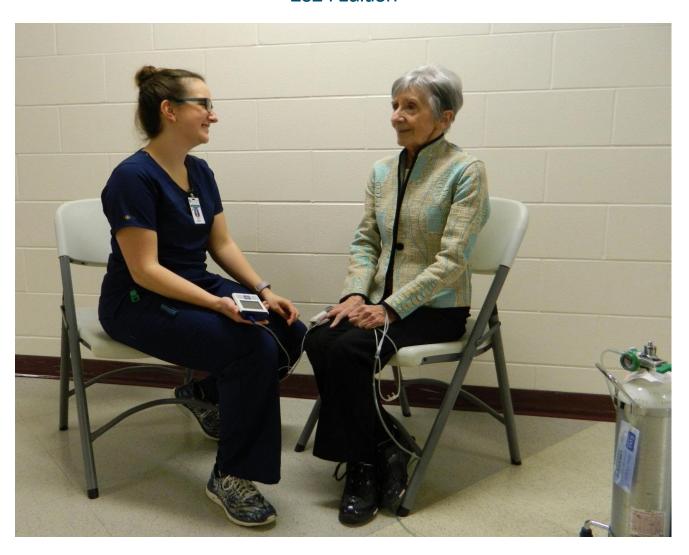
# **Home Oxygen Tester Handbook**

2024 Edition







## **Important:**

This handbook is a guide to assist you with oxygen testing. Check the <u>SAIL Home Oxygen Policy</u> and your local Policy and Procedure Manuals to ensure you are following protocol. SAIL Policy requires testers to be Saskatchewan Health Authority (SHA) employees.

It is the responsibility of the individual completing home oxygen testing to work within their scope of practice (as guided by their regulatory body or supervisor/management) and job responsibilities in their current work environment.

## About the Saskatchewan Aids Independent (SAIL) Home Oxygen Program

The SAIL Home Oxygen Program provides funding towards the cost of prescribed home oxygen therapy for clients who meet the program criteria. Testing for the program is provided through Saskatchewan Health Authority (SHA) employed qualified health professionals who are trained in home oxygen therapy. Assessment and treatment is delivered through private oxygen suppliers contracted by Saskatchewan Health.

Lung Saskatchewan (Sask) is contracted by Saskatchewan Aids to Independent Living (SAIL) to provide education/training, information, and resources for health professionals and clients throughout Saskatchewan on home oxygen testing. Clients who have treaty status are funded by Non-Insured Health Benefits (NIHB) and have different criteria for oxygen testing; please review the NIHB Home Oxygen Benefits to learn more.

Lung Sask is all about breathing. Protecting airways, preventing lung disease, and ensuring that the right resources are available in your community when you need them, is our primary focus and highest priority. With the help of our donors, volunteers, and community partners, we are improving lung health one breath at a time in Saskatchewan.

## **Client funding questions:**

**SAIL** 

1-888-787-8996 or Regina 1-306-787-8996

Fax: 1-306-787-8679 Email: ehb@health.gov.sk.ca

**NIHB** in SK

1-866-885-3933 Email: sasknihbmedicalsuppliesandequipment@sac-isc.gc.ca

## **SAIL Home Oxygen Policy:**

Available online: https://publications.saskatchewan.ca/#/products/11690

## **NIHB Home Oxygen Policy:**

Available online: <a href="https://www.sac-isc.gc.ca/eng/1585322635380/1585322658309">https://www.sac-isc.gc.ca/eng/1585322635380/1585322658309</a>

## **Testing questions:**

## **Lung Saskatchewan**

1-306-370-9012 Fax: 306-343-7007 Email: oxygentest@lungsask.ca

## **Tester Number:**

#### Password:

You are not listed as a tester until you have registered on-line and successfully completed the certification quiz. *Once you are listed as a tester you are strongly encouraged to recertify on-line every 2 years.* 

Visit https://o2.lungsask.ca to login and complete your certification.

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## Role of the Home Oxygen Tester

- To understand the testing criteria and SAIL program
- To test/assess clients if they meet the criteria for home oxygen as per policy
- To educate what oxygen therapy is and how it may impact the client
- To communicate with clients, physicians/NP's, home oxygen company health professionals, SAIL, and Lung Sask for testing orders, results, and to ensure therapy is initiated (if needed)
- To advocate for or assist clients in navigating home oxygen treatment

## **Home Oxygen Therapy Overview**

Many home oxygen clients have been diagnosed with Chronic Obstructive Pulmonary Disease (COPD); however, clients with other lung or cardiac diseases, such as pulmonary fibrosis and heart failure, causing poor gas exchange can also benefit from home oxygen. Gas exchange is the movement of oxygen from the air we breathe to the blood stream and the movement of carbon dioxide out of the blood stream. Gas exchange impairment can be caused by impaired diffusion (lung tissue damage), V/Q mismatch (areas of the lung where blood flow and breathing do not meet) or alveolar hypoventilation (areas that each new breath doesn't expand).

## **Effects of Long Term Oxygen Therapy (LTOT)**

Two landmark studies from the early 1980's, the Nocturnal Oxygen Therapy Trial and the British Medical Research Council Working Party looked at the effect oxygen therapy had on survival for the COPD patient. These studies showed that the 3-year survival rate for patients with COPD and hypoxia who use LTOT continuously was 65%, compared to 45% for patients who used LTOT for only 12 hours overnight. The survival rate was even lower when no supplementary oxygen was used.

As a result of these studies, the standard treatment with supplemental oxygen is for the client to use oxygen ideally continuously and at least for 18 hours per day. We can say with some confidence that hypoxic clients will live longer if they use supplemental oxygen as prescribed.

The following figure from Comprehensive Management of Chronic Obstructive Pulmonary Disease by Jean Bourbeau illustrates the effect COPD has on oxygenation and as a result, the effect hypoxia has on the body as a whole. We should remember that clients with COPD are short of breath mainly due to airflow limitation, not hypoxia, and so may still be short of breath even with oxygen therapy.

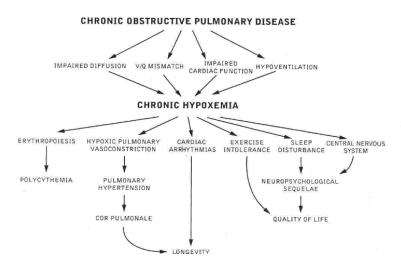


Figure 7–1 Schematic representation of the relationship between chronic obstructive lung disease, hypoxemia, and end organ effects.

## **Types of Home Oxygen Funding**

## **Continuous 'At Rest' Oxygen Therapy**

Most clients in Saskatchewan on oxygen have qualified for continuous oxygen. Continuous oxygen is when oxygen is used continuously for at least 18 hours per day. Palliative clients will be prescribed continuous oxygen.

## **Exertional Oxygen Therapy**

Some clients will have decreased oxygen saturation only during exertion (exercise and other physical movement) and may benefit from oxygen therapy. Supplementary oxygen is thought to increase oxygen delivery and its utilization by muscles and physical activity. Once again, as with continuous oxygen, the client may still be short of breath even with oxygen therapy. More research is needed in this area.

#### **Nocturnal Oxygen Therapy**

There are clients who desaturate to levels that require oxygen therapy only at night, probably due to a decrease in ventilation during some stages of sleep as well as a change in the V/Q relationship in the supine position. Supplemental oxygen therapy is NOT a recommended treatment for sleep apnea.

## **Pertinent Information & Definitions**

## **Smoking cessation**

Smoking cessation is the single most important step to reducing the risk of developing lung and heart disease and slowing its progression. Smoking while using oxygen is an extreme fire hazard. Additionally, smoking will limit the effectiveness of oxygen therapy as carbon monoxide reduces oxygen saturation. Clients who smoke should be advised of the health and safety concerns and encouraged to seek help in quitting from their physician, pharmacist, Lung Sask at 1-833-385-LUNG or the Smoker's Helpline at 1-877-513-5333.

#### **Cor Pulmonale**

Cor pulmonale is the enlargement of the right ventricle due to diseases of the lung, thorax, or pulmonary circulation. It can be detected on an ECG that demonstrates higher than normal P waves or on an echocardiogram. Many of those with advanced chronic obstructive lung disease have cor pulmonale. It is associated with a decrease in life expectancy (1).

#### **Polycythemia**

Polycythemia refers to an increase above normal in the number of red blood cells in the circulating blood. This elevation is usually, although not always, accompanied by a corresponding increase in the quantity of hemoglobin and in the hematocrit. Secondary polycythemia often occurs in response to some known stimulus, most commonly hypoxemia. These clients will often have a ruddy or red face. Unchecked polycythemia puts the client at risk for thrombosis. When the hematocrit levels increase beyond 55 to 60%, perfusion of the major organs can be affected (2, 3).

#### Sleep Apnea

Apnea literally means no breathing. Sleep apnea refers to pauses in breathing that occur during sleep. These pauses can be from 10 - 30 seconds or longer in severe cases. The number of complete pauses in breathing (apnea) or significant decreases in airflow (hyponea) per hour is designated as the Apnea/Hyponea Index (AHI).

The severity of sleep apnea is based on the AHI as follows:

- 1. Mild: 5 to 15 events per hour
- 2. Moderate: 15 to 30 events per hour
- 3. Severe > 30 events per hour.

Clients who have sleep apnea may have any or all of the following symptoms:

- Excessive day time sleepiness
- Snoring followed by silent pauses
- · Choking or gasping during sleep
- Unrefreshing sleep
- Impaired concentration
- Hypertension

Treatment for sleep apnea is Continuous Positive Airway Pressure (CPAP), not oxygen. Overnight oximetry alone is a poor diagnostic tool for sleep apnea but may be used to assess if CPAP or BiPAP therapy is effective for treating hypoxemia.

- 1. http://health.allrefer.com/health/cor-pulmonale-cor-pulmonale.html
- http://www.emedicine.com/ped/topic1848.htm
- 3. Bourbeau, Neault, Borycki, Comprehensive Management of Chronic Obstructive Pulmonary Disease BC Decker Inc 2002.

