# ePM 10M/ePM 12M Patient Monitor

Quick Reference Guide




mindray
NORTH AMERICA

**NOTE:** This Quick Reference Guide is not intended as a replacement to the Operating Instructions. This document is a guideline only to be used as an aid to comprehensive Inservice Training.

**NOTE:**  indicates a feature that can be configured and performed on both the monitor and the target CMS connected.

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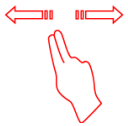
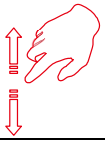
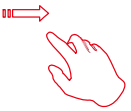
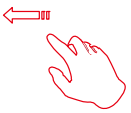
## QUICK KEYS

| | | | |
|---|---|---|---|
|  | **Main Menu**<br>Enters the main menu. |  | **More**<br>Shows more quick keys. |
|  | **Alarm Setup**<br>Enters the **Alarm** dialog. |  | **Alarm Reset**<br>Acknowledges ongoing alarms and resets the alarm system. |
|  | **Alarm Pause**<br>Pauses the physiological alarm system. |  | **Audio Pause**<br>Pauses alarm tone. |
|  | **Review**<br>Enters the **Review** dialog to review historical data. |  | **Standby**<br>Enters Standby mode. |
|  | **Patient Management**<br>Enters the **Patient Management** dialog. |  | **Screen Setup**<br>Enters the **Screen Setup** dialog. |
|  | **NIBP Start/Stop**<br>Starts an NIBP measurement or stops the current NIBP measurement. |  | **NIBP Stop All**<br>Stops all NIBP measurements. |
|  | **NIBP STAT**<br>Starts a five-minute continuous NIBP measurement. |  | **NIBP Measure**<br>Opens the **NIBP Measure** interval options. |
|  | **Intubation Mode**<br>Enters the intubation mode. |  | **Venipuncture**<br>Inflates the NIBP cuff to help venous puncture. |
|  | **Zero IBP**<br>Enters the **Zero IBP** dialog. |  | **PAWP**<br>Opens the **PAWP** screen. |
|  | **Parameters Setup**<br>Enters the **Parameters Setup** dialog. |  | **Remote View**<br>Opens the **Remote View** screen to view other patients. |

| | | | |
|---|---|---|---|
|  | **Manual Event**<br>Manually saves an event into the Events list. |  | **Minitrends**<br>Opens the **Minitrends** screen. |
|  | **ECG Lead/Gain**<br>Enters the **ECG Lead/Gain** dialog. |  | **Night Mode**<br>Enters Night mode. |
|  | **Volume**<br>Enters the **Volume** dialog. |  | **Freeze**<br>Freezes waveforms. |
|  | **Calculations**<br>Enters the **Calculations** dialog. |  | **Load Config**<br>Enters the **Load Config** dialog. |
|  | **Print**<br>Starts printing a real-time report. |  | **Record**<br>Starts/Stops a recording. |
|  | **End Case Report**<br>Prints the selected end case reports. |  | **GCS**<br>Enters the **GCS** dialog. |
|  | **Discharge Patient**<br>Enters the **Discharge Patient** dialog to discharge the patient and restore pre-configured default settings. |  | **Discharged Patients**<br>Enters the **Discharged Patients** dialog and displays previously discharged patients. |
|  | **Privacy Mode**<br>Enters Privacy mode. |  | **EWS**<br>Opens the **EWS** screen. |
|  | **CPB Mode**<br>Enters the CPB mode. |  | **ECG Full-Screen**<br>Opens the ECG full screen. |
|  | **OxyCRG**<br>Opens the **OxyCRG** screen. | | |

## GESTURES

The following gestures on the touchscreen are enabled:

| | |
|---|---|
|  | Swipe from top to bottom across the screen with two fingers to access the **Discharge Patient** dialog box. |
|  | Swipe from left to right or right to left across the screen with two fingers to change the screen between three screens (e.g. normal screen, minitrends screen and big numerics screen). |
|  | Swipe up and down on the touchscreen with a single finger to scroll through a list and a menu. |
|  | Swipe right on the screen with a single finger to show or expand the minitrends screen or the EWS screen. |
|  | Swipe left on the screen with a single finger to contract or hide the minitrends screen or the EWS screen. |

## PATIENT SETUP

### Admit Patient And Enter Demographics (Manual Entry)

The **Patient Management** dialog allows the clinician to admit a patient and enter patient demographics. Admitting also restores default (preconfigured) settings and clears the previous patient's information.

To manually admit a patient on the ePM 10M/ePM 12M bedside monitor:

a. Use any of the following methods to enter the **Patient Management** dialog:

- Select the patient information area at the top left corner of the screen.
- Select the **Patient Management** quick key.
- Select the **Main Menu** quick key, and select **Patient Management** from the **Patient Management** column.
- Select **Patient Management** from the discharge screen.

b. Select **Patient Category** and select **OK** to confirm.

c. Select patient field(s) and enter patient information as required using the onscreen keyboard.

d. Select button to accept the information.

e. Select **OK** to confirm and return to the main screen.

