

# Local Guideline and Procedure



John Hunter  
Children's Hospital  
CHILDREN, YOUNG PEOPLE AND FAMILIES



Health  
Hunter New England  
Local Health District

## Overnight Home Oximetry Using Masimo® Rad 5 Oximeter

Sites where Local Guideline and Procedure applies	JHCH
This Local Guideline and Procedure applies to:	
1. Adults	No
2. Children up to 16 years	Yes
3. Neonates – less than 29 days	Yes
Target audience	Paediatric Sleep Unit Nursing staff.
Description	Instructions on how to use the Masimo® Rad 5 oximeter for overnight home/inpatient oximetry recordings.

[Hyperlink to Procedure](#)

Keywords	Oximetry, Masimo, Rad 5, Sleep Unit, Download, Home oximetry.
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Related Legislation, Australian Standard, NSW Ministry of Health Policy Directive or Guideline, National Safety and Quality Health Service Standard (NSQHSS) and/or other, HNE Health Document, Professional Guideline, Code of Practice or Ethics:

- [NSW Health Policy Directive PD2009\\_060 Clinical Handover – standard key principles](#)

Prerequisites (if required)	General request form identifying patient and detailing reason for oximetry test. Completed by qualified respiratory/sleep or other specialist consultant.
Local Guideline and Procedure note	This document reflects what is currently regarded as safe and appropriate practice. The guideline section does not replace the need for the application of clinical judgment in respect to each individual patient but the procedure/s <b>require mandatory compliance</b> . If staff believe that the procedure/s should not apply in a particular clinical situation they must seek advice from their unit manager/delegate and document the variance in the patients health record.
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## RISK STATEMENT

There is a risk of test failure and/or data loss.

**Risk Category:** *Clinical Care & Patient Safety;*

## GLOSSARY

Acronym or Term	Definition
Oximeter	An instrument for measuring continuously the degree of oxygen saturation of the circulating blood
Photodetector	Senses/detects light

## GUIDELINE

This Guideline does not replace the need for the application of clinical judgment in respect to each individual patient.

## PRINCIPLES OF OPERATION

- Oxygenated and de-oxygenated blood differs in their absorption of red and infrared light.
- The RAD 5 oximeter uses red and infrared lights to pass through the sight of contact and onto a photodetector.
- This helps to determine the amount of oxygenated blood present and in turn the oxygenation of the child.
- It is important therefore to ensure that the machine is fully charged (requires 4 AA batteries) and that the sensor is applied properly.

## PROCEDURE SUMMARY

- Patient is seen by Paediatric Respiratory/Sleep or other Paediatric specialist within John Hunter Children's Hospital.
- General request form is filled out by the requesting physician per pre-requisite.
- Request form for overnight oximetry is either brought by patient/parent on day of study or delivered by the physician to the Paediatric sleep unit. Parent can then phone to arrange suitable date and time for collection.
- Staff to set up RAD 5 for overnight downloading. (see RAD 5 Masimo® Oximeter – Setup)
- Parent given education on use of RAD 5.
- Patient/parent given information sheet and RAD 5 oximeter and probe to take home.
- Patient details entered in RAD 5 log in Paediatric Sleep Unit.
- Patient/parent returns RAD 5 oximeter and probe the morning after the overnight oximetry is conducted.
- Staff will download the oximeter data and generate a report. The results are then given to the Paediatric Respiratory Physicians for review. (See 2. *Downloading the RAD 5 Masimo® Oximeter.*)

- Paediatric Respiratory Physicians contact patients/parents with orders/changes if required.

**Hospital in the home may be utilised to deliver oximeter, educate parents, collect oximeter and return it to the Paediatric Sleep Unit on ward J2 for downloading.**

## PROCEDURE

**This procedure requires mandatory compliance.**

### Patient Preparation

It is mandatory to ensure that the patient has received appropriate information to provide informed consent and, that patient identification, correct procedure and correct site process is completed prior to any procedure.

### Staff Preparation

It is mandatory for staff to follow relevant: “Five moments of hand hygiene”, infection control, moving safely/safe manual handling, documentation practices and to use HAIDET for patient/carer communication: **H**and hygiene **A**cknowledge, **I**ntroduce, **D**uration, **E**xplanation, **T**hank you or closing comment.

### Equipment Requirements

- Alcohol based hand rub
- Masimo® Rad 5 Oximeter, with patient interface cable
- “AA” Batteries x 4
- Disposable Oximeter Probe of appropriate size for age/weight (eg. Infant, Paediatric or Adult)
- Coban or micropore

## RAD 5 MASIMO OXIMETER – SETUP

**The trend facility on the RAD 5 must be ON to collect data, to do this:**

- Turn the RAD 5 on using the lowest button on the front panel
- After the machine scrolls through its settings “no sen” will appear on the screen
- Press the MODE/ENTER button 3 times until “tnd off” appears on the screen
- Press the up arrow so “tnd on” appears on the screen
- Press MODE/ENTER

*NB: If “tnd on” is already on the screen and you are having trouble progressing from this step, change it to “tnd off” turn the machine off and start again.*

- **The current year, month, date, hour and minute must be set in 24 hour time. To do this:**
- Use the up arrow to set each parameter
- Press MODE/ENTER after each entry to set
- After minutes have been entered “tnd on” appears on the screen for a few seconds then “no sen” will appear
- You must be quick with each entry or you will need to start again from the beginning

