# Accutorr® 7

## Quick Reference Guide

**mindray**
NORTH AMERICA

**Note:** The Accutorr 7 Quick Reference Guide is not intended as a replacement to the Operating Instructions. Prior to operating the equipment, the user must be familiar with the Operating Instructions Manual contents. This document is a guideline only to be used as an aid to comprehensive Inservice Training.

# Table of Contents

# Table of Contents (cont'd)

# Accutorr® 7 Quick Reference Guide

## KEYS

### Hard Keys

| | |
|---|---|
| | **Power ON/OFF Switch**<br>• Press this key to turn the monitor on.<br>• Press this key to enter/exit Standby mode.<br>• Press and hold this key for more than 2 seconds to turn the monitor off. |
| | **Alarm Reset Key**<br>• Press this key to turn off the present alarm sounds.<br>• Press and hold this key for more than 2 seconds to pause or restore alarms. |
| | **NIBP Start/Stop Key**<br>• Press to start or stop NIBP measurements. |
| | **Admit Patient Key**<br>• Press this key to admit a new patient.<br>• Press this key again to return to the main screen. |
| | **Knob**<br>• Rotate the knob to scroll through parameters or menus.<br>• Press the knob to access a menu or select an item. |

### Menu Quick Keys

| | |
|---|---|
| **Main** | • Accesses the **Main** screen , or quickly returns to the main display. |
| **Scoring** | • Accesses the **Scoring** screen to evaluate a patient's condition. |
| **Patient List** | • Accesses the **Local Patient List** or **ADT Database** pages to admit a patient and enter demographics. |
| **Review** | • Views and prints historical trends data. |
| **Save** | • Accesses the **Results** screen to manually save patient data. |

## PATIENT SETUP*

### Admit Patient And Enter Demographics (Barcode Scanner)

The Patient Setup menu allows the clinician to admit a patient through a barcode scanner.

To admit a patient through linear barcode scanner on the Accutorr 7 monitor:

    a. Connect the barcode scanner to the USB connector on the monitor.

    b. Aim the barcode scanner at the barcode.

    c. Select **Ok** in **Patient Demographics** menu.

To admit a patient through two-dimension barcode scanner on the Accutorr 7 monitor:

    a. Connect the barcode scanner to the USB connector on the monitor.

    b. Aim the scanner at the clinician barcode and press the scan button at the barcode scanner.

    c. Aim the scanner at the patient barcode and press the scan button on the barcode scanner.

    d. Select **Ok** in **Patient Demographics** menu.

**NOTE:** The monitor must be configured to use the two-dimension format in order to work this way.

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

The Patient Setup menu 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 and enter demographics on the Accutorr 7 monitor:

    a. Press the 🔘 hardkey to access the **Patient Demographics** menu.

    b. Select patient demographic field (Last Name, First Name, etc.).

    c. Enter patient's information using onscreen keyboard.

    d. Select ⬅ to accept the information.

    e. Select **Ok** to return to main display.

## Admit Patient And Enter Demographics (Local Patient List and ADT Database)

The Patient Setup menu allows the clinician to enter patient demographics from the local patient list or the ADT database (hospital's patient database).

To enter demographics from the local patient list on the Accutorr 7 monitor:

a. Select the **Patient List** quick key to access the **Local Patient List** tab.

b. Select the page key (for example ⬆ 1/1 ⬇), and then use the up or down arrow beside this key to turn the page.

c. Select **Scroll**, use the up or down arrow beside this key to highlight the desired patient.

d. Select **Admit** to access the **Patient Demographics** menu.

e. If necessary, you can modify patient's information using the onscreen keyboard.

f. Select **Ok** to return to main display.

To enter demographics from the ADT database on the Accutorr 7 monitor:

a. Select the **Patient List** quick key, and select the **ADT Database** tab.

b. Search a patient.

