

Mobile Viewer

Operator's Manual

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- Revision: 5.0

WARNING

- **Federal Law (USA) restricts this device to sale by or on the order of a physician or other practitioner licensed by U.S. state law to use or order the use of this device.**
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Preface

Manual Purpose

This manual contains the instructions necessary to operate the product safely and in accordance with its function and intended use. Observance of this manual is a prerequisite for proper product performance and correct operation and ensures patient and operator safety.

This manual is based on the maximum configuration and therefore some contents may not apply to your product. If you have any question, please contact Mindray.

This manual is an integral part of the product. It should always be kept close to the equipment so that it can be obtained conveniently when needed.

Intended Audience

This manual is geared for clinical professionals who are expected to have a working knowledge of medical procedures, practices and terminology as required for monitoring of critically ill patients.

Illustrations

All illustrations in this manual serve as examples only. They may not necessarily reflect the setup or data displayed on your equipment.

Conventions

- *Italic text* is used in this manual to quote the referenced manuals, chapters, sections and formulas.
- **Bold text** is used to indicate the screen texts and names of hard keys.
- → is used to indicate operational procedures.

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1 Safety

1.1 Safety Information

WARNING

- Indicates a potential hazard or unsafe practice that, if not avoided, could result in death or serious injury.
-

CAUTION

- Indicates a potential hazard or unsafe practice that, if not avoided, could result in minor personal injury or product/property damage.
-

NOTE

- Provides application tips or other useful information to ensure that you get the most from your product.
-

1.1.1 Warnings

WARNING

- The user of the equipment should receive sufficient training. Anyone unauthorized or untrained must not perform any operation on it.
 - To avoid inadvertent disconnection, route all cables in a way to prevent a stumbling hazard. Wrap and secure excess cabling to avoid risk of entanglement or strangulation by patients or personnel.
 - When disposing of the package material, observe applicable local or hospital's waste control regulations and keep it out of children's reach.
 - Before connecting the equipment to the power line, check that the voltage and frequency ratings of the power line are the same as those indicated on the equipment's label or in this manual.
-

1.1.2 Cautions

CAUTION

- The hospital should provide an Uninterruptible Power Supply (UPS) to the Mobile Server. If the Mobile Server system is powered off unexpectedly, the system may become abnormal and fail to operate properly when it is turned on next time or even lead to a more severe consequence.
 - The Mobile Server system should be maintained every 3 to 6 months. Continuous operation for a long term may cause the system to operate abnormally.
 - Always install or carry the equipment properly to avoid damage caused by drop, impact, strong vibration or other mechanical force.
-

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2 Overview

2.1 Overview

The Mobile Viewer is a mobile application independent of the Central Monitoring System, supporting Android and iOS systems. Doctors, nurses and other medical personnel can use Mobile Viewer to view the data from patient monitors, telemetry devices, and other monitoring devices admitted by the BeneVision Central Monitoring System (hereinafter referred to as the CMS).

The Mobile Viewer installation for Android and iOS clients are the same, only installation screenshots for Android client are taken for reference in this manual.

The Mobile Server provides monitoring data to the Mobile Viewer and acts as an interface to the BeneVision CMS. For details on the Mobile Server, see Mobile Server Installation Guide (P/N: 046-011066-00).

WARNING

- **The Mobile Viewer is not intended for real-time or primary monitoring. It cannot be used as a device for issuing alarms. There is no audible alarm sound in the Mobile Viewer, and all the data is delayed. Always refer to your primary monitoring source for current information, real-time patient data and combine this data with personal clinical observation of the patient before administering interventions.**
-

2.2 Installation Requirements

2.2.1 For Android Client

The installation requirements for Android client are shown as below.

Item	Requirement
Platform	Cell phone whose operating system is Android 4.4 or above
CPU	1.3GHz or above, quad core or above
RAM	1.5GB or above
Screen resolution	1920×1080 recommended

Table 2-1 Requirements for Android Client

2.2.2 For iOS Client

The installation requirements for iOS client are shown as below.

