Pulse oximetry measures arterial hemoglobin oxygen saturation (SaO2) by passage of two different wavelengths of light through blood-perfused tissues to a photodetector.

CONSIDERATIONS:
1. Normal range is 95-99%.
2. There are two types of oximeter probes, alligator clip style and adhesive strip sensor.
3. The alligator clip style may be used on an older child and the finger is placed in the bed of the clip. This is appropriate for the child that can sit still for several minutes.
4. The adhesive strip sensor style is appropriate to use on an infant or child. The sensor can be placed on the earlobe, finger or great toe. In smaller infants, the sensor works best when placed on the bottom of the foot.
5. Avoid sites where blood flow is compromised or restricted.
6. Avoid IV dyes, colored nail polish and artificial nails. False readings may occur.
7. With use of sensor strip on a child, secure cord with tape or self-adhering wrap to avoid interference from patient movement. Keep site warm by placing a sock over the foot or hand if the site is cool.
8. Sensor strip should be changed every 4 to 8 hours. Be cautious if the child is compromised in order to prevent pressure necrosis. Sensor should be changed more frequently, if needed.

EQUIPMENT:
Pulse oximeter
Sock (if needed)
Tape (if needed)

PROCEDURE:
1. Adhere to Standard Precautions.
2. Gather all equipment.
3. Identify the patient and explain procedure to caregiver and patient, if age appropriate.
4. Assess finger or toe to be used. Clean finger or toe with soap and water, if any dirt. Ensure site to be used is free of any ointment or dressing.
5. When using adhesive strip sensor, peel off clear strip that covers the adhesive strip. Sticky side should be exposed. DO NOT touch the sticky side of the adhesive strip.
6. Place light on the finger or toe ensuring it is in full contact with the skin.
7. Wrap adhesive strip around finger or toe. Ensure sensor is attached firmly to the site.
8. The pulse oximeter will then search for a pulse. It may be necessary to hold the child’s foot or finger still if he/she is moving as the sensor may not be able to pick up a signal. It may take 30 to 60 seconds to obtain a signal when using either the adhesive strip sensor or alligator clip.
9. Once pulse is detected, the monitor will read the oxygen saturation. If the pulse oximeter model being used has the ability to detect a pulse reading, verify that the pulse is accurate by manually checking for a pulse. If the pulse is not accurate for the infant or child, then the oxygenation reading is not reliable.
10. Verify with the physician the infant/child’s target oxygen saturation range.

AFTER CARE:
1. Document in the patient’s record:
   a. Oxygen saturation reading. Be sure that oxygen saturation parameters are documented in the patient’s orders.
   b. Patient’s response to procedure
   c. Instruction given to patient/caregiver.
   d. Communication with physician when necessary.