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Welch Allyn Connex
Central Station

Instructions for use

Software version 1.8x

For information about this product, see hillrom.com/en/about-us/contact-us/contact-technical-support.

REF 80029825 Ver. A

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This manual applies to # 901066 MONITORING STATION.

Welch Allyn, Inc.
4341 State Street Road
Skaneateles Falls, NY 13153 USA

Welch Allyn, Inc. is a subsidiary of Baxter International Inc.

baxter.com

EC REP and EU IMPORTER
Welch Allyn Limited
Navan Business Park, Dublin Road,
Navan, Co. Meath, C15 AW22
Ireland

This IFU is intended for use in Australia.
Authorized Australian Sponsor
Welch Allyn Australia Pty Limited
1 Baxter Drive
Old Toongabbie NSW 2146
Australia

Notice to Users and/or Patients in EU

Any serious incident that has occurred in relation to the device, should be reported to the manufacturer and the competent authority of the Member State in which the user and/or patient is established.

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CE 0297

Contents

Introduction

This manual describes the capabilities and operation of the central station.

Before using the central station, read the sections of this manual that pertain to your use of the product.

Intended purpose

The Connex CS is a software product that provides clinicians with a means to remotely monitor the vital signs of several patients simultaneously by running on dedicated hardware, such as a computer workstation. The monitoring station receives patient vital signs and alarm data from compatible patient monitors over a network, then displays the data and alarms, enunciated audibly and visually, acting as an ancillary alarm system. The Connex CS system can also transfer information from the patient monitors to the EMR and/or third-party notification systems.

Indications for use

The Connex Central Station is intended to be used by clinicians for the central monitoring of neonatal, pediatric, and adult patients in health care facilities.

In addition to the central monitoring of patient data and alarms, the Connex software can include optional modules to provide extended recording of patient data, including full disclosure.

Contraindications for use

None known.

Related documents

The following documents contain information on monitors and devices that connect to the central station:

- Welch Allyn Connex® Devices Instructions for use (multilingual CD)
- Welch Allyn Connex® Vital Signs Monitor 6000 Series Service manual (online)
- Welch Allyn Connex® Integrated Wall System Service manual (online)
- Welch Allyn Connex® Devices ECG Module Instructions for use (multilingual CD)
- Welch Allyn Connex® Spot Monitor Instructions for use (multilingual CD)

Lot code and serial number

Connex CS is a software-only device. Its software version is equivalent to Lot number. For software version, see the Connex CS USB drive provided by Welch Allyn or access the Connex CS application *About* screen which also indicates date of release.

The Connex CS USB drive is labeled with a Serial number consisting of CS#####P/T where CS indicates Connex Server followed by digits sequentially assigned and a last alpha character, either P or T, indicating “Production” or “Test”, respectively.

Symbols

For information on the origin of these symbols, see the Welch Allyn symbols glossary: welchallyn.com/symbolsglossary.

Documentation symbols

	**WARNING** The warning statements in this manual identify conditions or practices that could lead to illness, injury, or death.
	**CAUTION** The caution statements in this manual identify conditions or practices that could result in damage to the equipment or other property, or loss of data.
	**NOTE** Presents clarification about an instruction or helpful information about a feature or behavior.
	Follow instructions for use (IFU)-- mandatory action. A copy of the IFU is available on this website. A printed copy of the IFU can be ordered from Baxter for delivery within 7 calendar days.

Connectivity symbols

	USB		Ethernet RJ-45
	Lost outbound connection. The central station is no longer connected to the HIS or EMR.		Information status message

Miscellaneous symbols

	Manufacturer	EC REP	Authorized representative in the European Community
#	Product identifier	SN	Serial number
REF	Reorder number	R_x ONLY	By prescription or order of physician
	Do not dispose of in trash	GTIN	Global Trade Item Number
MD	Medical device		

Window navigation symbols

	Move window left		Move window right
	Close window		

Patient demographic symbols

	Female		Male

Special indicator icons

	Isolation		Fall risk
	Special diet		

About warnings and cautions

Warning and caution statements can appear on the central station, the packaging, the shipping container, or in this document.

The central station is safe for patients and clinicians when used in accordance with the instructions and with the warning and caution statements presented in this manual.

Before using the central station, familiarize all operating personnel with the general safety information in this summary. Specific warnings and cautions are also found throughout this manual.

- Failure to understand and observe any warning statement in this manual could lead to patient illness, injury, or death.
- Failure to understand and observe any caution statement in this manual could lead to damage to the equipment or other property, or loss of patient data.

General warnings and cautions

WARNING The central station must only be used in a healthcare setting by clinical personnel who have been properly trained to the safe and efficacious use of the product.

WARNING False alarms may occur in some situations. You must understand and address the cause of the false alarms whenever possible to eliminate the possibility of repeated false alarms and alarm fatigue, which might result in a failure to respond to an actual alarm situation.

WARNING Many environmental variables, including patient physiology and clinical application, can affect the accuracy and performance of the central station. The clinician must verify all vital signs information before treating the patient. If there is any question about the accuracy of a measurement, verify the measurement using another clinically accepted method.

WARNING All wireless systems are prone to intermittent signal dropout. Make sure that the patient only has conditions that can tolerate intermittent monitoring interruptions. The patient monitor is the primary alarm. The central station provides a less robust additional alarm per IEC 60601-1-8. Alarm delays were measured between a patient monitor and the central station and the same alarm from the central station to a third party alarm notification system. Delays are less than 10 total seconds, not including any alarm hold-off settings set by your facility. However, network speeds vary and your performance may vary, depending on the speed of your network.

WARNING Alarm limits are patient- or facility-specific. The clinician must set and verify alarm limits appropriate for each patient. Each time the monitor is powered on, you must check that the alarm settings are appropriate for your patient before you start monitoring. Failure to set alarm limits properly can lead to false alarms or failure to alarm.

WARNING Patient harm risk. Do not pause or turn off an audible alarm if patient safety might be compromised. Do not adjust a patient's alarm limits as a way to silence an alarm.

WARNING Use only accessories approved by Welch Allyn. The use of any other accessories can result in inaccurate patient data potentially leading to false alarms or failure to alarm, can damage the equipment, and can void your product warranty. See the accessory list or visit hillrom.com.

WARNING Always use accessories according to the manufacturer's instructions.

WARNING After Welch Allyn has verified that Welch Allyn-specified network requirements for this central station have been met, altering the cabling or connecting the central station to another type of power source could damage the equipment, cause system restarts or hazardous conditions on the network, or result in gaps in patient information at the central station.

WARNING For maximum system performance and availability, the central station PC hardware must be replaced on a recommended preventative maintenance interval. See the service documentation for recommended intervals.

WARNING Do not change central station components or configuration, such as removing or adding a printer or substituting hardware. Such changes could degrade system performance and affect patient monitoring. Contact your biomedical engineering group or Hillrom Technical Support when replacing or upgrading components. Proper installation and performance must be verified prior to putting any updated equipment into use. Reference the Connex CS Technical Specifications for system configuration guidance.

WARNING Devices connected to the central station must be certified for overall system compliance according to the IEC 60601-1 safety standard. Such changes could degrade system performance, affect patient monitoring, and potentially lead to electrical safety issues. If in doubt about network connectors or devices, please consult your facility's biomedical engineering group or Hillrom Technical Support.

WARNING The central station will only work with reliable AC power. Power surges and brown outs can damage any electronic equipment. Baxter strongly recommends that the central station be installed with redundant power supplies. You are responsible to provide reliable power to the central station.

WARNING Central station alarms and other events can go unnoticed if clinical personnel are not present at the central station or if interruptions occur in power or system operations.

WARNING Ensure that no headphones or headphone adapters are connected to the headphone jack of your computer. A connection in the headphone jack of a computer will cancel speaker output for any audible alarms associated with the central station. Make this inspection on a daily basis.

WARNING Ensure that all audio cables are installed and connected and that the volume settings are not set too low or are not set to mute as these factors may cause you to miss audible alarms generated from the central station. Make this inspection on a daily basis.

WARNING Whenever possible, do not rely on visual alarm notifications alone while monitoring patients. If you must rely on visual alarm notifications, maintain a clear line of sight with the central station or the patient monitor. For audio alarm notifications, set the volume as needed considering the environment and ambient noise levels. Verify that the alarm is audible to a clinician working at the maximum distance from the central station or the patient monitor.

WARNING If a central station display is intentionally or inadvertently muted, alarm tones do not occur at the display. Remain aware of when audible tones are occurring. If they appear to have stopped, ensure that tones are restored.

WARNING If normal central processing unit (CPU) operation is interrupted (for example, during CPU maintenance, scheduled and unscheduled restarts, or power loss), then central station monitoring and patient review data collection stops. That review data becomes permanently unavailable. During outages, you must rely on the bedside monitor for data review and primary alarming.

WARNING Failure to perform preventative maintenance can increase the unscheduled frequency of both CPU or Connex CS application auto-restart and wireless disconnect. During outages, you must rely on the bedside monitor for data review and primary alarming.

WARNING Following an interruption in the central station CPU operation occurs, ensure that your entire system has returned to normal operating condition, that the system does not require further service, and that all patient monitors have re-connected to the system.

WARNING Central monitoring is not a substitution for frequent patient assessment by attending clinicians, or a substitute for the primary alarming that occurs at the patient monitor.

WARNING Interruption of care hazard. The bedside patient monitor is the primary alarming source for the patient and the central station is a backup alarm source. The central station is only as reliable as its network and should be relied on only as a backup alarming device.

WARNING Incorrect treatment hazard. The electronic medical record system (EMR) is not intended to serve as a primary monitoring system for alarms or as an exclusive source for patient data in determining patient care. The central station is capable of transferring patient historical data to most customer-specified EMR systems, but the transferred historical patient data at the EMR is not a substitute for current patient data available at the primary monitoring system for clinical decisions.

WARNING Electric shock hazard. Do not open the central station or attempt repairs. The system has no user-serviceable internal parts. Only perform routine cleaning and maintenance procedures specifically described in this manual. Inspection and servicing of internal parts shall only be performed by qualified service personnel.

WARNING Electric shock hazard. Use only a Class I (grounded) AC power supply cord for powering this central station.

WARNING For operator and patient safety, all peripheral equipment and accessories must comply with all applicable safety, EMC, and regulatory requirements. See IEC 60601-1, 60601-1-2.

WARNING Verify patient identity on the central station after manual or barcode entry and before printing or transferring patient records.

WARNING Risk to patient safety. Custom scores and messages serve as guides to your facility's protocols; do not substitute Custom Scores for patient physiological alarms. Appropriate alarms settings must be set and maintained to ensure patient safety.

WARNING Risk to patient safety. The User should confirm patient location prior to confirming the location in the system. Failure to do so could lead to difficulty in locating the patient during an alarm event.

WARNING Risk to patient safety. For facilities with third-party paging enabled, the clinician should not depend on the third-party paging system exclusively as their only source of patient data to support clinical decisions.

WARNING Product security hazard. Protect your passwords and physical access to computers and servers with the Connex CS application. Follow local and facility-wide practices and regulations intended to protect patient data. Unauthorized access can lead to loss of data confidentiality, corruption of data, device unavailability, and attempts to retrieve customer network credentials from the Connex CS application.

CAUTION Refer to the original equipment manufacturer's documentation for the life expectancy of central station system components. Welch Allyn recommends the replacement of the keyboard and mouse annually, and the replacement of the central station display every 2 to 3 years. The actual performance of system components may vary depending on usage.

CAUTION To ensure the continued proper operation of the central station, check for software updates available from Welch Allyn using your facility-approved remote access tool (e.g. TeamViewer). Software updates should be installed as they become available.

CAUTION The anti-virus system on your computer may attempt to block certain files that are necessary to successfully run the software. To address this issue, refer to the exclusion lists in the Connex CS Administrator's Guide Appendix J Anti-virus Software Exclusion Folders for the appropriate exclusion information.

Residual risk

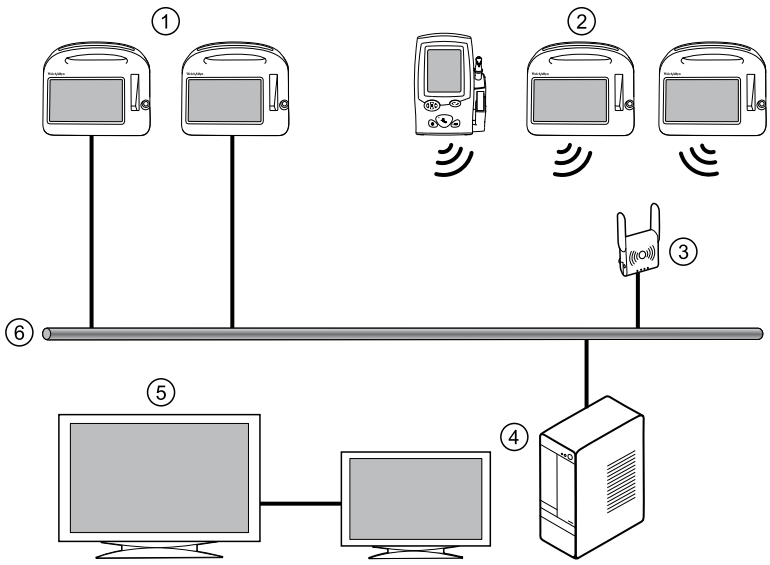
This product complies with relevant electro-magnetic interference, mechanical safety, performance, and biocompatibility standards. However, the product cannot completely eliminate potential patient or user harm from the following:

- Harm or device damage associated with electro-magnetic hazards,
- Harm from mechanical hazards,
- Harm from device, function, or parameter unavailability,
- Harm from misuse error, such as inadequate cleaning, and/or
- Harm from device exposure to biological triggers that may result in a severe systemic allergic reaction.

System configuration

The Connex CS system consists of a central station that receives and displays information from connected devices.

Stand-alone system diagram



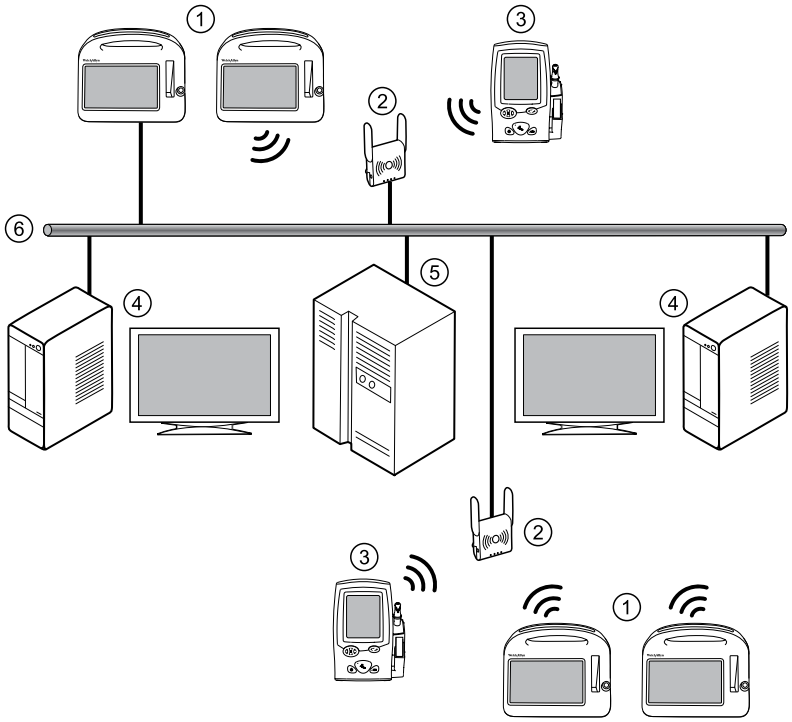
1. Wired monitors or episodic devices (Ethernet connection)
2. Wireless monitors or episodic devices
3. Wireless access point
4. Central station
5. Repeater display (read only)
6. Network

In this configuration, continuous and episodic devices communicate over the network to the central station. The central station contains all the software needed to monitor patients' continuous parameters and episodic data on a single computer.

The central station also monitors connected continuous devices for proper operation, and displays an alarm if a continuous monitor stops working or is improperly disconnected.

Up to 4 optional read-only repeater displays may be connected to the central station, which display a visual and audible duplication of the central station.

Server-based system diagram



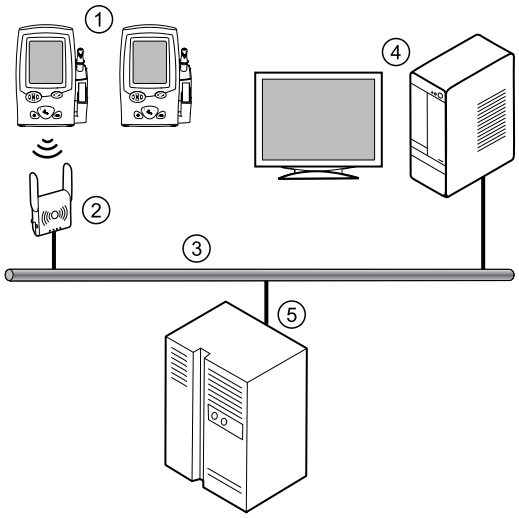
1. Wired or wireless monitors
2. Wireless access point
3. Wired or wireless episodic device
4. Central station
5. Central station server
6. Network

In this configuration, one or more central stations are connected to a single Connex server. The central stations share common data, such as configuration data, user definitions, and patient information by maintaining it on the Connex server.

Continuous devices communicate over the network and are routed to the central station whose coverage area includes the device's location. Episodic devices communicate over the network to the Connex server which stores all episodic data.

An optional read-only repeater display can also be connected to the central station, which displays a visual and audible duplication of the central station.

Server-only system diagram



1. Episodic devices (wired or wireless)
2. Access point
3. Network
4. Customer-provided PC running Connex viewer
5. Connex server

Connex viewer is a client application that provides a means of tracking the flow of patient vitals sign data from an episodic device to the Connex server and through to the Electronic Medical Record (EMR). This application displays filtered lists of patients and vital signs, and allows an administrator, biomed, or nurse manager to select what subset of data to view. This is intended to help diagnose any workflow, networking, or configuration issues that might prevent patient data from reaching the EMR.