**NOTE:** If the patient's barcode is scanned, the medical number and associated information is entered into the monitor.

**NOTE:** After a patient is manually discharged, the monitor automatically admit a new patient.

**NOTE:** The monitor prompts to admit a new patient in the following situations:

- The monitor automatically discharges the previous patient when it is turned off for the selected time period*. The clinician will be prompted to admit a new patient once the monitor is started up.
- If the monitor has not detected certain patient vital signs (ECG, SpO2, PR, RR, NIBP) for 30 minutes, the clinician will be prompted to admit a new patient once continuous monitoring is detected.

***Time period configurable.**

### Enter Demographics from the Central Monitoring System (CMS)

If the ePM 10M/ePM 12M bedside monitor is connected to the CMS, entering patient information at the CMS will enter the patient information into the ePM 10M/ePM 12M bedside monitor. In addition, entering demographic information into the ePM 10M/ePM 12M monitor will automatically enter information into the CMS.

### Enter Demographics from the ADT Database

If the ePM 10M/ePM 12M bedside monitor is connected to a hospital's ADT server the patient demographic information can be imported into the ePM 10M/ePM 12M bedside monitor.

To import patient information from the Hospital's ADT server:

a. Enter the **Find Patient** dialog in either of the following ways:
   - Select the **Main Menu** quick key, and select **Find Patient** from the **Patient Management** column.
   - Select **Find Patient** from the **Patient Management** dialog.

b. Input query criteria (e.g. patient ID).

c. Select **Search** to display a list of search results.

d. Select a patient from the patient list.

e. Select adjacent to the patient information to import that patient's information and return to patient management.

f. Select **OK** to confirm and return to the main screen.

**NOTE:** Find Patient from the ADT server is only enabled if **ADT Query** is supported.

**NOTE:** Loading patient information from the ADT server updates only patient information in the ePM 10M/ePM 12M bedside monitor. The patient's monitoring data is unaffected.

### Discharge a Patient

The Discharge function clears all patient information and restores default (preconfigured) settings.

Use any of the following methods to discharge a patient from the ePM 10M/ePM 12M bedside monitor:

- Swipe down the touchscreen with two fingers, and select **Discharge** to confirm.
- Select the **Discharge Patient** quick key, and select **Discharge** to confirm.
- Select the **Patient Management** quick key, select **Discharge Patient**, and select **Discharge** to confirm.
- Select the **Main Menu** quick key, select **Discharge** from the **Patient Management** column, and select **Discharge** to confirm.
- Select **Discharge Patient** from the standby screen, and select **Discharge** to confirm.

## STANDBY

### Enter Standby

The Standby function allows the clinician to suspend monitoring on a patient. While in standby, the patient is not being monitored; however, all patient data and patient settings are preserved.

To place a patient into Standby on the ePM 10M/ePM 12M bedside monitor:

a. Select the **Standby** quick key.

Or

a. Select the **Main Menu** quick key, and select **Standby** from the **Patient Management** column.

b. Set the desired location from the drop down list to define where the patient is when the monitor enters the Standby mode.

c. Select **OK** to confirm.

### Resume Monitoring

To remove a patient from Standby and resume monitoring on the ePM 10M/ePM 12M bedside monitor, select **Resume Monitor**.

When a patient is discharged, the monitor automatically enters the Discharged mode. To resume monitoring from the Discharged screen, select **Monitor**.

## RECORD

### Realtime Waveforms

Use any of the following methods to record a waveform on the built-in recorder:

- Press the  hardkey on front of the recorder.
- Select  at the top left corner of a currently opened dialog (if available).
- Select the  hardkey on front of the monitor.

### Adjust Recorder's Waveforms

To adjust recorded waveforms on the built-in recorder:

a. Select the **Main Menu**  quick key.

b. Select **Record Setup** from the **Report** column.

c. Select **Waveform 1**.

d. Select the desired waveform from the drop down list or select off to turn off the waveform.

e. Repeat steps c and step d for remaining waveforms as necessary.

f. Select the **Main Menu**  quick key or  to return to the main screen.

## PRINT

### Realtime Waveforms (Laser printer connection required)

To print a real time report for a patient on the ePM 10M/ePM 12M bedside monitor:

a. Select the  quick key.

Or

a. Select the **Main Menu**  quick key, and select **Report Setup** from the **Report** column.

b. Select the **Realtime Report** tab.

c. Select **Current Waveforms**.

d. Select **Print**.