Item	Requirement
Platform	Cell phone whose operating system is iOS 9.2 or above
iPhone	iPhone 6, iPhone 6 Plus or above
iPad	iPad mini2 or above

Table 2-2 Requirements for iOS Client

2.3 Installing the Mobile Viewer

2.3.1 For Android Client

To install the Mobile Viewer, follow this procedure:


1. From the Google Play Store, search for **Mindray Mobile Viewer**.
2. Select **INSTALL**.

2.3.2 For iOS Client

To install the Mobile Viewer, follow this procedure:

1. From the Apple AppStore, search for **Mindray Mobile Viewer**.
2. Select **INSTALL**.

2.4 Starting the Mobile Viewer

Select the Mobile Viewer icon  to start the application, as shown in Figure 2-1.

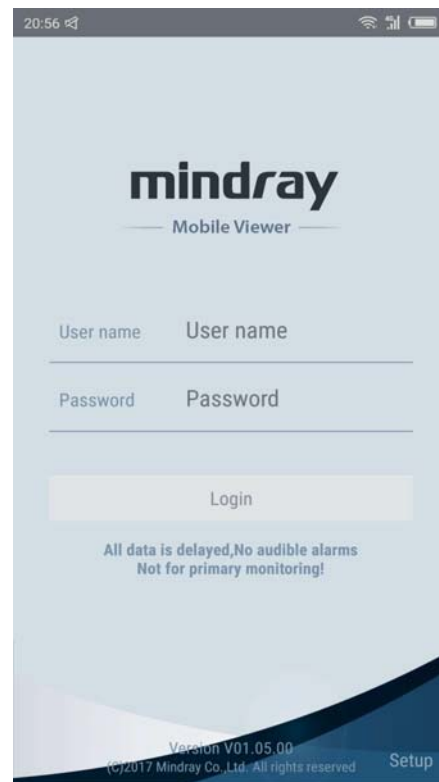


Figure 2-1 Example Mobile Viewer Login Screen

NOTE

- Before using Mobile Viewer for the first time, first configure this application by following steps in Section

3 Basic Operations

3.1 Settings

1. Select **Setup** on the login screen to enter the **Setup** screen.

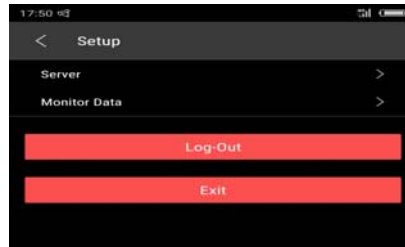


Figure 3-1 Example Setup Screen

2. Set the required items.

NOTE

- If you select the **Log Out** button, this login will be canceled. User names and passwords saved locally will also be deleted.
 - If you select the **Exit** button, Mobile Viewer will be exited.
-

3.1.1 Setting Server

1. Select **Server** on the setup screen.

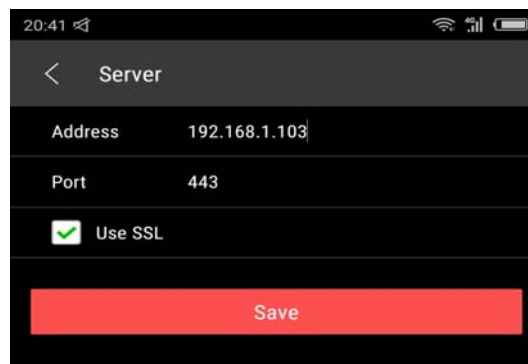


Figure 3-2 Example Server Setup

2. Enter the server domain name or IP address in **IP address**, e.g., www.mindray.com or 10.48.11.1.
3. Enter the number of port for communicating with the server in **Port**. The default value is 443.
4. If encrypted communication is not adopted, cancel selecting **Use SSL**. The default port number for not using encrypted communication is 80.
5. After entry, select **Save**. The screen displays **Server setting updated, please login**, indicating that the setting has been saved. After that, the system goes to the login screen.

NOTE

- If encrypted communication is adopted and login failure is prompted, clear the data and cache of this application from system settings or uninstall and reinstall this application, and try it again.
-

3.1.2 Setting Monitor Data

1. Select **Monitor Data** on the setup screen.

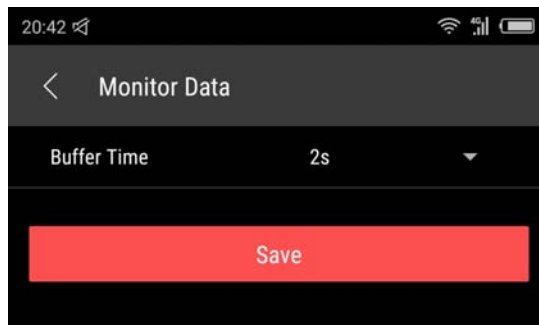


Figure 3-3 Example of Setting Monitor Data

Buffer Time indicates the cache time for viewing real-time waveform, including options such as 0s, 2s, 4s, and 6s. If **0s** is selected, there is no cache, and the waveform is displayed immediately after being obtained from the server; if **2s** is selected, the waveform will be displayed after the waveform of 2s is obtained from the server.

