

# COUNTYWIDE COMMUNITY RESPIRATORY SERVICES

## Standard Operating Procedure for Assessment and Review of Patients on Home Oxygen

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# Countywide Community Respiratory Services

## Assessment and Review of Patients on Home Oxygen

### Version Control Sheet

Version	Section/Para/Appendix	Version/Description of Amendments	Date	Author/Amended by
1	All	4 Whole document reviewed	July 2015	Countywide Community Respiratory Services – Adult Home Oxygen Assessment Service Team
2	Page 3, 15-19, 22	5	May 2018	Karen Cox
3	Appendix 6	Added: pages 45-48	June 2019	Sue Macleod
	Page 5	Inclusion and exclusion criteria amended	June 2019	Karen Cox
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# **Countywide Community Respiratory Services**

## **Adult Oxygen Assessment Service Specification**

### **Overview of service**

Long Term Oxygen Therapy (LTOT) is a widely used treatment that improves survival in patients with Chronic Obstructive Pulmonary Disease (COPD) and severe hypoxaemia. Once started this therapy is likely to be life long. Ambulatory oxygen therapy refers to the provision of oxygen therapy during exercise and activities of daily living. In 2015 the British Thoracic Society (BTS) published updated guidelines and a structured framework for the assessment and follow up care of patients requiring home oxygen therapy. There is a strong recommendation in the guidelines that both LTOT and ambulatory oxygen therapy should only be prescribed after appropriate assessment by a respiratory specialist. The Adult Oxygen Assessment Service provides the primary care component of a joint primary/secondary care model for the provision of specialist oxygen assessment and follow up care which are based on the clinical standards set out by the BTS (2015). Patients across Lincolnshire will have access to standardised clinical assessment, appropriate and safely prescribed oxygen therapy and formal arrangements for community based follow-up care thus ensuring that the prescribed LTOT adequately corrects hypoxaemia, that there is good compliance with LTOT and ambulatory oxygen therapy, to detect clinical deterioration and to ensure continuing requirement for domiciliary oxygen. The revised inclusion and exclusion criteria reflects the recently updated NICE COPD guidelines (2018) which advises that oxygen should not be prescribed to current smokers and patient's need to have stopped smoking for 8 weeks before being accepted for an oxygen assessment.

### **Aim of the Service**

To provide a primary care based oxygen triage and assessment service, improving choice and access for patients and by working in partnership with secondary care providers ensure a seamless patient journey between assessments and follow on care.

### **Scope of the Service**

Adult patients with COPD or severe chronic asthma currently receiving oxygen therapy and those who are considered to require assessment and subsequent initiation.

The service will cover the geographical area and practices within the boundaries of Lincolnshire (CCGs: NHS Lincolnshire West CCG, NHS Lincolnshire East CCG, NHS Lincolnshire South West CCG and NHS Lincolnshire South CCG).

### **Statement of principles**

The Home Oxygen Service will:-

- Provide advice and information to service users and their carers and relatives.
- Provide a confidential and safe service in line with Caldicott guidelines on confidentiality.
- Provide a clinical assessment for patients who may require home oxygen therapy.
- Provide or co-ordinate a review of patients who are already in receipt of home oxygen therapy and where appropriate, in line with national and local evidence, support the removal of oxygen therapy.

- Wherever possible patients will be seen in a clinic setting (if they are currently able to visit the GP). However a home visit will be offered in those patients who are housebound and cannot get to a clinic.
- Ensure compliance with LCHS policies and Health and Safety legislation.
- Work within clinical competencies and to the code of ethics for relevant profession e.g. NMC.
- Ensure all complaints are responded to in line with LCHS policy in a timely manner.
- All patients will have a confirmed diagnosis of COPD and wherever possible a hard copy of spirometry results to be provided be seen.

### **Referral Pathway**

Patients identified from Primary and Secondary Care and referred via a standardised referral form to the appropriate locality office (based at The Contact Centre, Gainsborough; Grantham and Boston) either by fax or by post.

Following initial assessment, those patients who require LTOT and Ambulatory oxygen assessment will be referred by letter to a Secondary Care provider, and will subsequently be handed back to the Primary Care team for follow up.

### **Inclusion Criteria**

Patients are required to have:

- A confident clinical diagnosis of COPD, confirmed by spirometry.
- Optimal medical management and a period of stability for a recommended 8 weeks prior to the assessment.
- A resting SpO<sub>2</sub> of ≤ 92% breathing air or a fall in SpO<sub>2</sub> of 4% to below 90% on exertion.
- A resting SpO<sub>2</sub> of ≤ 94% with evidence of peripheral oedema, polycythaemia (haematocrit ≥55%) or pulmonary hypertension.
- Be in receipt of oxygen therapy without ever having been formally assessed.
- Those patients who currently receive oxygen therapy but do not require follow up in Secondary Care.
- Patients referred into the service and other smokers living in the same household must have ceased smoking for at least 8 weeks prior to the referral

### **Exclusion Criteria**

- Patients without a confirmed clinical diagnosis.
- Current smokers or any smokers within the household
- Patients who are not pharmacologically optimised.
- Patients who are not in a stable phase of their disease.
- Patients receiving oxygen therapy for conditions other than COPD and severe chronic asthma.
- Palliative patients who are normoxic i.e. SpO<sub>2</sub> ≥93% on air.

