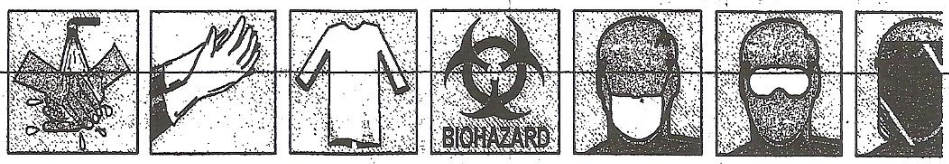
Pulse Oximetry (Assessing Oxygen Saturation)

Protective Barriers
(as necessary to prevent exposure to blood or body fluids)



Handwashing | Gloves | Gown | Designated Waste Disposal | Mask | Goggles | Face Shield

Purpose

The purpose of this procedure is to monitor arterial blood oxygen saturation (SaO2) without the use of invasive devices.

Preparation

1. Review the physician's orders or facility protocol for pulse oximetry.
2. Review the resident's care plan to assess for any special needs of the resident.
3. Refer to the manufacturer's instructions for pulse oximetry placement and alarm settings.
4. Assemble the equipment and supplies as needed.

General Guidelines

1. The pulse oximeter is a probe with light emitting diodes (LEDs) connected to an oximeter. The LED emits light waves that are absorbed by oxygenated and deoxygenated hemoglobin molecules. The oximeter measures the light reflected by these molecules and calculates the pulse oxygen saturation (SpO2), which is a reliable measure of SaO2. Several factors can influence the accuracy of pulse oximetry, such as:
   a. **Amount of hemoglobin.** The pulse oximeter measures oxygen saturation of the hemoglobin, not absolute hemoglobin levels. Therefore, a severely anemic resident could have normal SaO2 without maintaining adequate oxygen in the tissues.
   b. **Placement of the oximeter.** Impaired circulation (e.g., peripheral vascular disease, temperature-induced vasoconstriction) to the area in which the oximeter probe is placed will provide inaccurate data. Since the elderly often have impaired peripheral circulation, the probe should be placed on the ear or bridge of the nose.
   c. **Activity.** Movement of the probe may affect the oximeter readings. Do not place probe on the finger of a resident who experiences hand tremors.
   d. **Light.** Bright lights (sunlight, treatment lights, etc.) may interfere with accuracy of the SpO2 readings.
   e. **Foreign objects.** Artificial nails and nail polish can prevent the LEDs from reaching the saturated hemoglobin molecules, lowering the SpO2 readings.
2. Normally SpO2 is between 90 and 100 percent; SpO2 below 70 percent is life threatening.

Equipment and Supplies

The following equipment and supplies will be necessary when performing this procedure.

1. Pulse oximeter;
2. Appropriate probe;
3. Nail polish remover;
4. Flow chart or documentation record; and
5. Personal protective equipment (e.g., gowns, gloves, mask, etc., as needed).

Assessment

1. Assess the resident for the following signs and symptoms of impaired oxygen saturation:
   a. Altered respirations, difficulty breathing, abnormal breath sounds;
   b. Cyanotic appearance of nail beds, lips, skin, mucous membranes, skin;
   c. Restlessness, irritability; and/or
   d. Confusion, loss of consciousness.
2. Assess the site most appropriate for probe placement:
   a. If the resident has impaired peripheral circulation or hand tremors, place the probe on the ear or bridge of the nose.
   b. If the resident is obese, use a disposable, adhesive probe.