration. At any time, alarm defaults can be restored by clicking the ***Restore Defaults*** button in the Alarm Setup view.

NOTE When an PG300 device is turned OFF or a battery is replaced, the device will download the Unit default alarm settings (or any custom alarm settings) when turned back ON.

Managing patient alarms

Users have the ability to Reset or Pause alarms for patients by right-clicking an Alarm Bar on the Alarm Summary. Users may also use the Audio Pause/Silence feature for managing patient alarms by clicking the Audio Buttons on the Tile View.

Alarm Reset

The Alarm Reset feature removes the Alarm Bar and suspends the audio immediately. Since patient data is received periodically however, the Alarm Bar may be re-added to the alarm list when new data is received.

Resetting a No Current PG300 Data alarm will suspend the alarm audio and will remove the Alarm Bar from the alarm list for the duration of time the alarm is active.

Device	Initiated from Alarm Summary	Alarm Summary	Tile View
PG300	Right-click, Reset	Alarm Bar Removed	Visual and Audio alarm removed
SpO_2	Right-click, Reset	Alarm Bar Removed	Visual and Audio alarm removed.

In some cases, an alarm may correct itself, however the alarm remains on the Alarm Summary view until a clinician acknowledges the alarm. This is known as latching alarms which in some cases need to be manually cleared.

Alarm Pause

The Alarm Pause feature removes the Alarm Bar and suspends the audio for a pre-determined time interval. Since patient data is received periodically however, the Alarm Bar may be re-added to the alarm list when new data is received.

Device	Initiated from Alarm Summary	Alarm Summary	Tile View
PG300	Right-click, Alarm Pause (2min, 5min, 15min, one hr)	Alarm Bar Removed. Alarm Breakthrough can occur.	Audio Removed. Alarm text remains. No Color or Flashing. Icon displayed Alarm Breakthrough can occur.
SpO_2	Right-click, Alarm Pause (2min, 5min, 15min, one hr)	Alarm Bar Remains when initiated from device. Removed when initiated from Alarm Summary. Alarm Breakthrough can occur.	Audio Removed. Alarm text remains. No Color or Flashing. Icon Displayed Alarm Breakthrough can occur.

For more information, see Chapter 4, Working with the System, Alarm Pause.

CAUTION Alarm Pause cannot be undone or terminated. The paused alarm will not recur until the pause period has passed regardless of whether or not the alarm condition persists. Reset alarms will reoccur if the alarm condition persists.

NOTE An alarm of equal or higher priority that occurs during an Alarm Pause will always breakthrough and enable alarm audio.

Audio Pause

Audio ON		-->	**Audio Paused (PG300)**	

The Audio Pause feature suspends the audio for two minutes. Since patient data is received periodically however, the audio may re-occur when new data is received.

Device	Initiated from	Alarm Summary	Tile View	Parameter in alarm
PG300	**Tile View,** Audio Button single select	Alarm Bar remains	Audio OFF. Alarm text remains. Alarm Breakthrough can occur.	Audio Paused icon
SpO_2	Bedside device	Alarm Bar remains	Audio Paused button	Audio Paused icon

For more information, see Chapter 4, Working with the System, Pausing audio.

NOTE An alarm of equal or higher priority that occurs during a two minute Audio Pause will breakthrough and enable alarm audio.

Audio Silence

Audio ON		-->	Audio Paused (PG300)		-->	Audio OFF (PG300)	

The Audio Silence feature suspends the audio completely for each alarm (PG300 devices only) from the Tile View. When audio has been paused, users can click the Audio Paused Alarm button again, and audio alarms stop completely, until a user re-enables audio. The Audio Alarm button changes and all parameters affected will indicate Audio OFF. The Visual alarm remains. Since patient data is received periodically however, the audio may re-occur when new data is received.

Device	Initiated from	Alarm Summary	Tile View	Parameter in alarm
PG300	**Tile View,** Audio Button double select	Alarm Bar remains	Audio OFF. Alarm text remains. Alarm Breakthrough can occur.	Audio Silenced icon
SpO_2	Bedside device	Alarm Bar remains	Audio Silenced button	Audio Silenced icon

For more information, see Chapter 4 Working with the System, Silencing audio.

WARNING Silencing alarms should be done in accordance with hospital procedures.

CAUTION An alarm of equal or higher priority that occurs during Audio Silence WILL NOT breakthrough and enable alarm audio.

NOTE The feature only affects PG300 devices.