### **Communication pathways and access timelines.**

- Referral form received by Adult Oxygen Assessment Service via fax or post.
- Triage of referral within 5 working days.

- Outcome of triage communicated to referrer by letter with copy to GP if appropriate within 10 working days.
- Patient is offered an assessment, either in a Primary Care clinic or at home. Date of assessment will be within 8-10 weeks of date the referral was received. The letter
- Offering an appointment and a patient information leaflet will be sent within 10 working days of the referral being received.
- Following assessment/intervention a letter or task (for SystmOne users) will be sent to the referrer and copied to the patient and their GP detailing assessment outcomes within 10 working days.
- Patients refusing 3 offers of an appointment or failing to attend 3 appointments will be discharged back to their GP.
- Patients requiring referral to secondary care for further assessment and oxygen initiation will be referred by letter (copy to patient and GP) within 10 working days.
- Patients requiring referral to other community health services will be referred by letter/form (copy to patient and GP) within 10 working days.

### **Process of Care**

The pathway of this service will be:

1. Patient identified by Primary Care (either in general practice or community care setting) for oxygen assessment.
2. Patient referred to Adult Oxygen Assessment Service.
3. Referral is triaged, possible outcomes will be: referral accepted or patient deemed inappropriate (see inclusion/exclusion criteria) and referral not accepted.
4. Outcome of triage communicated to referrer by letter, detailing reasons for non-acceptance and recommendations for improving care if appropriate.
5. Patient assessed at a community clinic/Primary Care centre, or at home if the patient is housebound. If SpO<sub>2</sub> ≤92% (and clinically stable for 8 weeks) capillary blood gases will be performed.

### **Outcomes**

- a) Ambulatory oxygen candidates will be referred on to Secondary Care for formal assessment.
- b) Patients in receipt of Short Burst Oxygen Therapy (SBOT) will be reviewed by Primary Care oxygen team annually.
- c) If capillary blood gas results confirm hypoxaemia – patient referred to Secondary Care for second set of blood gases and/or ambulatory assessment. If appropriate, initiation of oxygen therapy.
- d) Patient is handed back to Primary Care oxygen team for follow up and ongoing management.

Each follow up appointment by the primary care oxygen team will include: patient review, clinical examination, personalised health and care planning in partnership with the patient and review of care plans, education and risk assessment. Additionally, lung function tests (i.e. Spirometry), assessment of inhaler technique and capillary blood gas analysis will be performed as required. Quality of Life measurement will be carried out 6 monthly using the Medical Research Council dyspnoea scale.

- Follow up by primary care oxygen team for LTOT at 1 month (home visit), 3 months, 6 months and 12 months, with twice yearly follow up thereafter (including capillary blood gas analysis).

- Ambulatory oxygen patients will receive follow up in Secondary Care at 2 months, then by Primary Care oxygen team at 6 months and 12 months, and twice yearly thereafter.
- Patients using Short Burst Oxygen will be reviewed annually by the primary care oxygen team.
- Patients who demonstrate deterioration in their condition will be managed appropriately by the Primary Care oxygen team unless there is a necessity to refer back to Secondary Care for specialist review, e.g. marked and unexpected deterioration in lung function and/or blood gases, unstable hypercapnia, assessment of nocturnal hypoxaemia.
- Borderline patients who do not qualify for oxygen therapy will be discharged back to the initial referrer/key worker for monitoring of condition.
- Existing oxygen users will have their oxygen prescription checked by the primary care oxygen team against their actual usage (using Air Liquide information hotline) and amended as clinically appropriate to their needs.
- Existing oxygen users who do not formally qualify for their therapy will work in partnership with the primary care oxygen team clinician to develop a personalised care plan and be assisted in weaning off their oxygen use prior to it being withdrawn (in as many cases as possible).
- Patients identified as having additional health care needs will, with their consent, be referred or signposted as required to the appropriate community services and managed in partnership between the primary care oxygen team and other services e.g. Complex Case Management, Case Management, Specialist Nurse Case Management, Key Worker, GP.
- Travel advice to include holiday orders for Oxygen provision by primary care oxygen team
- Service user feedback will be sought annually by primary care oxygen team via a Patient Satisfaction Questionnaire.

### **Outcome of Service/intervention**

- A service ensuring that all appropriate patients receive a formal oxygen assessment and appropriate diagnosis and treatment of chronic hypoxaemia.
- Adherence to evidence based recommendations and guidelines.
- Improved patient quality of life and symptom relief.
- Quality assurance of service for all patients across the Primary/Secondary Care interface.
- Equity of services for patients in Lincolnshire
- Service enabling patients to be managed in the community, thus improving patient choice and access.
- Cost effectiveness of limited resources.
- Documentation and communication with oxygen contract supplier (Air Liquide) will be maintained.
- Patients will have access to appropriate integrated community services such as Complex Case Management, Case Management, Specialist Nurses, Key Worker.
- Countywide solution for Secondary Care providers who have not had an oxygen assessment service.
- Partnership working between Primary and Secondary Care.
- Supporting Complex Case Management and Palliative Care.

