

MRMC Training for Avoximeter 1000E



Quality Control

- **MUST BE DONE BEFORE ANY PATIENT TESTING!!!**
- **Internal Self-Check**
 - If the Avoximeter is on:
 - Press the [Main Menu] key
 - Press [4] Turn Off
 - Press [Enter/On]
 - When the Avoximeter is off:
 - Press the [Enter/On] key
 - During the Self-Check the screen will display the message “Do Not Insert Sample. Collecting Io Values”
 - This process checks each wavelength and resets the “Blank” reading
 - Record the Internal Self-Check on the Quality Control Log
- **Optical Filter QC**
 - Orange and Yellow filters
 - Must be done before any other testing (Liquid QC or Patient)
 - Must be done every 8 hours during use
 - Screen will display a count-down when Optical QC is approaching the 8 hour time limit
 - If the 8 hour time limit is up, the screen will display “Run Optical QC next, before anything else.”
 - Optical Filters are stored at room temperature in their case




Quality Control

- **Optical Filter QC (continued)**
 - Insert the Orange Optical Filter into the test chamber
 - Screen will display “User ID: #### ID Correct? [Y/N]”
 - Press the [Yes] key if the ID displayed matches your user ID.
 - Press the [No] key if the ID displayed does not match your user ID.
 - Enter your user ID then press the [Enter] key.
 - Screen will display the User ID entered.
 - Select [1] if User ID is correct, then [Enter]
 - Select [2] if User ID is incorrect, then [Enter] and repeat the User ID entry.
 - Results will be displayed on the screen and print automatically.
 - Remove the Orange Optical Filter.
 - Screen will display “Insert yellow filter next”, insert the Yellow Optical Filter.
 - Screen will display “User ID: #### ID Correct? [Y/N]”
 - Press the [Yes] key. (the user ID should be the one that was just entered)
 - Results will be displayed on the screen and print automatically.
 - Remove the Yellow Optical Filter.



Quality Control

- Optical Filter QC (continued)
 - Record the THb and %HbO2 on the Quality Control Log:

|  | | Avoximeter 1000E SN 6599 | | Reagent | Lot Number | Expiration | Range | | | | |
|---|---------|--------------------------|---------------------|-----------------------|-------------------|------------|---------------------|--------------------|--------|------------------|----------|
| | | Quality Control Log | | RNA Level 1 | | | THb: | | | | |
| Location: Cath Lab 1 | | | | RNA Level 2 | | | THb: | | | | |
| | | | | RNA Level 3 | | | %HbO2: | | | | |
| 1) Turn Avoximeter off/on to perform Internal Self-Check 2) Enter Patient ID and User ID into the Avoximeter 3) Perform Optical Filter QC, review Liquid QC to assess if it needs to be run: <i>Liquid QC must be performed with each new bag of cuvettes, if 7 days have passed since the last successful liquid QC, if the Avoximeter is moved, after maintenance & calibration, or if instrument performance is suspect. If LQC not needed, write "NA".</i> | | | | Orange Optical Filter | 6599 | N/A | THb: 16.4-17.6 g/dL | | | | |
| | | | | Yellow Optical Filter | 6599 | N/A | %HbO2: 37.2-40.8 % | | | | |
| | | | | Cuvettes | | | THb: 7.7-8.3 g/dL | | | | |
| | | | | | | | %HbO2: 93.5-96.5 % | | | | |
| | | | | | | | Pathlength: | | | | |
| PATIENT LABEL | DATE | TIME | QC Type | Parameter | Liquid QC Results | | | Optical QC Results | | QC OK? Y/N/NA | Initials |
| | | | | | Lvl 1 | Lvl 2 | Lvl 3 | Orange | Yellow | | |
| | 3/15/19 | 1230 | Internal Self-Check | | | | | | | Y | AM |
| | | | Liquid | THb g/dL | | | | | | | |
| | | | Liquid | %HbO2 | | | | | | | |
| | | 1232 | Optical | THb g/dL | | | | | | | |
| | | 1232 | Optical | %HbO2 | | | | 38.4 | 94.7 | Y | AM |



Quality Control

- **Liquid Quality Control**

- Must be performed:
 - With each new bag of cuvettes
 - If 7 days have passed since the last successful Liquid QC
 - If the Avoximeter is moved (from Cath Lab 1 into Cath Lab 2 and vice versa)
 - After maintenance/calibration
 - If instrument performance is suspect
- RNA Medical CO-Oximetry Controls levels 1, 2, and 3
 - All three levels will be run when Liquid QC is due