NOTE Clicking the Audio OFF icon (third time) will TURN ON, or re-enable Audio.

Audio Pause and Audio Silence on SpO_2 patient monitor

The Surveillance Station Tile View will indicate when a clinician has initiated an Audio Pause, or silenced alarms at the SpO_2 bedside patient monitor.

NOTE The Audio Pause button does not apply to SpO_2 patient monitors. Clicking the Audio Pause button does not silence the bedside SpO_2 monitor.

Printing patient alarms

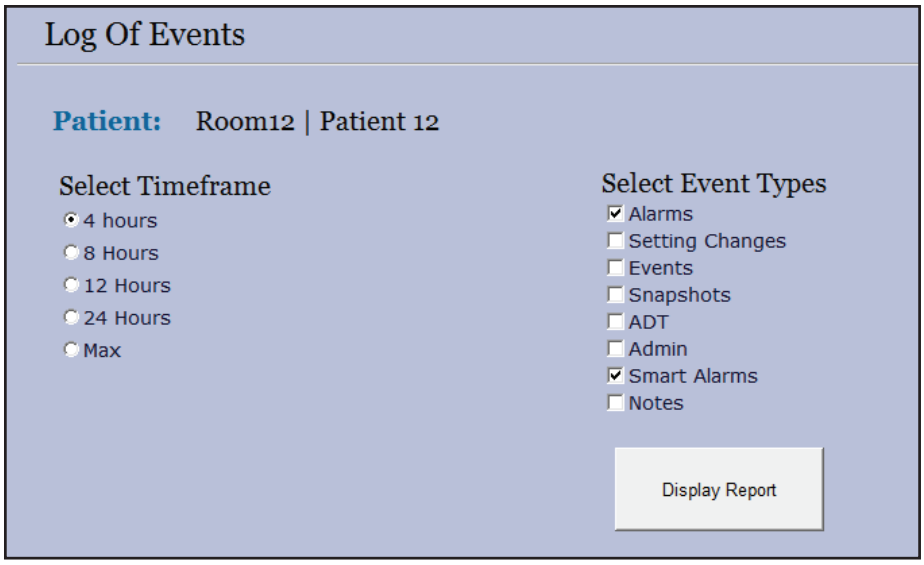
The Log of Events report records all alarms by the system and timestamps (system date and time precision of at least one second) to itemize each alarm event. In most cases, an alarm event will have a corresponding waveform.

Step 1

From the Run Reports Tab or Reports button, click ***Log of Events*** option from the Report Selection screen.

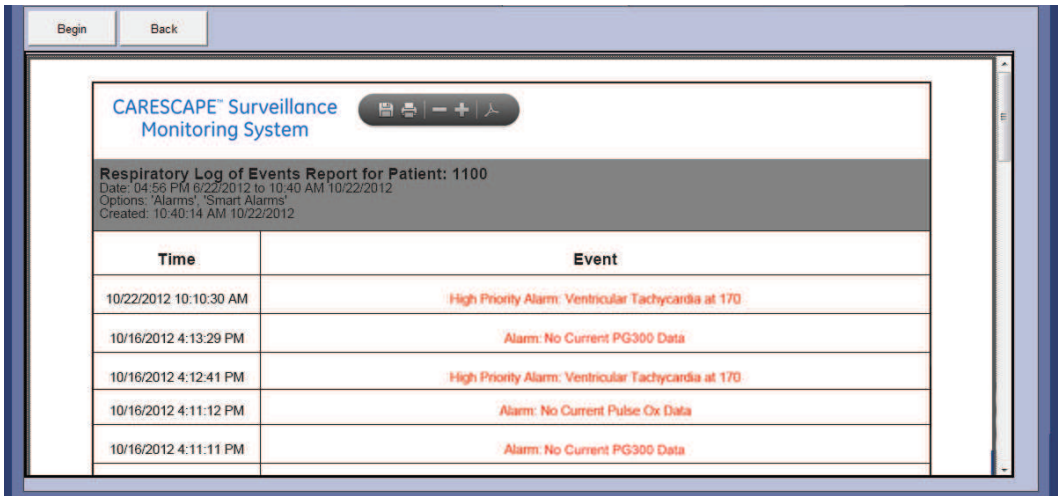
Step 2

Select a patient from the list. Specify a report timeframe using the predetermined options available (4, 8, 12, 24 hours or max time). Specify the event types to be displayed by enabling Alarms, and Smart Alarms report option filters.