- Input **Department** name, and then the system will search the patient within the department**.**

- Input **MRN**, and then the system will search the patient according to the medical record number**.**

- Input **Last Name** and/or **First Name**, and then the system will search the patient upon the name**.**

Or

b. Select the page key (for example ⬆ 1/1 ⬇), and then use the up or down arrow beside this key to turn the page.

c. Select **Scroll**, use the up or down arrow beside this key to highlight the desired patient.

d. Select **Admit** to access the **Patient Demographics** menu.

e. If necessary, you can modify patient's information using the onscreen keyboard.

f. Select **Ok** to return to main display.

**\*If Modify Patient Demographics** is **enabled** in the **Remote Control** menu of **BeneVision Central Monitoring System (BeneVision CMS):** Entering demographic information on the BeneVision CentralStation and BeneVision WorkStation automatically enters it on the monitor. Entering demographic information on the monitor automatically enters it on the BeneVision CentralStation and BeneVision WorkStation.

## Adjust Patient Size

The Patient Setup menu allows the clinician to adjust patient size. To adjust patient size on the Accutorr 7 monitor:

a. Press the 🔵 hardkey to access the **Patient Demographics** menu.

Or

a. Admitting a patient from the **Local Patient List** or **ADT Database** page will automatically access the **Patient Demographics** menu.

b. Select **Patient Category.**

c. Select current size and adjust to **Adu** (adult), **Ped** (pediatric), or **Neo** (Neonate).

d. Select **Ok** to return to main display.

**NOTE:** Adjusting patient size restores the monitor to the default (preconfigured) settings but does not clear patient information or data.

## Discharge A Patient

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

To discharge a patient on the Accutorr 7 monitor:

• Admit a new patient

• Place the monitor into Standby

• Turn the monitor off

• Select the **Save** quick key

**NOTE: Discharge Patient at Spot Check Saving** must be selected in the **"Save" Button Options** menu in order for the monitor to work this way.

*If Discharge Patient is **enabled** in the **Remote Control** menu of **BeneVision Central Monitoring System (BeneVision CMS):** Discharging a patient on the Accutorr 7 monitor will automatically discharge the patient on the BeneVision CentralStation and BeneVision WorkStation. Discharging the patient on the BeneVision CentralStation and BeneVision WorkStation will discharge the patient on the Accutorr 7 monitor.

## STANDBY*

### Enter Standby

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

To place a patient into Standby on the Accutorr 7 monitor:

a. Press the ⬤/⬤ hardkey.

b. Select **Yes** to confirm.

### Resume Monitoring

To exit Standby and resume monitoring, select any key on the Accutorr 7 monitor.

*If Standby is **enabled** in the **Remote Control** menu of **BeneVision Central Monitoring System (BeneVision CMS):** Selecting any key on the BeneVision CentralStation and BeneVision WorkStation will remove patient from Standby on the Accutorr 7 monitor.

## RECORD

### Realtime Waveforms

To record a waveform on a patient on the Accutorr 7 monitor's integrated recorder press the 🔲 hardkey on the monitor's recorder.

### Adjust Recorder's Waveforms

To adjust recorded waveforms on a patient on the Accutorr 7 monitor's integrated recorder:

a. Select the **Main** quick key to access the **Main** menu.

b. Select **General Setup** >>, and then select **Print Setup** >>.

c. Select the waveforms for recording.

d. Select the **Main** quick key or ✖ to return to the main display.

## NIBP*

### 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. Errors in the 10 to 40 mmHg range can occur.

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 this.

- 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.

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

To initiate a NIBP measurement on a patient on the Accutorr 7 monitor:

   a.  Press the 🅐 hardkey on the monitor's front panel.

Or

   a.  Select NIBP parameter area to access the **NIBP Setup** menu.

   b.  Select **Start NIBP**

   c.  Select the **Main** quick key or ✖ to return to the main display.

**\*If NIBP Start/Stop** is **enabled** in the **Remote Control** menu of **BeneVision Central Monitoring System (BeneVision CMS):** Selecting **Start NIBP Measurement** on the BeneVision CentralStation and BeneVision WorkStation will initiate a NIBP measurement on the Accutorr 7 monitor.