Screen elements

This section describes the central station screens.

Main Monitoring screen

The Main Monitoring screen is the main screen of the central station. This screen contains patient tiles displayed in rows and columns. There may be a group of tiles overlaying the patient data area. These tiles are referred to as the Waiting area.

1. **System message area.** This section of the screen displays the covered location, date, time, and any patient or technical alarms.

2. **Patient data area.** This section of the screen displays patient tiles arranged in rows and columns.

3. **Navigation area.** This section of the screen displays secondary links to the patient list, alarms, view options, settings, and system notifications. Click the Welch Allyn label to display the options installed on your central station, the end user license agreement, and regulatory information.

4. **Waiting area.** This section of the screen displays patient tiles awaiting confirmation of patient ID or location.

WARNING Do not leave a patient tile in the Waiting area for an extended amount of time, as patient measurements are not saved until the patient is confirmed. The waiting area is a temporary placeholder for patient tiles. Confirm the patient as soon as possible after confirming that patient demographic information (Pt. name, gender, weight, birth date etc.) is accurate.

WARNING Risk to patient safety. The User should confirm patient location prior to confirming the location in the system. Failure to do so could lead to difficulty in locating the patient during an alarm event.

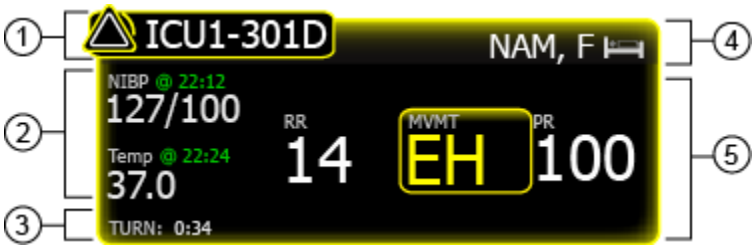
Patient tiles

Standard tile

1. This area displays the patient location.
2. This area displays the episodic patient parameters.
3. This area displays the patient's name, and an icon indicating the patient is on a bed sensor.
4. This area displays the continuous patient parameters. The patient movement parameter measurement is displayed under the **MVMT** label.

NOTE The respiration rate (RR) and pulse rate (PR) measurements are also provided by the EarlySense sensor.

Alarming tile – Patient movement



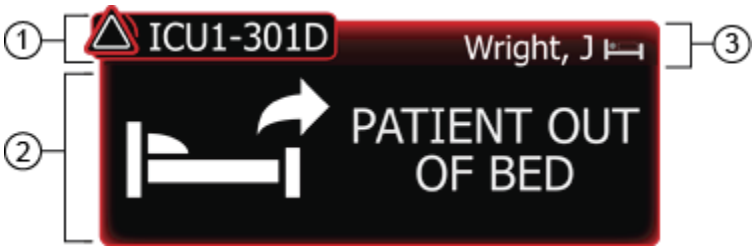
1. This area displays the alarm icon and the patient location.
2. This area displays the episodic patient parameters. Any alarming parameters are displayed in either red or yellow, depending on the alarm type.

3. This area displays the turn counter. The timer indicates the amount of time remaining before the patient's next scheduled turn.

4. This area displays the patient's name, and an icon indicating the patient is on a bed sensor.

5. This area displays the continuous patient parameters. The alarming parameters are surrounded by a colored box.

Alarming tile – Patient exit

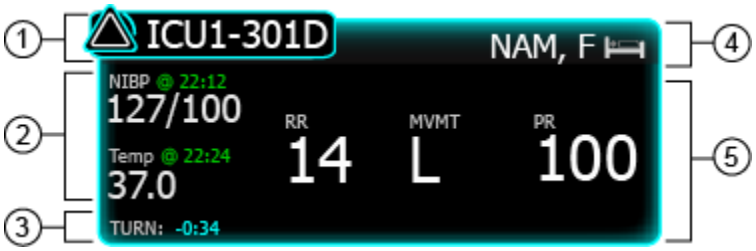


1. This area displays the alarm icon and the patient location.

2. This area displays the patient exit alarm.

3. This area displays the patient's name, and an icon indicating the patient is on a bed sensor.

Alarming tile – Patient turn



1. This area displays the alarm icon and the patient location.

2. This area displays the episodic patient parameters.

3. This area displays the patient turn alarm, and the amount of time elapsed since the patient's last scheduled turn.

4. This area displays the patient's name, and an icon indicating the patient is on a bed sensor.

5. This area displays the continuous patient parameters.

Tile layout modes

There are three different modes for tile layout. To select a tile layout, or to change the current tile layout, see the Views configuration section of this manual.

Automatically sorted mode

In sorted mode, tiles are displayed according to configured settings, for example, room number. New tiles are placed onto the main tile area based on the configured settings.

Mapped by patient location mode

In mapped mode, tiles are mapped to a known location. If a location does not have an assigned patient or monitor, an empty room tile is displayed.

Manually placed in a tile location mode

In manual mode, all new tiles appear in the waiting area and can be dragged into any available space in the patient data area.

Tile-dragging behavior

The following table describes actions in the three tile layout modes. An empty position on the grid is a blank area with no tiles. An empty room tile represents a room that has no patient or data assigned to it.

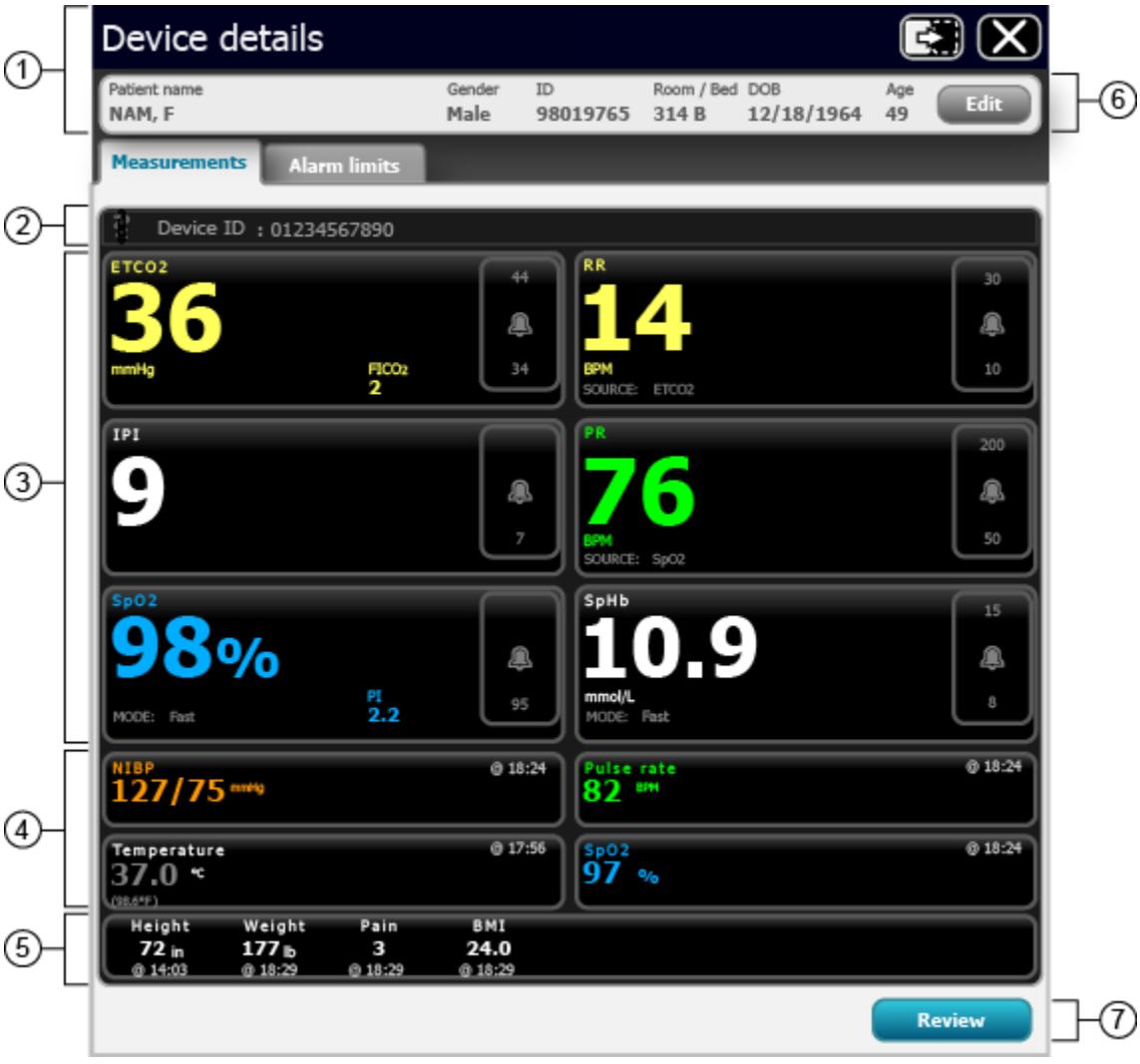
Action	Mapped mode	Manual mode	Automatically sorted mode
Move tiles within the patient data area to an empty grid position	Not supported	Changes tile position	Not supported
Move tiles within the patient data area to an empty room tile	Assigns a monitor or a patient to the new location	Not supported. There are no empty room tiles in manual mode	Not supported. There are no empty room tiles in sorted mode.
Move tiles within the patient data area to an already-assigned tile	Assigns a monitor or a patient to the location If a previously assigned tile is connected to a continuous monitor, this action assigns the new device and patient to the location and moves the previous device and patient to the waiting area.	Not supported	Not supported
Move tiles from the waiting area to an empty position on the grid.	Not supported	The tile moves to the position	Not supported
Move tiles from the waiting area to an empty room tile	Assigns a monitor or a patient to the location	Not supported. There are no empty room tiles in manual mode	Not supported. There are no empty room tiles in sorted mode.
Move tiles from the waiting area to an already-assigned tile	Assigns a monitor or a patient to the location If a previously assigned tile is connected to a continuous monitor, this	Not supported	Not supported

	action assigns the new device and patient to the location and moves the previous device and patient to the waiting area.		
New tile appears, known location	Tile appears in main tile area	Tile appears in waiting area	Tile appears in waiting area
New tile appears, unknown location	Tile appears in waiting area	Tile appears in waiting area	Tile appears in waiting area

Device details

This window displays information on the monitors and measurements associated with a patient. Click a patient tile to open the Device details window.

Measurements tab



1. This area displays the patient summary.

2. This area displays the device message area. This includes the device serial number, or any alarms or messages associated with the patient's connected continuous monitor.

3. This area displays the continuous patient data. Click the alarm limits button to pause an alarm or adjust that parameter's alarm limits. Where applicable, the source for the parameter data is displayed in the lower left corner of the parameter tile.

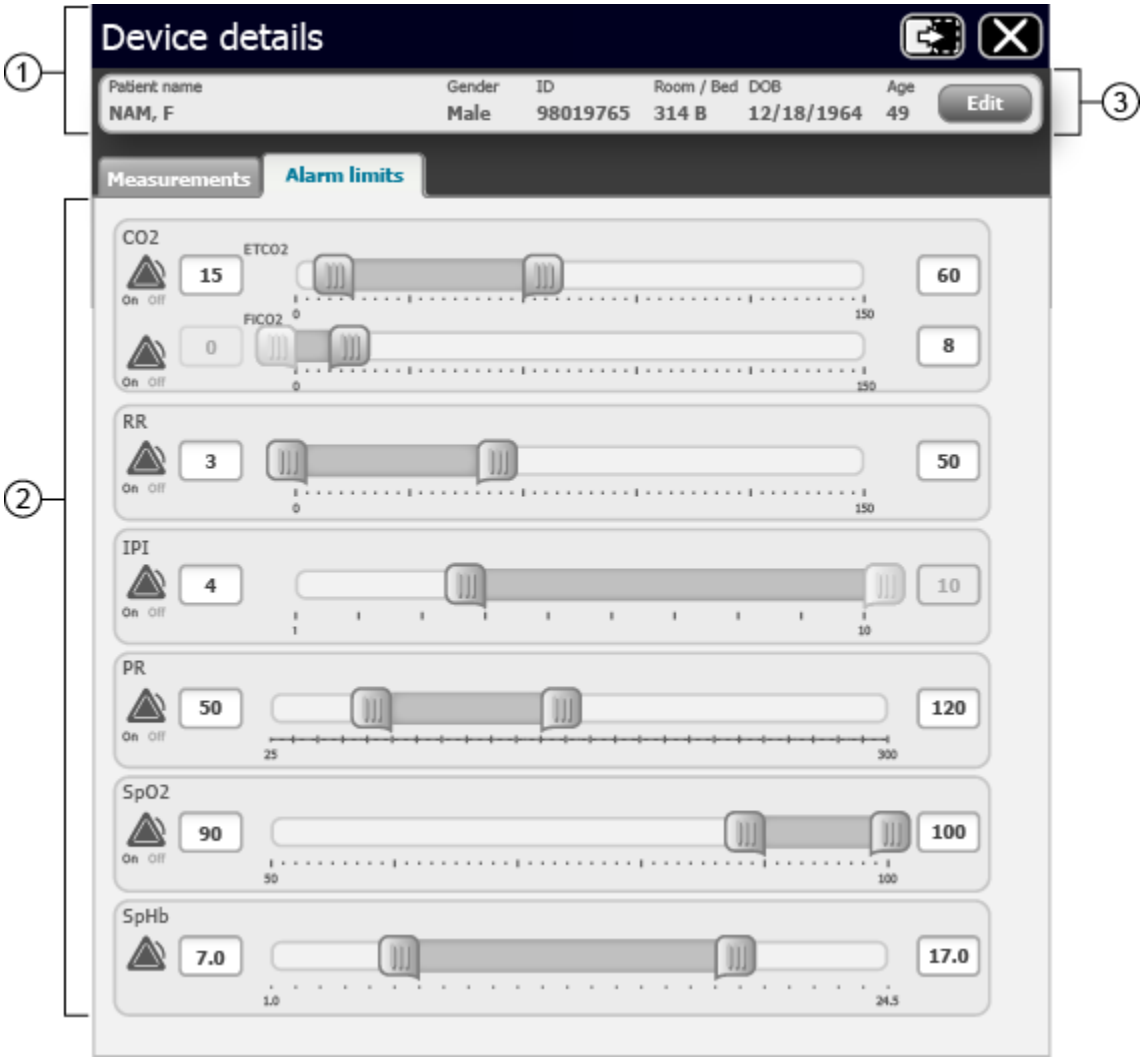
4. This area displays the episodic patient data.

5. This area displays the manual parameters.

6. Click **Edit** to open the Patient Details window and edit the patient information.

7. Click this button to open the Review window.

Alarm limits tab



1. This area displays the patient summary.

2. This area allows you to set both the high and low limits for the parameter alarm. You can adjust the limits by doing any of the following:
   - Move either end of the slider bar to the desired high or low limit.
   - Click and drag the center of the slider bar to move the entire range to the desired limits.
   - Click on the numeric boxes on either side of the parameters to manually enter a limit.

   The default alarm settings are provided by the monitor. See the monitor instructions for use.

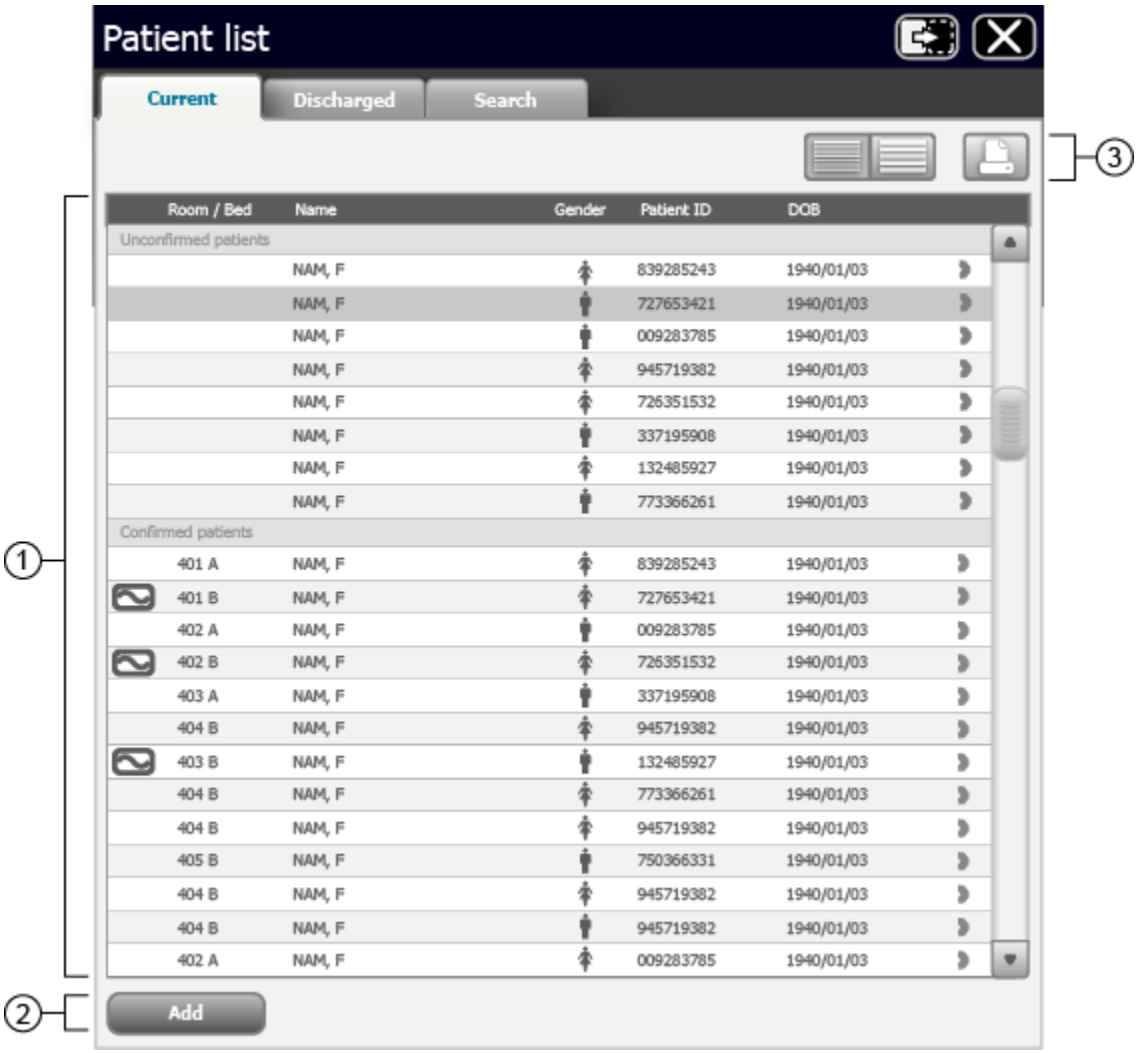
3. Click **Edit** to open the Patient Details window and edit the patient information.