### **Discharge Criteria**

Patients will be discharged from the service if:

- They do not attend or decline 3 offers of appointment.
- Oxygen therapy is not required.
- Oxygen therapy is withdrawn.

### **Reporting Mechanisms/service standards**

Performance monitoring of the Adult Oxygen Assessment Service will be undertaken by reporting and audit which will include the following:

Quarterly report on number of patients:

- Referred into the service.
- Currently receiving oxygen therapy who have undergone formal assessment (thus identifying those who have not).
- Who have had oxygen removed.
- Not fulfilling criteria for oxygen therapy but in whom it is impossible to remove the oxygen.
- Who have received more appropriate therapy as a result of oxygen assessment.
- To have Patient Satisfaction Questionnaire offered prior to discharge from the service.

Also:

- Waiting times from referral to assessment.
- Number of assessments performed.
- Location of assessment.
- Number of referrals made to Secondary Care.
- Number of referrals made to other community health services e.g. Pulmonary Rehabilitation Smoking Cessation Service, Complex Case Manager.
- Amendments made to existing oxygen orders/prescription.
- Clinical indicator comparison to evaluate quality effectiveness of community provision.

Annual audit of Key Performance Indicators including:

- No of patients who receive a letter offering them an appointment
- No of patients who receive a Patient Information Leaflet with their first appointment letter.
- Recording and reporting of the number of ethnic minority patients seen within the service.
- No of personalised care plans offered to patients.
- Savings achieved through appropriate oxygen provision.
- Workforce development.

Standards:

- Improvement in patient quality of life and symptom management.
- Reduction in inappropriately prescribed home oxygen therapy.
- The Adult Oxygen Assessment Service will wherever possible adhere to the clinical guidance and structure of care recommended by the British Thoracic Society (2015). It may be necessary in rare circumstances to review patients outside of this pathway. Such situations will be individually negotiated with the patient, clinician and if appropriate, under consultant review.
- Patients will have their consent obtained prior to any intervention or further referrals being made as a result of their oxygen assessment in Primary Care.



- Patients will receive education and information including risk assessment and if appropriate liaison with the Fire Department in order to promote and ensure safe home oxygen usage, throughout the pathway.
- A cost effective service.
- A full set of key performance indicators are available on request.

## Definition of terms

**Long Term Oxygen Therapy (LTOT)** refers to the provision of oxygen therapy for continuous use via an oxygen concentrator at home for patients with chronic hypoxaemia (PaO<sub>2</sub> at or below 7.3 kPa when stable or PaO<sub>2</sub> of 7.3 to 8.0 kPa when stable but with evidence of Cor Pulmonale, secondary polycythaemia or nocturnal hypoventilation). The oxygen flow rate must be sufficient to raise the waking oxygen tension above 8 kPa. Once started, this therapy is likely to be life long. LTOT is usually given for at least 15 hours daily, to include night time, in view of worsening hypoxaemia during sleep. It is important to differentiate LTOT from the use of oxygen as a palliative measure for symptomatic relief in breathless patients which is not recommended in the absence of hypoxaemia.

**Ambulatory Oxygen Therapy (AOT)** refers to the provision of oxygen therapy during exercise and activities of daily living. It has been shown to improve exercise capacity and reduce breathlessness in patients with arterial oxygen desaturation, defined as a fall in SaO<sub>2</sub> of 4% to a value <90%. The purpose of ambulatory oxygen is to enable the patient to leave home for a longer period of time, to improve daily activities and quality of life and therefore should only be prescribed for patients who are mobile outdoors. Ambulatory oxygen should only be prescribed after appropriate assessment by the hospital specialist.