Step 3

Hit the ***Display Report*** button. A report is generated. The options and filters, along with patient name and date/time frame are included in the report. Users can print this report or download. This report is generated with the most recent events listed first.



6

Managing patients

The Administration system (or ***Admin*** area) enables authorized users to manage patients, devices, and alert notifications. It is designed to quickly perform administrative tasks when assigning patients to devices and working with ADT data. The Assignments view displays an interactive grid, containing room information, admitted patients, devices and pager assignments known by the system.

Unassigned Devices detected

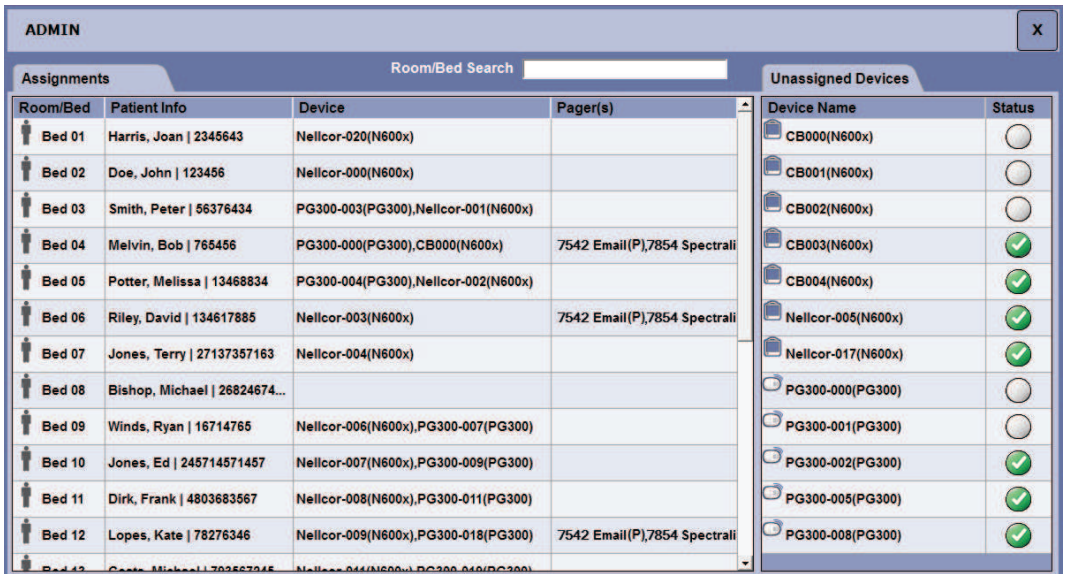
NOTE When Unassigned Devices are detected in the system, the ***Admin*** button becomes highlighted to indicate devices are available for assignment.

Assignments

The user accesses the Assignments view by clicking the ***Admin*** button at the bottom of the screen. After successful login, users may perform administrative functions such as assigning patients to rooms, patients to devices, pager assignments and more.

The Assignments view is a selectable table that displays five columns:

- Room/Bed (patient icon indicates the room is occupied)
- Patient Info (Name followed by Medical Record Number if available)
- Device(s) assigned
- Pager(s) assigned



The Room/Bed column displays a list of rooms that have been pre-configured for the system. The Patient Info column displays a list of patient names (Patient IDs) that have been assigned to each Room/Bed. The Device column displays each unique device(s) ID and model of a device assigned to a patient. The Pager(s) column displays pager(s) associated to a room.

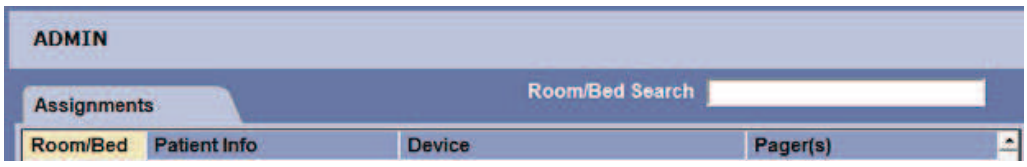
NOTE Clicking on a column header will sort the list alphabetically. The default sort order is by Room/Bed.

NOTE Contents of each cell in the Assignments view can be clicked. Selecting on a Patient Name column cell opens the Patient Information screen.

NOTE Clicking on a Device column cell opens the Device Assignment screen, if a patient is assigned to the room. If a patient is not currently assigned to the room, then the Patient Information screen is displayed followed by Device Assignment screen.

NOTE If the number of rooms exceeds the current display area, scroll bars are displayed.