Patient list

This window displays a list of patients available to the central station. Click the **Patients** icon in the Navigation area to open the Patient list.

Current tab

This area displays names and demographics for all patients who are currently admitted or pre-admitted to your unit.



1. This area displays the Patient list. Patients are sorted in Unconfirmed or Confirmed lists.

   Unconfirmed patients. Patients in this section are unconfirmed, and are not actively being monitored by the central station.

   Confirmed patients. Patients in this section have been confirmed. Patients with the  icon are actively being monitored by the central station.

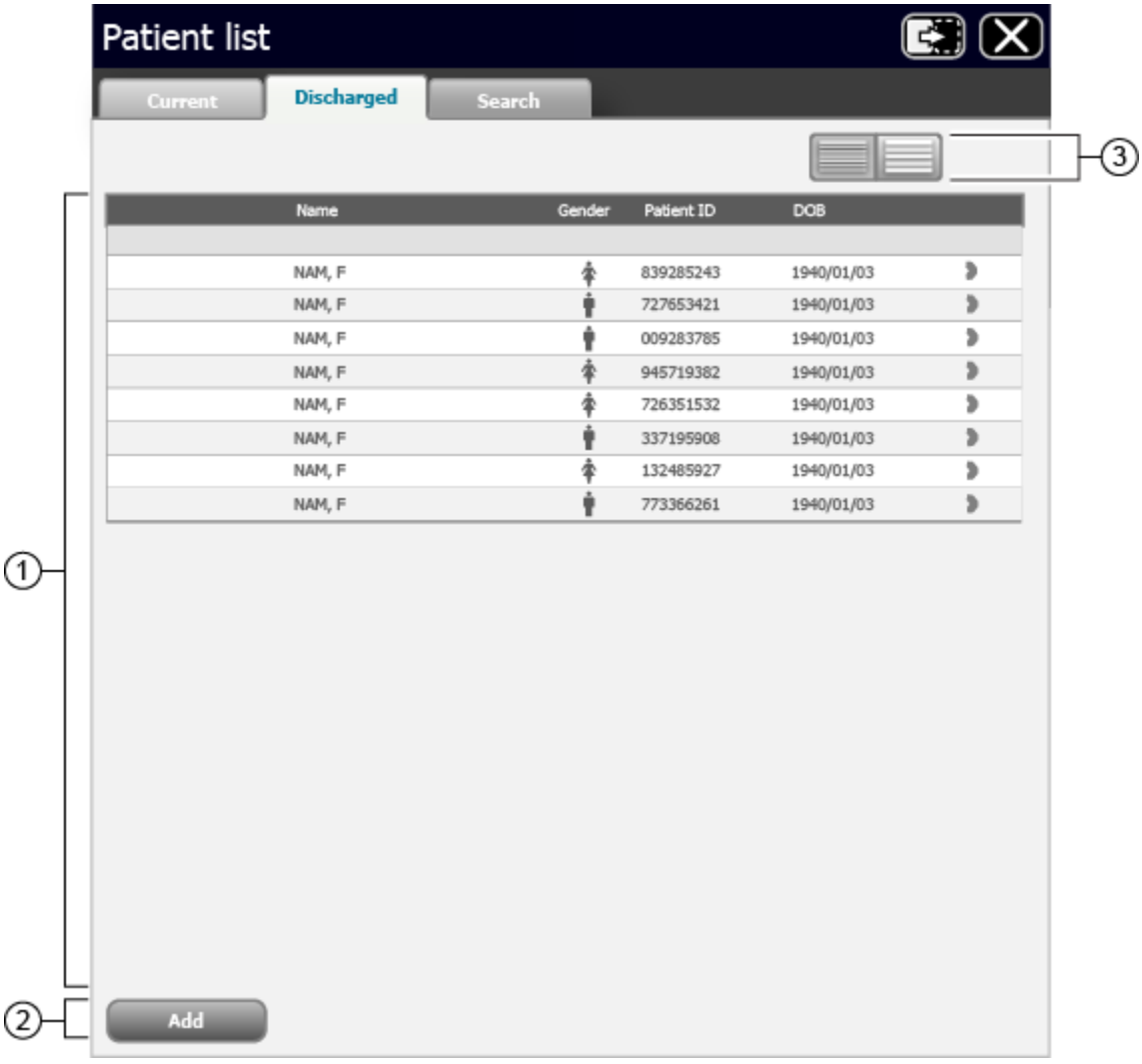
2. Click **Add** to open the Patient Details screen and add a patient to the current Patient list.

3. Click  for a standard view of the Patient list.

   Click  for an expanded view of the Patient list. The expanded view displays the patient's latest vital signs measurements and any special indicator icons.

   Click  to print the Patient list.

Discharged tab



1. This area displays the list of patients who have been discharged from your unit.
2. Click **Add** to open the Patient Details screen and add a patient to the current Patient list.
3. Click these buttons to expand or contract the Patient list view.

Search tab

This tab allows you to set criteria for searching the full Patient list.

1. This area allows you to search by a patient's name, ID, or date of birth.
2. This area shows the patient list. This area is blank until you click **Search**.
3. Click **Search** to perform your search. The search results appear in the scrolling list.

   Click **Clear All** to clear all fields.

Patient Details

This window displays patient demographics, visit information, and history. Click **Edit** in the Device Details window to open the Patient Details window.

Summary tab

1. This area displays the patient's measurements.

2. This area displays patient demographics, such as name, gender, date of birth, and any special indicators applicable to the patient.

3. This area displays any monitors connected to the patient.

4. Click **Review** to open the Review Window for the listed patient.

   Click **Discharge** to discharge the patient.

   NOTE You cannot discharge a patient who is actively being monitored.

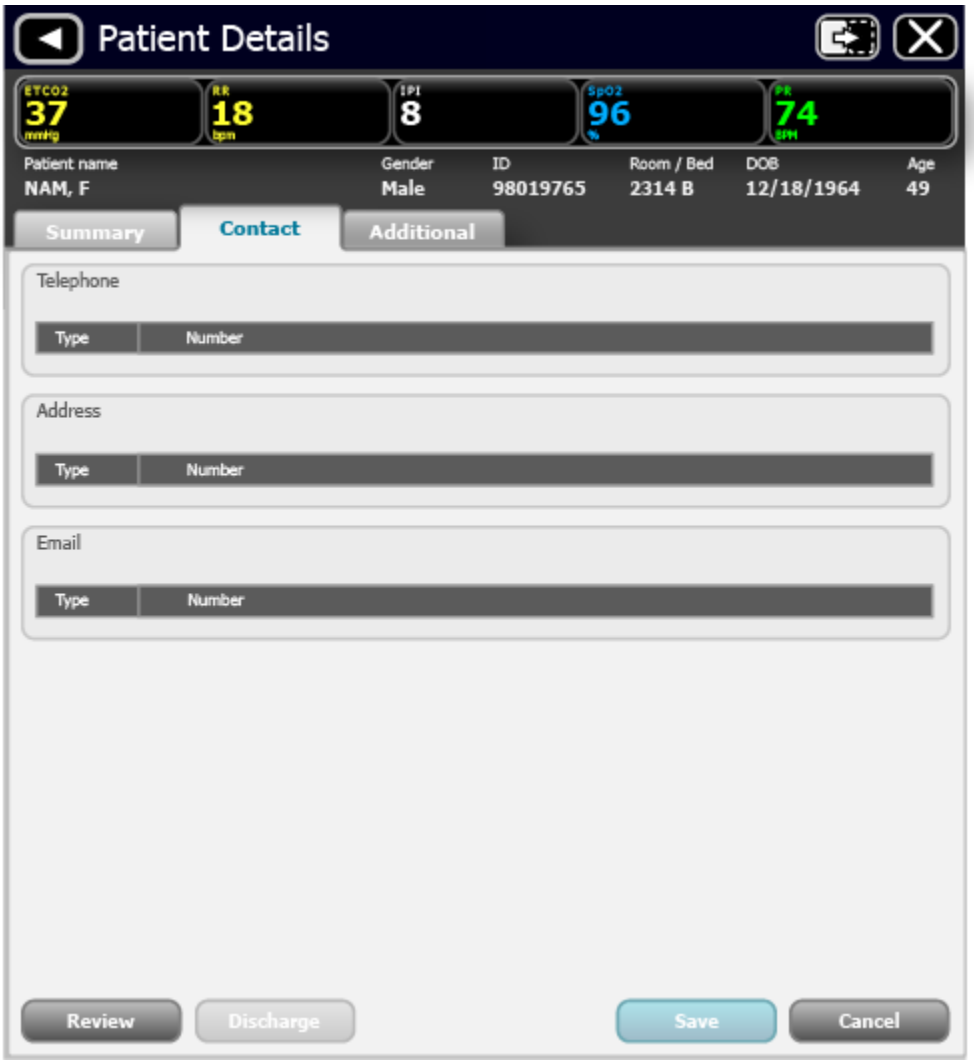
5. This area displays the patient's unit and room or bed.

6. This area displays the nurse and physician assigned to the patient.

7. Click **Save** to save any changes and return to the Main Monitoring screen.

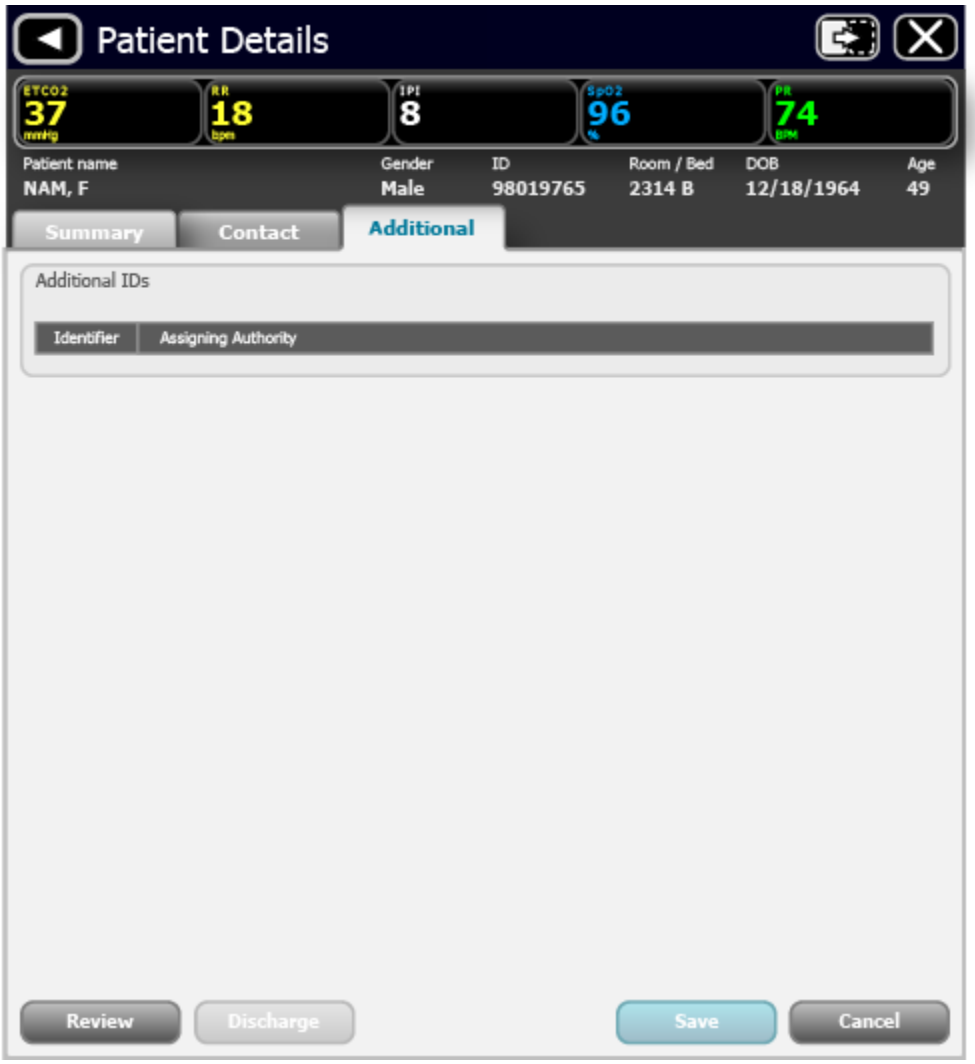
   Click **Cancel** to discard any changes and return to the Main Monitoring screen.

Contact tab



This window displays a read-only list of the patient's phone numbers, street addresses, and email addresses.

Additional tab



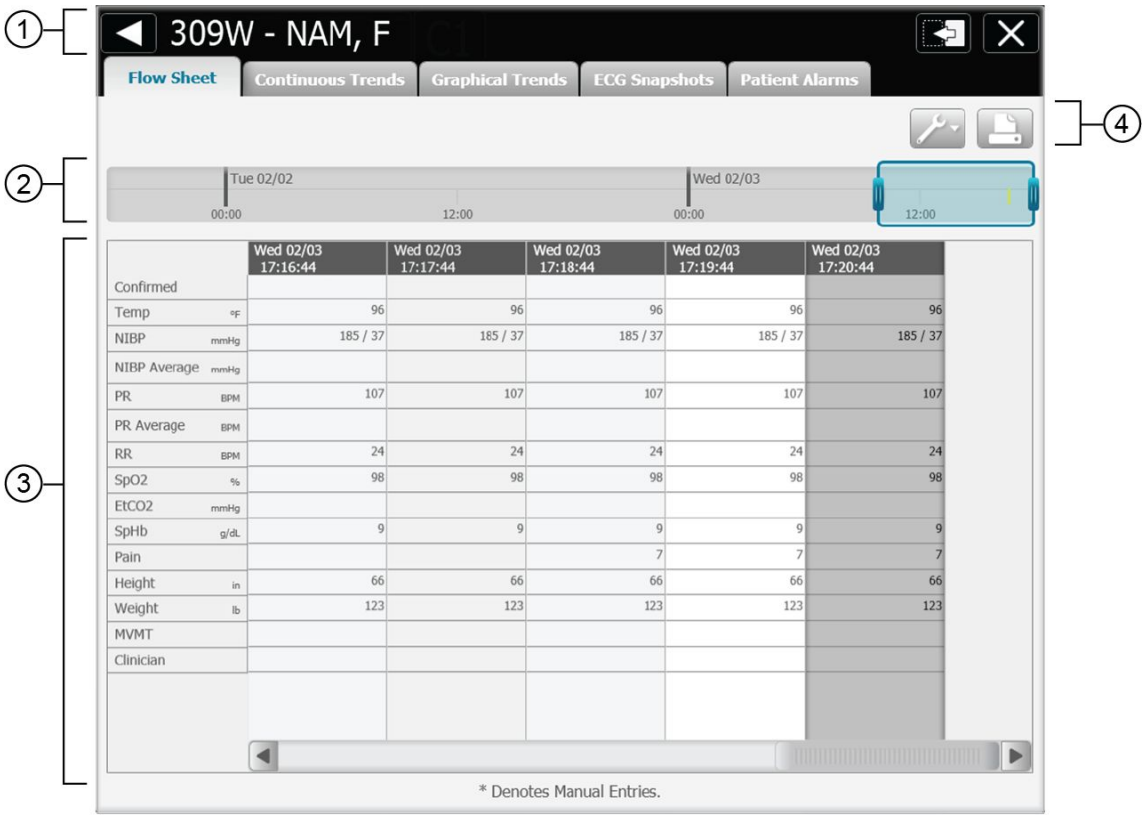
This window displays other patient IDs that have been used with the patient from other institutions or other visit IDs.

Patient Review

Click **Review** in the Patient Details window or in the Device Details window to open the Patient Review window.

Flow Sheet tab

The Flow Sheet tab only displays historical episodic vital signs measurements. Measurements are listed with one set of vital signs per column, with time displayed on the horizontal axis.



1. This area displays the patient summary.

2. This area allows you to change the duration of the displayed patient measurements and alarms.

   Grab the center of the blue timeline bar and slide it left or right to select a different time interval. Grab and slide either of the endpoints to widen or narrow the time interval.