2. After setting, select **Save**. If the system prompts **Monitor data setting updated**, the settings have been saved.

3.2 Login

Enter **User name** and **Password** on the login screen, select **Login** to perform the login operation. If the verification succeeds, the system goes to the home screen **My Patients**.

NOTE

- To enter **Demo mode**, use **demo** as the **User Name** and **Password**.

3.3 Log-Out

Select **Log-Out** on the setup screen to log out.

3.4 Patient Selection Mode

You can set **Patient Selection Mode** to **Manual** or **Care Group**.

- When it is set to **Manual**, you need to select a patient on the **Patients Management** screen.
- When it is set to **Care Group**, patients are automatically managed according to the care group followed.

When you log on to the Mobile Viewer for the first time, **Manual** defaults to be selected as the patient selection mode..

3.4.1 Selecting a Department

Before configuring **Patient Selection Mode**, you need to follow the desired department.

To do so, follow this procedure:

1. Click the  button on the **My Patients** screen. The setup screen is as shown below.

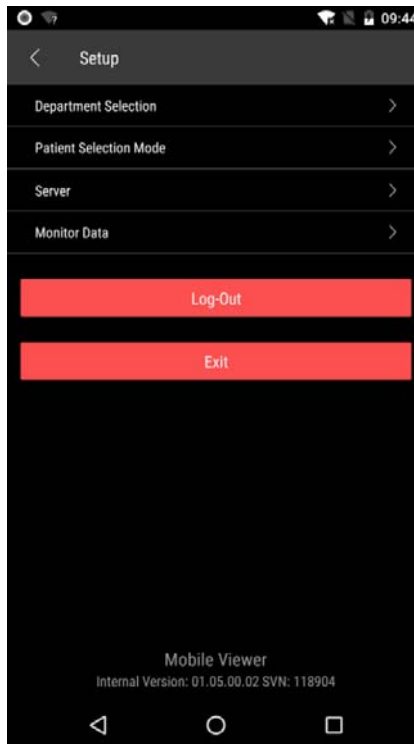


Figure 3-4 Example Mobile Viewer Setup Screen

2. Select **Department Selection**. The **Department Selection** screen is displayed as shown below.



Figure 3-5 Example Department Selection Screen

3. Select or unselect the checkbox to follow or unfollow a department.

3.4.2 Patient Selection in Manual Mode

3.4.2.1 Setting Patient Selection Mode to Manual

To set **Patient Selection Mode** to **Manual**, follow this procedure:

1. Click the  button on the **My Patients** screen. The **Setup** screen is displayed.
2. Select **Patient Selection Mode**.

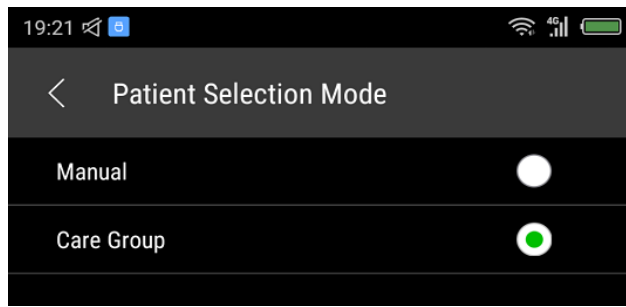


Figure 3-6 Example Patient Selection Mode Screen

3. Select **Manual**.

3.4.2.2 Following/Unfollowing Patients

Because no patients have been selected at the first time of login, the **My Patients** screen is blank.

