ASSESSMENT FOR AMBULATORY OXYGEN THERAPY - GUIDELINE

This guidance does not override the individual responsibility of health professionals to make appropriate decision according to the circumstances of the individual patient in consultation with the patient and /or carer. Health care professionals must be prepared to justify any deviation from this guidance.

Introduction

This document describes the clinical standard for the assessment and prescription of home ambulatory oxygen therapy, based on the Royal College of Physicians guidelines for domiciliary oxygen therapy services.

The purpose and nature of the assessment will vary according to the patient grading system and will depend on the patient's activity and ability to leave the house. Assessments for ambulatory oxygen therapy depend on the short-term response to supplementary oxygen therapy, when the patient is performing an exercise test, such as a six-minute walk test, or a shuttle walk test.

This guideline describes the clinical standard required for the above two exercise tests.

This guideline is for use by the following staff groups:

Respiratory Specialist Nurses
Respiratory Physiologists
Respiratory Specialist Physiotherapists

Lead Clinician(s)

Dr D Brocklebank	Consultant Respiratory Physician
Lynn Dale	Respiratory Specialist Practitioner
Approved Accountable Director on:	15th April 2015
Review Date: This is the most current document and is to be used until a revised version is available	8th September 2018

Key amendments to this guideline

Date	Amendment	By:
Feb 2013	Full review	L Dale
April 2015	Document reviewed with no changes for a further 2 years	L Dale
August 2017	Document extended for 12 months as per TMC paper approved on the 22nd July 2015	TMC
December 2017	Sentence added in at the request of the Coroner	
June 2018	Document extended for 3 months as per TLG recommendation	TLG

ASSESSMENT FOR AMBULATORY OXYGEN THERAPY

Introduction

Ambulatory oxygen therapy has been shown to be effective in increasing exercise capacity and reducing breathlessness in patients with exercise arterial oxygen desaturation. (British Thoracic Society (BTS), 2006)

The purpose/aims of ambulatory oxygen therapy are to: -

- Enable the patient to leave the home for a longer period of time,
- Increase exercise capacity and reduce shortness of breath
- Increase quality of life
- Improve the patient's daily activities

Indications

Ambulatory Oxygen therapy is indicated for any chronic lung disease with exercise de-saturation, defined as a fall in S_p0_2 of 4% to a value <90% (BTS 2006), and includes the following conditions:

- COPD
- Severe Chronic Asthma
- Interstitial Lung Disease
- Cystic Fibrosis

Ambulatory oxygen therapy is not recommended in patients with chronic lung disease and mild hypoxaemia (not on Long term Oxygen Therapy) without exercise de-saturation.

Contra-Indications

- History of unstable angina in the previous month prior to the assessment
- History of myocardial infarction in the previous month prior to the assessment
- Systolic BP of more than 180 mmHg
- Diastolic BP of more than 100 mmHg

Competencies Required/Criteria for Competence

The guideline is limited to the Respiratory Nurse Specialists, Respiratory Physiotherapists and Respiratory Physiologists with specialist knowledge of respiratory diseases.

Ensuring Safe Practice

All staff undertaking this policy should be trained using the standard protocol and then supervised for several tests before performing alone.

Staff working under this protocol should have completed cardiopulmonary resuscitation training yearly as per Trust policy.

Details of Guideline

Patient Grading- Three Grades of Patient Categories-

- Grade 1 –Long Term Oxygen Therapy (LTOT) - Low activity - patients with severe hypoxaemia on LTOT for up to 24hrs and are mainly housebound

requiring 0_2 to leave the house. Same flow rate as LTOT provision. No formal assessment required.

- Grade 2 – LTOT – Active Group – patients who are mobile and need to leave the home on a regular basis. Hours and 0_2 flow rate to be decided on assessment.

- Grade3 – Non- LTOT patients – (patients without chronic hypoxaemia and LTOT) if they show evidence of: -

    - exercise 0_2 de-saturation,
    - improvement in exercise capacity,
    - less breathlessness with ambulatory 0_2
    - motivation to use the ambulatory 0_2 outside the house

  Hours and 0_2 flow rate to be decided on assessment.