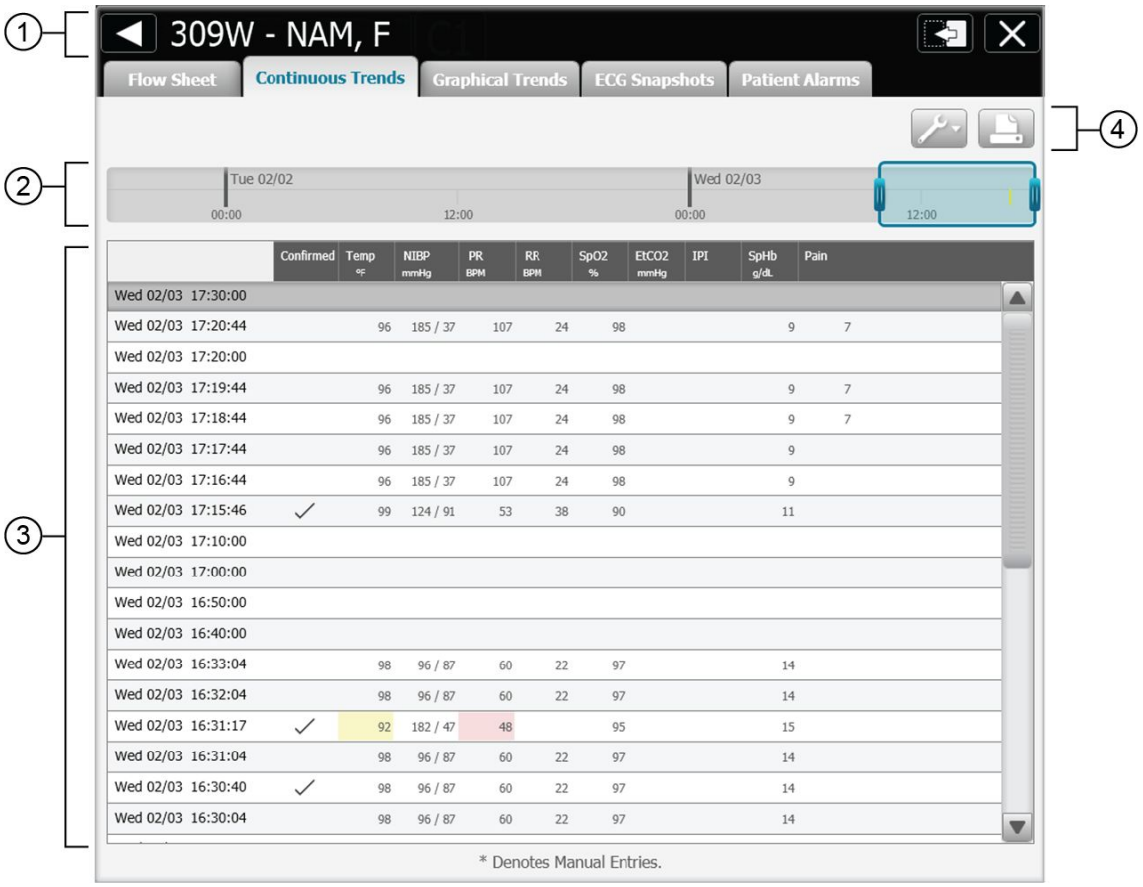
3. This area displays the history of the patient's episodic measurements.

4. Click  to open the display options window. In this window, you can choose which vital signs, modifiers and custom scores are displayed.

   Click  to print the Flow Sheet.

Continuous Trends tab

The Continuous Trends tab displays historical, continuous, and episodic vital signs measurements. Measurements are listed with a snapshot of vitals per row, with time displayed on the vertical axis.



1. This area displays the patient summary.

2. This area allows you to change the duration of the displayed patient measurements and alarms.

   Grab the center of the timeline bar and slide it left or right to select a different time interval. Grab and slide either of the endpoints to widen or narrow the time interval.

3. This area displays a history of the continuous and episodic measurements for the current patient. High-level alarms appear in red. Medium-level alarms appear in yellow.

4. Click  to open the display options window. In this window, you can choose to display vitals signs data with or without alarms, or alarms only.

   Click  to print the Continuous Trends.

Graphical Trends tab

The Graphical Trends tab displays and graphically trends patient vital signs measurements. Measurements are displayed by parameter in a row, and are updated in a horizontal, side-scrolling format.

1. This area displays the patient summary.

2. This area allows you to change the duration of the displayed patient measurements and alarms.

   Grab the center of the blue timeline bar and slide it left or right to select a different time interval. Grab and slide either of the endpoints to widen or narrow the time interval.

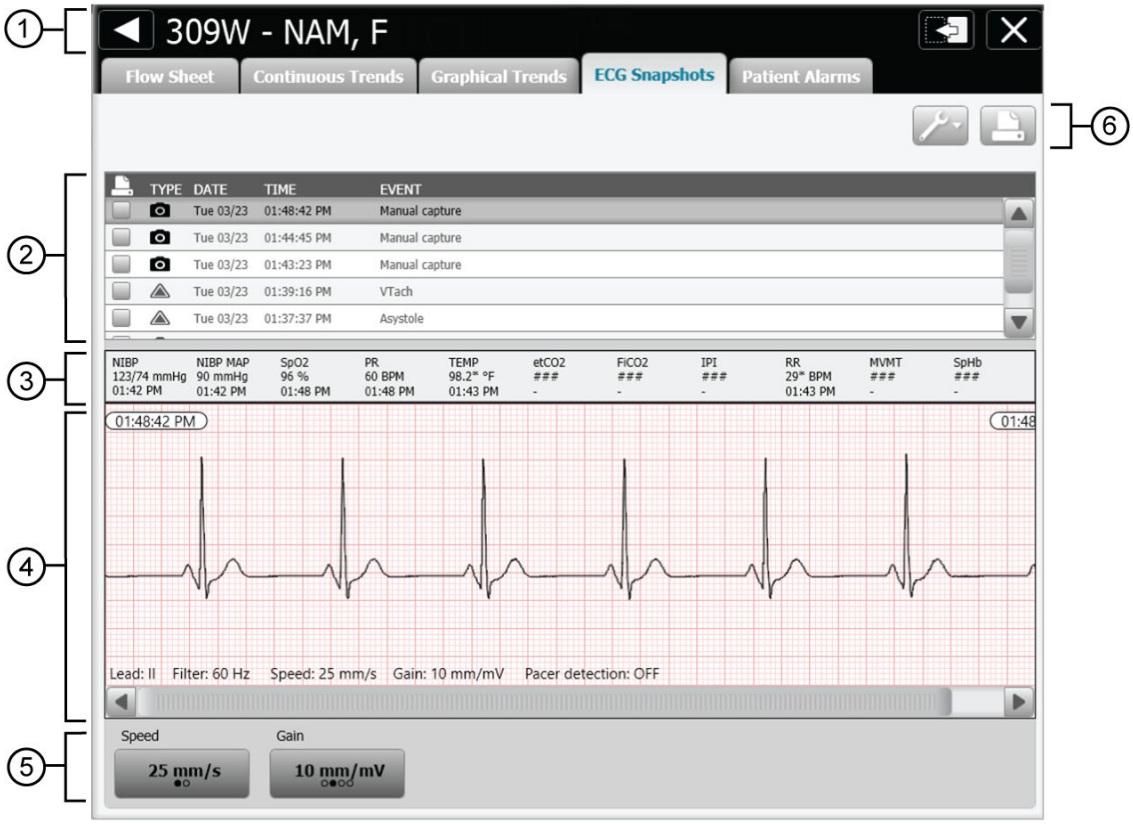
3. This area displays the patient measurement trends in a graphical format. Alarms are displayed by an indicator at the peak of the waveform.

4. Click  to open the display options window. In this window, you can choose which vital signs are displayed and whether or not manual parameters are displayed.

Click  to print the Graphical Trends.

ECG Snapshots tab

The ECG Snapshots tab displays historical ECG waveform snapshots sent from the bedside monitoring device. Snapshots are listed by date, time, and initiating event for the capture (e.g., an alarm or manual capture at the device). You can select ECG snapshots for printing.



1. This area displays the patient summary.

2. This area displays a list of captured ECG snapshots. Selecting an ECG snapshot causes it to be displayed in the detail view below [4]. You can use the check box for each row to select the snapshots for printing.

3. This area displays the measurements data for the current patient. Any measurement data taken 16 minutes prior to the ECG data capture is displayed along with its time reference.

4. This area displays the ECG waveform, relevant device settings, and annotations.

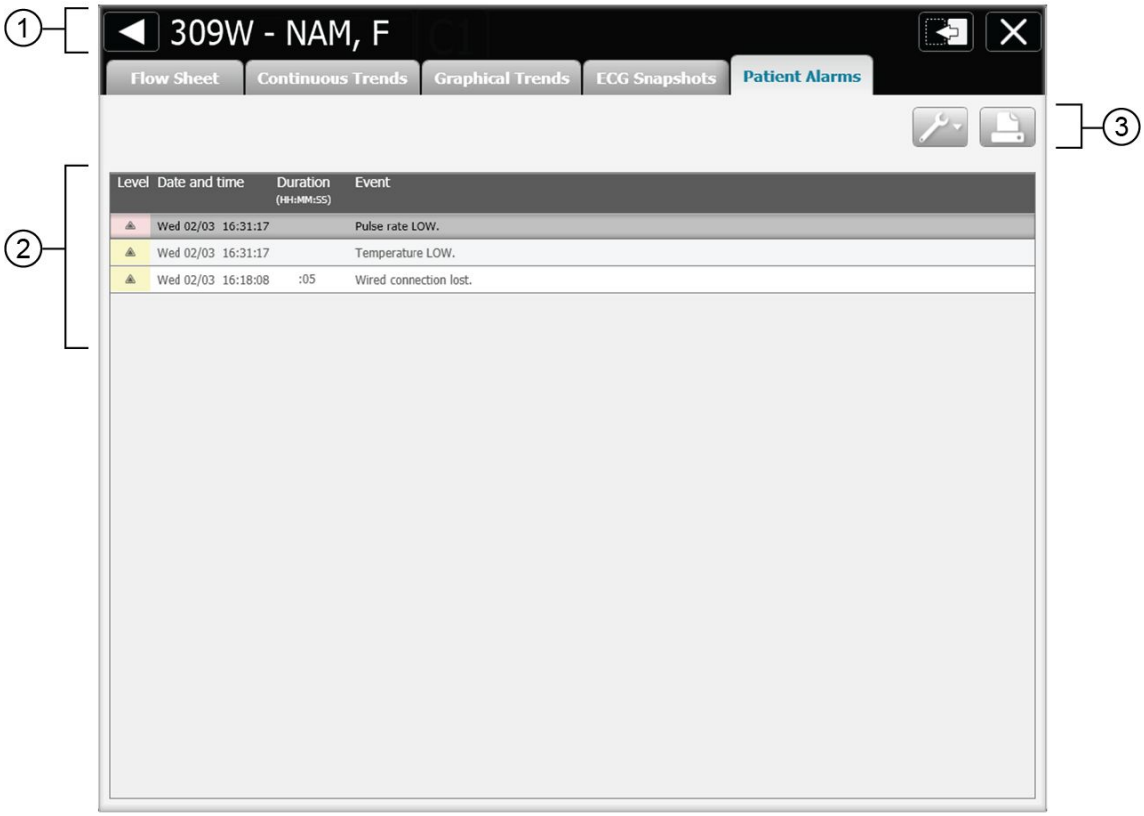
5. Click the Speed button to select the desired speed (**25 mm/s** or **50 mm/s**). Click Gain buttons to select the desired gain (**5 mm/mV** or **10 mm/mV** or **20 mm/mV** or **40 mm/mV**).

6. Click  to open the display options window. In this window you can select timespan and types of snapshot to display.

Click  to print the selected ECG snapshot.

Patient Alarms tab

The Patient Alarms tab displays a table of messages and alarms generated during the previous 12 hours. The messages and alarms are listed by time and presented vertically.



1. This area displays the patient summary.

2. This area displays a history of messages and alarms for the current patient. High-level alarms are displayed in red. Medium-level alarms are displayed in yellow.

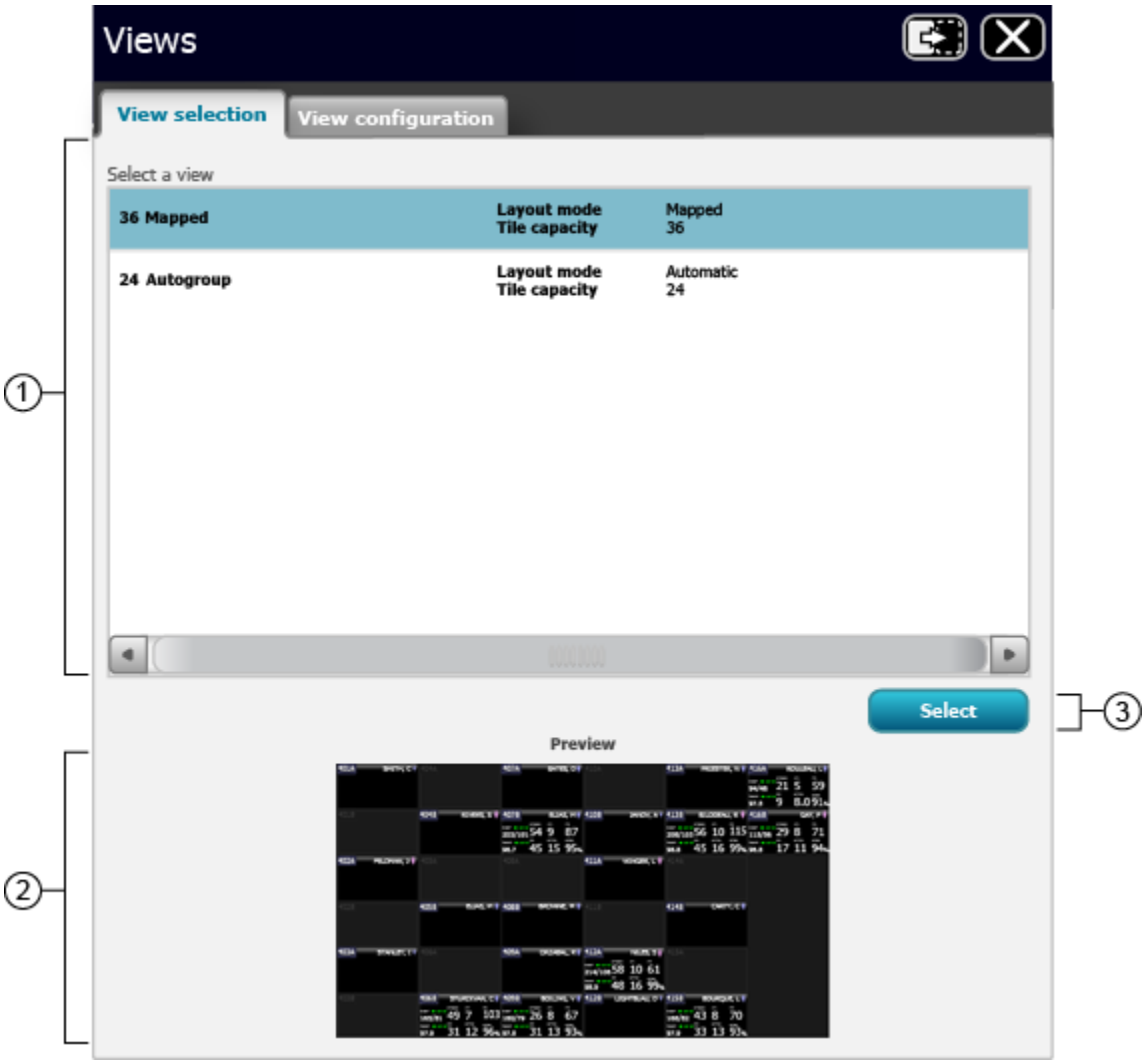
3. Click  to open the display options window. In this window, you can determine which types of alarms are displayed.

   Click  to print the Patient Alarms.

Views

This window allows you to switch your central station to one of the previously configured views. Click the **Views** icon in the Navigation area to open the Views window. If prompted, enter your user ID and password to access this window.

View selection tab

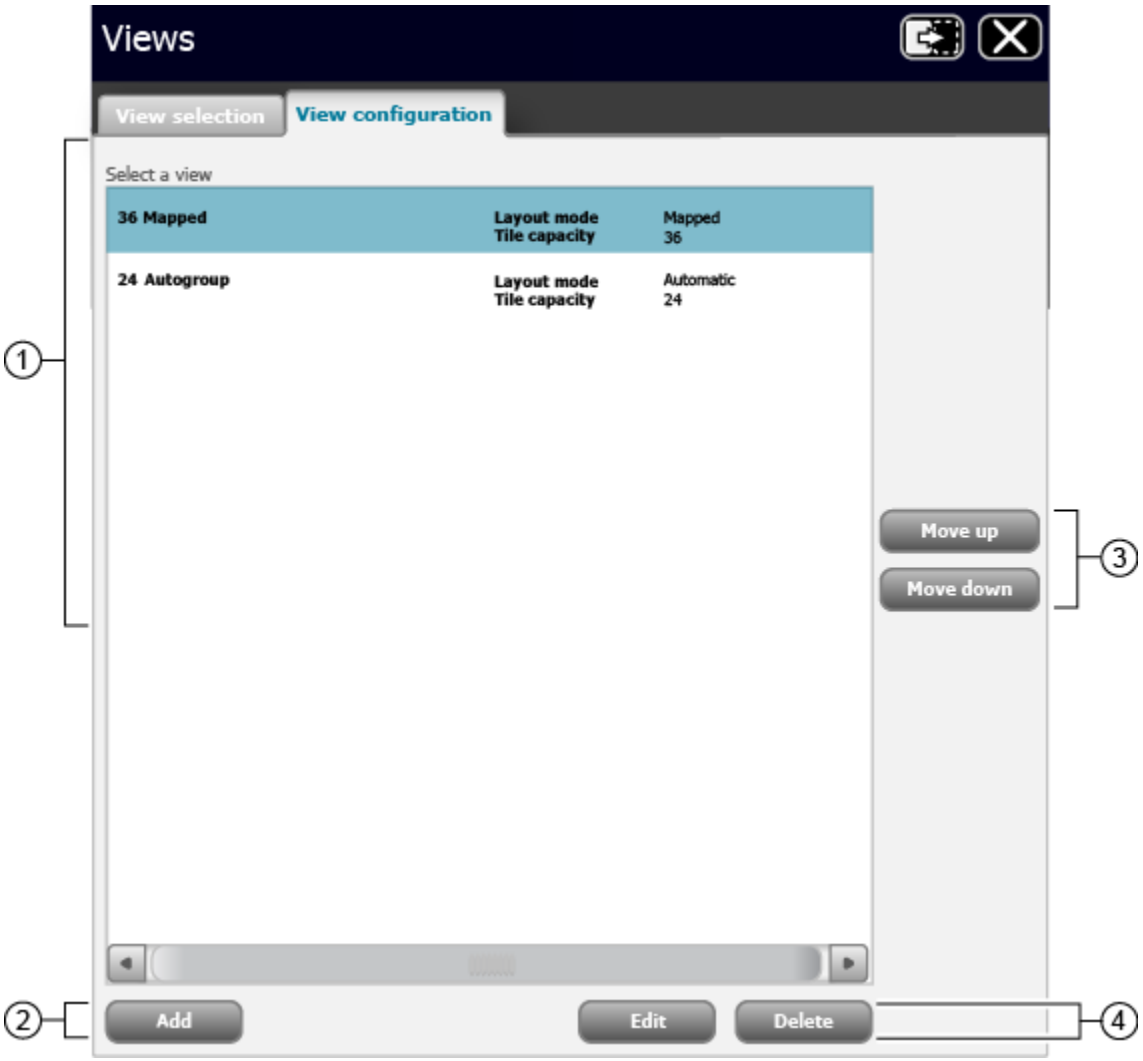


1. This area indicates the list of previously configured views.

2. This area displays a preview of the selected view.

2. Click **Select** to activate the selected view.

View configuration tab



1. This area displays the existing tile layouts.

2. Click this button to create a new layout.

3. Click these buttons to move a selected view up or down in the list.

4. Click these buttons to edit or delete existing tile layouts.

Select a tile layout

1. Click the **Views** icon on the Main Monitoring screen.

   The Views Configuration window appears.
2. Select the layout you wish to use and click **Select**.