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

To stop the *current* NIBP measurements on a patient on the Accutorr 7 monitor, you can press the 🅐 hardkey on the monitor's front panel during the NIBP measurement.

To stop *all* NIBP measurements on a patient on the Accutorr 7 monitor:

   a.  Press the 🅐 hardkey on the monitor's front panel.

Or

   a.  Select NIBP parameter area to access the **NIBP Setup** menu.

   b.  Select **Stop All**.

   c.  Select the **Main** quick key or ✖ to return to the main display.

**\*If NIBP Start/Stop** is **enabled** in the **Remote Control** menu of **BeneVision Central Monitoring System (BeneVision CMS):** Selecting **Stop NIBP Measurement** on the BeneVision CentralStation and BeneVision WorkStation will stop a NIBP measurement on the Accutorr 7 monitor.

## Set A Non-Invasive Blood Pressure Measurement Interval

The Accutorr 7 monitor allows the clinician to set a pre-configured interval for a NIBP measurement to be obtained automatically.

To set an automatic interval on the Accutorr 7 monitor:

a.  Select NIBP parameter area to access the **NIBP Setup** menu.

b.  Set **Interval**.

- **Interval** can be set to **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**: The monitor automatically measures NIBP based on the specified time interval.

- **Interval** can be set to **Program 1/Program 2**: The monitor automatically measures NIBP based on a program customized by the user.

c.  Select the **Main** quick key or ✖ to return to the main display.

**\*If NIBP Interval** is **enabled** in the **Remote Control** menu of **BeneVision Central Monitoring System (BeneVision CMS):** Selecting **Interval** on the BeneVision CentralStation and BeneVision WorkStation allows the clinician to set an automatic interval on the Accutorr 7 monitor.

## Configure A Custom Program

The Accutorr 7 monitor allows the clinician to perform NIBP measurement based on a customized program.

To configure a custom program on the Accutorr 7 monitor:

a.  Select NIBP parameter area to access the **NIBP Setup** menu.

b.  Select **Custom Program >>**.

c.  Set **Program** to **Program 1** or **Program 2**.

d.  Set **Duration** and **Interval** for each measurement cycle.

e.  Select **Ok** to confirm.

f.  Set **Interval** to **Program 1** or **Program 2**.

## ALARMS*

### Adjust Alarm Limits

The Alarm Setup tab allows the clinician to configure alarm limits and alarm responses on the Accutorr 7 monitor.

To adjust a patient's alarm limit on the Accutorr 7 monitor:

a. Select parameter's waveform or numeric tile to open the parameter's Setup menu.

b. Select **Alarm Setup >>**.

c. Select High or Low limit value and adjust using the up and down arrows.

d. Select Off in the limit value area to switch off the parameter's alarm limit(s).

e. Select the **Main** quick key or ✖ to return to the main display.

Or

a. Select the **Main** quick key to access the **Main** menu.

b. Select **Alarm Setup >>**.

c. Scroll and select the parameter

d. Select High or Low limit value and adjust using the up and down arrows

e. Select **Off** in the limit value area to switch off the parameter's alarm limit(s)

f. Select the **Main** quick key or ✖ to return to the main display.

**\*If Alarm Setup** is **enabled** in the **Remote Control** menu of **BeneVision Central Monitoring System (BeneVision CMS):** Adjusting alarm limits on BeneVision CentralStation and BeneVision WorkStation automatically adjust alarm limits on the Accutorr 7 monitor. Adjusting alarm limits on the Accutorr 7 monitor can automatically adjust alarm limits on BeneVision CentralStation and BeneVision WorkStation.

### Adjust Alarm Responses

To adjust a patient's alarm responses on the Accutorr 7 monitor:

a. Select parameter's waveform or numeric tile to open the parameter's Setup menu.

b. Select **Alarm Setup >>**

c. Select

- **On/Off** – to switch on or off the alarm's limits or responses

- **Level** – to adjust the audio and visual alarm indicators. Level options include High (Red), Medium (Yellow), and Low (Yellow)

- **Restore Defaults** – to restore preset settings

d. Select the **Main** quick key or ✖ to return to the main display.