Assessment For Ambulatory Oxygen Therapy- For Grade 2 & 3 patients

Option 1 – Shuttle Walk Test

Shuttle walk test (evidence-based CD) uses an audio signal from a CD to direct the walking pace of the patient back and forth on a 10-meter course. The walking speed is increased every minute and the test ends when the patient cannot reach the turnaround point within the required time (Crapo, Casaburi et al 2002)

Patient recovery determines the gaps between tests.

Equipment

- Gym time –10-meter area marked.
- Shuttle walk CD & CD player
- Stop watches x 2
- Patient's Medical notes
- Ambulatory oxygen equipment, hired/supplied from Air Products
- Nasal Cannula
- Pulse Oximeter
- Sphygmomanometer
- Patient's own medications
- Cardiopulmonary resuscitation equipment nearby

Procedure	Rationale
Inform patient about the procedure The patient should wear comfortable clothing.	To gain patient's consent and gain co-operation
Practice walk test	To introduce the technology to the patient
Baseline walk test on air, Measuring S_p 0_2, heart rate, minimum S_p 0_2 & Borg score.	To enable assessment for change in patient's condition pre and post oxygen intervention

Measure distance covered	To enable assessment for change in patient's condition pre and post oxygen intervention
Repeat walk on supplementary flow rate of 2lit/min 0_2 with **patient carrying the ambulatory system.** Measuring S_p 0_2, heart rate, minimum S_p 0_2 & Borg score.	To maintain the S_p 0_2 above 90% where possible during exercise
If required, repeat walk on supplementary flow rate of 4lit/min 0_2 with patient carrying the ambulatory system. Measuring S_p 0_2, heart rate, minimum S_p 0_2 & Borg score.	To maintain the S_p 0_2 above 90% where possible during exercise
Details of the procedure/assessment including informed consent, number of walk tests, oxygen flow rates, and patient outcomes, to be documented in patient's notes.	To maintain effective communication

Option 2 – Six Minute Walk Test

The six-minute walk test is a practical simple test. The object of the test is for the patient to walk as far as possible in 6 minutes. They are permitted to slow down, to stop and rest as necessary, but resume walking as soon as possible (Crapo, Casaburi et al 2002).

Equipment

- Long, flat straight corridor- 30 meters in length. The corridor should be marked every 3 meters and the turnaround points marked with a cone. A starting line, which indicates the beginning and end of each lap 60-meter lap, should be marked on the floor.
- Cones x 2
- Stopwatch
- Lap counter
- Patient's Medical notes
- Ambulatory oxygen equipment, hired/supplied from Air Products
- Nasal Cannula
- Pulse Oximeter
- Sphygmomanometer
- Patient's own medications
- Cardiopulmonary resuscitation equipment nearby.

Procedure	**Rationale**
Inform patient about the procedure The patient should wear comfortable clothing.	To gain patient's consent and gain co-operation
Staff demonstration - walking a lap back and forth around the cones	To introduce the technology to the patient
Baseline 6 minute walk test on air,	To enable assessment for change in

Measuring S_p 0_2, heart rate, minimum S_p 0_2 & Borg score. Staff must not walk with patients	patient's condition pre and post oxygen intervention To maintain patient's own walking stride
Measure distance covered in 6 minutes.	To enable assessment for change in patient's condition pre and post oxygen intervention
Repeat 6 minute walk on supplementary flow rate of 2lit/min 0_2 with **patient carrying the ambulatory system.** Measuring S_p 0_2, heart rate, minimum S_p 0_2 & Borg score. Staff must not walk with patients	To maintain the S_p 0_2 above 90% where possible during exercise To maintain patient own walking stride
If required, repeat walk on supplementary flow rate of 4lit/min 0_2 with patient carrying the ambulatory system. Measuring S_p 0_2, heart rate, minimum S_p 0_2 & Borg score.	To maintain the S_p 0_2 above 90% where possible during exercise
Details of the procedure/assessment including informed consent, number of laps, total distance covered, oxygen flow rates, and patient outcomes, to be documented in patient's notes.	To maintain effective communication

Adapted from the American Thoracic Society's Guidelines (2002)

