

LOS ANGELES UNIFIED SCHOOL DISTRICT
Office of the Chief Medical Director
District Nursing Services

PULSE OXIMETRY

I. GENERAL GUIDELINES

A pulse oximeter is an assessment tool that uses light-emitting diodes (LEDs) to measure and compute oxygen saturation in the bloodstream, displayed as SpO₂%

A. PURPOSE

1. Pulse oximeters measure blood oxygen levels, in the form of oxygen saturation (SpO₂%), circulating in the body, in order to determine if interventions are needed and/or if oxygen treatment is effective.

B. GENERAL INFORMATION

1. A pulse oximeter has a sensor with a light emitting diode (LED) connected by a cable to an oximeter. The LED emits light wavelengths that are absorbed differently by oxygenated and deoxygenated hemoglobin molecules. The more hemoglobin saturated by oxygen, the higher the oxygen saturation.
2. The normal percentage range for oxygen saturation (SpO₂) is 95% to 100% (WHO, 2011) Student specific ranges will vary depending on student's diagnosis and healthcare provider recommendations.
3. Each type of sensor is designated for a different part of the body; therefore, the sensors are not interchangeable.
4. Some limitations impacting the accuracy of a pulse oximeter:
 - a. Poor circulation
 - b. Dark skin pigmentation
 - c. Thick skin such as calluses
 - d. Current use of nicotine-containing products
 - e. Dark fingernail polish
 - f. Long and/or artificial nails
5. Some signs and symptoms of respiratory distress and/or impaired gas exchange:
 - a. Altered respiratory rate, depth or rhythm
 - b. Bluish appearance of nail beds, lips, mucous membranes, and skin
 - c. Difficulty or labored breathing
 - d. Decreased level of consciousness
 - e. Lethargy/fatigue
 - f. Restlessness, irritability, confusion, or unusual behavior
 - g. Student-specific symptoms for respiratory distress may differ based upon their diagnosis and healthcare provider recommendations.

C. PERSONNEL

1. School Nurse, Licensed Nursing Provider (RN, LVN), School Physician
2. Trained Unlicensed Personnel

D. EQUIPMENT

1. Provided by the parent:
 - a. Pulse Oximeter along with manufacturer's instructions for use.

II. PROCEDURE

ESSENTIAL STEPS	KEY POINTS AND PRECAUTIONS
1. Verify pulse oximeter order authorization is followed specific to the student and they are clear, accurate, and complete.	If student is in respiratory distress, CALL 911. Some signs and symptoms of respiratory distress and/or impaired gas exchange: Altered respiratory rate, depth, or rhythm. Bluish appearance of nail beds, lips, mucous membranes, and skin Difficulty or labored breathing Decreased level of consciousness Lethargy/Fatigue Restlessness, irritability, confusion, or unusual behavior
2. Remove gloves, mittens, or any other items covering the student's fingertip.	Pulse oximeter requires direct contact with fingertip in accordance with pulse oximeter manufacturer's instructions.
3. Apply pulse oximeter.	Ensure proper alignment in accordance with manufacturer's instructions. Pulse oximeters that are not properly aligned will not yield an accurate result.
4. Note reading on the display area.	Oxygen saturation will be measured by the data received from these units. A desired reading would be between 95%-100%, however, consult the student's healthcare authorization for their baseline.
5. Proceed with student pulse oximeter order and adjust oxygen	If student is in respiratory distress, CALL 911.

support per licensed healthcare provider's orders (if applicable).	Not all students with pulse oximeter orders will have oxygen orders.
6. Observe student's respiratory status.	If student is in respiratory distress, CALL 911.
7. If needed or if pulse oximeter is used intermittently at timed intervals, clean equipment after use or when needed.	Clean in accordance with manufacturer's instructions
8. Wash hands.	
9. Document procedure and interventions: <ul style="list-style-type: none"> • Date • Time • SpO2% before and after intervention 	Indicate date, time, SPO2% before and after interventions, and student's reaction to the treatment. Report to the school nurse and family any changes from the student's usual pattern.

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Date



Smita Malhotra, MD
Chief Medical Director,
Office of the Chief Medical Director



Rosina Franco, MD
Senior Physician, Student Medical Services



Sosse Bedrossian, MSN, MA, RN, FNP
Director, District Nursing Services

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