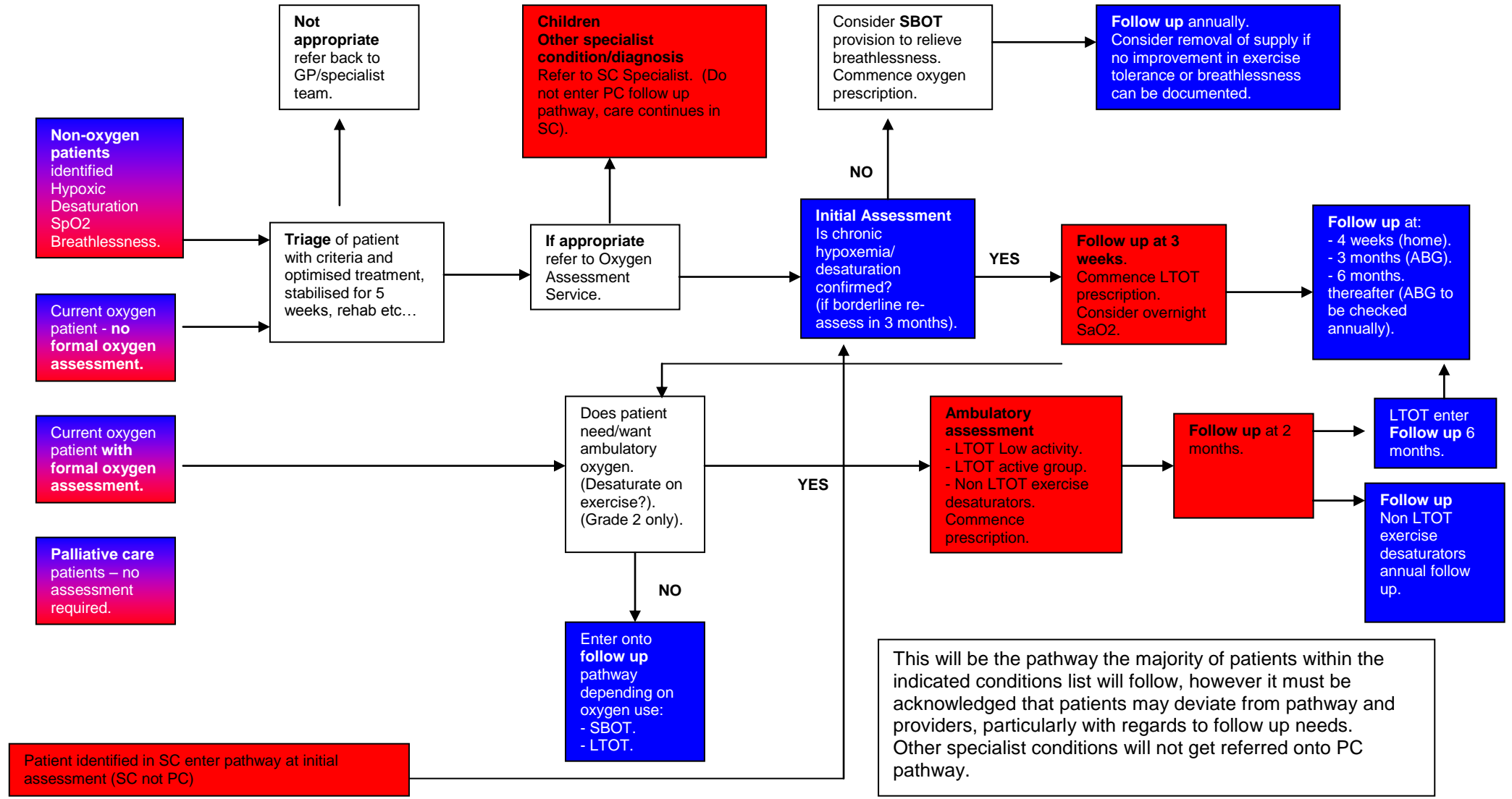
**Short Burst Oxygen Therapy (SBOT)** is typically given to patients for the relief of breathlessness not relieved by any other treatments. It is used intermittently for short periods of 10-20 mins at a time. Evidence shows that SBOT does not improve exercise tolerance or reduce breathlessness when administered either before or following exercise to hypoxic or non-hypoxic patients with moderate-severe COPD. Nor does it improve health-related quality of life or reduce healthcare utilisation when ordered for patients following an acute exacerbation of COPD.

British Thoracic Society guidelines for home oxygen use in adults, *Thorax* 2015; Vol 70, (Supplement 1) i1-i43

Primary Care (PC)

Secondary Care (SC)