   The Main Monitoring screen appears in the selected layout.

Create a custom tile layout

The central station supports up to 10 custom tile layouts.

1. Click the **Views** icon on the Main Monitoring screen.

   The Views Configuration window appears.
2. Click the **View Configuration** tab.
3. Click **Add**.

   The Add/Edit a View screen appears.
4. Enter a name for the layout.
5. Select the number of patient tiles the layout will display.

   Patient tiles can be displayed in 8-, 12-, 24-, 36-, or 48-tile grids.
6. Select the way in which the patient tiles will be organized.

   There are three modes in which tiles can be organized:
   - **Automatically sorted.** Patient tiles are sorted automatically. There is no further customization.
   - **Manually placed in a tile location**. Patient tiles can flow in either a column direction - top down then left to right, or a row direction - left to right then top down.
   - **Mapped by patient location.** Patient tiles are mapped on a grid. Click on an unassigned tile to assign the highlighted room number to that location. Click on the assigned tile to remove it from that location.
7. Select any of the tile customizations you want to apply to your layout.
8. Click **Save**.

   The Main Monitoring screen appears in the new layout.

Patient monitoring

For information about patient monitors and devices that are not covered in this section, see the device instructions for use.

Connect a continuous monitor to the central station

A continuous monitor must be licensed in order to connect to the central station. For more information, see the monitor instructions for use.

1. Make sure that the monitor is connected to the same network as the central station.

   WARNING Make sure that the connection between the monitor and the central station has been established before leaving the bedside monitor or the patient. See the monitor instructions for use for instructions for verifying that a connection has been established.

2. Set the monitor to the **Continuous** profile. For more information, see the monitor instructions for use.
3. Do one of the following at the device:
   - Select a patient.
   - Select a location.
   - Take and send an episodic reading.
   - Collect and send continuous or trend data.

   WARNING The patient tile will not appear in the waiting area until one of these actions is completed.

   The device connects to the central station, and the patient tile appears in the waiting area.

   If the selected patient was never connected to the central station, the central station monitors the patient using the current saved alarm limits on the device. These alarm limits can be modified at the device or at the central station.

   For a patient who was previously connected to the central station, the currently saved alarm limits at the central station are used. If the alarm limits between the central station and the device are different, a message appears indicating the device alarms limits were modified. When the patient monitoring ends, the device reverts to its previous alarm limits.
4. Admit the patient as described in the Patient data management section.

   The patient tile appears in the Main Monitoring area.

Connect an episodic device to the central station

1. Enter the patient information at the central station.

   NOTE Patient information must be entered at the central station before a patient tile appears in the Waiting area.

2. Make sure that the device is connected to the same network as the central station by checking for the radio signal strength indicator on the device. For more information, see the device instructions for use.
3. Admit the patient as described in the Patient data management section.

   The patient tile appears in the Main Monitoring area.

Patient data management

Patient data can be managed at the central station or at the monitor.

Add a patient at the central station

NOTE This method is only recommended for use when your central station is not connected to an ADT.

1. Click the **Patient** icon in the Navigation area.

   The Patient List appears.

2. Click **Add**.

   The Patient Details window appears.

3. Scan the patient's barcode or use the keyboard to enter the patient's ID, name, date of birth, and other information.

   NOTE The patient's first or last name can not exceed 32 characters. If the ADT system sends a first or last name longer than 32 characters, the name will be truncated, and will generate a conflict.

4. Click **Save**.

   The Confirm Changes dialog box appears.

5. Review the information in the dialog box, and if correct, click **Yes** to return to the Main Monitoring screen. If further editing is required, click **No** to return to the previous screen.

Admit a patient from the Waiting area

1. In the Waiting area, click the patient tile you want to admit.

   The Device Detail window appears.

2. Click **Edit**.

   The Patient Details window appears.

3. Enter the patient information, choose a location for the patient, and click **Save**.

   The Confirm Changes dialog box appears.

4. Review the information in the dialog box, and if correct, click **Yes** to return to the Main Monitoring screen. If further editing is required, click **No** to return to the previous screen.

Admit a patient from the Patient list

1. Click the **Patients** icon in the Navigation area.

   The Patient list appears.
2. In the **Unconfirmed** area, click the patient you want to admit.

   The Patient Details window appears.
3. Enter the patient location and device information. Click **Save**.

   The Confirm Changes dialog box appears.
4. Review the information in the dialog box, and if correct, click **Yes** to return to the Main Monitoring screen. If further editing is required, click **No** to return to the previous screen.

Admit a patient from a room tile

1. Click on the patient tile in the Main Monitoring screen.

   The Patient Detail screen appears.
2. Click **Edit**.

   The Patient Details window appears.
3. Enter the patient information, choose a location for the patient and click **Save**.

   The Confirm Changes dialog box appears.
4. Review the information in the dialog box, and if correct, click **Yes** to return to the Main Monitoring screen. If further editing is required, click **No** to return to the previous screen.

Edit patient information at the central station

1. Click on a patient tile.

   The patient's Device Details window appears.
2. Click **Edit**.

   The Patient Details window appears.
3. Edit the patient's ID, name, date of birth, and other information, and click **Save**.

   The Confirm Changes dialog box appears.
4. Review the information in the dialog box, and if correct, click **Yes** to return to the Main Monitoring screen. If further editing is required, click **No** to return to the previous screen.

Edit patient information at the device

Patient information that is changed at the device automatically changes at the central station. See the device instructions for use. Verify all entries after the changes are made.

Move a patient

NOTE This feature is only available in a Mapped by patient location layout.

1. Click and hold on the patient tile you want to move.
2. Drag the patient tile to a new location.
3. Click **OK** at the Confirm Patient Transfer dialog box.

   The patient tile moves to the new location.

Assign a patient to a room

NOTE This feature is only available in a Mapped by patient location layout.

1. Click and drag a patient tile from the Waiting area to the appropriate room.

   The Confirm Patient dialog box appears.
2. Click **OK** to confirm the transfer.

   The patient tile appears in the room area.
3. Click the patient tile.

   The Device Details window appears.
4. Click **Edit**.

   The Patient Details window appears.
5. Enter the patient's ID, name, date of birth, and other information.
6. Click the **Room / Bed** pull-down menu and select the appropriate room or bed.
7. Click **Save**.

   The Confirm Changes dialog box appears.
8. Review the information in the dialog box, and if correct, click **Yes** to return to the Main Monitoring screen. If further editing is required, click **No** to return to the previous screen.

Review patient alarms

1. Click on a patient tile.

   The Device Details window appears.
2. Click **Review**.

   The Patient Review window appears.
3. Click **Patient Alarms**.

   The Patient Alarms tab appears.

WARNING If your main central station PC disconnects and is replaced with a warm spare — an additional, central station-capable PC running on the network — historical continuous data and alarms will not transfer to the new central station PC. Some continuous trend data and episodic data generated before the disconnect will show up on the new central station PC. If the system is connected to an EMR, then you might be able to access historical data and alarms there.

Transfer a patient to a different unit covered by the same central station

1. Click on the tile of the patient you want to transfer.

   The Device Details window appears.
2. Click **Edit**.

   The Patient Details screen appears.
3. Edit the patient's new unit and bed and click **Save**.

   The Confirm Changes dialog box appears.
4. Review the information in the dialog box, and if correct, click **Yes** to return to the Main Monitoring screen. If further editing is required, click **No** to return to the previous screen.

Transfer a patient to a different unit covered by a different central station

1. Click on the tile of the patient you want to transfer.

   The Device Details window appears.
2. Click **Edit**.

   The Patient Details screen appears.
3. Click **Discharge**.

   The patient is moved to the **Discharged** tab in the Patients List.
4. Physically move the patient to the new unit.
5. At the new unit, admit or pre-admit the patient as described.

Resolve an information message conflict

An information message conflict occurs when the patient information at the central station does not match the patient information at the hospital information system (HIS) or electronic medical record (EMR).

1. Click on the patient tile that displays the information message icon ().

   The Device Details window appears.
2. Click the information message icon in the patient summary area.

   The Patient Details screen appears.
3. Click on the information message icon in the Patient Details screen.

   The information for this patient stored in the HIS or EMR is displayed.
4. Click the text in blue to change the displayed patient information to match the information stored in the HIS or EMR.

   The patient information changes.
5. Click **Save**.

   The conflict is resolved.

Print the Patient list

1. Click the **Patients** icon in the Navigation area.

   The Patient list appears.

2. Click  .

   A dialog box appears.

3. Select your printer from the printers in the dialog box.
4. Select the page size and the page orientation.
5. Click **Print**.

   The Patient list prints at the selected printer.

End monitoring a patient

This task is performed only at the device. See the device instructions for use.

Discharge a patient at the central station

NOTE You cannot discharge a patient who is continuously sending data vital signs measurements to the central station. These patients appear in the list with the  icon.

1. Click the **Patients** icon in the Navigation area.

   The Patient list appears.

2. Click on the patient name of the patient you want to discharge. Click **Discharge**.

   The Confirm Changes dialog box appears.

3. Click **Yes** to discharge the patient.

   The Main Monitoring screen appears.

NOTE It is important to discharge patients on a regular basis in order to keep the patient list current and up to date. Failure to discharge patients can also lead to newly added patients transitioning directly to waiting room tiles rather than to active monitoring.

Automatic discharge

NOTE You cannot discharge a patient who is continuously sending data vital signs measurements to the central station. These patients appear in the list with the  icon.

The central station automatically discharges patients based on monitoring inactivity or events from the ADT system. Patients who were entered through an ADT system are automatically discharged only after the central station receives a discharge or transfer message.

After receipt of a discharge or transfer message, patients are automatically discharged 4 hours after the last episodic reading is taken or a monitoring session ends.

Patients that were entered into the system without an ADT feed are automatically discharged 24 hours after the last episodic reading is taken or a monitoring session ends.

NOTE This behavior can be customized, enabled, or disabled. Contact your system administrator to change or modify your settings.

Re-admit a patient

1. Click the **Patients** icon in the Navigation area.

   The Patient list appears.
2. Click the **Discharged** tab.

   The list of discharged patients appears.
3. Click on the patient you want to re-admit.

   The Patient Details window appears.
4. Enter the new location for the patient and click **Save**.

   The Confirm Changes dialog box appears.
5. Review the information in the dialog box, and if correct, click **Yes** to return to the Main Monitoring screen. If further editing is required, click **No** to return to the previous screen.

EarlySense sensor

The EarlySense sensor is an option that provides patient data on the central station. See the Welch Allyn Connex® Vital Signs Monitor 6000 Series™ instructions for use or the user documentation provided with the sensor for more information on the sensor, including features, setup, and use.

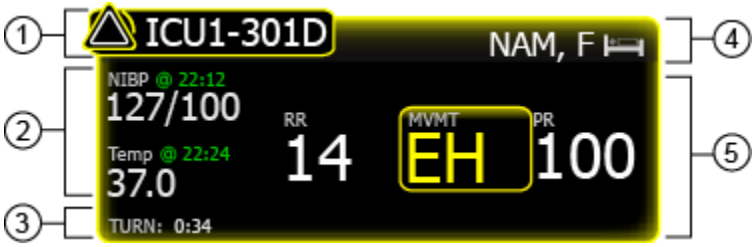
Patient tiles

Standard tile

1. This area displays the patient location.
2. This area displays the episodic patient parameters.
3. This area displays the patient's name, and an icon indicating the patient is on a bed sensor.
4. This area displays the continuous patient parameters. The patient movement parameter measurement is displayed under the **MVMT** label.

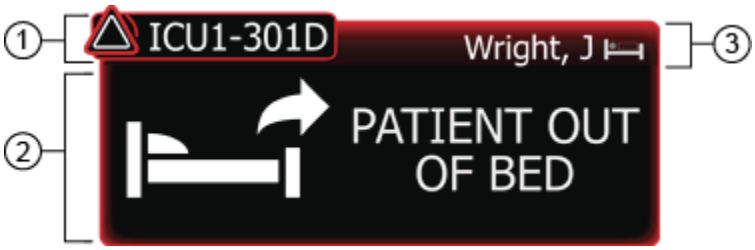
NOTE The respiration rate (RR) and pulse rate (PR) measurements are also provided by the EarlySense sensor.

Alarming tile – Patient movement



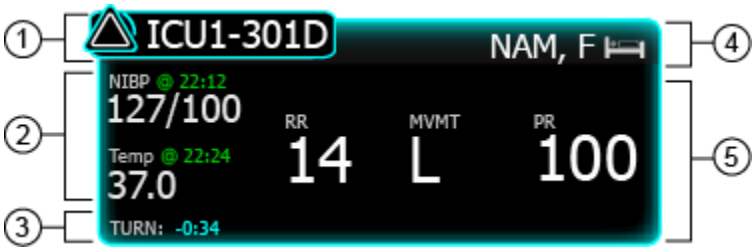
1. This area displays the alarm icon and the patient location.
2. This area displays the episodic patient parameters. Any alarming parameters are displayed in either red or yellow, depending on the alarm type.
3. This area displays the turn counter. The timer indicates the amount of time remaining before the patient's next scheduled turn.
4. This area displays the patient's name, and an icon indicating the patient is on a bed sensor.
5. This area displays the continuous patient parameters. The alarming parameters are surrounded by a colored box.

Alarming tile – Patient exit



1. This area displays the alarm icon and the patient location.
2. This area displays the patient exit alarm.
3. This area displays the patient's name, and an icon indicating the patient is on a bed sensor.

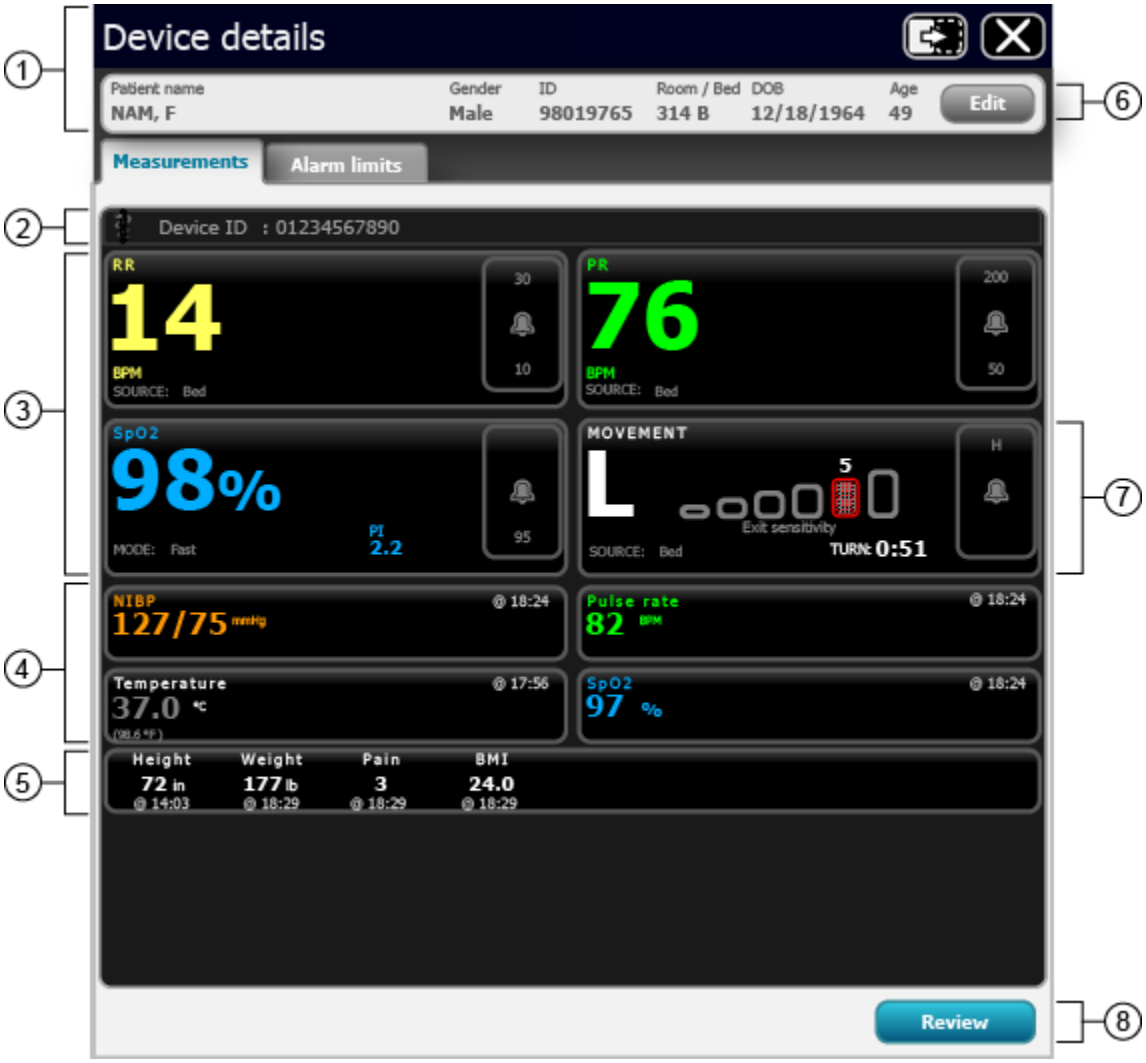
Alarming tile – Patient turn



1. This area displays the alarm icon and the patient location.
2. This area displays the episodic patient parameters.
3. This area displays the patient turn alarm, and the amount of time elapsed since the patient's last scheduled turn.
4. This area displays the patient's name, and an icon indicating the patient is on a bed sensor.
5. This area displays the continuous patient parameters.