To print selected waveforms for a patient on the ePM 10M/ePM 12M bedside monitor:

a. Select the **Main Menu**  quick key, and select **Report Setup** from the **Report** column.

b. Select the **Realtime Report** tab.

c. Select **Selected Waveforms**.

d. Select the **Select Waveform** button.

e. Select the desired waveforms to add/delete from the selected list.

f. Select  to return to the previous page

g. Select **Print**.

### End Case Report

The following reports can be set as end case reports:

- ECG Report
- Realtime Report
- Tabular Trends Report
- Graphic Trend Report
- Alarm Limits Report

- Event Report

If **Print End Case Report** are enabled, the ePM 10M/ePM 12M bedside monitor will automatically print the selected reports when a patient is discharged.

To set reports to print as an End Case Report:

a. Select the **Main Menu** quick key, and select **End Case Report** from the **Report** column.

b. Select the **Select Reports** tab.

c. Set **Period**, and select the desired report.

d. Select the **Main Menu** quick key or to return to the main screen.

## ECG

### Adjust ECG Lead

The ePM 10M/ePM 12M bedside monitor allows the clinician to adjust the leads being viewed on the main screen.

To adjust ECG Leads:

a. Select the ECG numeric area or waveform area to enter the **ECG** dialog.

b. Select the **Setup** tab.

c. Verify **Lead Set** matches the lead type being used.

d. Select **ECG** to select the first ECG waveform and select the desired lead.

e. Repeat step d for remaining displayed leads.

f. Select the **Main Menu** quick key or to return to the main screen.

### Enable Pacemaker Detection

The ePM 10M/ePM 12M bedside monitor allows the clinician to enable pacemaker detection. The symbol is displayed when the pacemaker detection is enabled.

To enable the pacemaker detection on the ePM 10M/ePM 12M bedside monitor:

a. Select the ECG numeric area or waveform area to enter the **ECG** dialog.

b. Select the **Pacer** tab.

c. Set **Paced** to **Yes**.

d. Select the **Main Menu**  quick key or  to return to the main screen.

### Initiate ECG Relearn



To initiate ECG relearning manually on the ePM 10M/ePM 12M bedside monitor:

a. Select the ECG numeric area or waveform area to enter the **ECG** dialog.

b. Select **Relearn** at the bottom left corner of the dialog.

c. Select the **Main Menu**  quick key or  to return to the main screen.

### Initiate ST Analysis (Optional)

To initiate ST analysis on the ePM 10M/ePM 12M bedside monitor:

a. Select the ECG numeric area or waveform area to enter the **ECG** dialog.

b. Select the **ST** tab.

c. Select the **Setup** tab.

d. Enable **ST Analysis**.

e. Select the **Main Menu**  quick key or  to return to the main screen.

### Initiate QT Analysis (Optional)

To enable the QT monitoring on the ePM 10M/ePM 12M bedside monitor:

a. Select the ECG numeric area or waveform area to enter the **ECG** dialog.

b. Select the **QT** tab.

c. Select the **Setup** tab.

d. Enable **QT Analysis**.

e. Select the **Main Menu**  quick key or  to return to the main screen.

### Selecting Leads for QT Calculation

To select leads for QT calculation:

a. Select the QT numerics area, ECG numeric area, or ECG waveform area to enter the **ECG** dialog.

b. Select the **QT** tab.

c. Select the **Setup** tab.

d. Set **QT Leads**.

e. Select the **Main Menu** quick key or to return to the main screen.

## NIBP

### Initiate A Non-Invasive Blood Pressure Measurement (NIBP)

To initiate a NIBP measurement:

a. Press the **NIBP Start/Stop** hardkey.

Or

a. Select the NIBP numeric area on the main screen to access the **NIBP** dialog.

b. Select **Start NIBP**.

c. Select the **Main Menu** quick key or to return to the main screen.

### Stop Non-Invasive Blood Pressure Measurement (NIBP)

To stop the *current* NIBP measurements,

a. Press the **NIBP Start/Stop** hardkey during the NIBP measurement.

Or

a. Select the NIBP numeric area on the main screen to access the **NIBP** dialog.

b. Select **Stop NIBP**.

c. Select the **Main Menu** quick key or to return to the main screen.

To stop *all* NIBP measurements on a patient on the ePM 10M/ePM 12M bedside monitor:

a. Press the **NIBP Stop All** quick key.

Or

a. Select the NIBP numeric area to access the **NIBP** dialog.

b. Select **NIBP Stop All**.

c. Select the **Main Menu** quick key or to return to the main screen.

### Select NIBP Start Mode

Start mode defines how future NIBP measurements are initiated with the automatic measurement mode. To set the start mode,

a. Select the NIBP numeric area on the main screen to enter the **NIBP** dialog.

b. Select **Start Mode**.