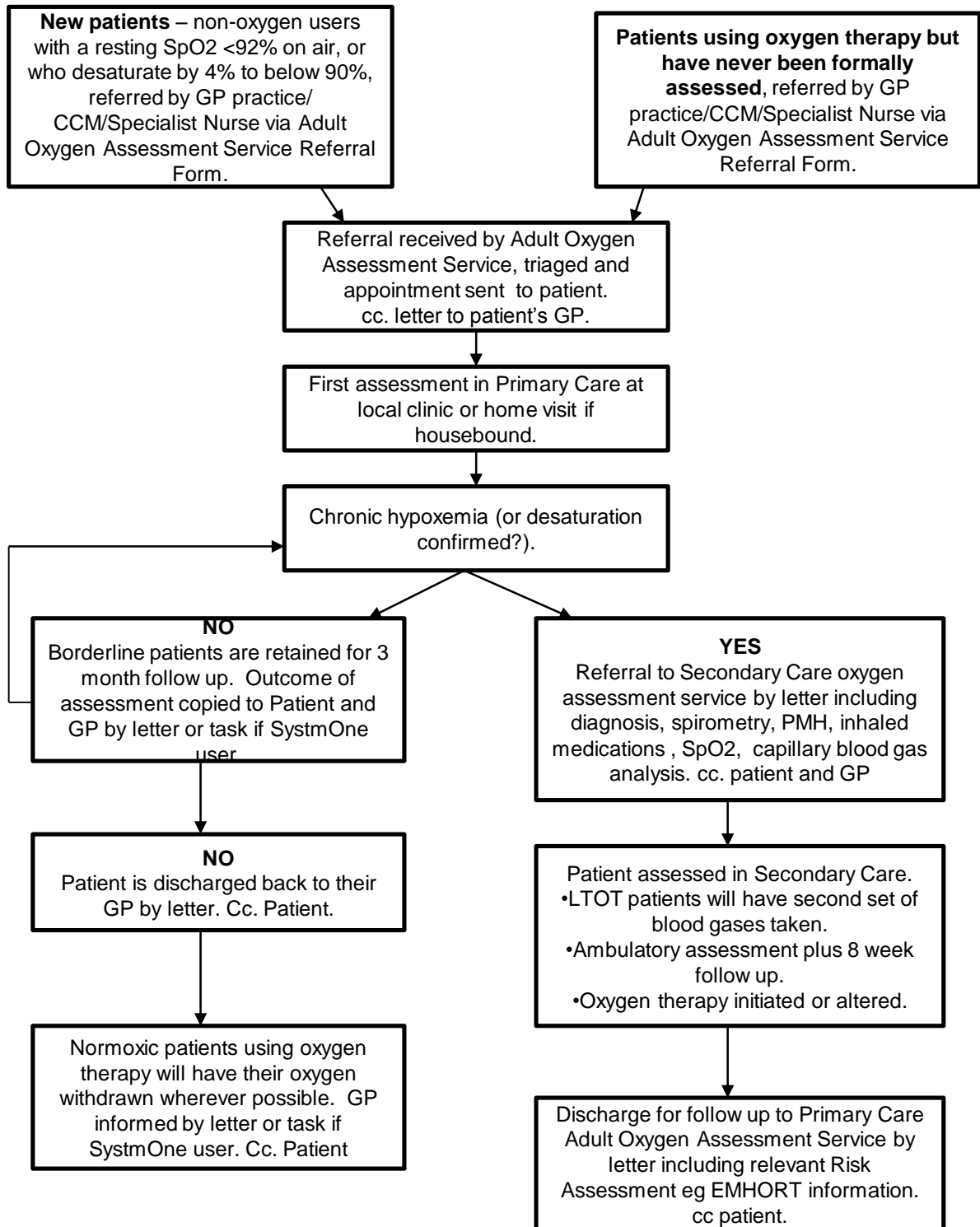
### Oxygen Assessment Pathway



This will be the pathway the majority of patients within the indicated conditions list will follow, however it must be acknowledged that patients may deviate from pathway and providers, particularly with regards to follow up needs. Other specialist conditions will not get referred onto PC pathway.

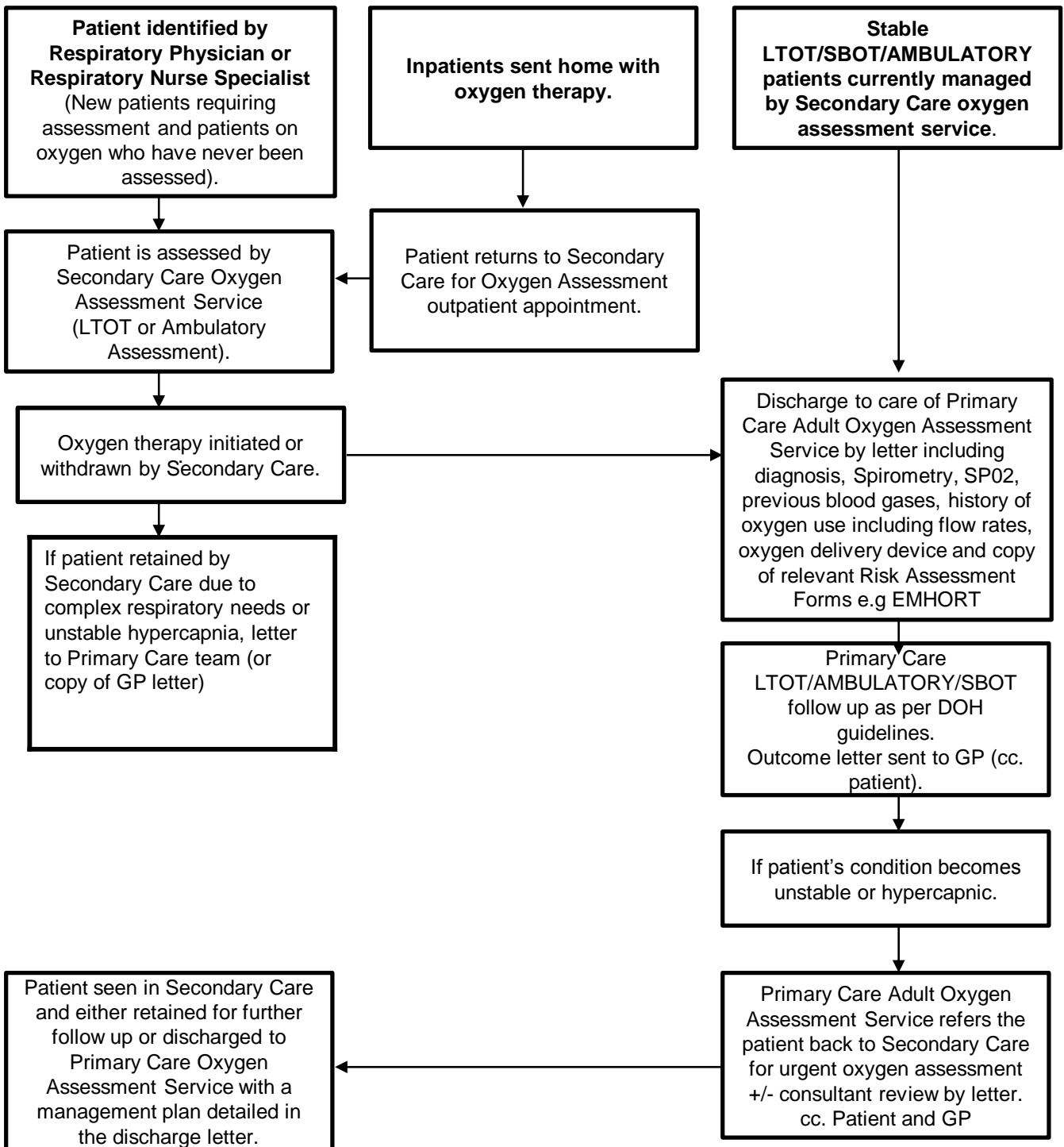
**Referral and Communication Pathway for the Adult Oxygen Assessment Service.**