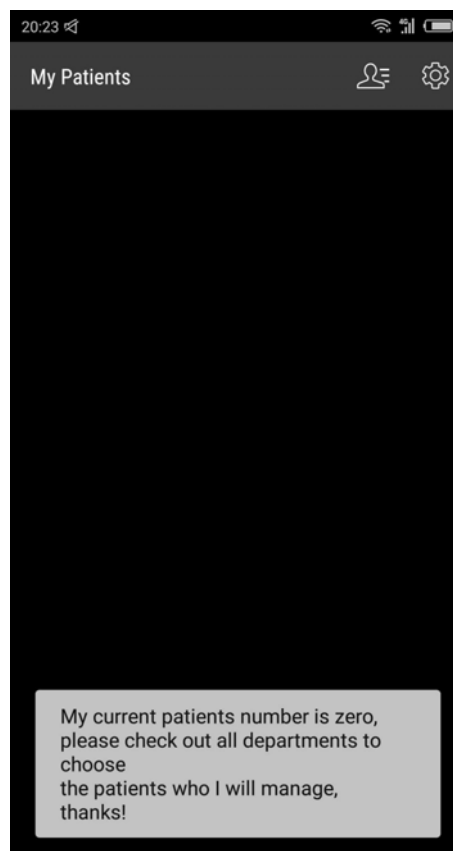



Figure 3-7 Example My Patients Screen

1. Select the  icon on the toolbar of **My Patients** screen to enter the **Patients Management** screen. All the patients which are authorized to view are displayed by grouping of departments.
2. Select or unselect the checkbox on the right of a patient to follow/unfollow this patient. A maximum of 32 patients can be followed; select anywhere on the left of the check box of a patient to view the real-time monitoring parameter and waveform of this patient. For details, see **3.6 Monitoring a Single Patient**.

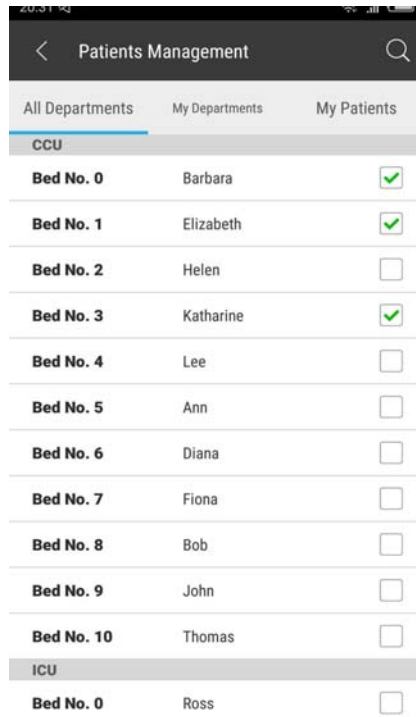


Figure 3-8 Example Patients Management Screen

- Sliding the **All Departments** tab to left goes to the **My Departments** tab. This tab displays the list of patients under the departments selected on the **Department Selection** screen.

Select or unselect the checkbox on the right of a patient to follow/unfollow this patient. A maximum of 32 patients can be followed; select anywhere on the left of the check box of a patient to view the real-time monitoring parameter and waveform of this patient. For details, see **3.6 Monitoring a Single Patient**.

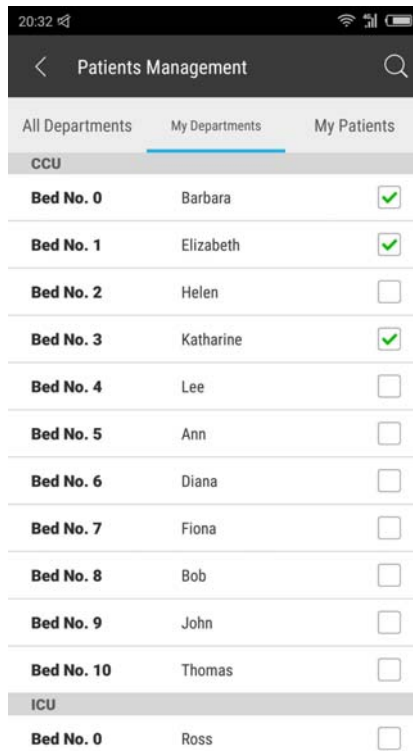




Figure 3-9 Example My Departments Tab

NOTE

- If you have not selected a department on the **Department Selection** screen, the **My Departments** tab is blank.
4. Sliding the **My Departments** tab to left goes to the **My Patients** tab. This tab displays the list of currently followed patients. Slide leftward on a patient to display . You can select  to unfollow this patient.