- **Clock**: after the first measurement, the monitor automatically synchronizes NIBP automatic measurements with the real time clock. For example, if **Interval** is set to **20 min**, and NIBP auto measurement is started at 14:03, the next measurement will be taken at 14:20, and then at 14:40, 15:00, and so on.
- **Interval**: after the first measurement, the monitor automatically repeats measurements at set interval. For example, if **Interval** is set to **20 min**, and NIBP auto measurement is started at 14:03, the next measurement will be taken at 14:23, and then at 14:43, 15:03, and so on.

c. Select the **Main Menu**  quick key or  to return to the main screen.

### Set A Non-Invasive Blood Pressure Measurement Interval



The ePM 10M/ePM 12M bedside monitor allows the clinician to set a pre-configured interval for automatic NIBP measurement. To set an automatic interval on the ePM 10M/ePM 12M bedside monitor:

a. Select the **NIBP Measure**  quick key.

b. Select the desired interval.

- Intervals include: **1 min**, **2 min**, **2.5 min**, **3 min**, **5 min**, **10 min**, **15 min**, **20 min**, **30 min**, **1 h**, **1.5 h**, **2h**, **3h**, **4h**, **8h**: The monitor automatically measures NIBP based on the specified time interval.
- Select **Sequence** to automatically measure NIBP based on the customized sequence in the **Sequence** tab.

Or

a. Select the NIBP numeric area on the main screen to access the **NIBP** dialog.

b. Select **Interval** to select the desired interval from the dropdown list.

- Intervals include: **1 min**, **2 min**, **2.5 min**, **3 min**, **5 min**, **10 min**, **15 min**, **20 min**, **30 min**, **1 h**, **1.5 h**, **2h**, **3h**, **4h**, **8h**: The monitor automatically measures NIBP based on the specified time interval.
- Select **Sequence** to automatically measure NIBP based on the customized sequence in the **Sequence** tab.

c. Select the **Main Menu** quick key or to return to the main screen.

### Configure A Custom Sequence

To configure a custom sequence:

a. Select the NIBP numeric area on the main screen to access the **NIBP** dialog.

b. Set **Interval** to **Sequence**.

c. Select the **Sequence** tab.

d. Set **Duration** and **Interval** for each phase in the measurement cycle.

e. Select the **Main Menu** quick key or to return to the main screen.

### Factors that Affect Blood Pressure Measurement Accuracy

The accuracy of non-invasive blood pressure (BP) measurement has been shown to be affected by numerous factors. Some of the more important aspects (based on published literature) to consider while measuring BP are:

- The cuff should fit snugly, but with enough room for two fingers to be placed between the cuff and the patient's arm (on adults), and loosely on neonates with little or no air present within the cuff.
- Use the Guidance Table provided to select the proper size cuff. Too small a cuff has been shown to result in the overestimation of BP (systolic and diastolic) while too large a cuff results in the underestimation of BP.

Ensure that the cuff is wrapped directly over the patient's skin. BP measurement could be 10 to 40 mmHg higher or lower than actual when the cuff is applied over clothing.

- The cuff should be applied so that the center of the bladder in the cuff is over the brachial artery. Use the reference marker for ver.
- For best results, the cuff should be placed on the arm at heart level and the lower arm supported passively. Published data indicates that BP can

increase about 2 mmHg for every inch that the cuff is below heart level and decrease by the same amount if above heart level.

- Avoid compression or restriction of the pressure hose. Do not place the NIBP cuff on a limb that is being utilized for any other medical procedure, for example, an I.V. catheter.
- Have the patient sit quietly for several minutes before BP measurement and remain still during measurement to avoid unnecessary motion artifact. If the patient has not rested before measurement, BP could be elevated by 10 to 20 mmHg.
- Do not talk to the patient during BP measurement as talking has been shown to result in a 10 to 15 mmHg overestimation of BP.
- The patient's back and feet should be properly supported with the legs kept uncrossed. Unsupported back and feet could increase BP by up to 15 mmHg, while crossed legs could result in a 4 to 12 mmHg increase.
- Other factors that have been shown to result in an overestimation of BP are labored breathing (5 to 8 mmHg), full bladder (10 to 15 mmHg), pain (10 to 30 mmHg).

**Guidance Table**

| **Cuff Description** | **Limb Circumference** |
|---|---|
| Child | 10 - 19 cm |
| Small Adult | 18 - 26 cm |
| Adult | 25 - 35 cm |
| Large Adult | 33 - 47 cm |
| Thigh | 46 - 66 cm |
| Adult Long | 25 - 35 cm |
| Large Adult Long | 33 - 47 cm |