## **SAIL Home Oxygen Therapy Program Overview**

In order to receive SAIL Home Oxygen Funding clients must:

- have oxygen prescribed by a physician or nurse practitioner (will be referred to prescriber in this document)
- meet the medical criteria for either continuous, exertional, or nocturnal oxygen, or meet the criteria for end stage palliative care
- be assessed by an SHA employee

## The SAIL Home Oxygen Therapy Program consists of four categories:

- I. Initial Coverage
- II. Long Term Coverage
- III. Palliative Care Oxygen
- IV. Optional Coverage

#### **Initial Coverage (short term oxygen therapy):**

When applying for oxygen therapy funding, prescribers should complete <u>Application for Initial SAIL Oxygen Funding</u> and send a copy **with the test results attached** to SAIL and the client's oxygen supplier. Test results should include the date, tester name and number, and signature. If the test results do not meet SAIL oxygen criteria, the client will be responsible for the oxygen costs. The oxygen companies may also assist the prescriber in completing the application form.

After receiving the application for oxygen therapy funding SAIL will advise the client, supplier, and the prescriber of the eligible level of benefit. All funding will be assigned an effective and expiration date.

- All new clients qualifying for SAIL oxygen coverage will begin with an oxygen concentrator, portable oxygen cylinders or both. Some companies may provide a portable concentrator.
- Clients who qualify for continuous oxygen therapy will initially be covered for 6 months, and will be provided with an oxygen concentrator and 10 portable cylinders per month.
- Stable clients who qualify for exertional oxygen therapy will be provided 6 months coverage initially, and will receive funding for 10 portable cylinders per month only. (see p. 14 for definition of stability)
- Stable clients with nocturnal (nighttime) desaturation will initially qualify for coverage up to 1 year, and will receive funding for an oxygen concentrator only. (see p. 14 for definition of stability)
- Renewal testing should be done in the last month of coverage.
- Extensions can be made by testers if you have an appointment booked. To request this, email <a href="EHB@health.gov.sk.ca">EHB@health.gov.sk.ca</a> with client's initials and health card number.

## **II. Long Term Coverage:**

At the end of the initial oxygen coverage, period oxygen renewal forms will be sent to the client as well as the home oxygen company (who will arrange an order from the prescriber). The form will detail the testing required for the client to continue home oxygen therapy. Once the testing is complete, the form should be returned with the testing results to SAIL and the client's oxygen supplier. SAIL will forward a copy of the completed renewal form will be sent to the appropriate supplier together with a copy of the approval letter issued by SAIL to the client. Failure to receive a renewal notice does not change the client's responsibility for oxygen costs after the expiration date.

- Clients who meet the medical criteria and have had no exacerbation, hospitalization or change in treatment in the previous 30 days are eligible for long-term coverage.
- Clients who meet the criteria but had an exacerbation, hospitalization, or change of treatment in the previous 30 days will **ONLY** receive **short-term coverage on renewal**. (6 additional months)
- Clients who qualify for long-term coverage will require an annual update of their oxygen prescription by their prescriber, but will not require any further formal testing.

## **III. End-Stage Palliative Care Oxygen:**

The following parameters shall be used to help determine whether a terminally ill individual is in the **end-stage of the palliative process:** 

- Clients must be enrolled with in the SHA Palliative Care Program
- The timeframe for the end-stage may be measured in terms of days or weeks of active dying. Time frames are difficult to determine, however, and in some cases, this end stage may be longer than a few weeks or as short as a couple of days.
- There are typically day-to-day changes with deterioration proceeding at a dramatic pace. There is usually a sudden drop in the Palliative Performance Rating according to the Palliative Performance Scale (PPS) developed by the Victoria Hospice Society and the Capital Regional District Home Nursing Care in British Columbia.
- The end-stage may be characterized by increasing intensity of need: increased assistance required for physical or psychological need, family exhaustion, usually a requirement for social work, pastoral care and therapies.
- There is documented clinical progression of disease which may include a combination of symptoms such as dyspnea, crescendo pain, profound weakness, being essentially bed bound, increased nausea or drowsy for extended periods.
- The terminally ill individual is assessed a Palliative Performance Rating of 30% according to the PPS.

## Coverage by SAIL:

- Requires a prescription only (a signed <u>Application for SAIL Palliative Oxygen</u>)
- Testing is not usually required
- Validation is required by a SHA case manager/client assessor-coordinator that the client is enrolled on the SHA's Palliative Care Program client must be assessed a Palliative Performance Rating of 30% according to the PPS. Case managers are encouraged to take the Home Oxygen Testers course.
- Is short term only, oxygen equipment funded by SAIL is an oxygen concentrator with appropriate back up provisions, and 10 small cylinders per month.
- SAIL provides coverage for palliative patients for 4 months and can be extended up to 4 months. No testing is required for extensions.

SAIL supplies palliative care oxygen application forms. See appendix for <u>Application for SAIL Palliative Oxygen</u> or request forms from <u>EHB@health.gov.sk.ca</u>.

## IV. Optional Systems for Continuous and Exertional Oxygen

Clients who qualify for long-term continuous or exertional oxygen therapy may request equivalent funding from the standard package applied towards an optional oxygen system of their choice. SAIL and the client's home oxygen company will be able to provide further direction for the optional system qualification.

Qualifying beneficiaries may select their own oxygen system from within the range of eligible benefits, including an oxygen-conserving device, liquid oxygen system, transfill system, or portable concentrator system. Clients are responsible for extra costs associated with these types of systems. (see p. 22 for examples of optional systems).

#### V. Pandemic Oxygen

Some oxygen funding exceptions were made during the COVID-19 pandemic. Please contact SAIL to discuss further.

## **Testing Standards**

Please refer to the reverse side of the <u>Application for Initial SAIL Oxygen Funding</u> form for testing protocol and the <u>SAIL Home Oxygen Policy</u>.

To be approved, an oxygen funding application must have **one of the following** attached to it:

- An arterial blood gas report complete with lab identification, date and signature, or
- Formal oximetry testing complete with date, name, signature, and tester number of the health professional performing the assessment.

Note: For nocturnal coverage, the underlying diagnosis must be included along with testing results.

Once a client has been approved for SAIL long-term oxygen funding, repeat testing will not be required for annual renewals.

## **Home Oxygen Companies**

Clients have their choice of three oxygen companies who provide service throughout Saskatchewan. As user costs, delivery schedules, and services vary among oxygen suppliers, the choice of an oxygen supplier remains solely with the oxygen user. Requests for a change of vendor are considered only if directed by the oxygen user.

#### **Careica Health**

Province-wide toll free: 1-855-672-6262

## **Prairie Oxygen (Air Liquide)**

Province-wide toll free: 1-877-738-8702

## **Medigas (Linde)**

Province-wide toll free: 1-866-446-6302

## **Role of the Home Oxygen Company**

Oxygen vendors employ health professionals, technicians for equipment, and drivers for delivery of oxygen. Health professionals are contracted to visit their clients on a regular basis to assess their health condition and oxygen status and share this information with the ordering physician or nurse practitioner.

#### **Roles:**

- To provide home oxygen therapy to the client
- To assist in the setup of therapy in the home
- To perform regular respiratory and oxygen assessments on their clients
- To provide the best equipment to assist or improve their client's quality of life and oxygen therapy

NOTE: Home oxygen health professionals can provide testing for NIHB clients for funding purposes (but not for SAIL)

## **Pulse Oximetry**

Pulse oximeters give a non-invasive estimation of the arterial hemoglobin oxygen saturation based on the knowledge that hemoglobin absorbs red light differently depending on the degree of oxygenation. This is why arterial blood appears brighter and redder than venous blood.

#### **How Does a Pulse Oximeter Work?**

The pulse oximeter has a peripheral probe that contains two light emitting diodes, one in the visible red spectrum and one in the infrared light spectrum. These beams of light are shone through the tissue onto a light detector. With each pulse, the volume of oxygenated arterial blood in the tissue increases, causing more red light to be absorbed. The microprocessor in the pulse oximeter calculates the oxygen saturation based on the change in red light being detected. The measurement calculated by the oximeter is charted as the SpO2 (1).

#### **Limitations:**

- Vasoconstriction and hypothermia can cause reduced tissue perfusion leading to a poor or absent signal.
- Movement such as shivering or tremors can cause the heart rate to be overestimated and the saturation to be underestimated.
- High ambient light can confuse the light detector.
- Low perfusion does not give the detector enough information to make an accurate reading. You may try moving
  the sensor to another site or warming or massaging the extremity.
- Nail polish that is especially dark such as black or brown may cause a problem for the sensor.
- In severe anemia, the saturation will only indicate what percentage of hemoglobin is carrying oxygen; however, the tissues may still be hypoxic due to the lack of oxygen carrying capacity of the blood.
- Carbon monoxide in the blood is also attached to the hemoglobin and may confuse the oximeter because it does not differentiate between carboxyhemoglobin and oxyhemoglobin.
- Pulse oximeters are accurate to within 2%.

#### **Quality Control:**

- ✓ Always compare the pulse reading to the actual pulse measured manually. An incorrect pulse rate means the reading is unreliable.
- ✓ Check a normal person (yourself) to confirm that the oximeter reads between approximately 97 100%.
- ✓ If an oximeter does not seem to be working properly, change the batteries, usually the problem will disappear.
- ✓ Warm up hands of someone with poor perfusion or use a forehead/ear probe. If this does not work, ABG is the best option.

1. Hill, Stoneham, Practical Applications of Pulse Oximetry, www.nda.ox.ac.uk/wfsa/html/u11/u1104\_01.htm1/10/2007

## **Testing for Continuous Oxygen Funding**

An arterial blood gas test is the preferred test for continuous home oxygen funding through the SAIL program (criteria below). When this testing is not feasible or as accessible, testing using a pulse oximeter is an acceptable alternative.

## **Eligibility Criteria for Continuous Oxygen Funding:**

- 1. Arterial blood gas (after resting for 10 minutes on room air):
  - PaO2 <55 mm Hg</li>
  - PaO2 <59 mm Hg if the client has cor pulmonale or polycythemia

OR

- 2. Oximetry (see instructions below):
  - Saturation results < 87% continuously for 2 minutes **OR**
  - Saturation results < 90% continuously for 2 minutes if the client has cor pulmonale or polycythemia
  - AND must have evidence that the client's saturation results improved with the use of oxygen.

## **Pulse Oximetry Testing Procedure for Continuous Oxygen Funding:**

- This requires a two-part test.
- This test may be performed on a hospitalized patient who is ready for discharge, within 48 hours prior to discharge.