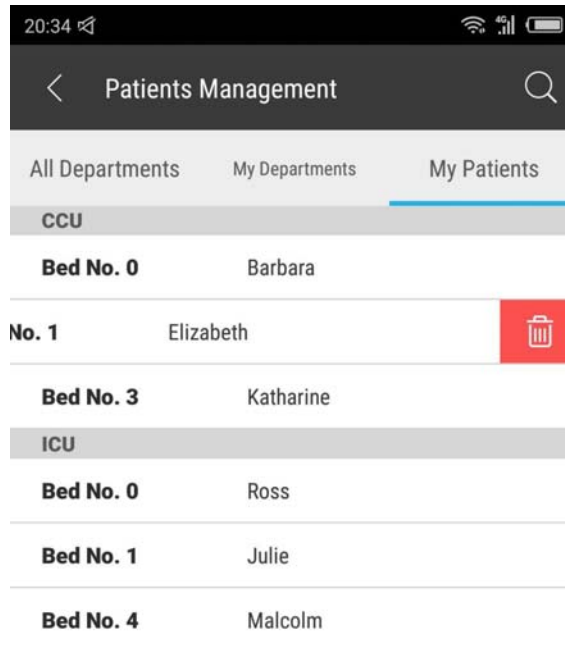




Figure 3-10 Example My Patients Screen

3.4.2.3 Searching Patients

To search patients, follow this procedure:

1. Select the  icon on the toolbar of **Patients Management** to enter the patient-searching screen.
2. Enter the patient's name, bed number or room number in the search box, and select **Search**. The search result will be displayed below. You can perform following/unfollowing operation in the search result, or select the  icon in the search box to clear the entered content in the search box.

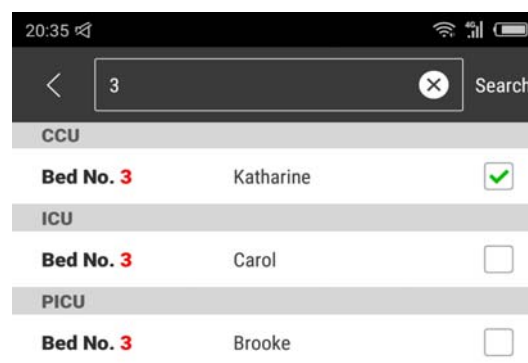



Figure 3-11 Example Patients Searching Screen

3.4.3 Patient Selection in Care Group Mode

To set **Patient Selection Mode** to **Care Group**, follow this procedure:

1. Click the  button on the **My Patients** screen. The **Setup** screen is displayed.
2. Set **Patient Selection Mode** to **Care Group**.
Care groups are displayed in the form of "department+shift".

3. Select or unselect the checkbox on the right side of a care group to follow or unfollow a care group, as shown below.

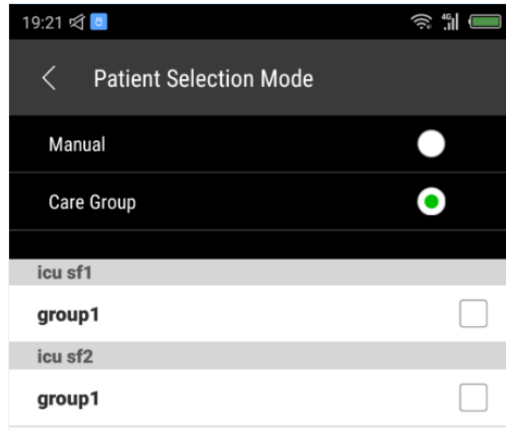



Figure 3-12 Example Care Group Selection Screen

When you return to **My Patients** screen, the patients selected for care groups are displayed. Besides, the  icon is not displayed in the tool bar of **My Patients** screen.

NOTE

- **The care group list only displays care groups for departments selected in the Department Selection tab and the selected care groups. Therefore, before selecting a care group, select a department in the Department Selection tab. Otherwise, no care group is displayed.**
- **When care groups are configured via the CMS, check that the departments where care groups are located are configured. Otherwise, the configured care group cannot be displayed at the Mobile Viewer.**
- **If you have unselected a department in the Department Selection tab, care groups for this department are unfollowed simultaneously.**
- **Patient Selection Mode cannot be set to Care Group in Demo mode.**

3.5 Monitoring Multiple Patients

3.5.1 Viewing Parameters

Choose either of the following ways to view parameters and alarm messages of followed patients,

- Select the patients that need to be followed in the **All Patients** tab or **My Departments** tab on the patient management screen,
- After selecting the care groups that need to be followed on the **Patient Selection Mode** screen, return to **My Patients** home screen.

