

PERFORMANCE EVALUATION

STUDENT NAME: _____

**TRANSCUTANEOUS MONITOR
TcPCO2/TcPO2**

DATE: _____

INITIAL EVALUATOR: _____

Initial Evaluation: Pass ____ or Remediate ____

SECOND EVALUATOR: _____

Second Evaluation: Pass ____ or Remediate ____

SCORING SYSTEM:

3 points	Describes and/or performs objectives perfectly without prompting and in appropriate time interval.
2 points	Describes and/or performs objectives satisfactorily without prompting or with minimal assistance/or completes step slower than expected.
1 point	Describes and/or performs objectives with assistance or prompting. Appears unsure of task.
0 point	Unable to perform objective adequately
NA	Objective not appropriate or unnecessary. Some steps may not be done at all clinical agencies.

	0	1	2	3	NA
1. Select and gather appropriate equipment a. Monitor b. Power cable c. Electrode & cable d. Calibration gas e. Membranes f. Electrolyte gel g. Contact gel h. Adhesive rings i. Alcohol swabs j. Watch, pen, calculator, paperwork					
2. Cleans hands and applies standard precautions (<i>handwashing technique in nursery may vary</i>)					
**3. Assess the patient to determine proper application site a. Gestational age _____ weeks and weight _____ lbs. b. Skin integrity _____ c. Vital signs d. Perfusion & color e. Activity f. Presence of open ductus _____					
4. Prepare the monitor following department policy and procedure a Set monitor on level surface near the infant b Connect unit to power source c Position electrode properly (in or out of chamber) d Turn on unit e Set appropriate temperature for probe o 43C in preterm o 44C in newborn/pediatric o Adult 45C o Range 41 – 45C f Follow directions on screen for calibration (if needed) g Notify appropriate personnel if calibration is not successful					

	0	1	2	3	NA
5. Apply the monitor to the patient a Select the application site b Properly clean/prepare patient's skin for sensor attachment c Apply securing device to electrode or patient (per policy) d Apply proper number of drops of contact gel e Attach probe properly, preventing air leaks					
**6. Evaluate stability and accuracy of readings: a. Reading stops fluctuating b. Correlates with patient assessment c. Correlates to CBG or ABG					
7. Document accurately a Date b Time c Probe site d TcPCO2 & TcPO2 e Heart rate & rhythm f Respiratory rate & pattern g Color, BP (if available), skin temp & moisture h FIO2 i Oxygen device j Signature & credentials					
**8. Set alarms properly for the patient a. 5 – 10 above and below stable PtcCO2 and PtcO2 readings b. Site time c. Alarm volume d. Smart heat e. Smart time f. All other parameters available					
9. Start monitoring (begin timer count down)					
10. Maintains and processes equipment as necessary a. Changes electrode position at regular intervals per protocol b. Evaluates probe site for redness and blisters c. Evaluates probe site for adhesive sensitivity d. Makes site change interval and temperature adjustments as needed e. Calibrates as needed f. Performs electrode maintenance as needed (clean electrode, apply new membrane & electrolyte gel) g.					
11. Process equipment after discontinuation a. Turns off monitor b. Removes electrode and cleans patient skin c. Dispose of adhesive ring d. Wipe electrode with dry soft cloth e. Cleans monitor with cloth soaked with appropriate cleaner f. Cleans electrode cable with appropriate solution g. Stores electrode properly					
h. Knowledge/Comprehension - Answers all oral review questions					

12-10-12 ma

Students must pass all critical steps with a score of 2 or 3

ORAL REVIEW QUESTIONS

1. Why is the transcutaneous probe heated? *Heating improves the capillary blood flow and enhances the gas movement through the skin.*
2. Explain correlation between transcutaneous CO₂/O₂ readings and ABG's *The thin skin of the infant allows the correlation of PaCO₂ and PaO₂ to be close, the rise and fall of O₂ and CO₂ should be the same as arterial values.*
3. Explain how transcutaneous oxygen monitoring may be useful in determining pre and post ductal blood flow in the newborn. *Preductal sensor placed on the right side of body will give a better reading for oxygenation in the brain and right side. Sensor placed on left side of body (post-ductal) will give a lower reading than right side reading.*
4. Why is transcutaneous monitoring more useful in the infant population? *The thin skin of the infant allows gas diffusion and gives a continuous reading of O₂ and CO₂ and the readings are more accurate than the adult population.*
5. What is the problem if the TcPO₂ reading is suddenly 150mmHg & TcCO₂ reading is suddenly 0mmHg? *The sensor fell off or not attached properly and the sensor is picking up the PO₂ & PCO₂ of ambient air.*
6. What should the RT do if the sensor site is reddened when the sensor is removed? *Nothing this is normal, the reddened site should go away within a day or two.*
7. What should the RT do if the sensor site is blistered when the sensor is removed? *Decrease the time the sensor is on, then possibly decrease the temperature of the sensor.*
8. What should the RT do if the skin is irritated by the adhesive rings? *Use skin prep materials or a different machine with adhesive rings that stay in place and allow you to screw the sensor back in place. Remove adhesive carefully after softening with sterile saline or sterile water.*
9. What should the RT do if the TCM is not correlating with the clinical appearance of the patient or the ABG? *Recalibrate the machine, change the sensor placement or increase the temperature of the sensor to get a better reading.*
10. What should the RT do if the monitor will not calibrate? *Remove the old membrane, clean the electrodes then replace with a new membrane and electrolyte solution.*