#### Part 1: Room Air Test

- 1. Confirm if client has SAIL or NIHB health benefits. If SAIL, proceed with the following:
- 2. Ensure oxygen is removed and client can rest seated or lying down for up to 10 minutes on room air. Monitor for desaturations and record. SAIL needs proof of desaturation as per criteria above; a spot check every 30 seconds or less is adequate.
- 3. Print the results or make a note of the time the room air strip was completed and symptoms the client was feeling. Label the printed results **Room Air Test.** See example in the Appendix.

#### Proceed to Part 2 only if the oxygen saturation was:

- <87% for two consecutive minutes</li>
- <90% for two consecutive minutes if client has known *cor pulmonale* or *polycythemia*. Don't know if the client has *cor pulmonale* or *polycythemia*? Complete test as if they do and report these results to the ordering prescriber (see Flow Chart p. 13).

## Part 2: Supplementary Oxygen Test (oxygen supplied by the SHA)

- 1. The client rests for at least 10 minutes while using supplementary oxygen.
- 2. Start with a low flow rate (1-2 litres/minute).
- 3. Adjust the oxygen as needed to achieve an oxygen saturation of 90-92%
- 4. While the client remains resting with oxygen on, record a 5-minute oximetry strip, (spot check every 30 seconds or less is adequate).
- 5. Print the strip or make notes for later printing. At the top of this strip, write Supplementary Oxygen Test.

Results that meet criteria must be attached to the SAIL application and include the tester number, name, date, and signature. Contact the home oxygen company of choice to set up oxygen as soon as possible/before discharge from hospital or clinic.

## Clients who meet the SAIL funding criteria

- Initial coverage is for 6 months.
- A concentrator and 10 portable cylinders per month will be supplied.
- The client chooses their supplier from the list of companies operating in this province.
- To achieve maximum benefit from continuous home oxygen therapy, oxygen should be used ideally 24 hours per day, and at the very least 18 hours.

## Clients who do not meet SAIL funding criteria at rest:

If the client does not qualify for continuous oxygen coverage after the resting test, consider requesting an ABG (especially if borderline results). Or do exertional testing and/or overnight oximetry to determine if the client requires oxygen during exercise or for nocturnal desaturation and is stable. A physician/NP order is required.

If the SAIL funding criteria has not been met, and the prescriber determines that oxygen therapy is still appropriate, it may be ordered and the client will pay the cost for this.

## Continuous Testing Clients with High Flow O2 (or for those who cannot tolerate removing O2)

There are clients who require oxygen flows of greater than 6 LPM, and should not have their oxygen removed for a room air test. Others may not feel well or are anxious without their oxygen. If you need to test someone like this, please use the following method.

- 1. Leave the oxygen on at the prescribed level.
- 2. Obtain a 5-minute oximeter strip.
- 3. Leave the oximeter attached.
- 4. Turn down the oxygen slowly until the SpO2 falls to 87%. (90% with cor pulmonale)
- 5. Obtain a 2-minute oximeter strip at 87% saturation.
- 6. Return oxygen flow to prescribed level.

## How long do oxygen cylinders last?

Cylinder size	1 LPM	2 LPM	3 LPM	4 LPM	5 LPM
E (29" tall)	10h	5h	4 h	2.5h	2h
D (19.5" tall)	5h	2.5h	2h	1.5h	1h
C (14" tall)	4h	2h	1h		•

<sup>\*</sup>Chart adapted from Prairie Oxygen's "Regulator and Cylinder Operations" Handout, 2017

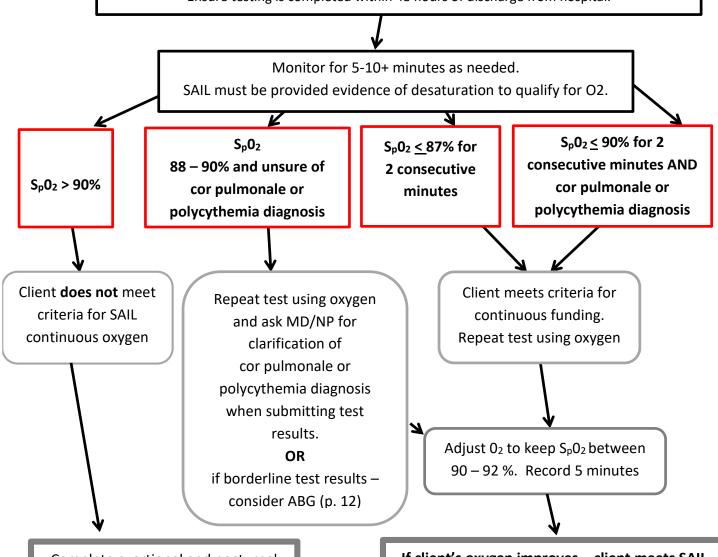
The hours listed above are based on a full cylinder. As flow increases, the length of time decreases. Clients are often scared to leave their home in case they run out of oxygen as they only get 10 tanks per month. Ask the oxygen supplier for a copy if your client does not have one as it may help with planning outings and providing comfort. An oxygen conserving device (OCD) can help a cylinder last longer. An OCD may be provided through the SAIL Optional Funding (see p. 22) to clients who have shown good use of their oxygen and who are using multiple tanks per month. Clients can discuss this with their provider.

# Pathway for Oximetry Testing for Continuous Oxygen Funding

Remove oxygen if using. Apply oximeter. Monitor for desaturations.

If unable to remove oxygen due to oxygen demand or anxiety, do testing for high flow oxygen.

Ensure testing is completed within 48 hours of discharge from hospital.



Complete exertional and nocturnal testing (ensure you have an order to do so).

Send physician and home oxygen results, informing them that the client does not meet criteria for continuous oxygen. SAIL does not need a copy of these results. If this is a renewal test, send results to the home oxygen company also.

If client's oxygen improves – client meets SAIL criteria for continuous oxygen.

Results must include tester name, number, and signature.

To ensure prompt treatment, send results to the physician and home oxygen company who will need to ensure a *signed* Application for Initial SAIL Oxygen Funding form is completed and faxed to SAIL and the home oxygen company. Contact company to arrange set-up oxygen prior to leaving the clinic or hospital discharge.

SAIL Home Oxygen Program Tester's Handbook

## **Testing for Exertional Oxygen Funding**

Exertional oxygen therapy is provided when a client is hypoxemic only on exertion and has improved exercise tolerance with the use of oxygen.

## Before testing is started, you must be able to answer yes to the following 4 questions:

- 1. Is the patient stable? (no hospitalization, no exacerbation or no change in treatment due to cardiorespiratory illness in the past 30 days)?
- 2. Is there an order for the test?
- 3. Is the client's resting oxygen saturation greater than 87%?
- 4. Is the test conducted in an appropriate facility or safe location?

## **Eligibility Criteria for Exertional Oxygen Funding**

To be eligible for oxygen funding, oximetry on room air must show:

- 1. A minimum of 20 seconds of continuous oxygen saturation ≤ 87% AND
- 2. An improvement in exercise capacity of 20% with supplementary oxygen must be documented.

## Part 1: Room Air Test

- 1. After the client has been seated for 10 minutes, they should walk on the level at a comfortable pace (or exercise on a treadmill, exercise bicycle, arm bicycle, or self-propelling a wheelchair).
- 2. Stop the test at the onset of symptoms and or when client has had minimum of 20 seconds of continuous oxygen saturation < 87%.
- 3. Record the symptoms and the time of onset on the oximetry strip.
- 4. Record the distance walked (or time on treadmill or bicycle).

**Proceed to Part 2** only if the client's oxygen saturation has been < 87% for 20 seconds. If the client is unable to walk far enough to meet criteria due to symptoms, stop test and consider nocturnal testing.

## Part 2: Supplementary Oxygen Test (oxygen is arranged/supplied by the testing site)

- 1. The client rests for 10 minutes while receiving oxygen at 2 litres per minute.
- 2. The client repeats the exercise protocol (same as part 1).
- 3. Adjust the oxygen as needed to achieve an exercise saturation of 90-92%.
- 4. Stop the test with the onset of symptoms.
- 5. Record the symptoms and the time of onset on the oximetry strip in detail (see p. 18).
- 6. Record the distance walked (or time on treadmill or bicycle).
- 7. Record the oxygen flow rate during used during the test.

Results that meet criteria must be attached to the SAIL application and include the tester number, name, date, and signature. Contact the home oxygen company of choice to set up oxygen as soon as possible. If client does not meet criteria, please state this on your results and fax to the physician/NP. SAIL does not need a copy of results that do not meet criteria.

## Clients who meet the SAIL funding criteria

- The client chooses their supplier from the list of companies operating in this province.
- Test results must be attached to the SAIL Home Oxygen application.
- Clients who qualify under these criteria will receive funding for 10 portable oxygen cylinders per month for 6 months initially.

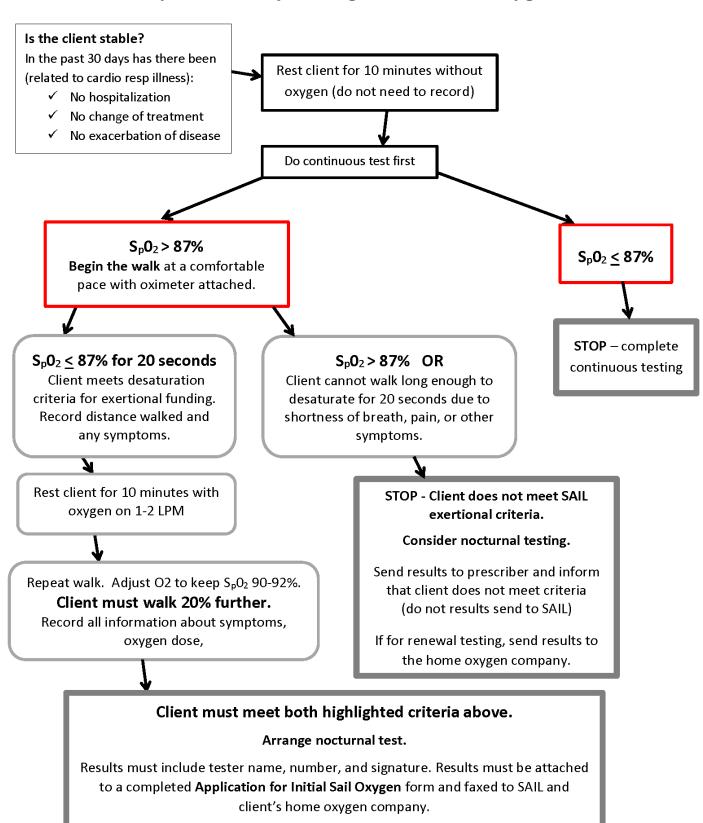
It is highly recommended that exertional testing be completed in a facility (e.g. hospital, clinic, LTC, exercise clinic).