Device details – Measurements tab

This window displays information on the devices and measurements associated with a patient. Click a patient tile to open the Device details window.



1. This area displays the patient summary.

2. This area displays the device message area. This includes the device serial number, or any alarms or messages associated with the patient's connected continuous monitor.

3. This area displays the continuous patient data. Click the alarm limits button to pause an alarm or adjust that parameter's alarm limits.

   Where applicable, the source for the parameter data is displayed in the lower left corner of the parameter tile.

4. This area displays the episodic patient data.

5. This area displays the manual parameters.

6. Click **Edit** to open the Patient Details window and edit the patient information.

7. This area displays the EarlySense sensor data.

NOTE Alarm limits for the EarlySense sensor are set at the device. The alarm can only be dismissed at the device. See the device instructions for use.

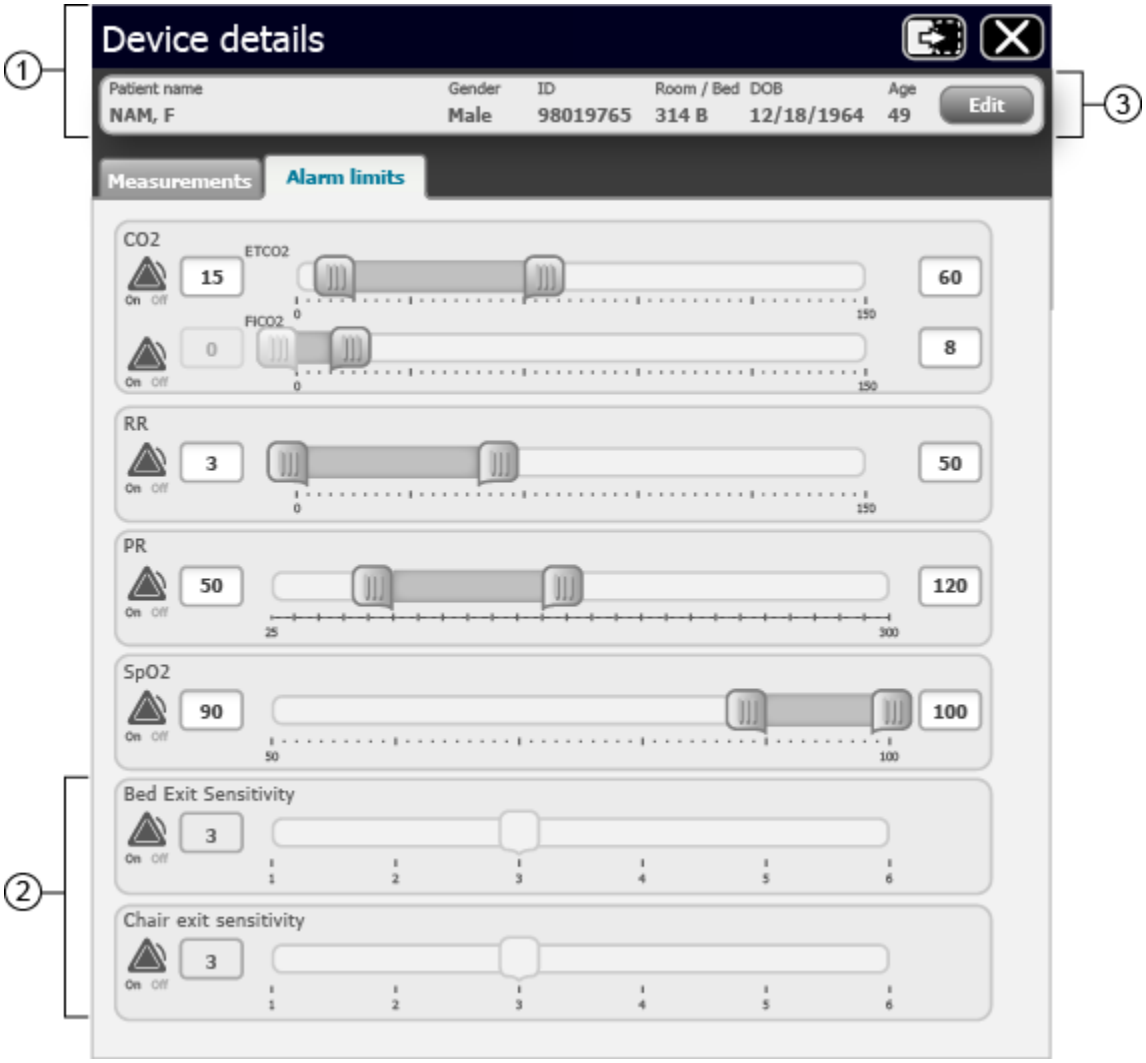
- The EarlySense measurement displayed under the **MOVEMENT** tile will be one of the following:
  - 0 – No motion
  - L – Low
  - M – Medium
  - H – High
  - EH – Extremely high
- The **Exit sensitivity** graph indicates the bed exit sensitivity setting. This setting is controlled at the device. See the device instructions for use.
- The **SOURCE:** label indicates the EarlySense source.
- The timer next to the **TURN:** indicates the amount of time remaining before the patient's next scheduled turn.

NOTE If the patient turn reminder is active, the timer counts down to zero and then displays a reminder in the System message area to perform and log a patient turn. If a scheduled patient turn remains overdue, an alarm message appears in the System message area.

8. Click this button to open the Review window.

Device details – Alarms tab

NOTE The bed or chair exit, motion alarm, and patient turn settings for the EarlySense sensor are controlled at the monitor. For more information, see the monitor instructions for use.



1. This area displays the patient summary.

2. This area displays the alarm settings for the EarlySense sensor. The settings are provided by the device. See the device instructions for use.

3. Click **Edit** to open the Patient Details window and edit the patient information.

Alarms

The central station presents physiological alarms and technical alarms.

Alarm types

Type	Priority	Color	Alarm audio tone[1]
High-priority alarms are defined by the device. See the device instructions for use.	High	Red	10-pulse tone
Central station-generated alarms based on loss of connection with any patient monitor due to a low or depleted battery.	High	Red	10-pulse tone
EarlySense-generated alarm caused by a patient exiting the bed	High	Red	Alternate 10-pulse tone
Arrhythmia alarms (LTAs): • Asystole • Ventricular tachycardia • Ventricular fibrillation	High cardiac	Red	Two available tones[2] Default: IEC 10-pulse tone Standard 10-pulse tone
Medium-priority alarms are defined by the device. See the device instructions for use.	Medium	Yellow	3-pulse tone
Low-priority alarms defined by the central station include technical alarms. Other low-priority alarms are defined by the device. See the device instructions for use.	Low	Yellow	1-pulse tone
Very-low priority alarms are technical alarms that do not impact patient safety. To view these alarms, do the following: 1. Click on the alarming patient tile. 2. Click **Device Details**. 3. View the alarm in the Device Message Area.	Very low	Cyan	None

[1]The minimum alarm sound pressure level for all alarms is greater than or equal to 37 dB, and the maximum alarm sound pressure level is less than or equal to 81 dB at 1 meter (as tested with a ViewSonic VS13816).

[2]The device with ECG can use the standard high priority alarm 10-pulse tone, or the device and central station can be configured for an alternate 10-pulse tone that meets the standard for arrhythmia alarms (LTAs). It is recommended to configure devices and the central station to use the same tone for LTAs.

WARNING Whenever possible, do not rely on visual alarm notifications alone while monitoring patients. If you must rely on visual alarm notifications, maintain a clear line of sight with the central station or the patient monitor. For audio alarm notifications, set the volume as needed considering the environment and ambient noise levels. Verify that the alarm is audible to a clinician working at the maximum distance from the central station or the patient monitor.

Alarm locations

Physiological alarms

Physiological alarms occur when a patient's vital sign measurements fall outside of set alarm limits.

1. **System message area**. If multiple alarms are active, click  to cycle through the messages for each active alarm.

2. **Patient tile.** If a patient tile is in a physiological alarm state, the border around the tile changes color, and a colored border appears around the alarming parameter.

Technical alarms

Technical alarms occur when a problem occurs with such things as the patient device, the patient location or ID, an accessory connected to the patient device, or the network.

1. **System message area**. If multiple alarms are active, click to cycle through the messages for each active alarm.

2. **Patient tile.** If a patient tile is in a technical alarm state, the border around the tile changes to a color relative to the level of the alarm. No colored borders appear around the patient's parameters.

Main Monitoring screen notifications

Notification	Description
System message area	The area changes color and displays a message with an accompanying status icon or button. If multiple alarms and information messages are active, the System message area shows the highest priority alarm. If the alarms are equal in priority, the most recent alarm message appears. You can cycle through the messages for each active alarm.
Patient tile	The border color changes. Click the alarming tile to pause an alarm audio tone. Visual indicators persist during an audio-paused condition.

Alarm icons in the Measurements tab

The icons in the parameter frames indicate alarm notification settings. When alarm limits are on, the icons are black and white until an alarm occurs. Then, the icons change color to indicate the priority of the alarm. Red icons represent high priority alarms, and yellow icons represent medium or low priority alarms.

Icons in the Measurements tab

Icon	Name and status
	Alarm active. One or more alarms are active. Click this icon within the parameter frame to pause the audio tone.
	Alarm on. Visual and audio alarms will occur for this parameter.
	Alarm off. No visual or audio alarms will occur for this parameter.
	Alarm audio off. Only visual notifications will occur. This functionality only occurs at the device. See the device instructions for use.
	Alarm audio paused. The audio tone is paused at the device and the central station. The duration of the pause is set at the device. See the device instructions for use.
	Information status message. This icon is displayed with messages that are unrelated to physiological alarms.

Alarm icons in the System message area

The icons in the System message area change colors to indicate the alarm priority. Messages accompany these icons.

Icons in the System message area

Icon	Name and status
	Alarm active. One or more alarms are active. Click the System message area to pause the audio tone or acknowledge the alarm depending on the given alarm.
	Alarm audio off. Audio signals are disabled, but alarm limits and visual alarm signals remain active. A reminder signal periodically occurs.
	Multiple alarms notification. Click this icon to cycle through the messages for the active alarm priority level.

Icons in the System message area	
Icon	**Name and status**
	Alarm audio paused. The audio tone is paused at the device and the central station. The duration of the pause is set at the device. See the device instructions for use.

Pause an alarm at the central station

Audio alarm characteristics

- After you pause an alarm, the alarm returns after a pause interval if the condition that caused the alarm persists.
- If a new alarm condition occurs during a pause interval, a new audio tone occurs.

1. Click  in the System message area.

   The alarm is paused. Visual indications remain in the patient tile until the condition is corrected or until the next measurement is taken.
2. If multiple alarms are active, a multiple alarms notification appears in the System message area. Respond to multiple alarms as follows:

   a. Click  in the System message area. (See note below.)

   b. Read the alarm message for the second alarm.

   c. Click  .

   d. Continue to click the multiple alarms notification and reset tones until you have read all of the messages.

NOTE The multiple alarms notification button displays the number of active alarms inside the alarm icon. A set of dots appears below the icon. These dots indicate the display order of alarms in sequential order of occurrence.

Pause an alarm at the device

Patient alarms can be paused at the patient device. For instructions on pausing the alarm, see the device instructions for use

Adjust patient alarm limits at the central station

WARNING Alarm limits are patient- or facility-specific. The clinician must set and verify alarm limits appropriate for each patient. Each time the monitor is powered on, you must check that the alarm settings are appropriate for your patient before you start monitoring. Failure to set alarm limits properly can lead to false alarms or failure to alarm.

NOTE Alarm limits that are adjusted at the central station are also adjusted at the device. If power is lost at the central station, the current alarm limits from the patient monitor will be used when the central station reconnects to the network.

1. Click on a patient tile.

   The Device Details window appears.
2. Confirm that the alarm is on.
3. Select the Alarms tab.

   The Alarms tab appears.
4. You can manually enter upper and lower parameter alarm limits by entering a value in the numeric boxes on the left and right side.
5. You can adjust the range of the parameter alarm by clicking and dragging the left or right side of the slider bar.
6. You can adjust the overall range of the parameter alarm by clicking and dragging the center of the slider bar.
7. Click  .

   The Main Monitoring screen appears. The alarm limits are adjusted at the central station and at the monitor.

Adjust patient alarm limits at the device

NOTE Alarm limits that are adjusted at the device are also adjusted at the central station.

Alarm limits can be adjusted at the patient device. For instructions on adjusting the alarm limits, see the device instructions for use.

Test the central station alarms

1. Locate a device that is not connected to a patient, and connect the device to the network.

   For instructions, see the device instructions for use.
2. Set the device into demo or simulation mode.

   For instructions, see the device instructions for use.
3. At the central station, click on the patient tile associated with the demo or simulation device.

   The Measurements tab appears.
4. Click the Alarms tab.

   The Alarms tab appears.

5. Verify that the alarms are on for the parameter you want to test.
6. Verify that the alarms are functional by setting the high and low parameter alarm limits beyond the simulated readings.
7. Verify that the parameter audio alarm sounds, the System message area flashes, and a colored border appears around the alarming parameter.
8. Repeat this procedure for the remaining monitored parameters.

   If these alarm test results do not occur, contact Welch Allyn technical service.

Alarm messages and priorities

The following section lists the physiological and technical alarm messages and their priority.

Physiological alarms

For a list of physiological alarms, see the device instructions for use.

Technical alarms

For additional technical alarms, see the device instructions for use. Very low alarms appear in cyan and are only displayed in the Device Details tab.

Alarm messages	Priority
Low battery. Lost connection.	High
Location conflict.	Low
Patient ID and location not confirmed.	Low
Patient ID not confirmed.	Low
Location not confirmed.	Low
Unknown Patient ID.	Low
Wireless connection lost.	Low
Wired connection lost.	Low
Too many monitors.	Low
Unknown parameter.	Low

WARNING Unintentional disconnects of continuously monitored patients are a risk to patient safety since changes in patient condition will not be recorded or alarmed at the central station. Therefore, you must disconnect patients from continuous monitoring at the patient device using the process outlined here to prevent a high-priority lost communication error message.

Alarm delays

Maximum remote alarm signal generation delay is less than 10 seconds.

For Alarm System alarm delays, see the Patient Monitor Instructions for Use.

Alarm system logging

After the alarm system has experienced a total loss of power, the current log files will be saved but no new log files will be created until power is restored.

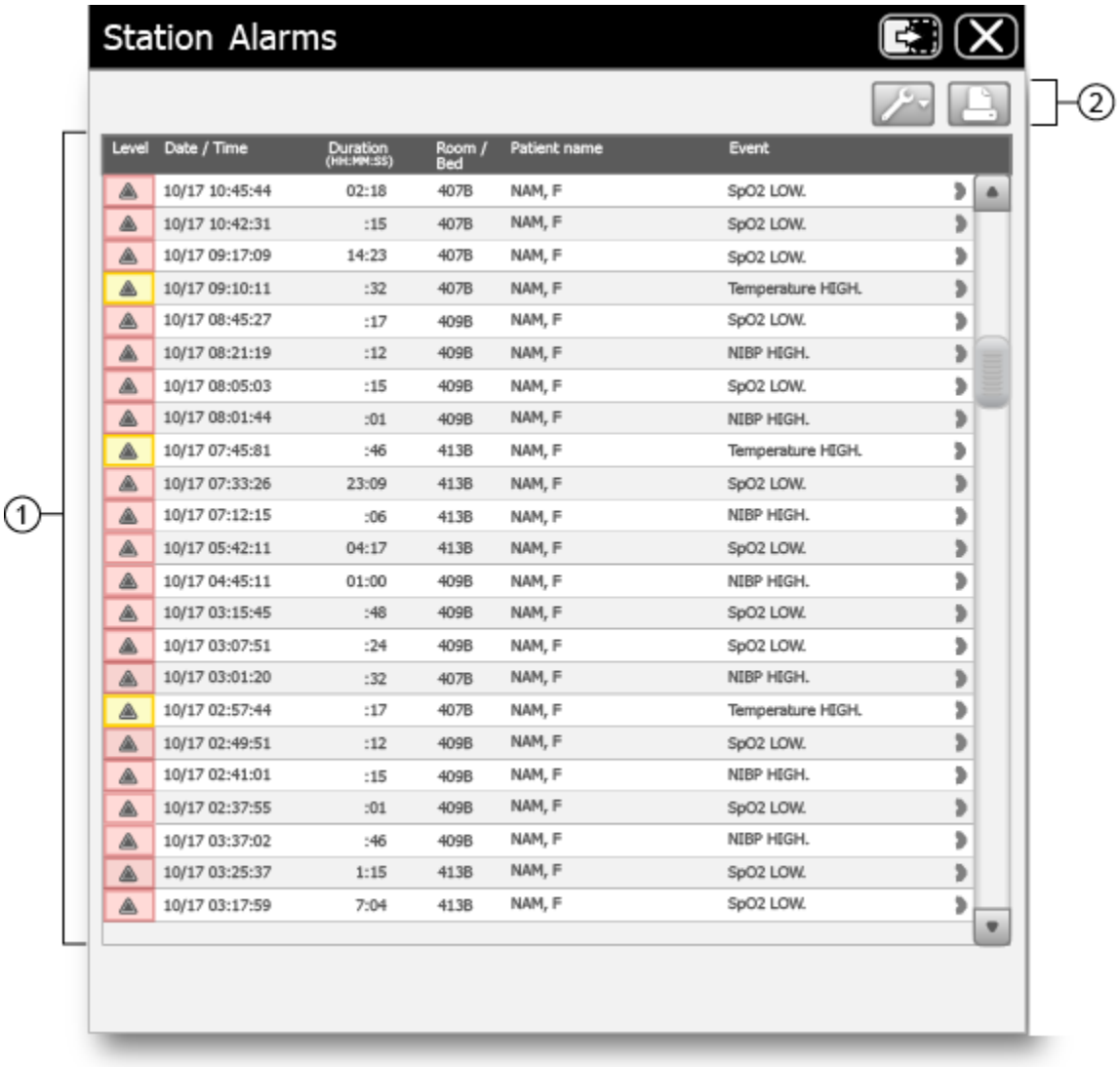
The maximum log capacity is limited only by the free storage space on the system. To prevent storage space from being exhausted, log entries expire and are deleted after a configurable time period. This period can be no less than 15 days and no more than 10 years.