Room/Bed Search



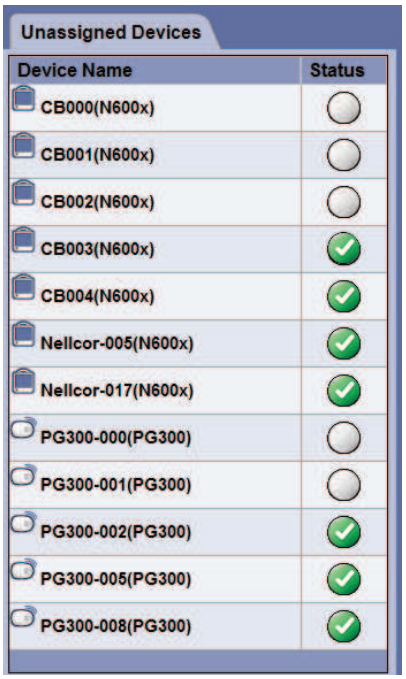
The search box defaults to the Room/Bed column for searching. As the user inputs text into the search box, the available data is evaluated and filtered based on wild cards, and searches MRN, Last name, or Bed number fields. The Unassigned column is not searchable.

Another way of searching is to click on a column header and enter search text. This filters the search results based on the clicked column. For example, clicking the Device column header and searching only applies to the Device column, or clicking the Pagers column header and searching only applies to the Pagers column.

Unassigned Devices

All devices that the system is aware of, but are not associated with a patient, are listed to the right in the ***Unassigned Devices*** column. Unassigned device names are created by device make (name) and unique device id.

NOTE The ***Unassigned Devices*** Tab lists both active and inactive devices known by the system. Inactive devices are those that were communicating at some point, but are not currently active, due to loss of battery or other factor.



Icon	Description
	Unassigned PG300 device, actively transmitting data
	Unassigned PG300 device, not actively transmitting data

NOTE Both device status types are available for assignment. Devices may be turned OFF, or may not have a battery installed.

Patient management

The Surveillance Station can be configured to utilize an existing ADT system for patient management (requires license activation), or use the standard data entry screens for patient admission, discharge or transfer. If you are manually entering the patient information, skip to Manually Admitting, Transferring, or Discharging section.

ADT systems

Facilities that choose to incorporate an existing ADT system into the workflow are required to do all ADT functions in the ADT system. The Surveillance Station receives ADT messages, and incorporates the patient names, admit, discharge, and transfer notifications into the system automatically, using the room list as a guide. If the room exists, then the messages are processed.

NOTE If the room does not exist, the Surveillance Station rejects the message.

NOTE Successful or rejected ADT message replies are sent back to the originating ADT system by the Surveillance Station.

Automatically admitting patients

In the ADT system, when admitting a patient, users provide basic patient information including:

- Patient Name
- MRN
- Account Number
- Room Assigned

Once the user completes the admit action in the ADT system, a message is generated and sent to the Surveillance Station. If the patient is new, a new patient record is created in the Surveillance Station database.

NOTE Assignments made through a third party ADT (Admit, Discharge, Transfer) system changes may override room and patient assignments, and may complicate patient to device assignments.

NOTE Patients will be admitted to the Surveillance Station into the room specified by the Message. The room must correspond to the rooms listed in the Surveillance Station database. If a room does not exist, the message is rejected.

The Patient name will be displayed with a pipe, "|" separating the name and MRN.

Room 02	**Thomas W. | 09233928**

Automatically discharging patients

In the ADT system, when discharging a patient, users must provide the following patient information:

- Patient Name
- MRN

Once the user completes the discharge action in the ADT system, a message is generated and sent to the Surveillance Station. If the patient exists, the patient is immediately discharged from the Surveillance Station.

NOTE A patient record will be stored in the Surveillance Station database for a period of 72 hours.

Automatically transferring patients

In the ADT system, when transferring a patient, users must provide basic patient information including:

- Patient Name
- MRN
- Old (From) Room
- New (To) Room
- Account Number

Once the user completes the transfer action in the ADT system, a message is generated and sent to the Surveillance Station.

Mandatory criteria for a valid transfer includes:
1. Both From and To rooms exist
2. A patient is currently in the From room

If the criteria is met, the patient in the From room is immediately moved to the To room, leaving the From room empty. If a patient exists in the To Room, they will be placed in a holding (temporary) room as a duplicate record.

NOTE Depending on your configuration, when there is an existing patient in the **To** room, the Surveillance Station may either remove (discharge) the patient, or create a duplicate record.