**Primary Care Generated Referrals To The Service.**

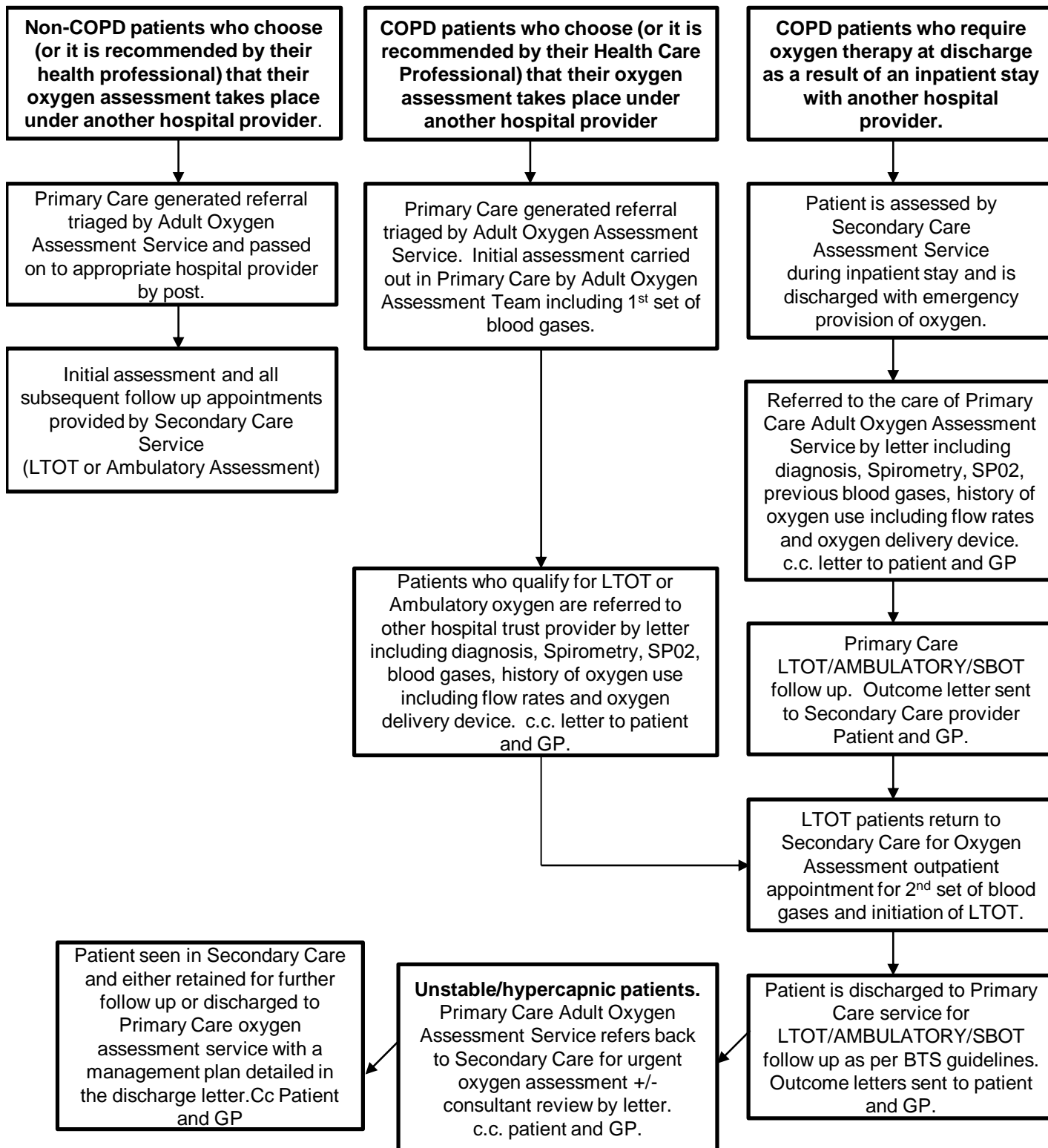


**Referral and Communication Pathway for the Adult Oxygen Assessment Service.**

**Secondary Care Generated Referrals To The Service.**



**Cross boundary referral and communication pathway between the Adult Oxygen Assessment Service and other Hospital Trust providers outside the boundaries of NHS Lincolnshire.**



## Adult Oxygen Assessment Service Guide to referral pathway

### Inclusion Criteria

Patients are required to have:

- A confident clinical diagnosis of COPD, confirmed by spirometry.
- Optimal medical management and a period of stability for a recommended 8 weeks prior to the assessment.
- A resting SpO<sub>2</sub> of  $\leq 92\%$  breathing air or a fall in SpO<sub>2</sub> of 4% to below 90% on exertion.
- A resting SpO<sub>2</sub> of  $\leq 94\%$  with evidence of peripheral oedema, polycythaemia (haematocrit  $\geq 55\%$ ) or pulmonary hypertension.
- Be in receipt of oxygen therapy without ever having been formally assessed.
- Those patients who currently receive oxygen therapy but do not require follow up in Secondary Care.