When log entries expire, they are deleted. If the system storage space is exhausted, system failure will occur.

Station Alarms

This window displays all of the central station messages and patient alarms generated during the previous 12 hours. Click the **Alarms** icon in the Navigation area to open the Station Alarms window.

Station Alarms window



1. This area displays a list of all central station messages and patient alarms that have occurred over the last 12 or 24 hours. Double-click an entry to open the alarm in the Review window.

2. Click  to open the display options window. In this window, you can determine which types of alarms are displayed.

   Click  to print the Patient Alarms.

Settings

The main areas of the Settings window are a password-protected. These areas provide customization of the system. For access information, contact your system administrator.

Patient rest mode

WARNING Risk to patient safety. Set the volume as needed on the central station considering the environment and ambient noise levels. When patient rest mode is activated, the central station is the only source of audible alarms. Verify that the alarm is audible to a clinician working at the maximum distance from the central station.

The patient rest mode enables you to turn the audio off at the device when continuous monitoring is enabled and the device is communicating with a central station.

Patient rest mode can be enabled and disabled from the central station or from the device.

Turn on patient rest mode for a covered area

1. Click the **Settings** icon in the Navigation area.
2. Click **On.**
3. Click **OK.**

   The patient rest mode is activated on all devices in the covered area.

Turn off patient rest mode for a covered area

1. Click the **Settings** icon in the Navigation area.
2. Click **Off.**
3. Click **OK.**

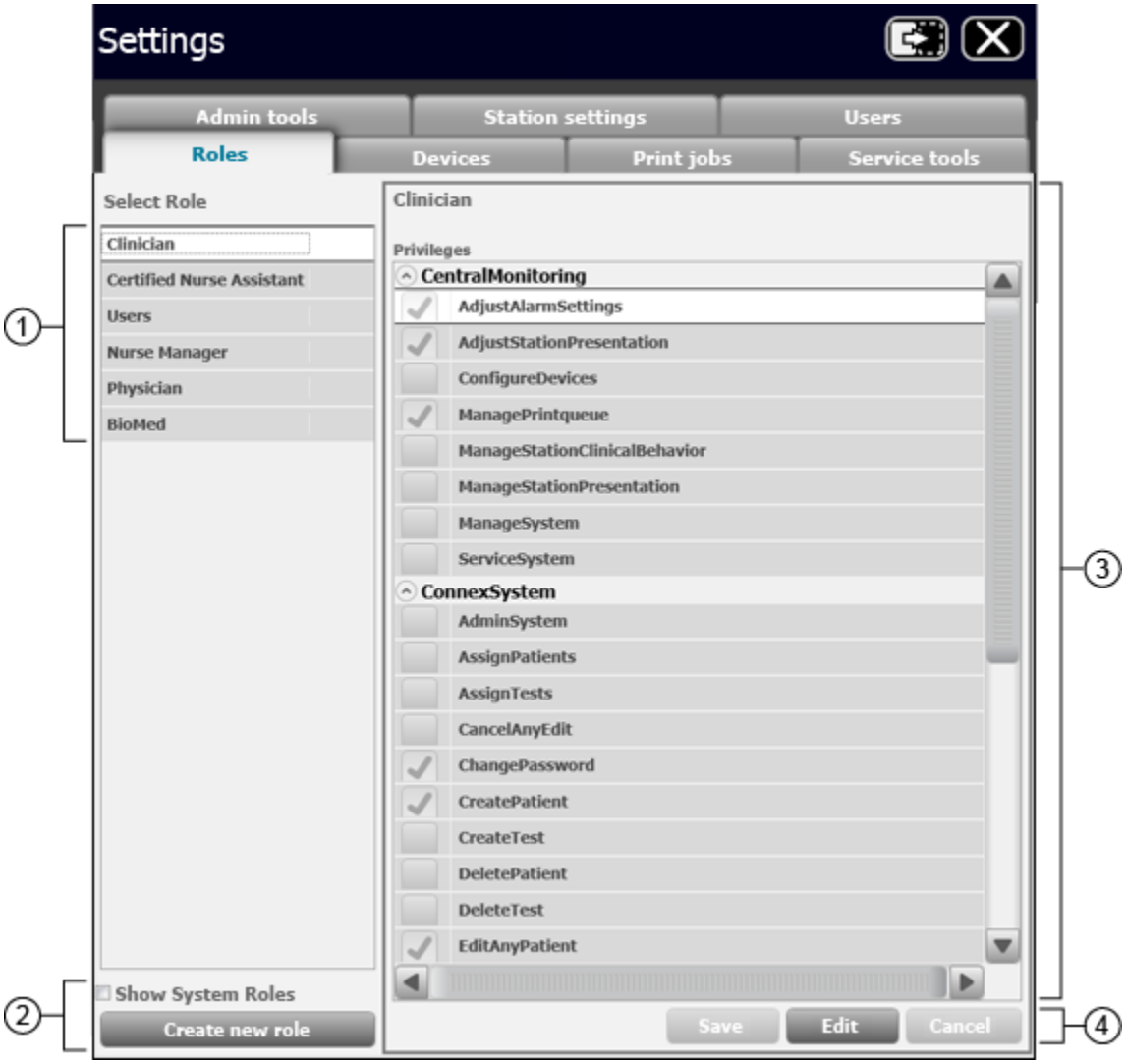
   The patient rest mode is deactivated on all devices in the covered area.

Turn on or turn off patient rest mode for an individual device

Patient rest mode for individual devices is controlled at the device. See the device instructions for use.

Roles tab

The Roles tab allows you to assign privileges to predefined roles, and create, modify, and assign privileges to new roles.



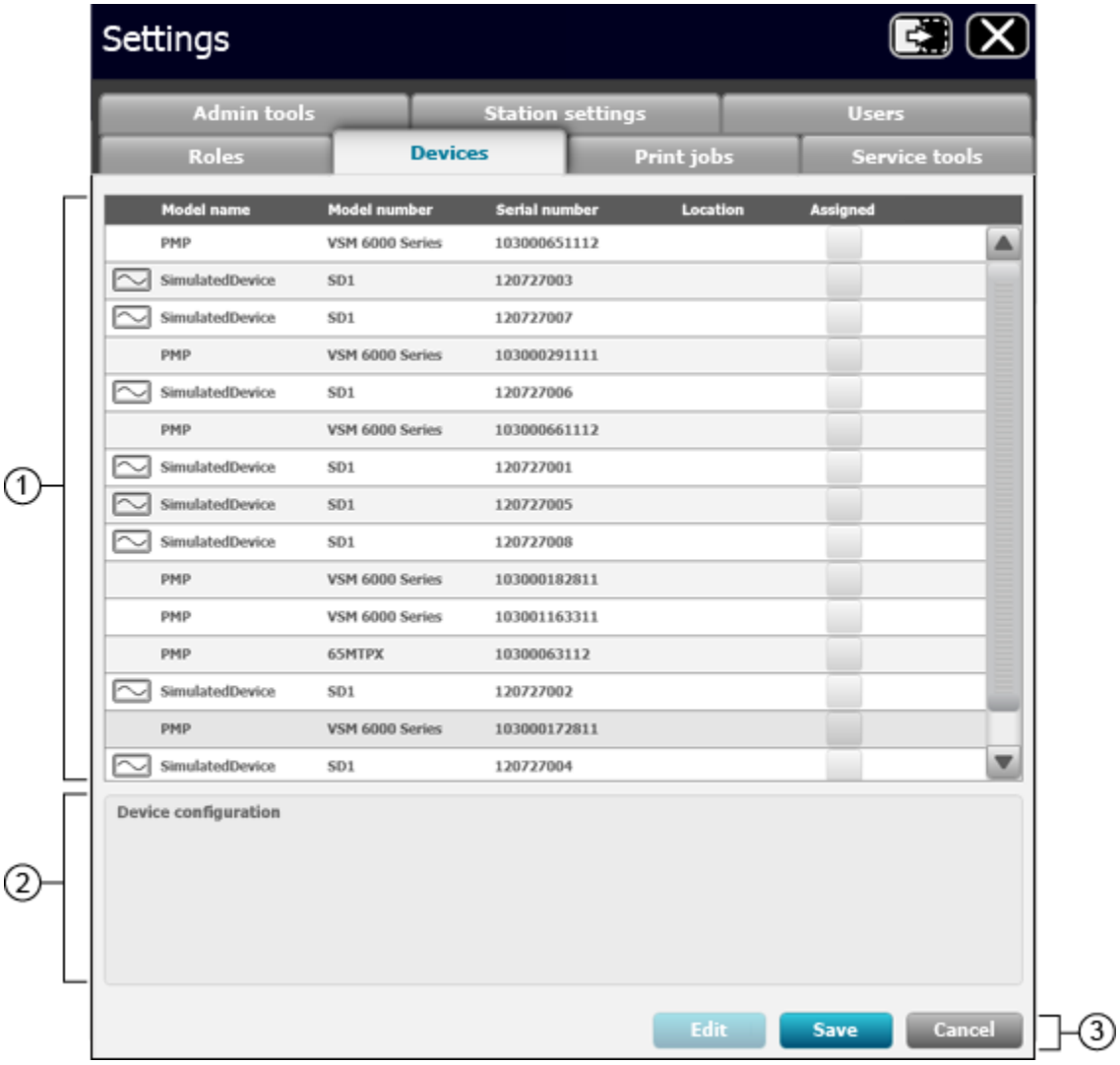
1. This area displays the list of roles currently defined in your system.
2. Click **Create new role** to create a new role in the system.
3. Click a checkbox to assign a privilege to the selected role.
4. Click **Save** to save any changes.

   Click **Edit** to edit the selected role.

   Click **Cancel** to clear any changes.

Devices tab

The Devices tab allows you to identify the devices that are accepted for a covered area and assign those devices to a location. Devices are listed by serial number.



1. This area displays the devices available in the covered area. Devices with the  icon are actively being monitored by the central station.

2. This area displays the configuration of the selected device.

3. Click **Edit** to edit a device.

   Click **Save** to save any changes.

   Click **Cancel** to clear any changes.

Edit a device

1. Click **Edit**.

The list of available devices is active.

2. Click on a device.

   NOTE You cannot select a device that is actively monitoring a patient.

3. Use the pull-down menu under Location to select a unit, room, or bed.

   You can also check the **Is Bolted** box to permanently assign the device to the location.

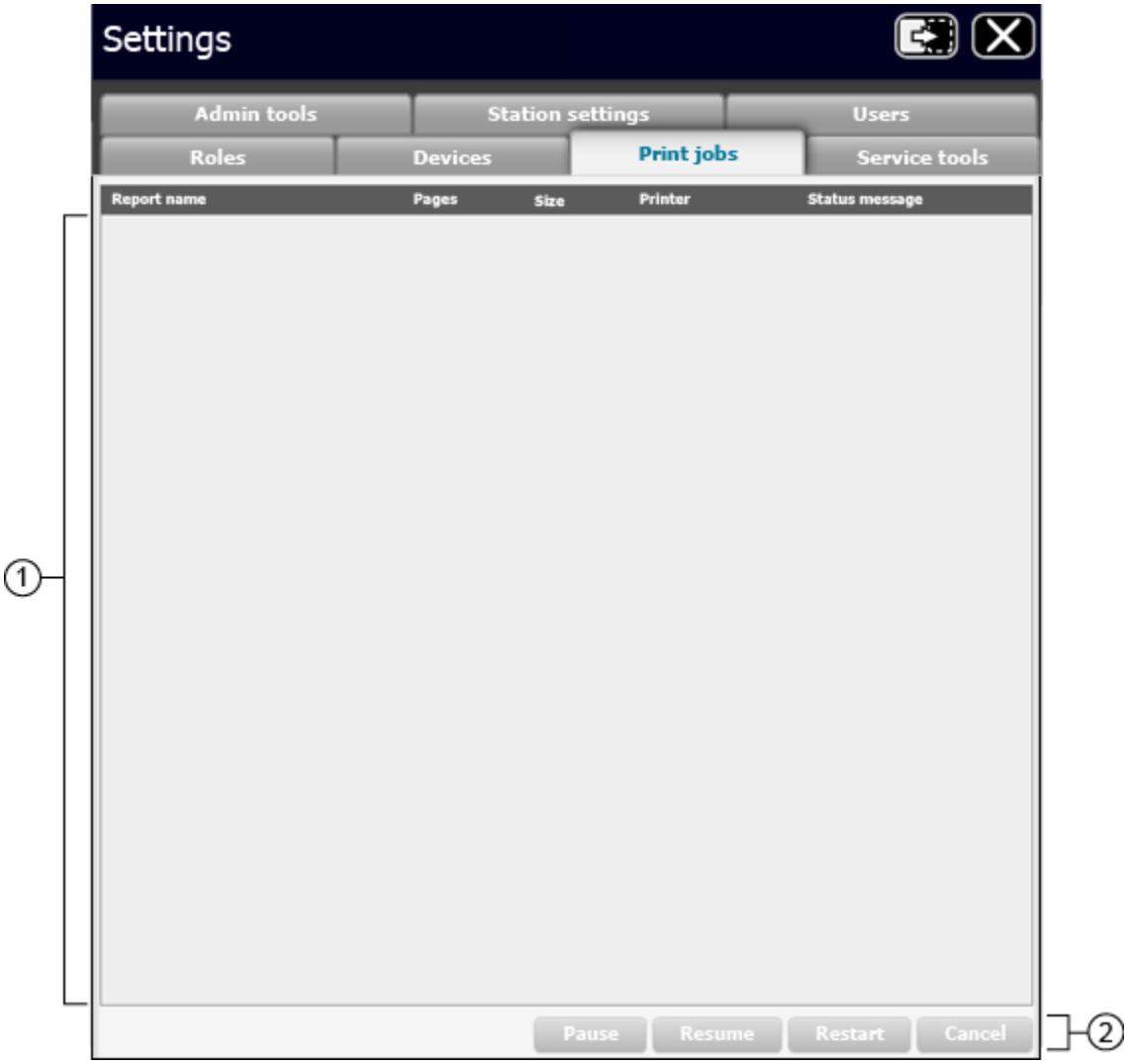
4. Review your changes, and if correct, click **Save**.

   A confirmation window appears.

5. Click **Cancel** to return the Device tab to an inactive screen.

Print jobs tab

The Print jobs tab allows you to view active print requests.



1. This area displays a list of active print jobs.

2. Click **Pause** to pause the selected print job.

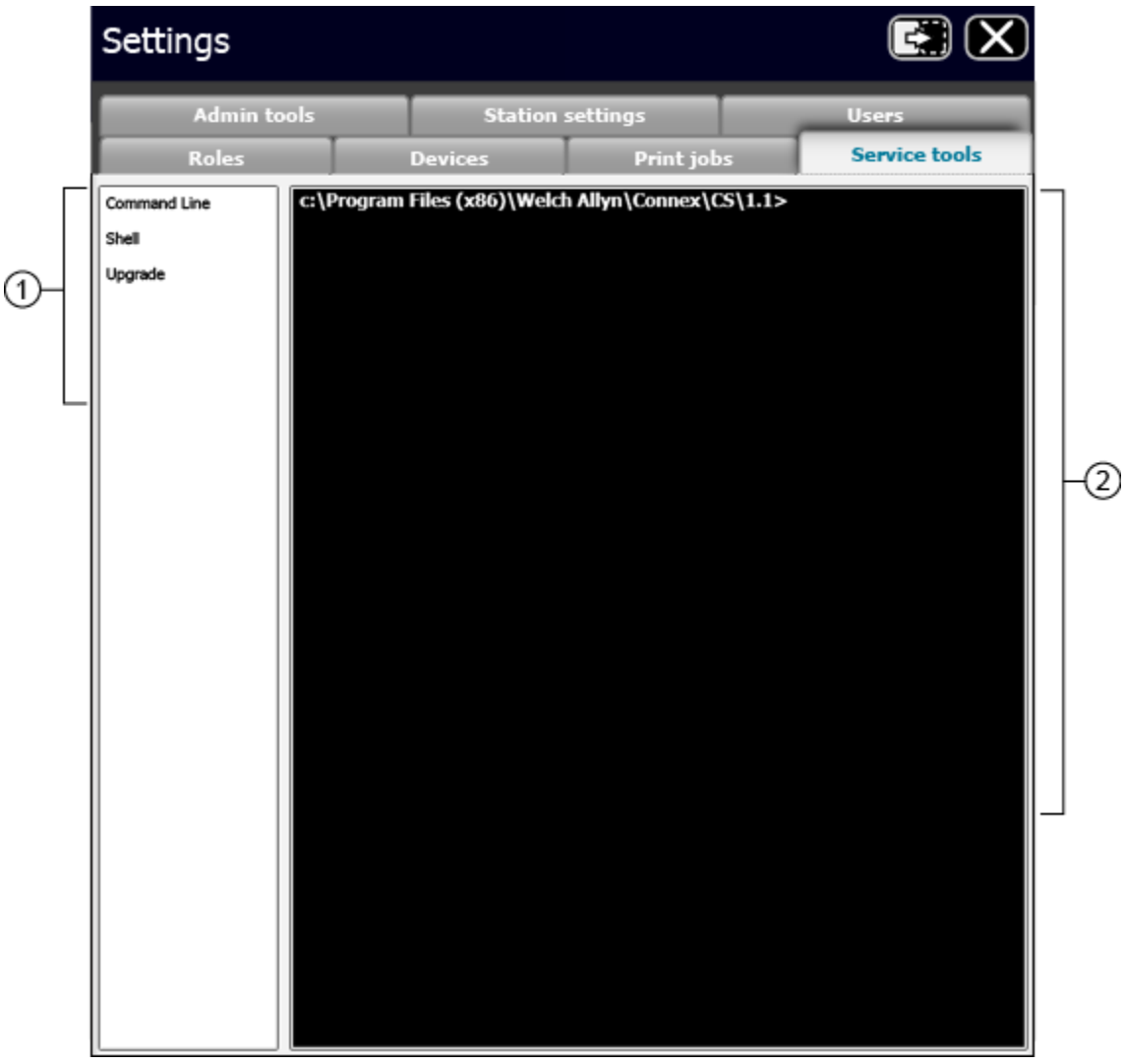
   Click **Resume** to resume the selected print job

   Click **Restart** to restart the selected print job.