#### Reasons to test in a facility:

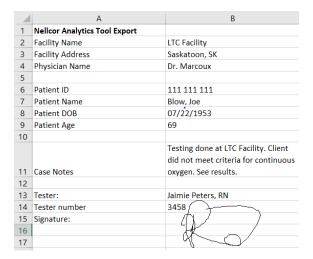
- 1. Access to oxygen.
- 2. A controlled environment with a level walking surface.
- 3. Distances can be measured for accurate testing.
- 4. Back up support if someone falls, faints, or has a medical emergency.

If this is not possible, use your clinical judgement and comfort depending on the client. If deemed appropriate, it may be safe to complete this testing at home.

## **Pathway for Oximetry Testing for Exertional Oxygen**



## **Example of a PM10N Oximeter Excel Oximetry Report**



## **Continuous**

	Α	R	C	U	E	F	G	Н	1
1	Date/Time	SpO2	Pulse Rate						
2	2/19/2020 11:22:10	96	87	Client sat a	t rest for 10	minutes on	room air.		
3	2/19/2020 11:22:30	95	92						
4	2/19/2020 11:22:50	94	94						
5	2/19/2020 11:23:16	95	92	Client comf	ortable and	talking eas	ily		
6	2/19/2020 11:23:45	95	92						
7	2/19/2020 11:23:59	94	90						
8	2/19/2020 11:24:15	95	90	Client does	not meet c	riteria for co	ntinuous		

## **Exertional**

9	2/19/2020 11:41:00	96	88 Started the walk - walking very fast
10	2/19/2020 11:42:00	96	111 Walked 180 ft
11	2/19/2020 11:42:28	94	111
12	2/19/2020 11:42:55	91	119
13	2/19/2020 11:43:19	89	125 States she is feeling good
14	2/19/2020 11:43:44	90	126 Coughing started 'dry throat'
15	2/19/2020 11:43:45	89	126 Round 2 of walk -another 180 ft
16	2/19/2020 11:44:16	88	129
17	2/19/2020 11:44:51	88	131 3rd Round - another 180ft
18	2/19/2020 11:45:14	87	130 States doing good but slower and starting to cough more
19	2/19/2020 11:46:12	87	131
20	2/19/2020 11:46:13	88	131
21	2/19/2020 11:47:00	88	195 Stopped for a drink states she does not usually walk that much
22	2/19/2020 11:47:01	88	135
23	2/19/2020 11:47:02	88	136
24	2/19/2020 11:47:03	89	136
25	2/19/2020 11:47:33	88	134 4th round walk stopped and continued to desaturate
26	2/19/2020 11:47:36	87	133
27	2/19/2020 11:47:41	86	132
28	2/19/2020 11:47:42	86	133
29	2/19/2020 11:47:48	87	131
30	2/19/2020 11:47:49	87	130
31	2/19/2020 11:47:50	87	130
32	2/19/2020 11:47:51	87	130
33	2/19/2020 11:47:56	87	129 Total distance ~720 feet
34	2/19/2020 11:47:57	87	128 23 second of desaturation but client not too concerned
35	2/19/2020 11:48:40	90	118 Attemped a second walk and up stairs
36	2/19/2020 11:48:41	90	117
37	2/19/2020 11:49:24	95	107 Client sob and anxious about 18 stairs but did not desaturate
38	2/19/2020 11:49:51	95	105
39	2/19/2020 11:50:21	97	106
40	2/19/2020 11:50:36	100	121 Rested and saturations improved
41	2/19/2020 11:50:41	99	114
42			

## **OXIMETRY PRINTOUT FORM**

Client's Name: MRS. R.	
Physician: OR, P	
Tester: FRAN HILL	
Tester Registration Number: _ 3.0.7	

-				
ROOM A	<u>IR TEST</u>	SUPPLEMENTARY OXYGEN TEST		
	☐ Free Walking distance <u>rso</u> m	distance <u>300</u> m	,	
NELLCOR K-20P POLSE OXIMETER VERSION 1.2.4	@ Treadmill speedkm/hr	speedkm/hr	KELLCOR N-20° PULSE GXI*ETE9 VERSION 1.2.4	
PATIENT	☐ Bicycle		PATIENT	
<u>MRS R</u> 86-87-00 18:88	work ratewatts	work ratewatts	PRS. R	
91: 30 82 8 8 82: 30 972 97 82: 33 962 96 87 87 83: 39 952 96 84: 39 952 186 85: 30 952 117 86: 46: 47: 30 852 117 86: 46: 47: 47: 48: 48: 48: 48: 48: 48: 48: 48: 48: 48	rated walking hallway with oxygen with what of water of test.  tent continued desalwate	Started walking, -  continued walk  same as inform but was able  to walk further,  slightly, short of  breath.  increased O2 to  1.5 LPM  Mrs. R. hed  increase Sa O2	66-07-00 10:19  SAI BPM  06:30 93% 96  * 08:31 92% 96  01:00 94% 91  01:30 95% 95  02:06 95% 95  02:30 94% 107  * 03:00 94% 107  * 03:00 92% 108  04:14 91% 111  04:30 92% 111  04:30 92% 111  04:30 92% 111  06:30 92% 111  06:30 92% 111  06:30 92% 111  06:30 92% 111  06:30 92% 111  06:30 92% 111  SECOND 92% 100  07:30 95% 96  08:00 95% 94	
	low resting.	and endurance on opygen.	M1N: 96%	
SP02: MIN: 85% MAX: 98% MERM: 91%		on ofygen.	HEAK: 93% PULSE RATE: NIN: 84	
PULSE RATE:		1	MAX: 114 MEAN: 104	
Min: 85 Max: 119	To preserve the p	rint on recording strip bly tape only to	TIME 69:06	
		ottom of strip	<del></del>	
	տի այն ն	onom or surp		

## **Testing for Nocturnal Oxygen Funding**

Testing during the night is requested to determine whether a client is hypoxemic during sleep only. Rural testing is coordinated provincially through a contract with the Lung Sask and SHA Health Centres. Requisitions for rural nocturnal testing are sent to the Lung Sask office by either fax or email and are prioritized by Lung Sask staff. Centres and respiratory therapy departments who have their own nocturnal oximeters may perform their own testing.

This is a 2-part test on a stable client who has **not had** a hospitalization, exacerbation, or change of treatment for a cardiorespiratory event treatment in the past 30 days.

## **Eligibility Criteria for Nocturnal Oxygen Funding**

To be eligible for nocturnal oxygen funding the testing must show:

- 1. An oxygen saturation of ≤ 87% for more than 30% of the night.
- 2. The second night's test must also show a significant improvement with oxygen therapy.

#### Part 1: Room Air Test (If the client has a CPAP/BiPAP, this should always be used for nocturnal testing)

- 1. An oximeter is sent to the requisitioning home care office from the Lung Sask office in Saskatoon (others with a nocturnal oximeter will determine their own process).
- 2. The client is monitored throughout the night using an oximeter with 12 or more hours of memory.
- 3. The oximeter is then returned to the Lung Sask or the local home oxygen tester to be downloaded *OR* if the client has oxygen available, client will do a second night of testing at home with oxygen applied.

#### Part 2: Supplementary Oxygen Test (A CPAP oxygen connector can be provided if needed)

- 1. When the downloaded information from an overnight oximetry test indicates that the client requires nocturnal oxygen therapy, a second night of testing will be completed.
- 2. The client is monitored throughout the night while using supplemental oxygen, supplied by the SHA or by the client if a concentrator is available. Arrangements may also be made to borrow oxygen from a home oxygen company.
- 3. Record the flow rate of oxygen used.
- 4. The oximeter is then returned to Lung Sask or local home oxygen tester for downloading of data. The results of the overnight studies are faxed directly to the requesting prescriber and oxygen supplier.

## Clients who meet the SAIL funding criteria:

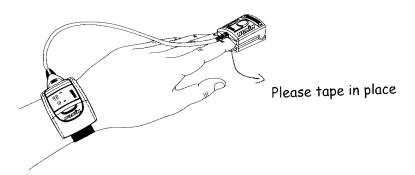
- Are supplied with an oxygen concentrator
- Test results and the diagnosis must be included with the Application for Initial SAIL Oxygen form.
- The <u>Nocturnal Oxygen Testing Instructions form</u>, <u>Nocturnal Oxygen Testing Communication Form</u> and <u>Sleep Apnea Screening Tool</u> is sent with each nocturnal oximeter. Please assist your clients in filling these out. (See Appendix).
- The returning SHA health centre is responsible for return shipping costs.

#### NOTE:

- Nocturnal oximetry is also used by sleep physicians to monitor sleep apnea therapy so at times some testing will be requested for non-oxygen funding purposes.
- SAIL and the sleep physicians prefer results from a Nonin Wristox 3150 oximeter.

## **WristOx Oximeter Instructions**

- The oximeter is shipped to you ready to use.
- You do not need to change batteries and the sensor is connected.
- The client's finger acts as the On/Off switch, it turns on and off automatically when a finger is inserted into the sensor.
- You may demonstrate the use of the oximeter to the client if it turns on it will not affect the nighttime test.
- If it becomes uncomfortable in the night, it can be moved to a different finger.



Please return the oximeter and paperwork **immediately** with the oximeter and/or via fax. Return shipping costs and oxygen supplementation are the SHA's responsibility.

