





# QUICK REFERENCE GUIDE

Using the Capnostream™ 35 portable respiratory monitor  
on the general care floor

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## Overview

## Monitor Preparation

## Using Capnostream™ 35 Portable Respiratory Monitor

## Sampling Line Options

# OVERVIEW

The Capnostream™ 35 portable respiratory monitor combines Microstream™ capnography and Nellcor™ pulse oximetry technologies to deliver continuous monitoring of etCO<sub>2</sub>, SpO<sub>2</sub>, pulse rate, and respiration rate for intubated and non-intubated patients, neonate to adult.



# MONITOR PREPARATION

## FOR A PATIENT ON THE GENERAL CARE FLOOR

### 1. Plug the monitor into wall power

- If your hospital policy permits, keep the monitor plugged into wall power when not in use.
- Remove from wall power when in use with a patient for maximum flexibility and transportability.
- If power is lost or the unit is unplugged when the monitor is operating on AC power, it automatically switches to the removable battery pack for power.
- The removable battery powers the monitor for approximately three hours.

### 2. Turn on the monitor

- Press the power button to turn on the monitor.
- When the monitor is set to Disable EMS mode (EMS mode is enabled by default), every time you turn on the monitor you see a prompt to clear trend memory.
- The active option by default is "No", which is color coded black with a white frame. You can press the Enter button to continue monitoring the same patient. If you are monitoring a new patient and want to clear information regarding the previous patient, navigate to the "Yes" option by pressing the right arrow, then select Enter. (Please note that while EMS mode is enabled, exiting data will automatically be cleared when you turn the monitor on and admit a new patient in the action menu: Menu>Action>Patient Admit).

To set the monitor to Disable EMS mode, please consult the Capnostream™ 35 portable respiratory monitor Operator's Manual or contact your Biomedical Engineering department.

### 3. Order and stock CO<sub>2</sub> sampling lines for the general care floor.

- The Microstream™ capnography sampling line portfolio offers a variety of options for intubated and non intubated patients, from neonate to adult. Nasal-only and oral-nasal options are available.
- Visit <http://www.medtronic.com/covidien/products/capnography/filterline-etco2-sampling-lines> or contact your local representative to view the full array of sampling line options for the general care floor.

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**4. Connect the selected CO<sub>2</sub> sampling line to the monitor before attaching it to the patient. Be sure to follow Microstream™ capnography sampling line Directions for Use.**

- Slide open the sampling line input connector shutter and connect the appropriate sampling line.
- Screw the sampling line connector into the monitor clockwise until it can no longer be turned.

**5. Choose and connect the Nellcor™ pulse oximetry sensor to the monitor**

When the Nellcor™ pulse oximetry sensor is plugged into the extension cable and connected to the monitor, the monitor will immediately begin to search for a pulse.

**6. Choose the patient type: Menu>Patient Type. Select patient type from the drop-down list and press Enter. Navigate to selected the patient type, and then press Enter again.**

**7. Opening a patient case with patient ID and patient data**

You can open a patient case and identify the patient in the monitor.

Go to Menu>Actions>Patient Admit and input the patient information. Then press Start Case.

When a case is complete, navigate to this same window and press the Stop Case button.

Please note: if you want to store a case report and download to USB or MicroSD card, please remember to download the case report **before you press Stop Case** (refer to page 10 of this document or consult the Capnostream™ 35 portable respiratory monitor Operator's Manual for more information).

# MONITOR PREPARATION FOR A PATIENT ON THE GENERAL CARE FLOOR

## 8. Setting alarm thresholds

- You can temporarily change alarm limits for all monitored parameters. To do so, select Menu>Setup>Alarm Setup>Enter, then navigate to the relevant alarm and press Enter. The up-and-down indicator arrows on the screen will become active. Using the directional arrows, select the desired alarm limit and press Enter for No Breath alarms and Apply to set other limits.
- The alarm limits will return to the device default settings when the monitor is powered off and back on again.
- Some patient groups may require different defaults, and therefore the monitor permits setting special institutional defaults. Consult the Operator's Manual or Biomedical Engineering for assistance setting defaults.

## 9. Setting alarm tone volume

- You can set alarm tone volume louder or softer by selecting Menu>Setup>Alarm Volume. Use the directional arrows to set the desired volume.

## 10. Begin patient monitoring

Once the CO<sub>2</sub> sampling line and/or the SpO<sub>2</sub> sensor are connected to the monitor and any patient set-up has been performed (opening a case, setting alarm thresholds), the monitor is ready for operation.



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### 11. Parameter Standby mode

Parameter Standby mode suspends monitoring until a valid physiological signal is detected. The purpose of this option is to enable the monitor to alarm when a sampling line/sensor is disconnected from the monitor, but permit the user to turn off this option if desired (ie: when the patient uses the restroom). By default, Parameter Standby mode is disabled. Please consult the Operator's Manual or Biomedical Engineering for help changing the default.

Once enabled, activate Parameter Standby mode using the following steps:

1. Remove the sampling line and/or SpO<sub>2</sub> sensor from the monitor or remove the SpO<sub>2</sub> sensor from the patient.
2. Press the Alarm Silence hard key on the monitor for more than two seconds to activate the Parameter Standby mode.
3. The monitor will emit the standby pattern beep when the monitor is successfully placed in Parameter Standby mode. The monitor screen will indicate 'CO<sub>2</sub> Standby' and 'SpO<sub>2</sub> Standby' in the waveform areas.

