VERMONT

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The Department of Vermont Health Access Clinical Criteria

Subject: Pulse Oximeter for Home Use
Last Review: September 7, 2023*
Past Revisions: January 1, 2021, December 30, 2015, January 2, 2015, September 12, 2012, April 27, 2011, September 16, 2010, and October 15, 2006

***Please note: Most current content changes will be highlighted in yellow.**

Description of Service or Procedure

Pulse Oximeter measures the oxygen saturation (oxyhemoglobin) by using wavelengths of light via a noninvasive probe. The probe can be attached to a finger, toe, or earlobe. A wire leading to the monitor shows the measurement and sounds an alarm if it is in an abnormal range.

The use of a Pulse Oximeter is considered safe but has some limitations. False-negative and false positive results for both hypoxemia and normoxemia may lead to inappropriate treatment of an individual. In addition, tissue injury may occur at the site of the probe, because of inappropriate use of the device (e.g., pressure sores from prolonged application or electric shock and burns from the substitution of incompatible probes between instruments).

Maintain skin integrity by changing the sensor site frequently (every 2-4 hours) and avoid prolonged skin contact. Ensure the wrapping is not too tight around the end of the digit being used for monitoring. Avoid using wrapping that is not approved for use with oximeter probe. The site should be assessed each time the site is changed.

Disclaimer

Coverage is limited to that outlined in Medicaid Rule or Health Care Administrative Rules that pertains to the member's aid category. Prior Authorization (PA) is only valid if the member is eligible for the applicable item or service on the date of service.

In February 2021 the FDA issued a warning citing "multiple factors" that can affect pulse oximetry accuracy, including "poor circulation, skin pigmentation, skin thickness, skin temperature, current tobacco use, and use of fingernail polish."

Medicaid Rule

Medicaid and Health Care Administrative Rules can be found at https://humanservices.vermont.gov/rules-policies/health-care-rules/health-care-administrative-rules-hcar/adopted-rules

7102.2 Prior Authorization Determination
4.101 Medical Necessity for Covered Services
4.104 Medicaid Non-Covered Services
4.209 Durable Medical Equipment
4.106 Early and Periodic Screening, Diagnostic and Treatment (EPSDT) Services

Coverage Position

A pulse oximeter may be covered for members:

- When the device is prescribed by a licensed medical provider, enrolled in the Vermont Medicaid program, operating within their scope of practice as described on the Vermont's Office of Professional Regulation's website*, Statute, or rule who is knowledgeable regarding pulse oximeters, and who provides medical care to the member AND
- When the clinical criteria below are met.

* Vermont's Office of Professional Regulation's website: https://sos.vermont.gov/opr/

Coverage Criteria

A pulse oximeter for home use may be covered:

Intermittent or short term (NU or RR):

- To determine the appropriate home oxygen requirement for ambulation, exercise, and sleep OR
- To determine the appropriate home oxygen level for members with neuromuscular disease involving respiration muscles, with chronic lung disease, or with severe cardiopulmonary disease OR
- For members being weaned from home oxygen OR
- For periodically checking oxygen saturation levels in members using long term oxygen therapy OR
- For infants less than 12 months of age using home oxygen OR
- For a change in the members physical condition requiring an adjustment in the liter flow of their home oxygen
- COVID-19 patients **AND**
- A trained caregiver is available to respond to changes in oxygen saturation.

Continuous or long term (TGRR):

- For members that require mechanical ventilation OR
- For members with a tracheostomy OR
- For members born premature, newborn, or an infant less than 12 months of age requiring ongoing therapy for apnea OR
- For medical need to maintain oxygen saturation within a very narrow range OR
- For infants with chronic lung disease (for example, bronchopulmonary dysplasia (BPD)) OR
- For members with spinal muscular atrophy (SMA) OR

- For members with congenital central hypoventilation syndrome (CCHS) **AND**
- A trained caregiver is available to respond to changes in oxygen saturation.

Vendor Responsibilities
The vendor will be responsible for expert oversight of the equipment:

- The vendor will have their Respiratory Therapist (RT) visit the member while still in the hospital and/or once the member is at home, at time of delivery of the oximeter (except for the spot oximeter) to: set-up, instruct in proper use, alarms, and other features and to review emergency procedure should the equipment fail.
- A follow-up visit by the RT will be repeated in **7** days and then every **3** months if the equipment is needed and remains in the home. These visits should be documented and kept in the members file at the vendor's facility.
- The vendor will instruct those members and/or caregiver, when a spot oximeter is purchased, in the proper care and storage, the correct use, and warranty information.
- The vendor will also instruct the member and/or caregiver ***not to*** throw the oximeter away if s/he no longer needs it.
- Vermont Medicaid may request a 60-day download when extension of a pulse oximeter with downloadable memory is available, please make this information available with replacement requests of E0445TGRR.