In the area of each patient, the patient's personal information (the bed No., name, etc.) is displayed on the upper left side, and the alarm message of this patient is on the right; the parameter area is at the lower part. You can drag leftward and rightward in the parameter area to view more parameters. If a parameter has a background color and blinks, this parameter is in the alarm status currently. If the parameter is in the hollow style such as HR value 201 in Figure 3-13, it indicates that this parameter value is unreliable.



Figure 3-13 Example Multiple Patients Monitoring Screen

3.5.2 Viewing Alarm Messages

The latest alarm message is displayed in the upper right corner of each patient's area. Select the alarm message to display the alarm message box and show more alarm messages. If there is "√" before a message, this alarm has been acknowledged; if time is displayed on the right of the message, the time is the time when the alarm is triggered.

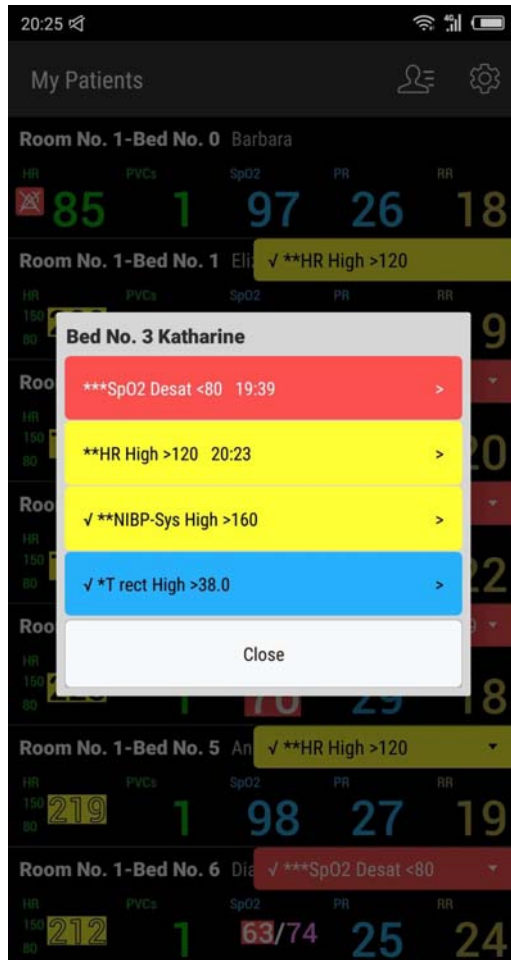


Figure 3-14 Example Screen of Viewing Alarm Messages

You can select an alarm message to view alarm details (details not provided for technical alarms). You can drag leftward and rightward in the parameter area and waveform area to view more details.

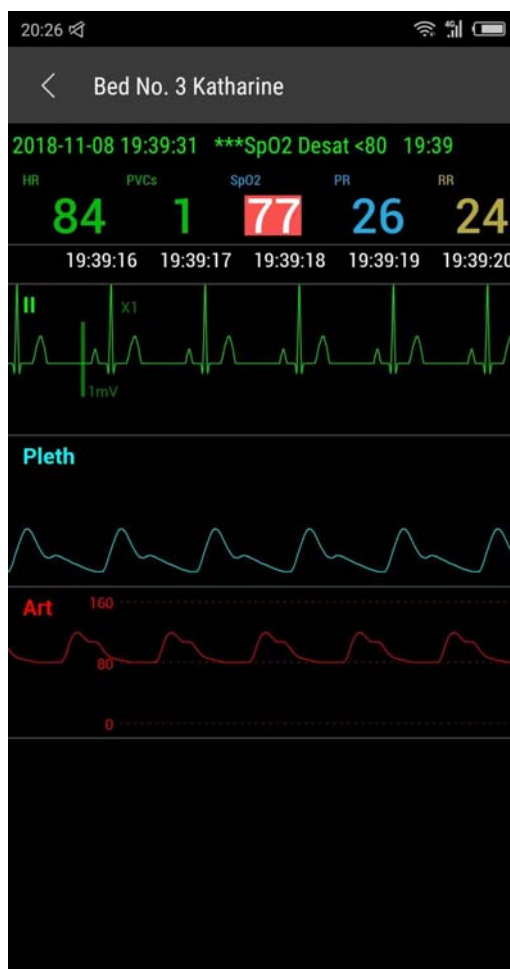


Figure 3-15 Example Alarm Details

3.6 Monitoring a Single Patient

Select a patient on the **My Patients**, **All Departments**, or **My Departments** screen to access the monitoring screen of this patient. This screen consists of the **View Bed** and **Event Review** tabs.