Please note the following:

- CO<sub>2</sub> standby will be exited automatically when a CO<sub>2</sub> sampling line is attached to the monitor.
- SpO<sub>2</sub> standby will be exited automatically when an SpO<sub>2</sub> sensor is attached to the monitor and to a patient.

Please consult the Capnostream™ 35 portable respiratory monitor Operator's Manual for more information about Parameter Standby mode.



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### 12. Home screen display

- The default home screen includes CO<sub>2</sub> and SpO<sub>2</sub> waveforms. However, there are nine different screen display options to choose from.
- Use the left and right directional arrows to toggle through available options (the default includes three different display).
- Please refer to the Capnostream™ 35 portable respiratory monitor Operator's Manual for all nine home screen options and instructions on changing the default home screen.

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# USING CAPNOSTREAM™ 35 PORTABLE RESPIRATORY MONITOR

## MONITORING PATIENTS AND MANAGING CLINICAL WORKFLOW

### 1. Using the Integrated Pulmonary Index™ algorithm

The Integrated Pulmonary Index™ algorithm (IPI) is a numerical value which integrates four parameters measured by the monitor. The integrated parameters include etCO<sub>2</sub>, RR, SpO<sub>2</sub>, and PR. IPI is calculated using the current values of these four parameters and their interactions.

IPI may be able to alert staff that attention or immediate intervention is required when patients experience clinically significant events by a simple single digit algorithm.<sup>1</sup>

- IPI is an adjunct to, and is not intended to replace, vital sign monitoring. Please refer to the chart below for IPI values and their meaning regarding patient status.
- IPI is available for all three groups of pediatric patients (1-3 years, 3-6 years, and 6-12 years) and for adult patients.

IPI	Patient Status
10	Normal
8-9	Within normal range
7	Close to normal range; requires attention
5-6	Requires attention and may require intervention
3-4	Requires intervention
1-2	Requires immediate intervention






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## MONITORING PATIENTS AND MANAGING CLINICAL WORKFLOW

### 2. Using the Apnea Saturation Alert™ algorithm (for patients 22+ years old or older)

The Apnea-Sat Alert™ algorithm includes the Apneas per Hour (A/hr) and Oxygen Desaturation Index (ODI) algorithms that notify clinicians of repetitive apnea or oxygen desaturation syndromes that may indicate a need for adjustments to patient management.

- Apnea per hour tracks and reports the occurrence of apneas—where the patient has not taken a breath for 10 seconds or longer—during a one-hour period.
- The Oxygen Desaturation Index (ODI) indicates the number of times the patient's SpO<sub>2</sub> value drops 4 percent or more from the baseline and returns to the baseline within a period of 240 seconds.

### 3. View patient trends to learn about change in patient status

- To view a patient trend, select: Menu>Trend, then choose either Graphical Trend or Tabular Trend.
- The monitor stores patient data and provides detailed information on the history of the patient on a trend screen during monitoring.

### 4. Reports

- To view a report, select Menu>Report>View Report, choose the desired report and then press Enter.
- The monitor allows you to view, store, and download various reports, including Alarm Review and Parameter Statistics reports.
- Ventilation and Desaturation reports, which show a patient's ventilation and oxygenation levels, can also be stored.
- Parameter Statistics, Ventilation, and Desaturation reports are available only if a patient case has been started.

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### 5. Data Transfer for viewing and analysis

- The monitor can export stored and current data to external devices. Data may be transferred to a USB flash memory device or micro SD card and can be transferred to a computer and printed using an external printer.
- To download, insert a USB device or a micro SD card into the monitor, and select Menu>Report>Store Report. Select the desired report from the menu, then Choose Device>Save Report.
- Choose Device>Save Report.
- Once you select Save Report, please wait for the pop up window confirming the report exported to the USB device or micro SD card (shown in the image below) — this process may take up to 80 seconds.
- Ensure that your USB flash drive has more than 100kb of memory, or data transfer will not be allowed.
- For further information please refer to the Capnostream™ 35 portable respiratory monitor Operator's Manual.



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### 6. View patient data wirelessly with Vital Sync™ virtual patient monitoring platform

- The Vital Sync™ virtual patient monitoring platform is the Medtronic EMR connectivity and remote continuous patient monitoring software solution (sold separately).
- Patient data can be transferred wirelessly from the monitor to the Vital Sync™ virtual patient monitoring platform.
- This option permits viewing of patient information on any web-enabled device, electronic medical record, or clinical information system.
- Please refer to the Capnostream™ 35 portable respiratory monitor Operator's Manual or contact your local representative for more information.



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# SAMPLING LINE OPTIONS FOR THE GENERAL CARE FLOOR

## ▪ Oral/Nasal with O<sub>2</sub>

- 010433 - Smart CapnoLine™ H Plus sampling line with O<sub>2</sub> adult (6.5'/200cm)
- 012463 - Smart CapnoLine™ H Plus sampling line with O<sub>2</sub> adult (13'/400cm)
- 010582 - Smart CapnoLine™ H sampling line with O<sub>2</sub> pediatric (6.5'/200cm)
- 012464 - Smart CapnoLine™ H sampling line with O<sub>2</sub> pediatric (13'/400cm)

## ▪ Nasal with O<sub>2</sub>

- 008180 - CapnoLine™ H sampling line adult (6.5'/200cm)
- 008181 - CapnoLine™ H sampling line pediatric (6.5'/200cm)

## ▪ Nasal without O<sub>2</sub>

- 008177 - CapnoLine™ H sampling line adult (6.5'/200cm)
- 008178 - CapnoLine™ H sampling line pediatric (6.5'/200cm)



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