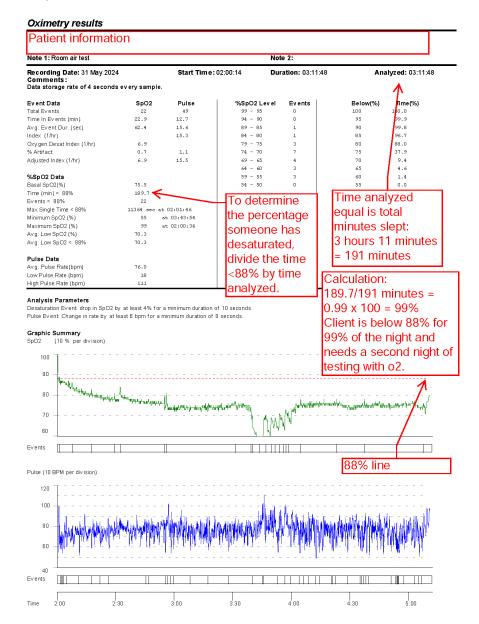
# How to calculate nocturnal oximetry results:

When calculating how much someone desaturates, please follow the directions in the diagram.

For sample nocturnal oximetry reports and cover letters, reach out to Lung Sask - oxygentest@lungsask.ca

#### NOTE:

If someone is awake during the test time, ensure to subtract the time awake from the total minutes slept ie. if they were awake for 1 hour, take 60 minutes off the total time.



## **Oxygen Delivery Systems**

Clients are supplied with home oxygen through private oxygen companies who provide both the equipment and the services of medical professionals, either respiratory therapists or nurses. Several options are available to meets the needs of clients. The following chart summarizes the equipment currently available:

<u>System</u>	<u>Advantages</u>	<u>Disadvantages</u>
Compressed Oxygen	Good for small volume	Heavy & bulky
Cylinders	No waste or loss	High pressure system (2200 PSI)
	Stores oxygen indefinitely	Limited volume of oxygen
	Most available	Multiple cylinders required for ambulation
		Frequent deliveries required
		Storage area required
Oxygen	No waste or loss	Electrical disruption renders system inoperable
Concentrator	Low pressure system (15 PSI)	Back-up oxygen is required
	Cost effective as a continual	Portable oxygen is required for ambulation
	supply of oxygen	Electrical costs increase
	No delivery refills required	
	Convenient and attractive at	
	home	
Liquid Oxygen	Provides large quantities of	Loss of oxygen due to venting
	oxygen	Must be delivered as required
	Low pressure system (20-25 PSI)	Low temperature safety precautions
	Portable, light-weight units can	Not available through all companies
	be refilled from reservoir (up to 8	Not available in all regions of the province
	hour supply at 2 LPM)	
	Valuable for pulmonary	
	rehabilitation	

## **Optional systems**

For those clients with long term funding who meet certain criteria and are willing to pay an extra fee, specialized equipment the following systems are available in Saskatchewan (see p. 9). Clients should discuss options with their home oxygen provider.

## Oxygen conserving device (OCD)

- Saves oxygen by delivering a bolus at the beginning of inhalation and sh
- Flow sensor starts oxygen when client takes a breath
- Small cylinder will last 3-4 times longer with OCD
- Not all clients can tolerate this type of oxygen delivery



#### Trans fill concentrator

- SAIL optional coverage
- Limited availability
- Fill cylinder from concentrator
- No need for delivery of cylinders
- No limit on cylinders
- Beneficial for rural, active client
- Requires some skill to fill cylinders
- Not used often anymore



## Portable oxygen concentrator

- Can be plugged into car
- Operated by battery
- Costs may be covered by the SAIL program
- May be rented by clients for travel
- Many only have pulse-dose option, some have continuous flow
- Expensive to purchase



## **Home Oxygen Safety**

Oxygen does not burn, but it causes other materials to burn more easily and rapidly. You may need to discuss and assess these concerns when testing a client in their home (e.g. nocturnal testing).

## Home oxygen can be used safely if you keep in mind two principles:

## 1. Do not provide a source of ignition for a fire to start:

- Never smoke or vape while using oxygen
- Do not allow anyone to smoke in your home
- Stay at least 5 feet from open flames such as fireplaces, gas stoves, and candles
- Do not store oxygen near sources of heat (radiators, heaters, steam pipes) or electrical appliances
- Do not use extension cords for oxygen concentrators
- Avoid operating electrical appliances such as razors or hairdryers while using oxygen
- Avoid static electricity and sparks by using cotton bedding and clothes. Do not use wool, nylon or synthetic fabrics.
- Do not use oil-based skin creams such as petroleum jelly, petroleum-based creams, or lip products

## 2. Avoid creating an oxygen-enriched atmosphere:

- Keep oxygen tanks in a well ventilated area
- Do not store in closets, behind curtains, or other confined spaces
- Secure the oxygen tank to a fixed object or place in a stand

Remember: the fire risk is still present for a while after the oxygen has been turned off.

# **Appendix**

# Application for Initial SAIL Oxygen Funding

Saskatchewan Aids to Independent Living 3475 Albert Street Regina, SK S4S6X6

Phone: 1-888-787-7121 or 1-888-787-8996

Fax: 306-787-8679

Date: (dd/i	mm/yyyy)			
Patient Identification				
Name:		Health Services Number:		
Telephone:		Date of Birth:		
Street Address or P.O. Box:	City/Town:	Prov	rince:	Postal Code:
Prescription: Please complete only th		(s) and attach correspo	nding tost re	
Funds a concentrator and 10 portable		cylinders per month for		ncentrator for use at night for
cylinders per month for patients who are hypoxemic at rest.	patients who are (These provide a	hypoxemic on exertion. limited supply for use on xertion.)		s who are hypoxemic while sleeping.
☐ Continuous Oxygen	☐ Exert	ional Oxygen		Nocturnal Oxygen
<b>Rx</b> Flow: lpm	Rx Flow	lpm	Rx ⊦	low: lpm
By: Nasal Cannulae □ Other: Does this patient have cor pulmonale or polycythemia?	By: Na Otl Has this patient change in treatm	sal Cannulae  her:had an exacerbation, a ent, or a hospitalization	Has this pachange in t	By: Nasal Cannulae □ Other: atient had an exacerbation, a creatment, or a hospitalization
Yes □ No □	30 days	o-pulmonary event in the prior to testing?		cardio-pulmonary event in the days prior to testing?  Yes  No
RESPIROLOGIST ONLY:	163			
Does this patient have advanced irreversible lung disease?  Yes  No			_	NOSIS for which nocturnal exygen is requested:
	ust be attached to all	applications. The funding	criteria are su	ımmarized on the reverse.
Typically, t	esting should be <b>with</b> i	in 48 hours prior to initiation traced	on of home o	xygen therapy.
Prescriber – Physician or Nurse Practi		-		
Name:		Prescriber's Signatur	re:	
Telephone: Date:	:			
Street Address or P.O. Box:	City/Town:	Prov	vince:	Postal Code:
Follow-up Prescriber(if the renewal sh	 nould be sent to and	ther physician, please s	specify belov	ν).
Name:		Telephone:	. ,	,
Street Address or P.O. Box:	City/Town:	Prov	vince:	Postal Code:
Patient's Supplier Selection Please mark your choice of oxygen supplie supplier before making your selection. You payment from Saskatchewan Health.		a copy of this requisition a	and your signa	
Careica Health Medigas F A Praxair Company	Prairie Oxygen Ltd.	Patient's	Signature:	

## SAIL Oxygen Funding Criteria

**Continuous Oxygen** – funds a <u>concentrator and 10 portable cylinders</u> for oxygen use 18+ hours daily for patients who are hypoxemic at rest.

#### In the absence of cor pulmonale or polycythemia Criteria:

The patient, while at rest after being seated for 10 minutes, must have a PO₂≤55 mm Hg or a pulse oximetry saturation ≤ 87% for a minimum of 2 continuous minutes.

## *With* cor pulmonale or polycythemia Criteria:

The patient, while at rest after being seated for 10 minutes, must have a PO₂ ≤59 mm Hg or a pulse oximetry saturation ≤ 90% for a minimum of 2 continuous minutes.

If aximetry is used to show qualification, both the test on room air and the test on prescribed axygen must be attached. Oxygen should be prescribed sufficient to raise the saturation to between 90% and 92%, or to raise the PO₂ to between 60 and 65 mm Ha.

Initial coverage is limited to 4 months.

Exertional Oxygen - funds 10 portable cylinders per month for oxygen use on exertion.

For exertional oxygen funding, patients must not have been hospitalized for a cardiorespiratory event or had an exacerbation or change of treatment in the 30 days prior to testing. Criteria:

This requires a two part test:

- Part 1 is a maximum exercise symptom limited room air test. After being seated for 10 minutes, the patient should use a treadmill, an exercise bicycle, or walk on the level at a comfortable pace. Stop the test with the onset of symptoms. Record the symptoms, the time of onset, and the distance.
- Part 2 requires the patient to rest for 10 minutes while receiving 2 litres per minute of oxygen after completing part 1. The patient should then repeat the test in part 1 while using oxygen. Oxygen should be adjusted as needed to maintain the saturation at 90% 92% during exercise. Stop the test with the onset of symptoms. Record the symptoms, the time of onset, and the distance.

For eligibility for oxygen funding:

- Oximetry on room air must show a pulse oximetry saturation ≤87% continuously for a minimum of 20 seconds and
- There must be documentation of improvement in exercise capacity of 20% with oxygen use; that is the
  onset of symptoms is delayed by at least 20%.

Ideally, oxygen should be prescribed sufficient to maintain the saturation to between 90% and 92% during exertion.

Initial coverage is limited to 6 months.

**Nocturnal Oxygen** – funds a <u>concentrator</u> for oxygen use at night for patients who require oxygen while sleeping.

**Criteria for a patient who has not been hospitalized for a cardiorespiratory event or had an exacerbation or change of treatment in the past 30 days.** Nocturnal funding applications should only be made for patients whose blood gas or oximetry results do not show qualification for continuous oxygen.

- Noctumal oximetry testing shall be done both on room air and with supplemental oxygen. Both complete tests
  and the underlying diagnosis must be included with the application for funding.
- Patients shall demonstrate noctumal hypoxemiathrough saturations ≤ 87% on overnight oximetry for a period of more than 30% of the test time. Measured saturation with the application of oxygen therapy should show evidence of significant improvement.
- Benefits may be considered on an exceptional basis when prescribed by a respirologist. Documentation of
  polysomnography results or other supporting evidence must be provided.

