PULSE OXIMETRY

Purpose:
To provide guidance in use of and reporting parameters for pulse oximetry testing.

General Information:
Pulse oximetry is noninvasive measurement of arterial hemoglobin saturation, without the risks associated with arterial puncture. Pulse oximetry is the standard for continuous and/or noninvasive assessment of arterial oxygen saturation. Pulse oximetry is indicated in any clinical setting where hypoxemia may occur.

The oximeter probe consists of two parts, the light emitting diodes (LEDs) and a light detector (called a photo-detector). Beams of light are shone through the tissues from one side of the probe to the other. The blood and tissues absorb some of the light emitted by the probe. The light absorbed by the blood varies with the oxygen saturation of hemoglobin. The photo-detector detects the light transmitted as the blood pulses through the tissues and the microprocessor calculates a value for the oxygen saturation (SpO²). In order for the pulse oximeter to function, the probe must be placed where a pulse can be detected. The LEDs must face the light detector in order to detect the light as it passes through the tissues. Probes are designed for use on the finger, toe or ear lobe. The oximeter probe is the most delicate part of a pulse oximeter and is easily damaged. Handle the probe carefully and never leave it in a place where it could be dropped on the floor.

Equipment:
- Oximeter monitor
- Oximeter probe
- 70% Isopropyl alcohol (prep pads or swabs), 91% Isopropyl alcohol wipes, or Chlorhexidine 2% wipes

Indications:
- To assess a patient exhibiting or complaining of respiratory distress
- To assess the arterial oxygen saturation (SaO2) of a patient on continuous oxygen therapy
- Documentation of hypoxemia to assist in the evaluation eligibility for the Medicare Hospice Benefit

Requirements:
- A physician’s order is required to utilize pulse oximetry in the clinical assessment of a patient, and should include physician ordered parameters for communication of results.
- One set of orders for vital sign and biometric measurements may be used across all applicable disciplines involved in care of the patient.
  - When orders for parameters are received, the RN Case Manager should ensure that all care team members are notified.
  - The parameter(s) must be placed on the Plan of Care (POC).

Procedure:
1. Turn the pulse oximeter on; it will go through internal calibration and checks.
2. Select the appropriate probe with particular attention to correct sizing and where it will go (usually finger, toe or ear). If used on a finger or toe, make sure the area is clean.
3. Position the probe carefully; make sure it fits easily without being too loose or too tight.
4. Allow several seconds for the pulse oximeter to detect the pulse and calculate the oxygen saturation.
5. Look for the displayed pulse indicator that shows that the machine has detected a pulse. Without a pulse signal, any readings are meaningless.
6. Once the unit has detected a good pulse, the oxygen saturation and pulse rate will be displayed.
7. Document the patient assessment and oximetry results in the Clinical Note.
8. Contact the patient’s Attending Physician according to the Pulse Oximetry reporting parameters.
9. After each home visit use, cleanse the surface of the pulse oximeter using 70% Isopropyl alcohol (for example, prep pads or swabs), 91% Isopropyl alcohol wipes, or Chlorhexidine 2% wipes before the oximeter is returned to its carrying case.
10. Caution should be used in the wiping of the oximeter to avoid moisture seeping past the surface areas.

**Reporting Parameters:**

- Prior to obtaining an order for SpO² monitoring, the clinician must ensure that clinical assessment findings support the need for oxygen saturation monitoring and a physician’s order has been obtained and includes patient specific parameters for when to notify the physician.
- Normal results on a pulse oximetry reading range between 96 and 100% of this maximum value.
- Parameters orders for SpO² should include *at rest* and *with exertion*, especially with patients that will desaturate with activity such as pulmonary patients.
  - Example: Skilled Nurse to perform SpO² monitoring PRN for assessing shortness of breath. Notify physician if <90% at rest.
- When clarifying to obtain parameters, ask the ordering physician, “When would you like to be notified?”
- The Manager of Clinical Practice (MCP) should be contacted for clinical and administrative guidance by the clinician when a physician has not provided a response, clarification, or direction to a patient’s significant condition or clinical presentation. This contact should be documented in the clinical record with appropriate actions taken to support care coordination.
- Each clinician is responsible for communicating significant clinical changes in the patient’s condition including vital signs and/or biometric measurements regardless of the physician’s willingness to provide parameters. Always report clinically significant findings AND document the physician’s response when reporting abnormal findings, even if no change to the Plan of Care is ordered.
- The Plan of Care should include interventions to instruct patients about their vital sign and biometric measurement parameters as applicable. Documentation in the clinical record should demonstrate teach-back and follow-up with patients on their normal trends.

**Summary**

Pulse oximetry monitoring with hospice patients can assist with dyspnea assessments and with plan of care intervention decision making. Prior to initiating this diagnostic testing, physicians orders which include parameters for physician notification or actions to be taken must be obtained and the clinician must be determined competent to perform this monitoring.

**Resources:**

- GENTIVA Home Health Operations Bulletin; Number 2012-11, Vital Sign and Biometric Parameters, December 13, 2012
- These requirements are in accordance with the following Community Health Accreditation Program (CHAP) Standards:
  - CII.5g: Infection Control policies and procedures detail systems designed to promote the prevention and control of infections, monitor the occurrence of infections and evaluate the effectiveness of infection control practices. 5) Modes of transmission of infection
  - CII.7g: The health and safety of employees and clients is promoted and enhanced through education, current application of infection control practices and implementation of appropriate safety measures. Adherence to work practice and engineering controls is evident in practice. 3) Handling, transporting, storage and processing of soiled/contaminated materials, supplies and equipment
  - CII.7n: The organization demonstrates compliance with its Infection Control policies and procedures, which must be in compliance with accepted professional standards and principles.