Provider Responsibilities
The Provider will be responsible:

- To develop and instruct the primary care person in the plan of care as it relates to the oximeter and responses to low readings.
- When ordering a pulse oximeter with alarm capability, specific monitoring parameters should be present in documentation as well as any interventions that are performed when the member is outside of ordered parameters.

Early and Periodic Screening, Diagnostic and Treatment (EPSDT) exception: Vermont Medicaid will provide comprehensive services and furnish all Medicaid coverable, appropriate, and medically necessary services needed to correct and ameliorate health conditions for Medicaid members under age 21.

Clinical criteria for repeat service or procedure

Useful life is 1 per 5 years.

Type of service or procedure covered

Pulse oximeter and related supplies

Type of service or procedure not covered (this list may not be all inclusive)

- Asthma management
- Sudden Infant Death Syndrome (SIDS) monitoring
- When used as a screening/testing technique for suspected sleep apnea.
- Smart phone applications

Coding guidelines

Pulse oximeter is a capped rental item.

HCPCS Code	Modifier	HCPCS Code Description
E0445	NU	Spot check oximeter one-time purchase
E0445	RR	Spot check oximeter paid in 10-monthly installments
E0445	TGRR	A capped rental item and is paid in 10-monthly installments
A4606		Oxygen probe for use with oximeter device (disposable), replacement allow 6 per month
A4606		oxygen probe for use with oximeter device (non-disposable), replacement allow 1 per year. Enhanced pricing may be requested.
A9999		Probe Tape for Oximeter allow 15 per month

Please see the Medicaid Portal at http://vtmedicaid.com/#/feeSchedule for fee schedules, code coverage, and applicable requirements.

References

Alboksmaty, A., Beaney, T., Elkin, S., Clarke, J. M., Darzi, A., Aylin, P., & Neves, A.-L. (2022). Effectiveness and safety of pulse oximetry in remote patient monitoring of patients with COVID-19: a systematic review. *The Lancet Digital Health*, *4*(4), e279–e289. https://doi.org/10.1016/s2589-7500(21)00276-4

Centers for Medicare and Medicaid Services. (n.d.). *Early and periodic screening, diagnostic, and treatment.* Medicaid.gov. https://www.medicaid.gov/medicaid/benefits/epsdt/index.html

Committee on Fetus and Newborn. (2008, reaffirmed 2018). Hospital discharge of the high-risk neonate. *PEDIATRICS*, *122*(5), 1119–1126. https://doi.org/10.1542/peds.2008-2174

Fahy, B., Lareau, S., & Sockrider, M. (2011). Pulse oximetry. *American Journal of Respiratory and Critical Care Medicine*, *184*(1). https://www.thoracic.org/patients/patient-resources/resources/pulse-oximetry.pdf

Luks, A. M., & Swenson, E. R. (2020). pulse oximetry for monitoring patients with COVID-19 at home. Potential pitfalls and practical guidance. *Annals of the American Thoracic Society*, *17*(9), 1040–1046. https://doi.org/10.1513/annalsats.202005-418fr

Marcus, C. L., Brooks, L. J., Ward, S. D., Draper, K. A., Gozal, D., Halbower, A. C., Jones, J., Lehmann, C., Schechter, M. S., Sheldon, S., Shiffman, R. N., & Spruyt, K. (2012). Diagnosis and management of childhood obstructive sleep apnea syndrome. *PEDIATRICS*, *130*(3), e714–e755. https://doi.org/10.1542/peds.2012-1672

Mechem, C.C. (2022, March 4). Pulse oximetry. UpToDate. Retrieved August 22, 2023. from https://www.uptodate.com/contents/pulse-oximetry?search=home%20oximetry&source=search_result&selectedTitle=1~150&usage_type=default&display_rank=1

Patient Safety Authority. (2005, June). Skin integrity issues associated with pulse oximetry. *PA PSRS Patient Safety Advisory, 2*(2), 25-29. http://patientsafety.pa.gov/ADVISORIES/Pages/200506_25.aspx

Rathod, M., Ross, H. J., & Franklin, D. (2022). Improving the accuracy and equity of pulse oximeters. *JACC: Advances*, *1*(4). https://doi.org/10.1016/j.jacadv.2022.100118

Sheikh, M., Ahmad, H., Ibrahim, R., Nisar, I., & Jehan, F. (2023). Pulse oximetry: Why oxygen saturation is still not a part of standard pediatric guidelines in low-and-middle-income countries (LMICs). *Pneumonia*, *15*(1). https://doi.org/10.1186/s41479-023-00108-6

United States Food and Drug Administration. (2021, February 19). Pulse oximeter accuracy and limitations: FDA safety communication. https://www.fda.gov/medical-devices/safety-communications/pulse-oximeter-accuracy-and-limitations-fda-safety-communication