### What are the referral criteria?

Due to the significant risk of fire and personal injury associated with smoking and the use of Home Oxygen therapy it is recommended that patients referred into the service have ceased smoking prior to the referral.

In order for the referral to be accepted, patients **must**:

- Have a confirmed diagnosis of COPD (hard copy of spirometry must be attached to the referral).
- Have inhaled therapies optimised (i.e. short acting bronchodilator, long acting anticholinergic, plus long acting beta-agonist/inhaled corticosteroid combined inhaler if appropriate).
- Be in a stable condition (i.e. 8 weeks since last exacerbation)
- For ambulatory oxygen referrals patients ideally should have completed a Pulmonary Rehabilitation programme prior to oxygen assessment.

### Exclusion Criteria

- Patients without a confirmed clinical diagnosis.
- Patients who are not pharmacologically optimised.
- Patients who are not in a stable phase of their disease.
- Patients receiving oxygen therapy for conditions other than COPD and severe chronic asthma.
- Palliative patients who are normoxic i.e. SpO<sub>2</sub>  $\geq 93\%$  on air.

### What about non-COPD patients?

Referrals for patients who may require oxygen assessment but do not have COPD (e.g. Heart Failure, Pulmonary Fibrosis, cluster headaches) will be passed straight on to Secondary Care for formal oxygen assessment.

### How do I refer?

By completing **IN FULL** the Community Respiratory Referral Form for your area and faxing it to your locality office (fax number can be found on the bottom of the referral form). Please remember to attach a hard copy of the patient's spirometry and a print out of current medications.

**What happens next?**

- The referral will be triaged, and either accepted or declined. You will be contacted by letter if your referral has been declined, with an explanation of the reasons for non-acceptance.
- If the referral is accepted the patient will be contacted by letter and offered an appointment with a Respiratory Nurse Specialist in a locality clinic (home visits are available for truly housebound patients).
- At clinic the patient will be assessed in line with the BTS guidelines for home oxygen, which may include capillary blood gas analysis. If the result of the assessment shows that the patient meets the criteria for Long Term Oxygen Therapy or Ambulatory Oxygen Therapy they will be referred on to their local Secondary Care provider for further assessment and initiation of oxygen.
- Once oxygen therapy has been initiated, patients will receive follow up locally by the community team.

Please contact the Adult Oxygen Assessment Team for advice and support:

<b>Boston Office:</b>	<b>Tel: 01205 315247</b>	.
<b>Grantham Office:</b>	<b>Tel: 01476 590416 Ext 209</b>	.
<b>Lincoln Office:</b>	<b>Tel: Contact Centre 01522 308890</b>	
<b>Louth Office:</b>	<b>Tel: 01205 315247 opt 5</b>	



**Community Respiratory Team**

*Please tick service required*

- |  |  |
|--|--|
| <input type="checkbox"/> Respiratory Complex Case Management (CCM)   | <input type="checkbox"/> Oxygen Assessment   |
| <input type="checkbox"/> Acute Respiratory Assessment Service (ARAS) | <input type="checkbox"/> Pulmonary Rehabilitation <input type="checkbox"/> Respiratory Physiotherapy |

<b>Patient Details</b>	<b>Referrer's Details</b>
Name:	Referrer's Name:
Address:	Surgery Name and Address:
Post Code:	Post Code:
Date of Birth:	Telephone No:
NHS No:	Fax No:
Telephone No:	Date of Referral:
<b>Carer's Name (if applicable)</b>	<b>Social Circumstances: Is the patient Housebound?:</b>
<b>Carer's Contact No:</b>	

<b>Confirmed COPD Diagnosis:</b>	<b>Has the patient used antibiotics or steroids in the last 5 weeks?</b>
<b>Co-morbidities:</b>	<b>History of Presenting Illness:</b>
<b>Current Medications (Please attach printout):</b>	<b>Smoking Status:</b>
	History: ..... pack years Cessation advice:

<b>Spirometry Date:</b>	<b>Current Oxygen Prescription (if appropriate)</b>			
Result	%	<b>Long-term Oxygen Therapy</b>	<b>Ambulatory</b>	<b>Short Burst Oxygen Therapy</b>
VC		Litre/min: Hours/day:	Litre/min: Hours/day:	Litre/min: Hours/day:
FEV1				
FVC				
FEV1/VC				
FEV1/FVC				

<b>OBSERVATIONS:</b>	<b>Any other information:</b>
Temperature:	Chest X-Ray:
Pulse Rate:	ECG:
Oxygen Saturation: on rest on exercise	Echocardiogram:
BP:	FBC:
Respiratory Rate:	MRC Score: Walking Tolerance (metres) ..... MRC: .....
Sputum Production – Colour/Volume:	Walking aid/appliance used: .....
Is the patient more breathless than usual:	Height Weight: .....