   Click **Cancel** to cancel the selected print job.

Service tools tab

The Service tools tab provides command line access and allows for upgrade, backup, restore, and revert to a previous version of the system.

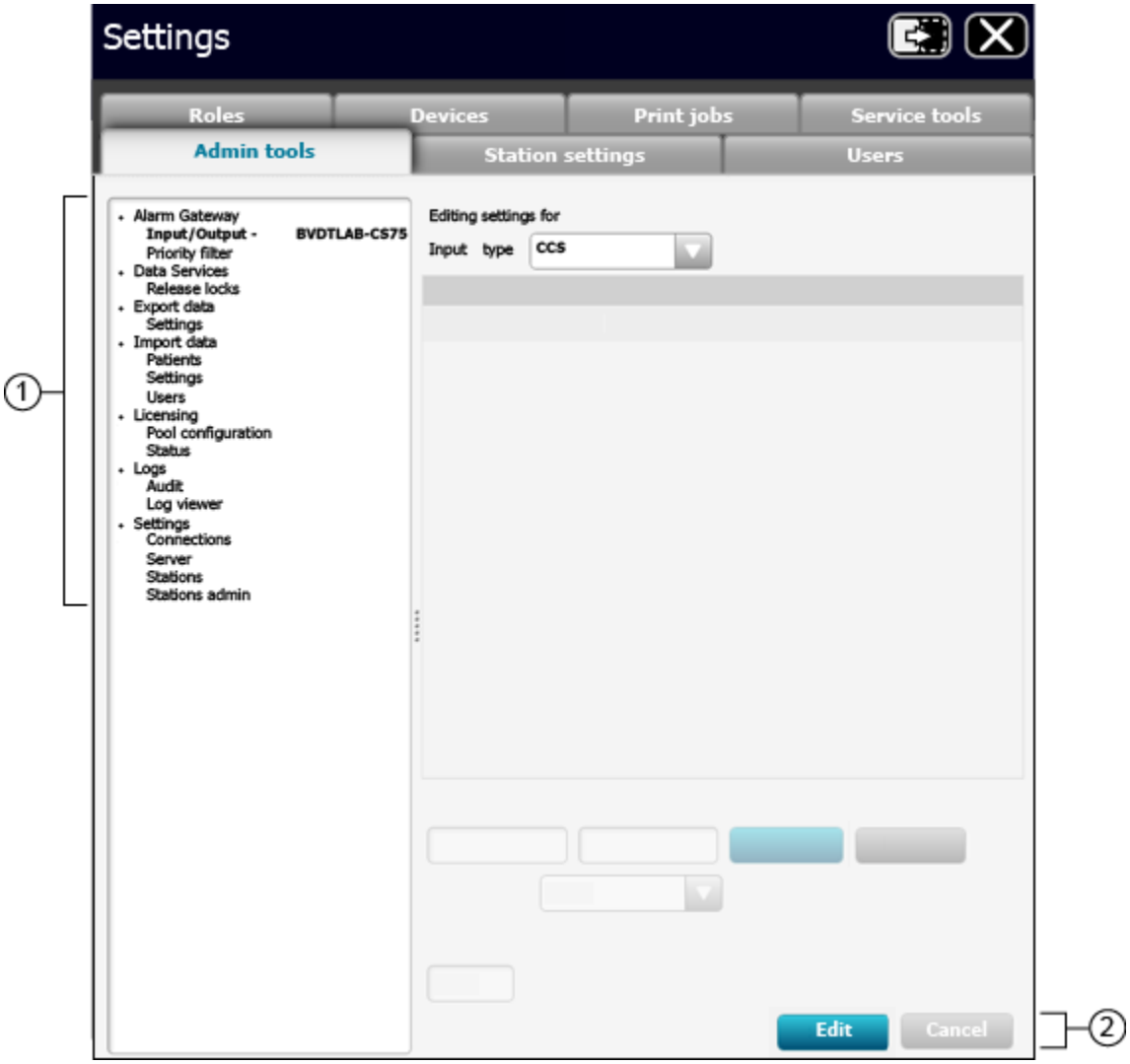


1. This area displays the list of available Service tool options.

2. This area displays detail of the selected option.

Admin tools tab

The Admin tools tab allows you to change central station settings including third-party alarms, vital signs modifiers, master bed lists, covered locations, preferred parameter units, display and print formats, password and password validation rules, and others.



1. This area displays a list of tools used to adjust or change certain settings of the central station.

2. Click **Edit** to edit the selected item.

   Click **Cancel** to cancel any changes made to the selected item.

Station settings tab

The Station settings tab allows you to change certain settings of the central station including alarm audio, patient rest mode, available patient indicators, the display and format of patient names, and HL7 data exporting criteria, among others.

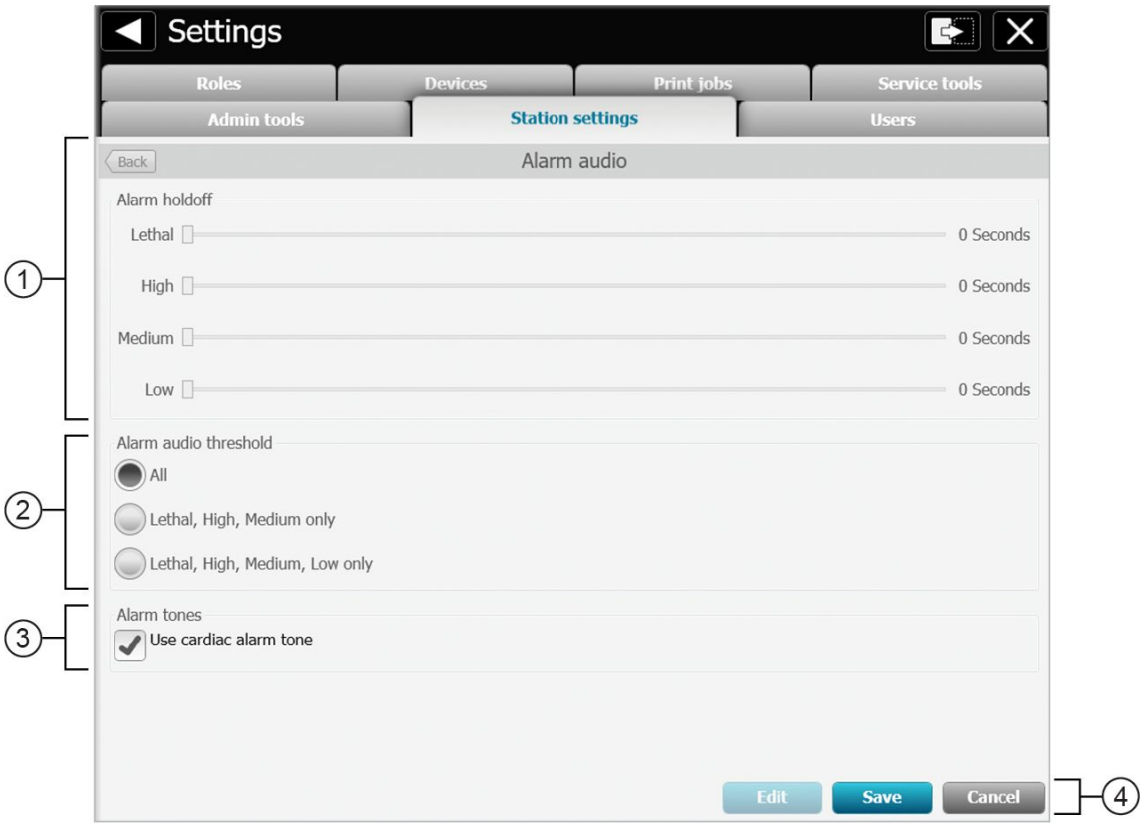
1. This area allows you to adjust station settings.

2. Click **Edit** to edit the selected item.

   Click **Save** to save any changes to the selected item.

   Click **Cancel** to cancel any changes made to the selected item.

Alarm audio



1. This area allows to you adjust the alarm holdoff settings. Move the slider bars to adjust the value.

   NOTE The visual alarms on patient tiles are still real-time alarms. However, alarm notification in the System message area and any audible alarms will be held off for the duration set on this screen.

2. This area allows you to set the alarm audio threshold. When an option is selected, only the indicated alarms are audible. All visual alarm notifications still occur.

   Select **All** to allow all alarms to sound.

   Select **Lethal, High, Medium only** to mute Low and Very Low alarms.

   Select **Lethal, High, Medium, Low only** to mute Very Low alarms.

3. This area allows you to set the alarm audio threshold.

   Select **Use cardiac alarm tone** to enable an alternate alarm tone for ECG LTA alarms.

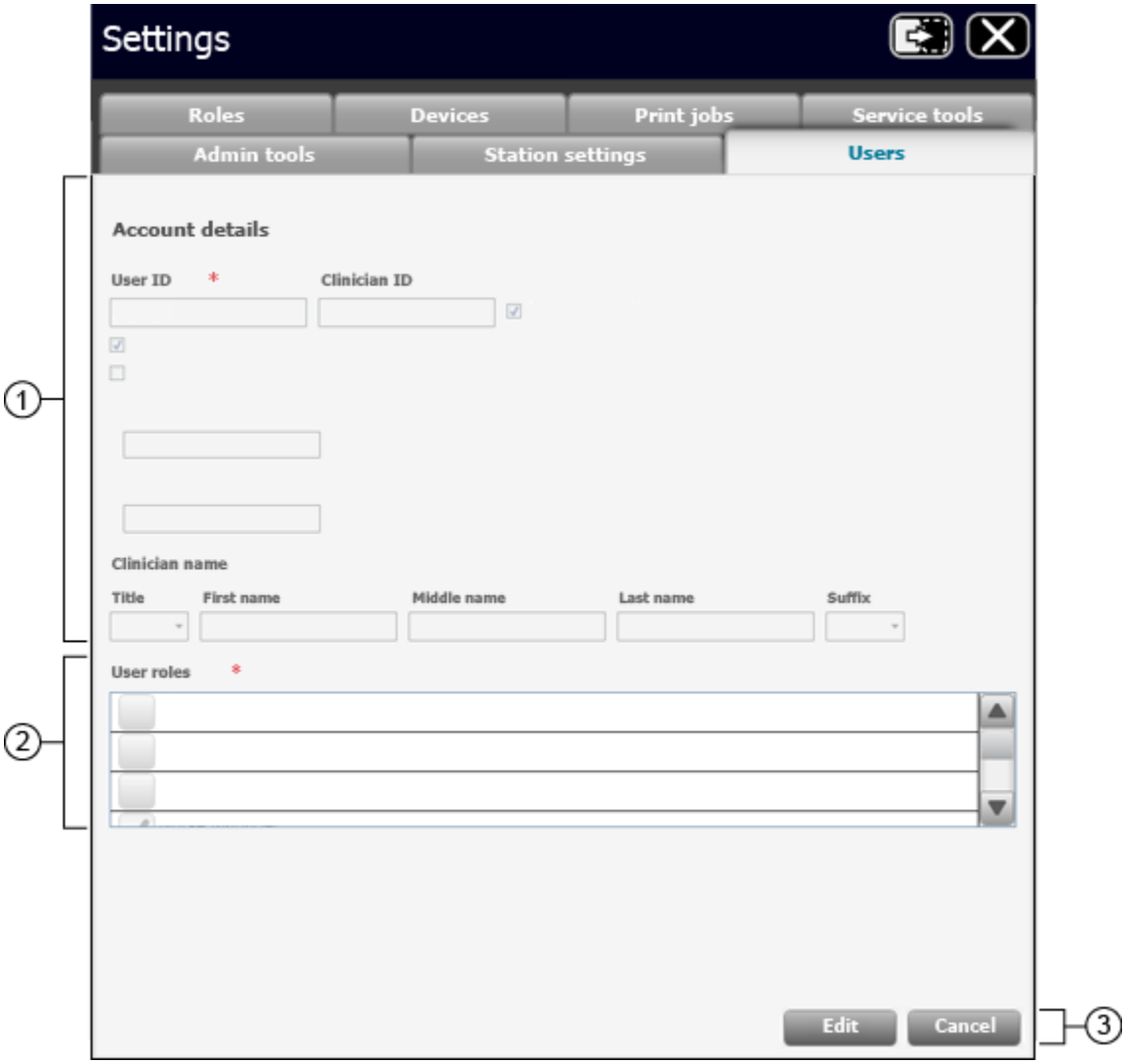
4. Click **Edit** to edit the alarm audio settings.

   Click **Save** to save any changes.

   Click **Cancel** to cancel any changes made.

Users tab

The Users tab allows you to create and maintain users and user data, including password settings.



1. This area displays a list of central station users.

2. This area displays a list of user roles.

3. Click **Edit** to edit a user.

   Click **Cancel** to cancel any changes made to the selected item.

General maintenance

Make sure that you routinely perform general maintenance and equipment safety checks on your central station.

Daily inspection

WARNING Ensure that no headphones or headphone adapters are connected to the headphone jack of your computer. A connection in the headphone jack of a computer will cancel speaker output for any audible alarms associated with the central station. Make this inspection on a daily basis.

WARNING Ensure that all audio cables are installed and connected and that the volume settings are not set too low or are not set to mute as these factors may cause you to miss audible alarms generated from the central station. Make this inspection on a daily basis.

Contact your biomedical engineering group or Hillrom Technical Support for assistance.

Central station general maintenance

General preventive maintenance consists of basic cleaning of equipment, inspection, and verification of the equipment and system operation. Only a trained biomedical engineer should perform these tasks.

Perform general preventative maintenance according to the following schedules:

Service activity	Frequency	Component	Action
Cleaning and maintenance	Annually	CPU	• Power down the CPU. • Open the CPU case and remove any dust build up.
		Display	• Power down the display. • Clean the display and the control buttons.
		Keyboard	General cleaning.
		Mouse	• Disassemble the mouse. • Remove any dust or debris build up.

			• General cleaning.
		Printers	• Clean external cooling vents. • Refer to the printer instructions for use for additional cleaning and maintenance information.

CAUTION Use only approved cleaning solutions according to your facility's guidelines and the manufacturer's recommendations.

Service activity	Frequency	Component	Action
Inspection	Bi-annually	CPU	Visually inspect cables, connectors, and indicators.
		Display	• Visually inspect cables, connectors, and indicators. • Inspect display quality and settings, such as brightness and contrast.
		Keyboard	Visually inspect.
		Mouse	Test the function of rollers and control buttons.
		Printers	• Run the on-board print quality tests. • Visually inspect display LEDs, connector cables, and controls.

Service

For service and product assistance, please contact Hillrom Technical Support: hillrom.com/en-us/about-us/locations/.

Disposal

Delete all existing data related to patients/hospital/clinic/doctor. Data backup may be performed prior to deletion.

Customers must adhere to all federal, state, regional, and/or local laws and regulations as they pertain to the safe disposal of medical devices and accessories. If in doubt, the user of the device should first contact Hillrom Technical Support for guidance on safe disposal protocols.

Troubleshooting

This section presents tables of information to help you troubleshoot issues on the central station.

To use these tables, locate the specific problem with your central station in the left column of the table. The remainder of the row explains possible causes and suggests actions that can resolve the issue.

Display

Issue	Possible cause	Suggested action
The central station display is blank	The cable for the display is not connected	Connect the monitor display cables.
	The display is not powered on	Power on the display.

Audio

Issue	Possible cause	Suggested action
No audible alarm tones are coming from the central station display	The display is muted	Look for a mute button on the display and press it to restore sound.
	The audio cables are disconnected	Connect the audio cables.
	Headphones are connected to the PC headphone jack	Disconnect the headphones.

Connectivity

Issue	Possible cause	Suggested action
A patient device does not appear in the central station Waiting area	The device is not connected to the network	See the device instructions for use.

Issue	Possible cause	Suggested action
	Network or wireless connection issues	Contact your network administrator.
	The device is no longer working	See the device instructions for use.
Communication between the device and the central station has been lost	The device is not connected to the network	See the device instructions for use.
	The device is no longer working	See the device instructions for use.
	Network or wireless connection issues	Contact your network administrator.
	The central station is not connected to the network	Contact your network administrator.

Software

Issue	Possible cause	Suggested action
You cannot log into the central station	You have been locked out of the central station	Contact your network administrator to reset your central station password.
The central station is not responding or is not running properly	Software issues	Contact your biomedical engineer to discuss a potential system restart to resolve the issue.
	Power loss	Wait for the system to automatically restart.
		Contact your biomedical engineer.
	Software restart	Contact your biomedical engineer.

Guidance and manufacturer's declaration

EMC compliance

Special precautions concerning electromagnetic compatibility (EMC) must be taken for all medical electrical equipment. Connex CS is a software-only device intended to be used in a system that complies with IEC 60601-1-2.

- All medical electrical equipment must be installed and put into service in accordance with the EMC information provided in this document, the *Welch Allyn Connex® Vital Signs Monitor 6000 Series Directions for use*, the *Welch Allyn Connex® Integrated Wall System Directions for use*, and the *Welch Allyn Connex® Spot Monitor Instructions for use*.
- Portable and mobile RF communications equipment can affect the behavior of medical electrical equipment.
- It is not safe to operate the central station in the presence of high-frequency surgical equipment.
- It is good practice to avoid using the central station in extremely close proximity to other equipment.