**References:**

1. American Association on Critical-Care Nurses (AACN): **Practice Alert, Non-Invasive Blood Pressure Monitoring** (April 2010)- http://www.aacn.org/wd/practice/docs/practicealerts/non-invasive-bp-monitoring.pdf?menu=aboutus
2. Pickering Thomas G, Hall John E, Appel Lawrence J, Falkner Bonita E, Graves John, Hill Martha N, Jones Daniel W, Kurtz Theodore, Sheps Sheldon G, Roccella Edward J. **Recommendations for blood pressure measurement in humans and experimental animals: Part 1: Blood pressure measurement in humans: A statement for professionals from the Subcommittee of Professional and Public Education of the American Heart Association Council on High Blood Pressure Research.** J Hypertens 2005; 45: 142-161.
3. O'Brien Eoin, Asmar Roland, Beilin Lawrie, Imai Yutaka, Mallion Jean-Michel, Mancia Giuseppe, Mengden Thomas, Myers Martin, Padfield Paul, Palatini Paolo, Parati Gianfranco, Pickering Thomas, Redon Josep, Staessen Jan, Stergiou George, Verdecchia Paolo. **European Society of Hypertension recommendations for conventional, ambulatory and home blood pressure measurement.** J Hypertens 2003; 21: 821-848.

## INVASIVE BLOOD PRESSURES (OPTIONAL)

The ePM 10M/ePM 12M bedside monitor allows a clinician to monitor up to 4 invasive blood pressures (IBP) simultaneously.

### Adjust Invasive Blood Pressure Label

Use one of the following methods to adjust the label on an invasive blood pressure:

a. Select the IBP parameter by:

- Main Menu

  -Select the **Main Menu**  quick key and select **Setup** from the **Parameters** column.

  -Select the Invasive Blood Pressure (ART, CVP, etc.).

  -Select the **Setup** tab.
- Waveform/Numeric area

  -Select the IBP waveform/numeric area.

  -Select the **Setup** tab.

b. Select **IBP Label** and adjust the label.

c. Select the **Main Menu** quick key or to return to the main screen.

**NOTE:** Insert the IBP Module as needed.

### Zero Invasive Blood Pressure

To zero an invasive blood pressure transducer on the ePM 10M/ePM 12M bedside monitor:

a. Insert IBP Module as needed.

b. Connect the invasive blood pressure cable to the invasive blood pressure transducer set.

c. Position transducer and open the invasive line in accordance with hospital policy.

d. Use one of the following methods to open the **Zero IBP** dialog:

- Press the →0← hardkey on the IBP module.
- Select the **Zero IBP** quick key.
- Select the IBP waveform or numeric area to open the **IBP** dialog and select **Zero**.

e. Select the **Main Menu** quick key or to return to the main screen.

f. Close the invasive line in accordance with hospital policy.

## ALARMS

### Setting Parameter Alarm Properties

The Alarm dialog allows the clinician to configure alarm properties on the ePM 10M/ePM 12M bedside monitor.

To adjust the parameter alarm properties on the ePM 10M/ePM 12M bedside monitor:

a. Use any of the following methods to enter the **Alarm** dialog:

- Select the **Alarm Setup** quick key.
- Select the **Main Menu** quick key, and select **Limits** from the **Alarm** column.
- Select the parameter's numeric area.

b. Select parameter (may require scrolling up or down) and select

- **On/Off** – to enable or disable parameter's alarm responses.

- Select **High** or **Low** limit and adjust value using the drop down value list
- **Priority** – to adjust the audio and visual alarm indicators. Level options include High (Red), Medium (Yellow), Low (Cyan) and Prompt (Black) (audio absent).
- **Alarm Output** – to activate an automatic recording/printing when the alarm occurs.

c. Select the **Main Menu** quick key or to return to the main screen.

### Changing Arrhythmia Alarm Settings

To adjust a patient's arrhythmia alarm on the ePM 10M/ePM 12M bedside monitor:

a. Select the **Alarm Setup** quick key, ECG waveform/numeric area or **Main Menu** quick key.

b. Select **Arrhythmia** tab.

c. Scroll and select individual arrhythmia.

d. Select

- **On/Off** – to enable or disable arrhythmia's alarm responses.
- **Priority** – to adjust the audio and visual alarm indicators. Level options include High (Red), Medium (Yellow), Low (Cyan) and Prompt (Black) (audio absent).

**NOTE:** If an alarm is locked, that alarm cannot be turned off or priority altered.

- **Alarm Output** – to activate an automatic recording/printing when the alarm occurs.

e. Select the **Main Menu** quick key or to return to the main screen.

To adjust a patient arrhythmia threshold setting on the ePM 10M/ePM 12M bedside monitor:

a. Select the **Alarm Setup** quick key, ECG waveform/numeric area or **Main Menu** quick key.

b. Select the **Arrhythmia** tab.

c. Select the **Threshold** tab.

d. Select arrhythmia threshold and adjust value using the drop down value list.

e. Select the **Main Menu** quick key or to return to the main screen.

### Disable Non-Lethal Arrhythmia Alarms

To disable all arrhythmia alarms *except lethal* arrhythmias on the ePM 10M/ePM 12M bedside monitor:

a. Select the **Alarm Setup** quick key, ECG waveform/numeric area or **Main Menu** quick key.

b. Select the **Arrhythmia** tab.

c. Select **Lethals Only**.

d. Select the **Main Menu** quick key or to return to the main screen.

