**Oxygen Assessment and Provision (Adult)**

**Tom Walton, Senior Respiratory Nurse, BREATHE, SWYPT, June 2023**

BTS Guideline for Home Oxygen Use in Adults June 2015 is still the standard guidance for oxygen assessment. This provision is for patients in the Barnsley (ICB-02) area in primary care setting. The acute trust as its own provision for assessment of patients in hospital who require LTOT.

**CRITERIA FOR LONG TERM OXYGEN THERAPY:**

• Stable COPD, ILD, severe asthma with, CF with resting PaO2 ≤ 7.3 kPa or PaO2 ≤ 8kPa with secondary Cor Pulmonale, polycythaemia, peripheral oedema, or Pulmonary artery hypertension (PAH) (PASP on ECHO of >35mmHg, not a CT finding) (evidence grade A).

• PAH and advanced cardiac failure with resting PaO2 of ≤ 8kPa (grade D).

• Neuromuscular/chest wall disease with type 2 respiratory failure not corrected with NIV (grade D).

**WHO SHOULD BE REFERRED?**

• Patients aged over 18 with resting stable SpO2 ≤ 92% and non-smoker for 12 weeks (grade C).

• Patients SpO2 ≤ 94% with peripheral oedema, polycythaemia (HCT ≥ 55%) or PAH

• Patients who have end-stage cardio-respiratory disease/ cancer with SpO2 <92% with symptom of intractable breathlessness despite optimisation of treatment/ therapy.

**Long term oxygen therapy (LTOT)**

• Continuous oxygen for at least 15 hours a day but additional benefit up to 24 hours (grade C).

• Survival benefit in persistently hypoxaemic patient – not given for breathlessness! (Grade A

reduced to grade D if smoker).

• Criteria for prescription based only on arterial blood gas measurements, not symptoms

(Grade A).

**Assessment for LTOT**

• Patients meets criteria for referral

• Refer to BREATHE with proforma emailed to [RightCareBarnsleyIntegratedSPA@swyt.nhs.uk](mailto:RightCareBarnsleyIntegratedSPA@swyt.nhs.uk) or by contacting single point of access (SPA) on 01226 644575

• BREATHE triage confirms diagnosis and ensures treatment is maximised

• Arterial blood gas on 2 occasions at least 3 weeks apart when stable (i.e., not during exacerbation). First blood gas is carried out in patient’s own home. Second blood gas at oxygen clinic venue. Currently there are two:

* Oaks Park Primary Care Centre (Monday morning)
* The Thurnscoe Centre (Friday afternoon)

• If on 2nd blood gas patient continues to fulfil criteria then oxygen given and titrated to get

PO2 ≥ 8kPa without significant rise in pCO2

**Oxygen prescription**

• HOOF A - allows GP or suitably trained AHP to prescribe emergency oxygen only (concentrator or B10 cylinder only).

• HOOF B – wide range of equipment including ambulatory oxygen.

• Consent form – HOCF.

• Education.

• Smoking and safety advice / risk assessment (IHORM) / oxygen alert card.

• Outcome letter sent to GP/ referrer.

**Ambulatory oxygen (AOT)**

• Provision of oxygen for people who are still mobile beyond the confines of their home!

• Shown to be effective in increasing exercise capacity and reducing breathlessness in patients

with exercise arterial oxygen desaturation (fall of more than 4% or to below 90%) (grade B)

**Assessment for Ambulatory oxygen**

• Consider all severe COPD patients if active enough

• Pulmonary fibrosis patients who are symptomatic with significant oxygen desaturation

• Consider Pulmonary Rehab

• Refer to BREATHE with proforma emailed to [RightCareBarnsleyIntegratedSPA@swyt.nhs.uk](mailto:RightCareBarnsleyIntegratedSPA@swyt.nhs.uk) or by contacting single point of access (SPA) on 01226 644575

**Ambulatory assessment**

• 6-minute walk test on air and on oxygen (if required), measure walking distance, breathlessness on visual analogue BORG scale., desaturation, and desaturation correction on oxygen. Assessment takes place at two venues on alternate Thursdays:

* Mapplewell Village Hall (morning),
* Rockingham Centre, Hoyland (afternoon).

• Assessment only if reasonably mobile and motivated to carry the oxygen.

**Short burst oxygen (SBOT)**

• SBOT does not improve exercise tolerance or reduce breathlessness when give either before or following exercise to hypoxaemic or non-hypoxaemic patients with moderate to severe COPD. It does not improve health-related quality of life or reduce utilisation of healthcare when given to patients following acute exacerbations.

• Should not be used in COPD (grade A)

• SBOT for cluster headaches should have high flow via NRB mask (>12L/min) to treat acute attacks (grade A).

**Nocturnal oxygen (NOT)**

• Nocturnal oxygen is not recommended in patients with COPD and nocturnal hypoxaemia (grade A); CF (grade B) or ILD (grade B).

• Can be given with NIV support or with severe heart failure with sleep disordered breathing

(OSA/hypoventilation having been excluded) (grade B).

**Palliative oxygen**

• Cancer/end stage cardiorespiratory disease with breathlessness should NOT be prescribed oxygen if not hypoxaemic i.e. - Spo2 ≤ 92% (grade A)

Palliation of breathlessness

Palliative Care Team review for: -

* Assessment for a trial of opiates / anxiolytics (grade A)
* Use of non-pharmacological treatments e.g.
* Fan therapy (grade D)
* Breathing control techniques

**Follow up:**

• Post-installation assessment within 4 weeks (8 weeks for AOT) by BREATHE team in patients own home.

