	RESPIRATORY SERVICES	DATE CREATED: September 2016 DATE REVIEWED/REVISED:
PROCEDURE	TITLE: <u>EMERGENCY</u> – Capnography with Root ISA Portable Bedside Capnograph and Pulse Oximeter (Respiratory Therapy) NUMBER: B-00-12-12087	RELATED DOCUMENTS:

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SITE APPLICABILITY:

ST. PAUL'S HOSPITAL
MOUNT SAINT JOSEPH HOSPITAL

GENERAL INFORMATION:

The ROOT ISA monitor provides continuous non-invasive measurement and monitoring of inspired and expired carbon dioxide concentration and respiratory rate.

The monitor also provides continuous non-invasive monitoring of arterial oxygen saturation and pulse rate.

The monitor must be plugged in when not in use in order to maintain a battery charge. A fully charged battery will power the monitor for 4 hours.

Trending and data download features are not applicable to patients undergoing Procedural Sedation.

EXHIBITS:

- A. [Radical-7 Operator Manual](#)
- B. [Root Operator Manual](#)
- C. [ISA EtCO₂ Operator Manual](#)

INDICATIONS:

Simultaneous capnography and pulse oximetry monitoring is required when patients are undergoing Procedural Sedation in the Emergency Department.

REQUIRED SUPPLIES & EQUIPMENT:


- Root ISA monitor
- Masimo Radical-7 pulse oximeter (handheld device attached to Root monitor docking station)
- Masimo M-LNCS reusable oximetry sensor
- Smart CapnoLine *Plus* O₂ – O₂/CO₂ Oral Nasal Cannula


- Nomoline Adapter
- Double male luer connector




PROCEDURE FOR PREPARING THE MONITOR FOR A PATIENT:

1. Assemble equipment and explain procedure to the patient.
2. Ensure the Nomoline Adapter is connected to the ISA analyzer input connector and a double male luer lock connector is attached to the Nomoline.

NOTE: The Nomoline and luer lock connector do not need to be changed after each patient use but should be replaced when the sampling line becomes occluded. This will be indicated by the appearance of a solid red light around the ISA analyzer input connector and an alarm message to **replace the Nomoline**.

3. Plug the Root monitor in and ensure that the **AC Power** indicator is green. 

NOTE: The Root **Charging** Indicator remains orange while the battery is charging and will illuminate green when Root is fully charged. 

4. Ensure the Radical-7 pulse oximeter is snapped into the docking station and turn on the Root monitor by pressing and holding the **POWER** button located on the side of the monitor for two seconds. 
5. Press the **POWER** button on the Radical-7 pulse oximeter to power it on.  When properly connected, the Radical-7 **Charging** indicator light will illuminate. 
6. Ensure that there is a solid green light around the ISA analyzer connector. A flashing green light indicates that the analyzer is calibrating.
7. The Root monitor will show active measurements and parameters.
8. Connect the capnography sensor to the monitor.

Connecting a CapnoLine O₂/CO₂ Oral Nasal Cannula:

- a) Attach the orange end of the FilterLine O₂/CO₂ Oral Nasal Cannula to the double male luer lock connector at the end of the Nomoline.
- b) Attach the green tubing of the FilterLine O₂/CO₂ Oral Nasal Cannula to an oxygen source.

NOTE: Maximum O₂ flow is 5 L/min.

- c) Place the FilterLine O₂/CO₂ Oral Nasal Cannula on the patient.

NOTE: If a flashing red light appears around the ISA analyzer connector, please check the FilterLine O₂/CO₂ Oral Nasal Cannula for kinks or occlusions.

9. Ensure the SpO₂ extension cord is connected to the Radical-7 pulse oximeter monitor and that the sensor is connected to the extension cord. Place the SpO₂ sensor on the patient.

NOTE: If the oximetry sensor cable is not connected to the monitor, there will be no SpO₂ waveform and the message (**Pulse CO-OX**) **No Cable Connected** will appear on the Root monitor.

10. Ensure the patient type at the top of the Root screen is set to **ADULT**. To adjust this setting, touch the profile that is displayed (Neonatal, Pediatric) and change **Patient Type** to **ADULT**. Select **OK** to confirm.
11. Once the capnography and oximetry sensors are connected to the monitor, it is ready for operation.

12. To turn off the Root ISA and Radical-7 monitors, press and hold the **POWER** buttons on each until you hear two beeps. A message will appear that each monitor is powering off.
13. Wipe the surface of the machine and reusable oximeter sensor using Cavi-wipes. If using a disposable sensor, place in an oximetry sensor recycling bin.

REFERENCES:

1. Root Operators Manual. Copyright 2014 Masimo Corporation.
2. ISA EtCO₂ Operators Manual. Copyright 2013 Masimo Corporation.
3. Radical-7 Operators Manual. Copyright 2014 Masimo Corporation.
4. Kodali, BS. Capnography outside the operating rooms. *Anesthesiology* 2013; 118(1): 192-201.
5. Kruass, B & Hess, DR. Capnography for procedural sedation and analgesia in the emergency department. *Annals of Emergency Medicine* 2007; 50(2): 172-181.
6. AARC Clinical Practice Guideline. Bronchoscopy assisting – 2007 revision & update. *Respiratory Care* 2007; 52(1): 74-80

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