### Accessing Help When Technical Alarms Occur

In the technical alarm list, alarm messages followed by **Detail** includes help information.

a. Select the technical alarm information area to enter the **Alarms** dialog.

b. Select the **Technical Alarms** tab.

c. Select the desired alarm.

d. Select the **Main Menu** quick key or to return to the main screen.

## RESET ALARMS

To reset ***an alarm for the duration of the alarm*** on the ePM 10M/ePM 12M bedside monitor, select the **Alarm Reset** quick key.

## PAUSE ALARMS/PAUSE ALARM TONES

To pause alarms and/or alarm tones on the ePM 10M/ePM 12M bedside monitor, press the **Alarm/Audio Pause** hardkey to pause all the alarms.

**WARNING:** Selecting alarm pause or audio pause may affect current and future alarms, including arrhythmias, depending on your department's configuration.

## SCREEN DISPLAY

To enter the screen selection dialog and adjust the main screen's layout on the ePM 10M/ePM 12M bedside monitor:

a. Use any of the following methods to enter the **Screen Setup** dialog:

- Select the **Screen Setup**  quick key.
- Select the **Main Menu**  quick key, and select **Choose Screen** from the **Display** column.

b. Select the desired screen.

- **Normal Screen:** Real time waveforms and parameter numerics on the main screen (Configurable).
- **Big Numerics:** Up to 6 waveforms and parameter numerics in an expanded view on the main screen (Configurable).
- **Minitrends:** Split screen with continuously displayed graphic minitrends on the left side and real time waveforms and parameter numerics on the main screen (Configurable).
- **OxyCRG:** Split screen with OxyCRG (HR trend, $SpO_2$ trend, and RR trend/RR waveform) on the lower portion of the main screen, real time waveforms on the upper portion of the main screen and parameter numerics on the right side of the main screen.
- **SpO2 Screen:** Split screen with tabular trends, $SpO_2$ statistics and NIBP numerics on the left side of the main screen, and real time waveforms and parameter numerics on the right side of the main screen.
- **Remote View:** Split screen with information from the remote bed on the left side and real time waveforms and parameter numerics from the host monitoring device on the main screen.
- **ECG Half-Screen:** (5 lead wire set): 7 Leads of ECG waveforms on the upper portion of the main screen, other real time waveforms on the lower portion of the main screen, and parameter numerics on the right side of the main screen.
- **ECG Full Screen:** (5 lead wire set): 7 leads of ECG waveforms on the left side of the main screen and parameter numerics on the right side of the main screen.
- **PAWP:** Split screen with the PAWP measurement screen on the left side and real time waveforms and parameter numerics on the main screen.

- **EWS (Optional):** Split screen with the **EWS** scoring tool on left side and real time waveform and parameter numerics on the main screen.

c. Select the **Main Menu**  quick key or  to return to the main screen.

**NOTE:** Parameter numerics and waveform display selections on the ePM 10M/ ePM 12M bedside monitor and Central Monitoring System are independent.

## REVIEW

### Tabular Trends

To display Tabular trends on a patient:

a. Use any of the following methods to enter the tabular trends review page:

- Select **Review**  quick key, and select the **Tabular Trends** tab.
- Select the **Main Menu**  quick key, and select **Tabular Trends** from the **Review** column.

b. Select **Trend Group** and specify trend category or select **Custom** for user defined parameters to be displayed.

c. Select **Interval** to specify the time interval to be displayed.

d. Select the **Main Menu**  quick key or  to return to the main screen.

To record Tabular trends to the built-in recorder:

a. Use any of the following methods to enter the tabular trends review page:

- Select **Review**  quick key, and select the **Tabular Trends** tab.
- Select the **Main Menu**  quick key, and select **Tabular Trends** from the **Review** column.

b. Select  and confirm specified time period.

c. Select **Record** to print to the built-in recorder.

d. Select the **Main Menu**  quick key or  to return to the main screen.

To print Tabular trends to the laser printer:

a. Use any of the following methods to enter the tabular trends review page:
   - Select **Review** quick key, and select the **Tabular Trends** tab.
   - Select the **Main Menu** quick key, and select **Tabular Trends** from the **Review** column.

b. Select and confirm specified settings.

c. Select **Print** to print to the laser printer.

d. Select the **Main Menu** quick key or to return to the main screen.

**Arrhythmia and Alarm Events**

The events review page stores 1000 physiological and arrhythmia.

To view and print an alarm event:

a. Use any of the following methods to enter the events review page:
   - Select the **Review** quick key, and select the **Events** tab.
   - Select the **Main Menu** quick key, and select **Events** from the **Review** column.

b. Scroll and select event.

c. Select **Detail** to view the details of selected events.

d. Select
   - to print to the built-in recorder.
   - to print to the laser printer.

e. Select the **Main Menu** quick key or to return to the main screen.