* Reinforce oxygen education and safety advice:
* Revisit discussion about the reasons for the oxygen therapy, and length of time that it should be administered,
* Provide appropriate patient information leaflets,
* Referral to Fire Service – smoke / CO2 alarms,
* Safety check / risk assessment / smoking status, discuss fire safety and assess falls risk,
* Highlight any problems / equipment issues,
* Discuss patient maintenance of equipment, changing of consumables,
* Review of inhalers and inhaler technique checked,
* Check for signs of infection/ exacerbation,
* Chest exam and assessment of day-to-day symptoms,
* Respiratory self management plan,
* Ensure that correct contact details have been given to patient for BREATHE and Baywater.

• 3 months in patients own home (LTOT)

* As per 4-week installation review, plus:
* Reassess ABG on air and on current oxygen flow rate to assess whether oxygen is still required and if so set to correct flow rate to achieve paO2 of >8kPa (LTOT),
* Assess for acidosis / hypercapnia,
* Assess compliance (Portal),
* Review ambulatory needs,
* Patients prescribed POT may be reassessed for LTOT at this point.
* Onward referral for sleep assessment / home NIV if required.

• Patients will then have alternate 12 monthly face to face follow up at home/ clinic with annual blood gas and reassessment as per 4 week and 3 month review above. All patients prescribed POT reassessed for LTOT at this stage unless clinically inappropriate.

12-month review of SBOT for cluster headaches should include:

* Risk,
* Concordance,
* Clinical effectiveness
* If oxygen is not used for 12 months, consider removal, patient can request urgent 4-hour reinstatement via BREATHE in the event of reoccurrence of cluster headache.

**REFERRAL PROFORMA For BREATHE Service:**

**From Secondary Care: From Primary Care:**

**** 

**Overview of Home Oxygen Assessment Pathway**

**Meets LTOT / Ambulatory O2 Criteria**

* Home oxygen consent (HOCF) and risk mitigation (IHORM)completed with patient at time of assessment
* Oxygen ordered based on appropriate ABG’s (LTOT), or AOT assessment by completing HOOF B form via Baywater portal for standard delivery.
* Patient/carer education

Patient meets criteria for referral as per criteria outlined on previous pages. Refer to BREATHE via SPA (01226 644575) or via proforma to [RightCareBarnsleyIntegratedSPA@swyt.nhs.uk](mailto:RightCareBarnsleyIntegratedSPA@swyt.nhs.uk)

**Short Burst Oxygen**

Refer to chest clinic or BREATHE consultant if:

Diagnosis is unclear.

Significant co-morbidity might contribute to SOB or hypoxaemia, e.g., heart failure, sleep apnoea.

Potential hypercapnic respiratory failure

**LTOT/ Ambulatory Oxygen Assessment**

**Palliative Oxygen Therapy**

**Assessment within 2 hours of referral being processed by SPA/ Rightcare.**

- SpO2 <92% and breathlessness is otherwise optimised.

- Has significant breathlessness (if not breathless but hypoxic consider whether oxygen is appropriate)

**Meets criteria for POT**

HOCF and IHORM completed with patient/ relatives. With education.

Oxygen ordered on urgent (4 hour) on HOOF B at 2-5l/min

Nurse returns to assess appropriate flow rate once installed by Baywater technician (8am-8pm).

**If smoker, stop smoking advice given & referral made to stop smoking service.**

**Refer to service when 12 weeks smoke free.**

**New patient assessment (Week 1 and Week 3)**

Nurse led- triage on receipt of referral.

Full assessment including:

* + ABG **Week 1 and minimum of 3 weeks later (LTOT). Oxygen titration with repeat ABG’s if required.**
  + Assessment for **ambulatory oxygen** next available appointment in AOT venue..
  + Pulmonary rehab referral.

First ABG can be at home but second must be in clinic top facilitate O2 delivery.

**Oxygen installed by Baywater**

**Oxygen ordered by neurologist and completes referral to BREATHE,**

**OR**

**Neurologist sends referral proforma or clinical letter to BREATHE to request prescription of home oxygen.**

**OR**

**Neurologist sends clinical letter to GP with prescription request and GP refers to BREATHE.**

**Overview of Home Oxygen Review Pathway**

**Repeat assessment every 6 months with annual ABG (LTOT, AOT, POT).** Frequency will also depend on clinical need, complexity, safety issues and concordance.

**Supported withdrawal of oxygen if:**

* No longer clinically required,
* Persistent non-compliance,
* Not deriving clinical benefit,
* Safety concerns.

**Review SBOT for cluster headaches annually** including risk, concordance, suitability for Schraeder device and clinical effectiveness. If the patient does not use the oxygen for a year, then arrange removal.

Support withdrawal of oxygen if no longer required, i.e., paO2 of >7.3kPa, or 8kPa with polycythaemia, PAH, HF with oedema on air.

**Home assessment (Within 4 weeks of commencement of O2)**

* Compliance
* Safety check
* Symptoms of hypercapnia?
* Smoking status
* Education

**Repeat Assessment 3 months post installation (LTOT)**

* Repeat 4 week assessment PLUS
* Repeat ABG on air and on O2
* Flow adjustment
* Check compliance
* Education