**The RAD 5 must be set to sleep mode so that it is able to collect the data overnight without alarming. To do this:**

- Press in MODE/ENTER and NEXT together for 3 seconds until “std” appears
- Press NEXT to set in sleep (SLP) mode
- Press MODE/ENTER “no sen” will appear on the screen then it will go black and the keypad will be locked apart from the power button.
- Pressing any key will bring back the display for 10 seconds
- “No sensor” and “probe off” alarms will still be functioning and if this occurs you need to remind parents they will have to reposition the probe on their child
- No other alarms will be on during sleep mode

**If performing an inpatient overnight oximetry:**

- Attach the sensor to the patient’s finger or toe. The site must have unrestricted blood flow and no artificial nails or nail polish present which can alter the results.
- The red light and photodetector must be in alignment (ie. Opposite each other)
- If using a reusable sensor, it will need to be clean to allow adequate light flow between the red light and photodetector.
- If using a disposable sensor/probe, ensure it is of an appropriate size for patient age/weight (see packaging recommendations) and the probe is firmly connected to the Rad-5 by lining up the gold terminals on the probe connection with the yellow marks on the patient interface cable and pushing until a click is heard. Pushing the buttons on the side of interface cable connection and gently pulling on the probe will disconnect it.
- Reinforce sensor with micropore tape to ensure it remains insitu overnight.
- Turn the RAD 5 on and leave in place all night.
- If child needs to go to the toilet overnight, sensor can be temporarily disconnected from the patient cable and then reconnected when child returns to bed. Rad 5 should remain turned on during this period.
- When recording is completed, Rad 5 can be turned off and sensor removed.
- Machine should then be returned to the Paediatric Sleep Unit on ward J2 for downloading.

## **DOWNLOADING THE RAD 5 MASIMO OXIMETER.**

The RAD 5 is returned to the Paediatric sleep unit at the completion of the overnight run, where staff will download the data using Profox® software.

**Set RAD 5 to standard mode for download.**

- Turn the RAD 5 on using the lowest button on the front panel
- “SLP” will appear briefly on the screen.
- The machine will go through a self-test. When finished, it will need to be set to standard mode.
- Press MODE/ENTER and NEXT together for 3 seconds.
- “SLP” appears – if “Std” appears, sleep data may not have been collected – skip to downloading the data.
- Press “next” to set in Standard (Std) mode
- Press MODE/ENTER
- The screen will then display “no sen”

## Downloading the data

- Download cable and Profox® software are ONLY ON COMPUTER 1 – (diagonally opposite entry door).
- Disconnect the patient cable and sensor from the RAD 5.
- Connect the mini D download cable to the top of the RAD 5 where the sensor cable was (grey cable to the left of computer 1 plugged into the room 1 wall port).
- Click on the Profox® oximetry icon on the Desktop.
- Select “new Patient”
- Complete patient name, MRN, Doctor and study type - save.
- Select Oximetry data (transfer) then “Next”
- Select Masimo® RAD 5 then “next” then turn oximeter on
- Transfer new memory data from RAD 5 (COM port 1)
- A status screen appears “collecting oximetry data”
- Message “dat out” appears on RAD 5.
- At completion of download (100%) “select recording session with starting time you wish to extract”
- Highlight required recording session– O.K.
- Save this test – “does this test belong to .....” Select yes.
- Patient information appears – select O.K.
- Main menu appears
- Select print or preview report
- Select print report and deliver to requesting physician.

## To e-mail report to requesting physician.

- At the Start reports in the main menu. Click on Options (top left)
- Select “Save reports” (in PDF format) select “make files now”
- Creates PDF file and returns to main menu
- Select - File – exit.
- On the desktop left double click on Profox® oximetry reports folder.
- Right click on the patients file you wish to send
- Select send to the mail recipient.
- Type the doctor’s name you wish to send the report to.
- Send.

## Erasing data after download.

- Data MUST BE erased after downloading in preparation for the next patient’s overnight run.
- Setting trend to OFF will erase all data.
- Turn the RAD 5 on using the lowest button on the front panel
- After the machine scrolls through its settings “no sen” appears on the screen.
- Press the mode/enter button 3 times until “tnd on” appears in the screen.
- Press the down arrow so “tnd off” appears in the screen.
- Press mode/enter
- Turn the RAD 5 oximeter off.
- Data is now erased.

## IMPLEMENTATION AND MONITORING COMPLIANCE

This document is also contained within the Paediatric Sleep Unit Laboratory manual and is monitored for correctness through the NATA accreditation process for Sleep services.

Compliance is essentially measured on the basis of success or failure to acquire the necessary data and the test is often repeated in the case of failure or at the specialist's request.

Reasons for failure of the test can include intolerance of the sensor/probe by the child, premature loss of battery power, or poor application of the sensor by the parent/carer. All of which is impossible to monitor as the test is completed in the child's home without staff supervision.

A basic log is kept for the success or failure of tests. The requesting specialist is also contacted to inform them of test failure and to discuss the need to re-test as necessary.

## REFERENCES

[Masimo Rad 5 product information](#)

## FEEDBACK

Any feedback on this document should be sent to the Contact Officer listed on the front page.

## CONSULTATION

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## APPROVAL

JHCH CQ&PCC – 28/11/2017