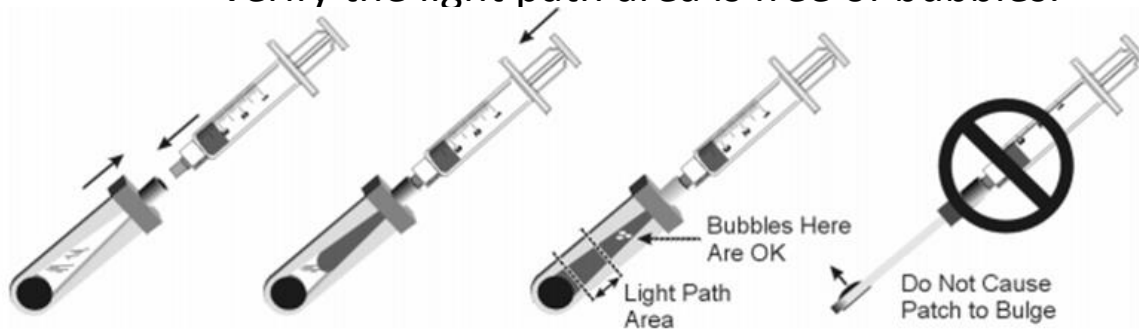
- **Preparing the control solution:**

- Controls are stored at room temperature (up to 25°C) with an expiration of 12 months from date of storage or the manufacturer's expiration date, whichever is first.
- Controls should be at 20-25°C at least 4 hours prior to use.
- Before use, hold the ampule at the top and bottom with forefinger and thumb and shake for 10 seconds to mix the solution.
 - Tap the ampule to move the liquid to the bottom.
 - Use gauze or an ampule opener to protect fingers from cuts, open the ampule by snapping off the tip at the score line.



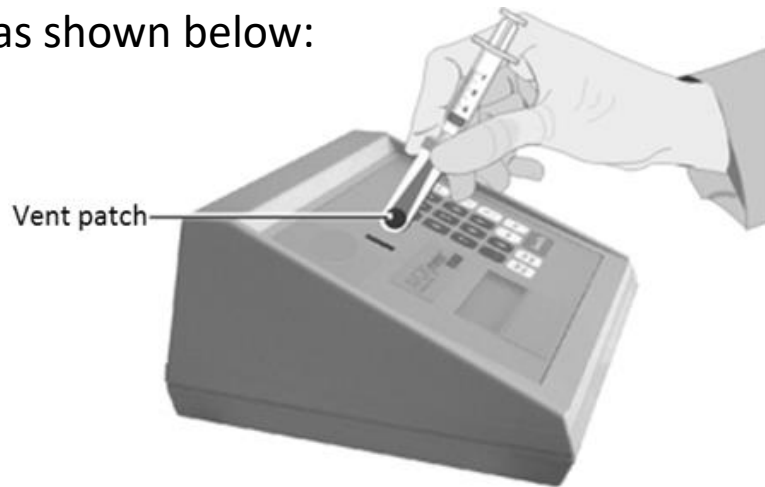
Quality Control

- **Liquid Quality Control (continued)**
 - Using a syringe with blunt fill needle attached, draw control solution up into the syringe.
 - Remove the needle from the syringe.
 - Connect the syringe containing control solution to a new disposable cuvette.
 - Hold the cuvette by the finger grip on the black cap.
 - Firmly holding the syringe and cuvette at a 45° angle, fill the cuvette by gently pressing the syringe plunger (see figure below)
 - Caution: never force sample into cuvette.
 - If cuvette does not fill easily, discard the cuvette and use a new one.
 - Fill the cuvette until the solution reaches the opposite end.
 - Do not continue to fill the cuvette once the solution has reached the end.
 - Do not overfill causing the vent patch to bulge.
 - Verify the light path area is free of bubbles.



Quality Control

- **Liquid Quality Control (continued)**
 - **Running the control solution** – must be performed within 30 seconds of filling the cuvette.
 - Verify the instrument is ready to run a test indicated by the “Ready – Insert Cuvette” message displayed on the screen.
 - Holding the cuvette by the finger grip on the black cap, insert the cuvette, with syringe still attached, into the test chamber, with the vent patch facing left, as shown below:



- Screen will display “Is this liquid QC? [Y/N]”.
 - Press the [Yes] key.
- Screen will display “Do you wish to enter level & lot numbers? [Y/N]”.
 - Press the [Yes] key.