Initial coverage in a stable patient is for up to 1 year

# Saskatchewan Health Aids to Independent Living 3475 Albert Street Regina, SK S4S 6X6 Telephone: (306) 787-7121

## Application for Renewal of SAIL Oxygen Funding

Please return directly to SAIL before coverage expires on

MIN	Regina, SK S4S 6X6	SAIL Oxygen Funding	coverage expires on				
	Telephone: (306) 787-7121 Fax: (306) 787-8679	and the second s	MARCH 31, 2007				
	MR. JOHN DOE PO BOX 99 SOMETOWN SASKATCH	IEWAN SOS OSO	HSN 123456789				
Did t	this patient have a change in the treat	heir cardiorespiratory disease in the 30 days priment of their cardiorespiratory disease in the 30 days prior to tes	days prior to testing? Yes □ No□				
If the	e answer to any of the above is "Yes"	coverage will be short term only.					
signo direc	Please attach blood gas or oximetry results which correspond to the coverage prescribed below. All test results must be dated, signed and labelled by the tester indicating the necessary testing conditions and the laboratory or agency doing the testing. Tests directed or performed by oxygen suppliers are not recognized by SAIL for oxygen coverage applications.  Test results must be attached to this form. See the reverse side of this form for details.						
Broce	rintion: Plassa complete en	ly the applicable section(s) and attac	h the corresponding test results				
TESU	Tiption. Please complete on	The applicable section(s) and attac	The corresponding test results.				
cylinde	a concentrator and 10 portable rs per month for patients who poxemic at rest.	Funds 10 portable cylinders per month for patients who are hypoxemic on exertion. (These provide a limited supply for use on exertion.)	Funds <b>a concentrator</b> for use at night for patients who are hypoxemic while sleeping.				
С	ontinuous Oxygen □	Exertional Oxygen □	Nocturnal Oxygen ☐				
Rx F	low: lpm	Rx Flow: lpm	Rx Flow: lpm				
	y: Nasal Cannulae	By: Nasal Cannulae □	By: Nasal Cannulae □				
	Other:	Other:	Other:				
	D		***				
	nis patient have cor pulmonale cythemia?		With all nocturnal oximetry tests please provide the				
or polyt	Yes □ No □		diagnosis for which nocturnal				
	Check one of the above.		oxygen is requested:				
		7					
Please	e complete only if oxygen	funding is to be discontinued.					
	Discontinue Oxygen	Funding This patient is no lo	nger hypoxemic or no longer meets SAIL				
		program criteria to	r funding. Oxygen coverage will be renewal date above.				
Presc	ribing Physician						
	TI TI	Please print the correct name and address if those shown	n below are different.				
	DR. JANE DOE BOX 99		SUPPLIER				
	BIGCITY SK S0S 0S0						
		Prescriber's signature:	Date:				
Physi	cian providing follow-up	05 for the control of	yy/mmm/dd				
Name	cian providing follow-up	(If future renewals should be sent to another phys  Telephone Number	sician please specify below.)				
Address	Account of the Control of the Contro	City, Town, or Village	Province Postal Code				
, 100,000		Ony, romin, or vinage	Fromition Foster Code				
2000	A copy of this form will be	e sent with approved oxygen coverage	ge to the oxygen supplier.				

\*\* may not be exactly as seen in current forms

# Saskatchewan Health Aids to Independent Living 3475 Albert Street Regina, SK S4S 6X6 Telephone: (306) 787-7121 Fax: (306) 787-8679

# Application for Renewal of SAIL Oxygen Funding

Please return directly to SAIL before coverage expires on

MARCH 31, 2007

MR. JOHN DOE PO BOX 99 SOMETOWN SASKATCHEWAN S0S 0S0 HSN 123456789

No test results are required for renewal of patient's continuous oxygen coverage.

Prescription: Please complete only the applicable section(s) and attach the corresponding test results.

A prescription renewal is required. Please complete the sections below.

Funds a concentrator and 10 portable cylinders per month for patients who are hypoxemic at rest.	month for pa on exertion.	portable cylinders per itients who are hypoxemic (These provide a limited e on exertion.)	Funds a concentrator for use at night for patients who are hypoxemic while sleeping.
Continuous Oxygen □	Exer	tional Oxygen □	Nocturnal Oxygen □
Rx Flow: lpm	Rx Flow:	lpm	Rx Flow: lpm
By: Nasal Cannulae 🛚	By: N	asal Cannulae 🛚	By: Nasal Cannulae 🛚
Other:	0	ther:	Other:
Does this patient have cor pulmonale or polycythemia?  Yes No Check one of the above.			With all nocturnal oximetry tests please provide the diagnosis for which nocturnal oxygen is requested:
Please complete only if oxygen	funding is t	o be discontinued.	
Discontinue Oxygen I □	Funding	program criteria fo	onger hypoxemic or no longer meets SAIL or funding. Oxygen coverage will be renewal date above.
Prescribing Physician			
	Please print the co	rrect name and address if those show	n below are different. ##
DR. JANE DOE BOX 99 BIGCITY SK S0S 0S0			SUPPLIER
	ſ	Properiher's signature:	Date:
		Prescriber's signature:	Date:
Physician providing follow-up	(If future renewa	als should be sent to another phy	y y / m m m / d d sician please specify below.)
Name		Telephone Number	
Address		City, Town, or Village	Province Postal Code
A copy of this form will be	e sent with a	pproved oxygen covera	ge to the oxygen supplier.
,		·	

<sup>\*\*</sup> may not be exactly as seen in current forms

## Regional Health Authority Request for **End Stage Palliative Oxygen Benefits**

Saskatchewan Aids to Independent Living 3475 Albert Street Regina, SK S4S6X6 Phone: 1-888-787-7121 or 1-888-787-8996

Fax: 306-787-8679

Date:	(d	d/mm/yyyy)			Fax: 306-787-8679	
Patient Identific	ation					
Name:			Health Sei	rvices Number:		
Telephone:			Date of Bi	rth:		
Street Address o	or P.O. Box:	City/Town:		Province:	Postal Code:	
End Stage Pallia	tive Designation					
I certify that this c defined in the Sas	lient has been assess katchewan Health po	licy entitled "Policy Dire	ection Regard	off, as meeting the criteria for ding Supplies and Charges For Denefits described in that po		
Signature of Cas	e Manager:	Date:		RHA Name:		
Name of Case M	lanager (Please Prir	nt):		Telephone:		
Prescription						
Flow Required: _	lpm					
By Nasal Cannul	ae □				d the following equipment for	
Other:			conti	nuous oxygen therapy:		
Use: Continuous			<ul><li>Oxygen concentrator; and</li><li>10 small cylinders per month (maximum).</li></ul>			
Other:	_				(	
Prescriber – Phy	sician or Nurse Pra	ctitioner				
Name:			Prescr	iber's Signature:		
Telephone:	Da	nte:	-			
Street Address o	or P.O. Box:	City/Town:		Province:	Postal Code:	
Follow-up Presci	riber (if the renewa	al should be sent to a	nother pres	scriber, please specify be	elow).	
Name:			Telephor	ne:	·	
Street Address o	or P.O. Box:	City/Town:		Province:	Postal Code:	
Patient's Supplie	er Selection					
		-		d. It is recommended that y		
	aking your selection skatchewan Health.	. Your supplier will requ	ire a copy of	this requisition and your si	gnature in order to seek	
Careica Health	Medigas A Praxair Company	Prairie Oxygen Ltd.		Patient's Signature	:	

saskatchewan.ca



## **End Stage Palliative Oxygen Criteria**

The following parameters shall be used to help determine whether a terminally ill individual is in the end stage of the palliative process:

- 1. The time frame for the end stage may be measured in terms of days or weeks of active dying. Time frames are difficult to determine, however, and in some cases, this end stage may be longer than a few weeks or as short as a couple of days.
- 2. There are typically day-to-day changes with deterioration proceeding at a dramatic pace. There is usually a sudden drop in the Palliative Performance Rating according to the Palliative Performance Scale developed by the Victoria Hospice Society and the Capital Regional District Home Nursing Care in British Columbia.
- 3. The end stage may be characterized by increasing intensity of need: increased assistance required for physical or psychological need, family exhaustion, usually a requirement for social work, pastoral care and therapies.
- 4. There is documented clinical progression of disease which may include a combination of symptoms such as dyspnea, crescendo pain, profound weakness, being essentially bed bound, increased nausea or drowsy for extended periods.
- 5. The terminally ill individual is assessed a Palliative Performance Rating of 30% according to the Palliative Performance Scale developed by the Victoria Hospice Society and the Capital Regional District Home Nursing Care in British Columbia.

## **Oximetry Printout Form**

Client's name:			
		CUDDIFATATATA	DV OVVCEN TECT
ROOM AI	R TEST	SUPPLEMENTA	RY OXYGEN TEST
			attach
attach			oximeter
oximeter	□Free Walking	distancem	print-out here
print-out	distancem	distancen	
here	□ <b>Treadmill</b> speedkm/hr	speedkm/hr	
	□Bicycle		
	work ratewatts	work ratewatts	
Tì	his page may be photocopied	l for your use.	



Lung Saskatchewan 2308 Arlington Avenue Saskatoon, SK S7J 3L3 P: 306-667-3012 F: 306-343-7007

oxygentest@lungsask.ca

## **REFERRAL FOR RURAL HOME OXYGEN ASSESSMENT**

Please complete and fax this requisition to 306-343-7007. This form will be forwarded to the local SHA oxygen tester.

Pa	tient Name:	Patient Phone #:
H	N:	DOB: (Day / Month / Year)
Pł	ysician:	Funding: NIHB   SAIL
Fa	x # (for results):	Current Oxygen Provider: Careica   Medigas   Prairie Oxygen/Vitalaire
To	wn of Residence:	Physician signature:
PI	EASE INDICATE THE APPROPRIATE TEST:	
	Initial home oxygen assessment If client does not qualify for CONTINUOUS, will do EXERTIONAL and NOCTURNAL. May include ABG if required.	This will be completed as per SAIL Policy and/or local policy.  Does this patient have cor pulmonale or polycythemia?  Yes  No
	Home oxygen renewal Client will be tested for continuous, exertional, and nocturnal unless requested otherwise.	CURRENT FUNDING:  Continuous   Exertional   Nocturnal   Palliative
	Arterial Blood Gas i.e. for NIHB funding or those who have borderline saturations.  * Please forward to a local site that does ABG testing	PLEASE INDICATE RATIONALE:
	Nocturnal Oximetry Study 1-night room air & 1 night with O2, if required Oximeters will be distributed for take-home use by the local SHA Home Oxygen Tester and results downloaded by Lung Sask or local tester.  *This test is not a diagnostic tool for sleep apnea. Consider referral to a sleep	SPECIFIC INSTRUCTIONS/ORDERS & DIAGNOSES: i.e. use CPAP/APAP/BiPAP, oxygen test only, LPM etc.