Or

a. Select the **Main** quick key to access the **Main** menu.

b. Select **Alarm Setup>>**.

c. Scroll and select parameter

d. Select

- **On/Off** – to switch on or off the alarm's limits or responses

- **Level** – to adjust the audio and visual alarm indicators. Level options include High (Red), Medium (Yellow), and Low (Yellow)

- **Restore Defaults** – to restore preset settings

e. Select the **Main** quick key or ✖ to return to the main display.

**\*If Alarm Setup** is **enabled** in the **Remote Control** menu of **BeneVision Central Monitoring System (BeneVision CMS):** Adjusting alarm responses on BeneVision CentralStation and BeneVision WorkStation will not adjust alarm responses on the Accutorr 7 monitor. Adjusting alarm responses on the Accutorr 7 monitor will not adjust alarm responses on BeneVision CentralStation and BeneVision WorkStation.

### Alarm Status Symbols

The Accutorr 7 monitor uses the following symbols telling the alarm status:

- 🔺 indicates alarms are paused.

- 🔺 indicates alarms are reset.

- 🔺 indicates the alarm sound is turned off.

## RESET ALARMS*

To reset *an alarm for the duration of the alarm* on the Accutorr 7 monitor, press the ⚠ hardkey on the front panel of monitor.

**\*If Alarm Pause&Audio Pause&Alarm Reset** is **enabled** in the **Remote Control** menu of **BeneVision Central Monitoring System (BeneVision CMS):** Pressing the ⚠ hardkey on the Accutorr 7 monitor can reset the alarm for that device on the BeneVision CentralStation and BeneVision WorkStation for the duration of the alarm. Selecting **Alarm Reset** on BeneVision CentralStation and BeneVision WorkStation can reset the alarm on the Accutorr 7 monitor for the duration of the alarm.

## PAUSE ALL ALARMS*

To pause *all alarms* on the Accutorr 7 monitor for a preconfigured amount of time, press and hold the ⚠ hardkey on the front panel for more than 2 seconds.

**\*If Alarm Pause&Audio Pause&Alarm Reset** is **enabled** in the **Remote Control** menu of **BeneVision Central Monitoring System (BeneVision CMS):** Pressing and holding the ⚠ hardkey on the Accutorr 7 monitor will pause active alarms on BeneVision CentralStation and BeneVision WorkStation for a *preconfigured amount of time*. Selecting **Alarm Pause** on BeneVision CentralStation and BeneVision WorkStation can pause active alarms on the Accutorr 7 monitor.

## SEND PATIENT DATA TO THE EMR

The Accutorr 7 monitor can send patient data, including parameter values, related alarms and alarm settings, patient information and historical data to the EMR system.

To send patient data on the Accutorr 7 monitor to the EMR system:

    a.  Select the **Review** quick key.

    b.  Select the **Spot Check Trends** tab.

    c.  Select the desired patient records.

    d.  Select **Send.**

Or

If **Automatically Send on Manual Save** is configured, simply select the **Save** quick key**.**

## SCREEN DISPLAY

The Accutorr 7 monitor allows the clinician to adjust the main display based on patient acuity.

To adjust the main screen's layout on the Accutorr 7 monitor:

a. Select the **Main** quick key to access the **Main** menu.

b. Select the **General Setup**>>.

c. Set **Display Setup**

- **All Parameters:** Real time waveforms and numeric parameters on the main display

- **Trend:** Split screen with tabular trend on the lower portion of the display with real time waveforms and numeric parameters

- **NIBP List:** Split screen with NIBP list on the lower portion of the display with real time waveforms and numeric parameters

## HISTORICAL TRENDS

To display and record Tabular (List) trends on a patient on the Accutorr 7 monitor:

a. Select the **Review** quick key.

b. Select the **Spot Check Trends** tab.