Quality Control

- **Liquid Quality Control** (continued)
 - Screen will display “Select Level”.
 - Press the number key corresponding to the level you are using, then press the [Enter] key.
 - Screen will display “Select Lot”.
 - Press the number key corresponding to the lot you are using, then press the [Enter] key.
 - Screen will display “User ID: #### ID Correct? [Y/N]”
 - Press the [Yes] key if the ID displayed matches your user ID.
 - Press the [No] key if the ID displayed does not match your user ID.
 - Enter your user ID then press the [Enter] key.
 - Results will be displayed on the screen and will print automatically.
 - The results will remain on the screen as long as the cuvette remains in the test chamber.
 - When the cuvette is removed from the test chamber, the results will clear from the screen.
 - Repeat this process for all three levels of Liquid Quality Control



Quality Control

- Liquid Quality Control (continued)
 - Record the following on the Quality Control Log:



Avoximeter 1000E SN 6599

Quality Control Log

Location: Cath Lab 1

1) Turn Avoximeter off/on to perform Internal Self-Check
 2) Enter Patient ID and User ID into the Avoximeter
 3) Perform Optical Filter QC, review Liquid QC to assess if it needs to be run:
Liquid QC must be performed with each new bag of cuvettes, if 7 days have passed since the last successful liquid QC, if the Avoximeter is moved, after maintenance & calibration, or if instrument performance is suspect. If LQC not needed, write "NA".

| Reagent | Lot Number | Expiration | Range |
|-----------------------|------------|------------|---|
| RNA Level 1 | 83325 | 01/2021 | THb: 6.6-7.0 |
| | | | %HbO2: 82.5-83.3 |
| RNA Level 2 | 63424 | 06/2019 | THb: 11.7-12.5 |
| | | | %HbO2: 87.3-88.1 |
| RNA Level 3 | 83525 | 01/2021 | THb: 17.6-18.4 |
| | | | %HbO2: 92.4-93.2 |
| Orange Optical Filter | 6599 | N/A | THb: 16.4-17.6 g/dL %HbO2: 37.2-40.8 % |
| Yellow Optical Filter | 6599 | N/A | THb: 7.7-8.3 g/dL %HbO2: 93.5-96.5 % |
| Cuvettes | | | Pathlength: |

| PATIENT LABEL | DATE | TIME | QC Type | Parameter | Liquid QC Results | | | Optical QC Results | | QC OK? Y/N/NA | Initials |
|---------------|---------|------|---------------------|-----------|-------------------|-------|-------|--------------------|--------|------------------|----------|
| | | | | | Lvl 1 | Lvl 2 | Lvl 3 | Orange | Yellow | | |
| | 3/15/19 | 1230 | Internal Self-Check | | | | | | | Y | AM |
| | | 1235 | Liquid | THb g/dL | 6.9 | 11.8 | 17.8 | | | Y | AM |
| | | 1236 | Liquid | %HbO2 | 82.9 | 88.0 | 92.8 | | | Y | AM |
| | | 1232 | Optical | THb g/dL | | | | 17.0 | 8.0 | Y | AM |
| | | 1232 | Optical | %HbO2 | | | | 38.4 | 94.7 | Y | AM |



Entering User ID and Patient ID

- **MUST BE DONE BEFORE ANY PATIENT TESTING!!!**
- **Enter your User ID and the Patient's ID into the Avoximeter – the Avoximeter will retain the last patient ID that was entered and apply that patient ID to further testing unless the patient ID is changed – turning the Avoximeter off/on will clear the Patient ID**
 - Press the [DATA] key.
 - Press the [4] key to select “Data Management” then press the [ENTER] key.
 - Press the [2] key to select “User & Patient ID” then press the [ENTER] key.
 - Press the [1] key to select “Enter User ID” then press the [ENTER] key.
 - On the “Enter User ID” screen, key in your 4 digit user ID using the keypad then press the [ENTER] key.
 - On the “User ID” screen, the user ID entered will be displayed.
 - Press [1] if the user ID is correct then press the [ENTER] key.
 - Press [2] if the user ID is not correct then press the [ENTER] key and repeat the process of entering your user ID.
 - Press the [2] key to select “Enter Patient ID” then press the [ENTER] key.
 - On the “Enter Patient ID” screen, key in the patient's ID (FIN number) then press the [ENTER] key.
 - Press [CANCEL] three times to get back to the “Ready – Insert Cuvette” screen.
 - Verify the patient ID and user ID displayed on this screen are correct before proceeding with any patient testing.