## **Nocturnal Oxygen Testing Instructions**



This test evaluates your oxygen needs while you sleep. This test will help your doctor determine the best treatment for you. To meet funding criteria for nocturnal (nighttime) oxygen, two nights of testing may be required. One night will be while you are sleeping without oxygen on (room air test) and one may be while wearing oxygen (oxygen test). A minimum of 3-4 hours of sleep is required for both tests.

## **INSTRUCTIONS:**

#### At BEDTIME:

- 1. Secure oximeter around your wrist with the black Velcro band.
- 2. Place finger probe on any finger. It should automatically turn on. Secure finger probe with tape.
- 3. Wear your CPAP/BiPAP/dental device, if you have one.
- 4. On the **Nocturnal Oxygen Testing Communication Form**, write down what time you put the oximeter on.
- 5. If a test with oxygen is needed, you will follow the same steps but also wear oxygen.
- \* You may change fingers in the night if it becomes uncomfortable. The oximeter will automatically turn off when the finger probe is removed; make a note on the **Nocturnal Oxygen Testing Communication Form** if this happens.

## In the MORNING:

- 1. Take off the oximeter.
- 2. Complete the **Nocturnal Oxygen Testing Communication Form** and the **Sleep Apnea Screening Tool** (even if you have sleep apnea).
- Return the oximeter and papers to your local oxygen tester (i.e. home care nurse, respiratory therapy department).

## **CPAP/BiPAP Instructions:**

This test may be used to assess how a CPAP or BiPAP is managing your sleep apnea; it is not a test that can diagnose sleep apnea. If you have a CPAP or BiPAP, you should wear this for all nighttime testing. When needed, oxygen should be applied via an adaptor into the CPAP or BiPAP (not under the CPAP mask).

Special in	structions:
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Tape finger probe here



## **Nocturnal Oxygen Testing - Communication Form**



Please read the included *Nocturnal Oxygen Testing Instructions* document.

**Tester:** Please ensure all sections of this form are completed and that client is *STABLE*. **Client:** Fill out time oximeter on/off, time oxygen applied, and #4.

1. Client information					
Name:					
Health Card Number:			_		
Home Oxygen Company (if applicable)*: Careica	□ Med	igas □	Prair	ie Oxygen 🗆	
Non-Insured Health Benefits (NIHB/Treaty): Yes	□ No □	]			
Client's date of birth (month/day/year):		_ Mal	e 🗆	Female 🗆	Other 🗆
Reason for testing:					
<ol><li>Prescriber's name (physician or nurse practitioner):</li></ol>	·				
Prescriber's fax number:					
			•		
3. Please check the appropriate box and chart accura	ite date:				
□ Room air (no oxygen) test Date:			-		
Time oximeter on (bedtime):					
Time oximeter taken off (usually morning):					
Wearing: CPAP/APAP □ or BiPAP □ NA □					
□ Oxygen test Date:					
Oxygen flow (e.g. 2 LPM): LPN	Л Via:				
Time oxygen on:			centrato	r not recommended :	for nocturnal tests
Time oximeter taken (usually morning):					
Wearing a CPAP/APAP □ or BiPAP □ NA □					
I. Tell us about your night: How did you sleep? Did you	ou wake up	? What tii	ne? Di	id you snore? E	Etc.
Room air test:					
Oxygen test:					
5. Tester name & number:					
Fax number:					

It is the responsibility of the health authority for the return shipping payment to Lung Saskatchewan, 2308 Arlington Avenue, Saskatoon SK S7J 3L3

## Sleep Apnea Screening & Assessment

Name:		
HSN:		
Birthdate:		

## **Epworth Sleepiness Scale:**

How likely are you to doze off or fall asleep in the following situations, in comparison to feeling just tired? This refers to your usual way of life in recent times.

Use the scale to choose the most appropriate number for each situation:

0 = would never doze

1 = slight chance of dozing

2 = moderate chance of dozing

3 = high chance of dozing

Sitting and reading	
Watching TV	
Sitting still in a public place (ie. meeting or theatre)	
As a passenger in a car for an hour without a break	
Lying down to rest in the afternoon when the circumstances allow	
Sitting and talking to someone	
Sitting quietly after lunch without having drank alcohol	
In a car or bus while stopped for a few minutes in traffic	
TOTAL	

Sleepiness Score Ranges: 0-6 Normal | 7-10 Mild | 11-16 Moderate | 17+ Severe

## STOP-Bang Questionnaire: A screening tool for sleep apnea

Circle yes or no on the below questions:

s	Do you <b>Snore Loudly</b> (loud enough to be heard through closed doors or your bed-partner elbows you for snoring at night?	Yes	No	Unknown
Т	Do you often feel <b>Tired, Fatigued, or Sleepy</b> during the daytime (such as falling asleep during driving or talking to someone)?	Yes	No	Unknown
О	Has anyone Observed you stop breathing or choking/gasping during your sleep?	Yes	No	Unknown
P	Do you have or are being treated for <b>High Blood Pressure</b> ?	Yes	No	Unknown

В	Is your <b>BM</b> I more than 35 kg/m2?	Yes	No	Unknown
	(See BMI calculation chart on back page.)			
Α	Are you <b>AGE</b> 50 or older?	Yes	No	Unknown
N	For males, is your <b>Neck Size</b> (shirt collar) 17"/43 cm or larger? For females, is your <b>Neck Size</b> (shirt collar) 16"/41 cm or larger? ( <i>Measured around Adams apple</i> )	Yes	No	Unknown
G	Are you <b>Male</b> ?	Yes	No	Unknown

Low risk of sleep apnea: Yes to 0-2 questions

Intermediate risk of sleep apnea: Yes to 3-4 questions

High risk of sleep apnea: Yes to 5-8 questions or

Yes to 2 or more of 4 STOP questions + male gender or Yes to 2 or more of 4 STOP questions + BMI > 35 kg/m2 or Yes to 2 or more of 4 STOP questions + neck circumference



's	Но		ž	Normal	_			8	Overweight	ight			_	Obese	0									ш	xtre	me C	Extreme Obesity	≥								
BMI	19	20	2	22	23	24	25	56	27	28	29	30	2	32	33	35	38	36	37	88	39	40	4	42	43	4	45	46	47	84	49	20	51	23	53	2
Hoight (inches	s) t														, <del></del> .	Body	Body Weight (pounds)	d)	puno	(S																
88	91	8	100	105	110	115	119	124	129	\$	138	143	448	133	158	162	167	172	177	18	188	191	196	201 2	205	210 2	215 2	220 2	224 2	229 2	234	239	244	248	253	258
69	8	83	40	109	114	119	124	128	133	138	143	148	153	\$2	163	168	173	178	183	188	193	198	203	208 2	212	217 2	222 2	227 2	232 2	237 2	242 2	247	252	257	262	267
09	97	102	2 107	112	118	123	128	133	138	143	148	153	158	163	168	174	179	184	189	198	199	204	209	215 2	220	225 2	230 2	235 2	240 2	245 2	250 3	255	261	266	271	276
61	100	106	11	116	122	127	132	137	143	148	153	158	164	168	174	180	185	190	195	201	206	211 2	217	222 2	727	232 2	238 2	243 2	248 2	254 2	259	264	269	275	280	285
62	104	109	9 115	120	126	131	136	142	147	153	158	164	169	175	180	186	191	196	202	207	213	218	224	229 2	235	240 2	246 2	251 2	256 2	262 2	287	273	278	284	289	295
63	107	113	3 118	124	130	135	14	146	152	158	163	169	175	8	186	191	197	203	208	214	220	225	231	237 2	242	248 2	254 2	259 2	265 2	270 2	278	282	287	293	299	304
2	110	116	3 122	128	134	140	145	151	157	163	169	174	180	188	192	197	204	209	215	221	727	232	238	244 2	250 3	256 2	262 2	267 2	273 2	279 2	285	291	296	302	308	314
65	#	120	126	132	138	4	150	156	162	168	174	180	186	192	198	204	210	216	222	228	234	240 2	246	252 2	258	264 2	270 2	276 2	282 2	288 2	284	300	306	312	318	324
99	118	124	130	136	142	148	155	161	167	173	179	186	192	198	204	210	216	223	229	235	241	247	253	260 2	286	272 2	278 2	284 2	291 2	297 3	303	306	315	322	328	334
29	121	127	134	140	146	153	159	168	172	178	185	191	198	204	211	217	223	230	236	242	249	255	261	268 2	274	280 2	287 2	293 2	299 3	306 3	312	319	325	331	338	34
68	125	131	138	144	151	158	164	171	177	184	198	197	203	210	216	223	230	236	243	249	256	262	269	276 2	282	289 2	295 3	302 3	308 3	315 3	322	328	335	34	348	354
69	128	3 135	5 142	149	155	162	169	176	182	189	8	203	209	216	223	230	236	243	250	257	263	270 2	277	284 2	291	297 3	304 3	311 3	318 3	324 3	331	338	345	351	358	365
02	132	2 139	9 146	153	160	167	174	181	188	195	202	209	216	222	229	236	243	250	257	264	27.1	278	285	292 2	299	306 3	313 3	320 3	327 3	334 3	341	348	355	362	369	376
71	136	5 143	3 150	157	165	172	179	186	193	200	208	215	222	229	236	243	250	257	265	272	279	286	293	301 3	308	315 3	322 3	329 3	338 3	343 3	351	358	365	372	379	386
7.5	140	147	154	162	169	177	184	191	199	206	213	221	228	235	242	250	258	265	272	279	287	284	302	309 3	316	324 3	331 3	338 3	346 3	353 3	361	368	375	383	390	397
73	144	151	159	166	174	182	189	197	204	212	219	227	235	242	250	257	265	272	280	288	295	302	310	318 3	325	333 3	340 3	348 3	355 3	363 3	371	378	386	393	401	408
74	148	3 155	5 163	171	179	186	195	202	210	218	225	233	241	249	256	264	272	280	287	295	303	311	319	326 3	334	342 3	350 3	358 3	365 3	373 3	381	389	396	404	412	420
75	152	160	168	176	184	192	200	208	216	224	232	240	248	256	264	272	279	287	295	303	311	319	327	335 3	343	351 3	359 3	367 3	375 3	383 3	391	389	407	415	423	431
76	156	164	1 172	180	189	197	205	213	22	230	238	246	254	263	271	279	287	295	304	312	320	328	336	344 3	353	361 3	369 3	377 3	385 3	394 4	402	410	418	426	435	443
	'a(																																			



## SAIL & NIHB Oxygen Testing Criteria Comparison Chart (Adults)

The following chart provides assistance in comparing the Saskatchewan Aids to Independent Living (SAIL) Home Oxygen program and the Non-Insured Health Benefits (NIHB) Home Oxygen Program criteria for adults. Equipment coverage is not included here as they can be quite different in each program. This is not an all-inclusive chart; please see links below for in-depth understanding of the program's details.