- Select **MRN** or **Name**, and then select the desired patient.

- Select **Filter** to select the desired parameter trends.

- Select the page key (for example ⬆ 1/1 ⬇ ), and then use the up or down arrow beside this key to turn the page.

- Select **Edit** to edit patient demographics or manual input data of selected patient.

- Select **Delete** to delete the trend data of selected patient.

- Select **Print** to print the trend data of selected patient.

- Select **Send** to transfer the trend data of selected patient.

c. Select the **Main** quick key or ✖ to return to the main display.

**BeneVision Central Monitoring System (BeneVision CMS):** Trend storage, display interval, and printing length on the Accutorr 7 monitor and BeneVision CMS are independent.

## MEWS

The MEWS (Modified Early Warning Score) calculates a total score and provides a clinical response based on the entered parameters.

To calculate a clinical scoring on a patient on the Accutorr 7 monitor:

 a. Obtain all parameter values.

 b. Enter all required manual inputs.

 c. Clinical score will be automatically be calculated and displayed.

## VOLUMES

The alarm volume and key volume can be adjusted on the Accutorr 7 monitor.

**Alarm Volume**

To adjust the alarm volume on the Accutorr 7 monitor:

 a. Select the **Main** quick key to access the **Main** menu.

 b. Select **General Setup** >> and select **Alarm Volume**.

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

 d. Select the **Main** quick key or ✖ to return to the main display.

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

**Key Volume**

To adjust the key volume on the Accutorr 7 monitor:

 a. Select the **Main** quick key to access the **Main** menu.

 b. Select **General Setup** >> and select **Key Volume**.

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

 d. Select the **Main** quick key or ✖ to return to the main display.

## LOCK/UNLOCK TOUCHSCREEN DISPLAY

The Accutorr 7 monitor provides the ability to lock and unlock the touchscreen display.

To lock the touchscreen display on the Accutorr 7 monitor press and hold the **Main** quick key for 3 seconds until 🔒 appears.

To unlock the touchscreen display on the Accutorr 7 monitor press and hold Lock 🔒 for 3 seconds until the **Main** quick key appears.

## CLEANING/DISINFECTING

### Cleaning

Clean your equipment on a regular basis. Before cleaning, consult your hospital's regulations for cleaning the equipment.

The following table lists approved cleaning agents.

| Product Name | Product Type | Ingredients |
|---|---|---|
| Sodium hypochlorite bleach | Liquid | Sodium hypochlorite 10% |
| Isopropanol | Liquid | Isopropanol 70% |

**NOTE:**

1. Refer to the Operating Instructions for important notes about cleaning.
2. The "*" symbol indicates a cleaning solution should be prepared according to the concentration directed by the accompanying instructions for use.

To clean the equipment:

a. Shut down the monitor and disconnect it from AC power.

b. Clean the display screen using a soft, clean cloth dampened with a cleaning agent.

c. Clean the exterior surface of the equipment using a soft cloth dampened with a cleaning agent.

d. Wipe off all the cleaning solution with a dry cloth after cleaning if necessary.

e. Dry your equipment in a ventilated, cool place.

### Disinfecting

Disinfect your equipment as required in your hospital's servicing schedule. Cleaning equipment before disinfecting is recommended.

The following table lists approved disinfectants.

| Product Name | Product Type | Ingredients |
|---|---|---|
| Sodium hypochlorite bleach | Liquid | Sodium hypochlorite 10% |
| Isopropanol | Liquid | Isopropanol 70% |
| Perform® | Powder | Used as 1% solution* 100g contains 45g Pentapotassium bis (peroxymonosulphate) bis (sulphate). 5 % to 15% anionic surfactants; <5% non-ionic surfactants; <5% soap and phosphonates, perfumes |

**NOTE:**

1. Refer to the Operating Instructions for important notes about disinfecting.
2. The "*" symbol indicates a disinfectant should be prepared according to the concentration directed by the accompanying instructions for use.

### STERILIZATION

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

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