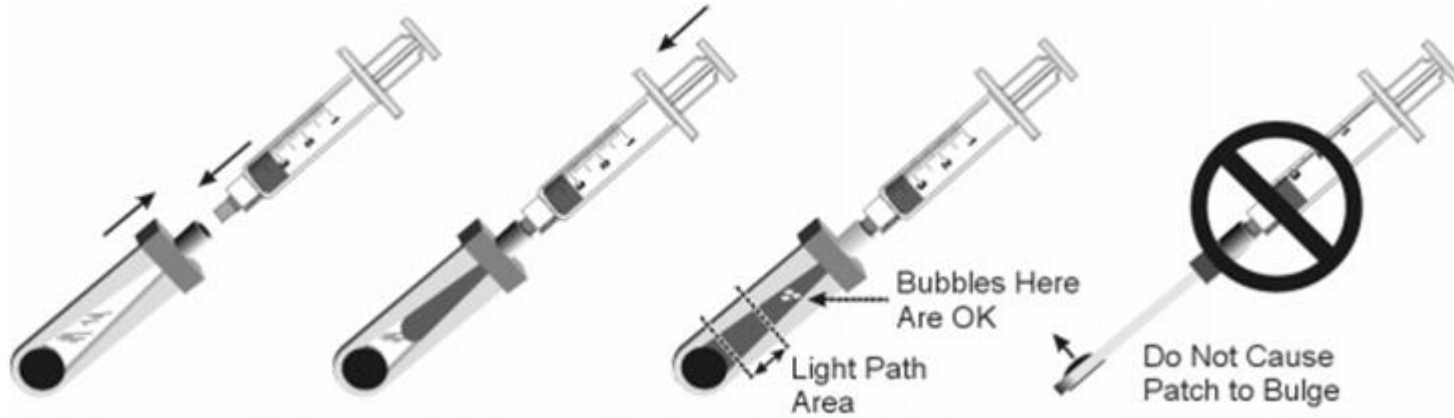


Running a Patient Sample

- **BEFORE RUNNING THE PATIENT SAMPLE YOU MUST VERIFY:**
 - Internal Self-Check passed
 - Optical Filter QC passed
 - Liquid QC passed, or was not required (see Liquid QC requirements)
 - User and Patient ID have been entered
- **Preparing the patient's sample:**
 - Thoroughly mix the syringe containing the patient's sample by rolling between the hands for at least 10-15 seconds.
 - Connect the syringe containing the patient's sample to a new disposable cuvette.
 - Hold the cuvette by the finger grip on the black cap.
 - Firmly holding the syringe and cuvette at a 45° angle, fill the cuvette by gently pressing the syringe plunger. (See Figure next slide)
 - Caution: never force sample into cuvette.
 - If cuvette does not fill easily, discard the cuvette and use a new one.
 - Fill the cuvette until the solution reaches the opposite end.
 - Do not continue to fill the cuvette once the solution has reached the end.
 - Do not overfill causing the vent patch to bulge.
 - Verify the light path area is free of bubbles.



Running a Patient Sample




- **Running the patient's sample** – *must be performed within 30 seconds of filling the cuvette.*
 - Verify the instrument is ready to run a test indicated by the "Ready – Insert Cuvette" message displayed on the screen.
 - Holding the cuvette by the finger grip on the black cap, insert the cuvette, with syringe still attached, into the test chamber, with the vent patch facing left.
 - Screen will display "User ID: #### ID Correct? [Y/N]"
 - Press the [Yes] key if the ID displayed matches your user ID.
 - Press the [No] key if the ID displayed does not match your user ID.
 - Enter your user ID then press the [Enter] key.
 - Results will be displayed on the screen and will print automatically.



Result Reporting

- Patient results will be saved on the Patient Results Worksheet and scanned into the patient’s medical record.
- Fill out all of the required information under Patient Information, Ordering Physician, and Specimen Collection Information.
- Avoximeter result printout will be attached to the worksheet.

| | | |
|--|---|---|
|  Dignity Health. Marian Regional Medical Center | Patient Results Worksheet Avoximeter 1000E <i>This worksheet is to be scanned into the patient's medical record</i> | |
| <u>Patient Information</u> <i>(chart sticker may be used)</i> | | |
| Name: <u> Doe, John </u> | | |
| DOB: <u> 06/15/1950 </u> | | |
| Sex: <u> Male </u> | Ordering Physician: <u> Dr Smith </u> | |
| MRN: <u> 3100368165 </u> | | |
| FIN: <u> 74000022835 </u> | | |
| <u>Specimen Collection Information</u> Date: <u> 3/15/19 </u> Time: <u> 1343 </u> Collected by: <u> Dr Smith </u> Location: <u> Pulmonary Artery </u> <i>Place Avoximeter Printout below:</i> | <u>Specimen Collection Information</u> Date: _____ Time: _____ Collected by: _____ Location: _____ <i>Place Avoximeter Printout below:</i> | <u>Specimen Collection Information</u> Date: _____ Time: _____ Collected by: _____ Location: _____ <i>Place Avoximeter Printout below:</i> |
| | | |