### Full Disclosure

The ePM 10M/ePM 12M bedside monitors have the ability to store up to 48 hours of configured waveforms and associated numeric information.

To adjust waveforms to be stored and print waveforms stored for a patient:

a. Use any of the following methods to enter the full disclosure review page:
   - Select the **Review** quick key, and select the **Full Disclosure** tab.
   - Select the **Main Menu** quick key, and select **Full Disclosure** from the **Review** column.

b. Select **Setup**.

c. Select the **Storage** tab and set the desired waveforms to be stored in the monitor.

d. Select the **Display(Maximum: 3)** tab and set the desired waveforms to be displayed on the Full Disclosure page.

e. Select to return to the **Full Disclosure** page.

f. Select **Detail** to view the details of selected waveforms.

g. Select
   - to print to the built-in recorder.
   - to print to the laser printer.

h. Select the **Main Menu** quick key or to return to the main screen.

### OxyCRG

The OxyCRG review page stores up to 48 hours of OxyCRG events.

To view and print an OxyCRG alarm event:

a. Use any of the following methods to enter the OxyCRG review page:
   - Select the **Review** quick key, and select the **OxyCRG** tab.
   - Select the **Main Menu** quick key, and select **OxyCRG** from the **Review** column.

b. Scroll and select event.

c. Select **Zoom** to set the resolution of events window.

d. Select and confirm specified settings.

e. Select **Print** to the laser printer.

f. Select the **Main Menu** quick key or to return to the main screen.

## VIEWING OTHER BEDS

### Entering the Remote View Screen

The clinician can observe alarm conditions and view real time physiological data from patients on other networked monitoring devices.

To enter the **Remote View** screen:

- Select the **Remote View** quick key.
- Select the **Main Menu** quick key, select **Choose Screen** from the **Display** column, and select **Remote View**.

### Adding a Bed

To add a remote bed (device):

a. Select **Select Bed** from the **Remote View** screen.

b. Select a desired department. All the beds under this department will be listed.

c. Select a desired empty bed tile from the A-W1 or A-W2 group. These beds can be displayed on the main screen in the Alarm Watch tiles.

d. Select a bed from the bed list. The selected bed will appear in the previously selected tile.

e. Repeat the step as necessary for A-W1 and A-W2 groups.

f. Select the **Main Menu** quick key or to return to the main screen.

**NOTE:** A √ check mark at the left of the bed list indicates the bed has been included in an Alarm Watch bed.

### Resetting Alarms for Remote Devices

To reset (acknowledge) the alarms on the remote devices, select **Alarm Reset** in the **Remote View** screen if enabled.

**WARNING:** Selecting **Alarm Reset** for the Remote View device will reset the alarms on the remote device and the CMS if enabled.

### Removing a Bed

To remove a remote device,

a. Select **Select Bed** from the **Remote View** screen.

b. Select the desired bed from the A-W1 or A-W2 group.

c. Select **Clear Bed** to remove the selected bed, or select **Clear All Beds** to remove all beds.

d. Select the **Main Menu** quick key or to return to the main screen.

### Saving a Manual Event

To save a manual event,

a. Select the desired device to view from the **Remote View** screen.

b. Select **Manual Event**.

c. Select to return to the main screen.

### Displaying the Alarm Watch Tile on the Main Screen

The alarm watch function provides the alarm notification by color and sound. To display the alarm watch tile on the main screen,

a. Select the **Main Menu** quick key.

b. Select **Tile Layout** from the **Display** column.

c. Select the tile where you want Alarm Watch to appear.

d. Select **Alarm Watch** from the drop down list and select **A-W1** or **A-W2**.

e. Select the **Main Menu** quick key or to return to the main screen.

## VOLUMES

The alarm volume, key volume, and QRS volume can be adjusted on the ePM 10M/ePM 12M bedside monitor.

### Alarm Volume

To adjust the alarm volume on the ePM 10M/ePM 12M bedside monitor:

a. Select the **Volume** quick key or select **Setup** tab in **Alarm Setup** quick key.

b. Select **Alarm Volume**.

c. Select volume ranging from X*-10 (0=Off 10=Max).

d. Select the **Main Menu** quick key or to return to the main screen.

***The minimum volume range(X) is configurable.**

### Key Volume

To adjust the key volume on the ePM 10M/ePM 12M bedside monitor:

a. Select the **Volume** quick key.

b. Select **Key Volume**.

c. Select volume ranging from 0-10 (0=Off 10=Max).

d. Select the **Main Menu** quick key or to return to the main screen.

### Beat Tone

To adjust the beat tone (QRS tone) volume on the ePM 10M/ePM 12M bedside monitor:

a. Select the **Volume** quick key.

b. Set **QRS Volume.** Select volume ranging from 0-10 (0=Off 10=Max).

c. Select the **Main Menu** quick key or to return to the main screen.