Patient Outcomes

- Clinically significant improvement - Less breathlessness with ambulatory 0_2
- Increase in walking distance covered – 10% cut off
- Improvement in Borg score

Criteria for Provision of Ambulatory Oxygen- *determined by a Consultant Respiratory Physician*

1. Increase in walking distance covered of at least 10%

2. Improvement in Borg score when walking with supplementary/ambulatory oxygen

3. Less breathlessness with supplementary/ambulatory oxygen

Review

3 months & 6 months by Respiratory Specialist Nurses

1. Re-assessment of patient's activity levels
2. Record of patient's utilisation of the ambulatory system
3. Record of adherence to the prescription
4. Assessment of any increases in O_2 requirements and/or change in CO_2 levels.
5. Patient's diary card.

Monitoring Tool

This should include realistic goals, timeframes and measurable outcomes.

How will monitoring be carried out?

Who will monitor compliance with the guideline?

Page/ Section of Key Document	Key control:	Checks to be carried out to confirm compliance with the policy:	How often the check will be carried out:	Responsible for carrying out the check:	Results of check reported to: *(Responsible for also ensuring actions are developed to address any areas of non-compliance)*	Frequency of reporting:
	WHAT?	**HOW?**	**WHEN?**	**WHO?**	**WHERE?**	**WHEN?**
	Documented evidence of the patients oxygen saturations during 6 minute walk and shuttle test: deterioration and/or improvement	Spot Checks by Matron	6 times per year	Matron To be added to job description	Divisional Quality Assurance team	6 times per year

References

British Thoracic Society (2006) Clinical Component for the Home Oxygen Service in England and Wales (Updated January 2006)

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Contribution List

Key individuals involved in developing the document

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Circulated to the chair of the following committee's / groups for comments

Name	Committee / group
Helen Blanchard	Head of Nursing Services

Appendix 1

SCALE	SEVERITY
0	No Breathlessness* At All
0.5	Very Very Slight (Just Noticeable)
1	Very Slight
2	Slight Breathlessness
3	Moderate
4	Some What Severe
5	Severe Breathlessness
6	
7	Very Severe Breathlessness
8	
9	Very Very Severe (Almost Maximum)
10	Maximum

Figure 1. Modified Borg Scale.

Supporting Document 1 - Equality Impact Assessment Tool

To be completed by the key document author and attached to key document when submitted to the appropriate committee for consideration and approval.

		Yes/No	Comments
1.	**Does the policy/guidance affect one group less or more favourably than another on the basis of:**		
	• Race	No	
	• Ethnic origins (including gypsies and travellers)	No	
	• Nationality	No	
	• Gender	No	
	• Transgender	No	
	• Religion or belief	No	
	• Sexual orientation including lesbian, gay and bisexual people	No	
	• Age	No	
	• Disability - learning disabilities, physical disability, sensory impairment & mental health problems	No	
2.	**Is there any evidence that some groups are affected differently?**	No	
3.	**If you have identified potential discrimination, are any exceptions valid, legal and/or justifiable?**	N/A	
4.	**Is the impact of the policy/guidance likely to be negative?**	No	
5.	**If so can the impact be avoided?**	N/A	
6.	**What alternatives are there to achieving the policy/guidance without the impact?**	N/A	
7.	**Can we reduce the impact by taking different action?**	N/A	

If you have identified a potential discriminatory impact of this key document, please refer it to Human Resources, together with any suggestions as to the action required to avoid/reduce this impact.

For advice in respect of answering the above questions, please contact Human Resources.

Supporting Document 2 – Financial Impact Assessment

To be completed by the key document author and attached to key document when submitted to the appropriate committee for consideration and approval.

	Title of document:	Yes/No
1.	Does the implementation of this document require any additional Capital resources	No
2.	Does the implementation of this document require additional revenue	No
3.	Does the implementation of this document require additional manpower	No
4.	Does the implementation of this document release any manpower costs through a change in practice	No
5.	Are there additional staff training costs associated with implementing this document which cannot be delivered through current training programmes or allocated training times for staff	No
	Other comments:	

If the response to any of the above is yes, please complete a business case and which is signed by your Finance Manager and Directorate Manager for consideration by the Accountable Director before progressing to the relevant committee for approval