Detailed instructions on oxygen testing and program contact information:

#### NIHB:

NIHB Home Oxygen Policy

Prior Approval Form

NIHB Oximetry Instructions

SK NIHB Contact: 1-866-885-3933 sasknihbmedicalsuppliesandequipment@sac-isc.gc.ca

SAIL:

SAIL Home Oxygen Policy

Home Oxygen Tester Handbook

SAIL Contact: 1-888-787-8996 ehb@health.gov.sk.ca

NIHB	SAIL	

#### Testers SAIL Home Oxygen Testers, Respiratory SAIL Home Oxygen Testers and Therapy Departments, and home Respiratory Therapy Departments can test oxygen companies can test as long as as long as they are Saskatchewan Health they are RRT/RN/RPN/LPN Authority employees Physician ABG's will also be accepted. Physician ABG's are also accepted Continuou a PaO2 < 55 mmHg a PaO2 < 55 mmHg s Testing a PaO2 between 56-59 mmHg with a PaO2 of < 59 mmHg with dx of hypoxia on exertion (SpO2 less than cor pulmonale and/or polycythemia 89% for 2 continuous minutes) oximetry at rest: a PaO2 of < 60 mmHg with dx of cor < 87% for 2 continuous minutes </p> pulmonale, pulmonary hypertension and/or polycythemia oximetry at rest with a dx of cor oximetry at rest: pulmonale or polycythemia: ○ SpO2 < 88% for 2 continuous o < 90% for 2 continuous minutes</p> minutes oximetry at rest with Stage IV Heart Disease (severe CHF) – SpO2 less than 89% for 2 continuous minutes (need documentation from MD/NP for Stage Client must meet one of the above. IV severe heart disease) If client is in hospital, testing must be Client must meet one of the above. completed within 48 hours of discharge Home oxygen may be considered for coverage once the client's condition is stabilized and treatment optimized A. Room air testing at rest (oximetry or Exertional A. Must not meet criteria for continuous **Testing** ABG): oxygen a. SpO2 greater than 90% B. Exercise testing on room air: b. PaO2 greater than 60 mmHg a. SpO2 < 87% for a minimum of 20 B. Exercise testing on room air: continuous seconds a. SpO2 < 88% for 2 continuous minutes C. Exercise testing with supplemental b. If exercise testing on room air oxygen: demonstrates a SpO2 < 80% with a. Improved exercise capacity – Must good pulse tracking regardless of have a documented improvement in dyspnea or distance walked, the exercise capacity of 20% while applicant meets eligibility criteria, maintaining SpO2 90-92%

	and no further testing is required for the requested funding period  C. Exercise testing with supplemental oxygen:  a. testing must be performed with the requested equipment  b. improved breathlessness - BORG scale increase of at least one unit at the end of the exercise  c. improved exercise capacity - improved walking distance by at least 25% and at least 30 meters OR time traveled increased by at least 25% and at least 2 minutes	Client must meet A, B, & C and has not been hospitalized, had an exacerbation or change of treatment in the past 30 days for a cardiorespiratory event
	Client must meet A, B, & C	
Nocturnal Testing	<ul> <li>A. room air testing demonstrating nocturnal desaturation SpO2 &lt; 88% for 30% of the night</li> <li>B. sleep disordered breathing must be ruled out</li> <li>Client must meet A &amp; B</li> </ul>	<ul> <li>A. must not meet criteria for continuous oxygen</li> <li>B. one night of room air testing: <ul> <li>a. SpO2 ≤ 87% for 30% of the night</li> </ul> </li> <li>C. one night of testing with oxygen that shows evidence of significant improvements</li> <li>Client must meet A, B, &amp; C and has not been hospitalized for a cardiorespiratory event or had an exacerbation or change of treatment in the past 30 days</li> </ul>
	Criteria for oxygen if client has sleep disordered breathing:	
	A. Diagnosis of sleep disordered breathing	
	B. Persistent hypoxemia demonstrating nocturnal desaturation SpO2 < 88% for 30% of the night that is not corrected with positive airway pressure (PAP)* therapy	

- C. Level I, III, or IV sleep study with interpretation by a physician with expertise in sleep medicine that demonstrates improvement when using oxygen with a PAP device
- \* Special consideration will be given to clients with sleep-disordered breathing who are unable to tolerate PAP therapy when accompanied by a written justification supporting the need.

## Palliative Care

The client must have been diagnosed with a terminal illness or disease which is expected to be the primary cause of death within 6 months or less.

- PaO2 of 60 mm Hg or less
- oximetry that demonstrates sustained desaturation (SpO2 less than 92% for 2 continuous minutes)
- supplemental oxygen may be considered with a letter from the prescribing physician, nurse practitioner or palliative care team member (for example, registered nurse) outlining the evidence for supplemental oxygen (for example, dyspnea that cannot be improved with medication or comfort analgesia)

#### Client must meet one of the above.

NIHB's palliative care home initial oxygen coverage period is for up to 6 months of palliative oxygen. Following renewal requests will be considered for a period of 9 months and then 12 months with the same testing requirements as the initial coverage period.

The following parameters shall be used to help determine whether a terminally ill individual is in the end stage of the palliative process:

- A. The timeframe for the end stage may be measured in terms of days or weeks of active dying. Time frames are difficult to determine, however, and in some cases, this end stage may be longer than a few weeks or as short as a couple of days.
- B. There are typically day-to-day changes with deterioration proceeding at a dramatic pace. There is usually a sudden drop in the Palliative Performance Rating according to the Palliative Performance Scale developed by the Victoria Hospice Society and the Capital Regional District Home Nursing Care in British Columbia.
- C. The end stage may be characterized by increasing intensity of need: increased assistance required for physical or psychological need, family exhaustion, usually a requirement for social work, pastoral care and therapies.
- D. There is documented clinical progression of disease which may include a combination of symptoms such as dyspnea, crescendo pain, profound weakness, being essentially bed bound, increased nausea or drowsy for extended periods.

	E.	The terminally ill individual is assessed a Palliative Performance Rating of 30%
		according to the Palliative Performance
		Scale developed by the Victoria Hospice
		Society and the Capital Regional District
		Home Nursing Care in British Columbia.

c. improved exercise capacity - improved walking distance by at least 25% and at least 30 meters OR time traveled increased by at least 25% and at least 2 minutes  Client must meet A, B, & C	
<ul> <li>A. room air testing demonstrating nocturnal desaturation SpO2 &lt; 88% for 30% of the night</li> <li>B. sleep-disordered breathing must be ruled out</li> </ul>	<ul> <li>A. must not meet criteria for continuous oxygen</li> <li>B. one night of room air testing:         <ul> <li>SpO2 ≤ 87% for 30% of the night</li> </ul> </li> <li>C. one night of testing with oxygen that shows evidence of significant improvements</li> </ul>
Client must meet A & B	Client must meet A, B, & C and has not been hospitalized for a cardiorespiratory event or had an exacerbation or change of treatment in the past 30 days
<ul> <li>PaO2 of 60 mmHg or less         OR         <ul> <li>oximetry that demonstrates sustained desaturation (SpO2 ≤ 91% for 2 continuous minutes)</li> </ul> </li> <li>Dyspnea that cannot be improved with medication and/or comfort analgesia must be supported by documentation from physician, nurse practitioner or palliative care team member (for example, Registered Nurse).</li> <li>Client must meet one of the above.</li> <li>Regular testing will be required for ongoing therapy after 6 months of palliative care oxygen therapy.</li> </ul>	The following parameters shall be used to help determine whether a terminally ill individual is in the end stage of the palliative process:  A. The timeframe for the end stage may be measured in terms of days or weeks of active dying. Time frames are difficult to determine, however, and in some cases, this end stage may be longer than a few weeks or as short as a couple of days.  B. There are typically day-to-day changes with deterioration proceeding at a dramatic pace. There is usually a sudden drop in the Palliative Performance Rating according to the Palliative Performance Scale developed by the Victoria Hospice Society and the Capital Regional District Home Nursing Care in British Columbia.  C. The end stage may be characterized by increasing intensity of need: increased assistance required for physical or psychological need, family exhaustion, usually a requirement for social work, pastoral care and therapies.
	walking distance by at least 25% and at least 30 meters OR time traveled increased by at least 25% and at least 2 minutes  Client must meet A, B, & C  A. room air testing demonstrating nocturnal desaturation SpO2 ≤ 88% for 30% of the night  B. sleep-disordered breathing must be ruled out  Client must meet A & B  • PaO2 of 60 mmHg or less OR • oximetry that demonstrates sustained desaturation (SpO2 ≤ 91% for 2 continuous minutes)  Dyspnea that cannot be improved with medication and/or comfort analgesia must be supported by documentation from physician, nurse practitioner or palliative care team member (for example, Registered Nurse).  Client must meet one of the above.  Regular testing will be required for ongoing therapy after 6 months of

D. There is documented clinical progression of

disease which may include a combination of

the Capital Regional District Home Nursing  Care in British Columbia.
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