Or

a. Select ECG waveform or ECG numeric area to enter **ECG** dialog.

b. Select **Alarm Source**.

c. Select the **Setup** tab.

d. Set **QRS Volume**. Select volume ranging from 0-10 (0=Off 10=Max)

e. Select the **Main Menu**  quick key or  to return to the main screen.

Or

a. Select $SpO_2$ waveform or $SpO_2$ numeric area to enter **SpO2** dialog.

b. Select the **PR** tab.

c. Select **Alarm Source**.

d. Select the **Setup** tab.

e. Set **QRS Volume**. Select volume ranging from 0-10 (0=Off 10=Max).

f. Select the **Main Menu**  quick key or  to return to the main screen.

*** The minimum volume range (X) is configurable.**

**NOTE:** The QRS tone is derived from either the HR or PR. When monitoring $SpO_2$, there is a variable pitch tone change as the patient's saturation level changes. The pitch of the tone rises as the saturation level increases and falls as the saturation level decreases.

## DATE AND TIME

The ePM 10M/ePM 12M bedside monitor allows the clinician to adjust the date and time if the ePM 10M/ePM 12M bedside monitor is not connected to the network. To adjust the system time, date, and format:

a. Select the **Main Menu**  quick key and select **Time** from the **System** column.

b. Set **Date** and **Time**.

c. Set **Date Format**.

d. Enable **24 Hour Time** if desired.

e. Enable **Daylight Saving Time** if desired.

f. Select the **Main Menu**  quick key or  to return to the main screen.

If the monitor is connected to a central monitoring system (CMS) or hospital clinical system (HIS), the date and time are automatically obtained from the network.

## PARAMETER COLORS

The ePM 10M/ePM 12M bedside monitor provides the ability to adjust the parameter's numeric and waveform (if applicable) color.

To adjust the parameter's color on the ePM 10M/ePM 12M bedside monitor:

a. Select the **Main Menu** quick key.

b. Select **Param Color** from the **Parameters** column.

c. Select parameter.

d. Select color.

e. Select the **Main Menu** quick key or to return to the main screen.

## LOAD DEFAULT (PRESET) SETTINGS

The ePM 10M/ePM 12M bedside monitor settings are automatically restored either when the patient size is adjusted or when Discharge is performed.

A clinician may restore default settings on a patient currently being monitored on the ePM 10M/ePM 12M bedside monitor by:

a. Select the **Main Menu** quick key, and select **Load** from the **Configuration** column.

Or

a. Select the **Load Config** quick key.

b. Select preset configuration from displayed list.

c. Select **Load**.

d. Select **OK** to confirm.

**NOTE:** All patient data preserved.

## LOCK/UNLOCK TOUCHSCREEN DISPLAY

To lock the touchscreen, hold and press the **Main Menu** quick key and slide to the left as directed by the arrow. A padlock symbol displays at the top of the **Main Menu** quick key if the touchscreen is disabled.

To manually unlock the touchscreen, hold and press the **Main Menu** quick key and slide to the right as directed by the arrow.

The touchscreen can be unlocked automatically when the lock period is over if enabled. To set a preconfigured lock period,

a. Select the **Screen Setup** quick key, and select the **Display** tab.

Or

a. Select the **Main Menu** quick key, and select **Display** from the **Display** column.
b. Select **Screen Lock Duration** and set duration from drop down list.
c. Select the **Main Menu** quick key or to return to the main screen.

## CLEANING/DISINFECTING

### Cleaning the Main Unit/Module

Clean your equipment in accordance with the hospital's equipment cleaning policy.

To clean the equipment:

a. Dampen a soft lint-free cloth with one of the recommended cleaning and disinfecting agents listed in the Operator's Manual.
b. Wipe the display screen.
c. Wipe the external surface of the monitor and modules with the damp cloth, avoiding the connectors and metal parts.
d. Dry the surface with a clean cloth. Allow the equipment to air dry in a ventilated and cool place.

**NOTE:** Lock the touchscreen before cleaning the monitor screen.

### Disinfecting the Main Unit/Module

Disinfect your equipment as required in your hospital's servicing schedule using one of the recommended disinfecting agents listed in the Operator's Manual. Cleaning equipment before disinfecting is recommended. Always dilute and use disinfectants according to the manufacturer's instructions.

**NOTE:** Lock the touchscreen before cleaning the monitor screen.

### Cleaning and Disinfecting the Accessories

For information regarding cleaning and disinfecting accessories, please refer to the manufacturer's packaging or the Operator's Manual.

## STERILIZATION

Sterilization is not recommended for this equipment, related products, accessories, or supplies unless otherwise indicated in the Instructions for Use documentation accompanying the products, accessories or supplies.