Figure 3-16 Example Single Patient Screen

3.6.1 View Bed

The View Bed screen contains the alarm area, parameter area, and waveform area from top down.



- Alarm area: It displays the latest alarm message. You can select to view more alarms and alarm details.
- Parameter area: It displays the real-time parameters. You can drag leftward and rightward to view more parameters. If a parameter has a background color and blinks, this parameter is in the alarm status currently. If the parameter is in the hollow style, this parameter is unreliable.
- Waveform area
 - ◆ For Android cell phones: It displays the real-time waveform. Select  to freeze the waveform and change the waveform background to gray. You can drag the waveform leftward to view earlier waveforms. Select this button again to cancel the freezing operation.
 - ◆ For iPhones: The  icon is not displayed. You can free waveforms either by double clicking real-time waveforms or touching and holding the real-time waveform area. If you wish to unfreeze waveforms, double click or touch and hold the frozen waveform area.



Figure 3-17 Example View Bed Screen

3.6.2 Event Review

Events of this patient can be reviewed on this screen. When **Event Level** is selected for the first time, events will be sorted in the descending order of priority; if it is selected again, events will be sorted in the ascending order of priority. When **Event Time** is selected for the first time, events will be sorted in the descending order of time; if it is selected again, events will be sorted in the ascending order of time.

Select an event to view details of this event. It is the same as the operation of viewing alarm details.

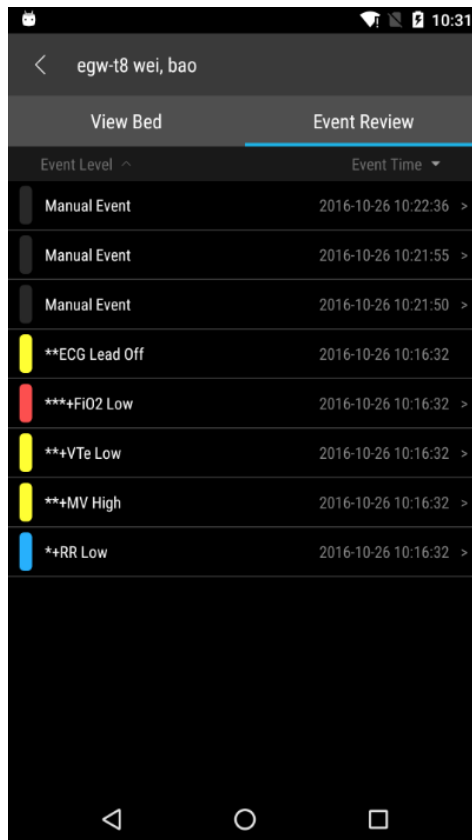


Figure 3-18 Example Event Review Screen

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4 Troubleshooting

4.1 Failed to Log on to Mobile Viewer

Please try the following operations:

- Check whether the server IP address and port number in Mobile Viewer settings are configured correctly. If the configuration is correct, try to open `http://Server:port/index.html` (Server is the IP address or domain name of the server, and port is the port number of the server) in the mobile phone browser.
 - ◆ If “It works!” is displayed, the network is normal; otherwise check whether the cellular data or Wi-Fi connection is normal or whether the corresponding port is opened for the firewall of Mobile Server. If the network connection is normal, check whether the user name or password is correct.
 - ◆ If encrypted communication is adopted and login failure is prompted, clear the data and cache of this application from system settings or uninstall and reinstall this application, and try it again.
- If multiple users use the same account, contact your administrator to check if the local account or domain account of the server is locked. Accounts are locked when other users made several attempts to log in using a wrong password, If this is the cause of the problem, we suggest that the administrator creates accounts for every user or change the account-lock security policy.

4.2 The List of My Patients Is Blank after Logging to Mobile Viewer

Please try the following operations:

- Follow patients or care groups. For how to follow them, see *3.4.2.2 Following/Unfollowing Patients* and *3.4.3 Patient Selection in Care Group Mode*.
- If the patient selection mode is care group, ensure that the shift of care groups is correct.

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