<b>Informed consent given?</b>	
<b>Signature:</b>	<b>Date:</b>
<b>Name of referrer (print):</b>	<b>Designation:</b>
<b>Telephone Number:</b>	

**PLEASE EMAIL A COPY TO [LHNT.LCHSreferrals@nhs.net](mailto:LHNT.LCHSreferrals@nhs.net) or tel  
03001234868**

*Please see attached for service criteria*

### Initial Oxygen assessment

The clinical assessment will be carried out in the appropriate clinic or if the patient is housebound their home. Prior to assessment the referral will have been assessed and deemed to be appropriate, patients will have to have a confirmed diagnosis of COPD, on optimised therapy and clinically stable for at least 8 weeks.

- Review of patient's history and current therapy.
- Check patients understanding of the referral and gain verbal consent.
- Health status check including B/P pulse, spirometry (if recommended) height and weight. Advise on Flu and pneumococcal vaccination.
- Inhaler technique and medication concordance.
- Measure pulse oximetry on air, if SpO<sub>2</sub> >92% or SpO<sub>2</sub> ≤ 94% with clinical evidence of peripheral oedema, polycythaemia (haematocrit >55%) or pulmonary hypertension assess also for ambulatory desaturation. If SpO<sub>2</sub> <92% or SpO<sub>2</sub> ≤ 94% with risk factors, continue with an ear lobe blood gas (CBG) (refer to protocol for CBG).
- PO<sub>2</sub> >7.3 but below 8kpa (and the patient does not have pulmonary hypertension or polycythaemia) then arrange a repeat assessment in 3/12 consider referral for overnight oxygen.
- PO<sub>2</sub> <7.3kpa arrange a referral for Secondary Care LTOT assessment, if housebound can have second assessment at home, at least 3 weeks between each assessment and clinically stable for 8 weeks.
- In patients with clinical evidence of peripheral oedema, polycythaemia (haematocrit >55%) or pulmonary hypertension with a resting PO<sub>2</sub> ≤ 8kPa arrange a referral for Secondary Care LTOT assessment.
- Check smoking status, if still smoking or members of family smoking then give smoking cessation advice. Note caution on smoking and oxygen. Initiate smoking risk assessment protocol in partnership with the patient. **FULLY ADVISE PATIENT ON RISK OF SMOKING WITH OXYGEN**

Refer to Appendix – EMHORT pathway and complete EMHORT Form

- refer to Allied Professionals – risk assessment.

- refer to Community Fire Safety team.

- withdraw oxygen if significant risk

- Complete quality of life measurement by use of MRC Dyspnoea Scale
- Whilst awaiting 2<sup>nd</sup> review if symptomatic consider prescription of appropriate oxygen therapy, complete Home Oxygen Consent Form (HOCF)/and Home Oxygen Order Form (HOOF).

## Short Burst Oxygen Therapy Assessment Annual Review

Short Burst Oxygen Therapy (SBOT) refers to intermittent use of supplemental oxygen at home usually for periods of 10 – 20 minutes at a time to relieve dyspnoea which is not relieved by other treatments.

SBOT has traditionally been used for:

- Pre-oxygenation before exercise.
- Breathlessness during recovery from exercise.
- Control of breathlessness at rest.
- Used in palliative care.
- Used after an exacerbation of COPD to bridge the time to full LTOT assessment.

Despite extensive prescription of SBOT there is no adequate evidence available for firm recommendation for the therapy.

- SBOT does not improve exercise tolerance or reduce breathlessness when administered either before or following exercise to hypoxic or non-hypoxaemic patients with moderate to severe COPD.
- SBOT does not improve health related quality of life or reduce healthcare utilisation when ordered for patients (BTS 2015)

Patients receiving SBOT will be reviewed annually at a clinic, housebound only at home:

- Review of how often SBOT is being used, flow rate and delivery device and any problems.
- Record SpO<sub>2</sub> if >92% record only but if lower perform CBG (as per protocol).
- Aim to wean down use of and remove SBOT if no benefit or no improvement in symptoms are present.
- Assess effectiveness of SBOT in managing breathlessness. Provide patient information leaflet regarding correct use of SBOT.
- Health status review, B/P, pulse, height, weight, spirometry if indicated and smoking cessation advice.
- Assess the need for completion of HADS.
- Review of inhalers, technique, concordance and ensure they are fully optimised.
- Chest examination.
- Note any exacerbations.
- Discuss need for Flu/Pneumococcal vaccination.
- Discuss benefits of pulmonary rehabilitation.
- Explore other strategies for the management of breathlessness
- Develop a personalised care plan in partnership with the patient.
- Record Quality of Life Measurement using MRC score.
- Offer a patient Satisfaction questionnaire annually.

## **Ambulatory Oxygen assessment review**

Patients without chronic hypoxaemia and LTOT, should be considered for ambulatory oxygen therapy only if they show evidence of exercise oxygen desaturation, a fall in SpO<sub>2</sub> of 4% to a value <90%. Show an improvement in exercise capacity and/or less breathlessness with ambulatory oxygen therapy. Initiation of ambulatory therapy grade 3 will be performed in Secondary Care with a follow-up 8 weeks later. If stable they will be discharged to the community oxygen assessment team where they will be reviewed after 6 months initially then 12 monthly if stable.

- Ensure that current oxygen flow rate corrects de-saturation when walking to the patients maximum tolerated distance to SpO<sub>2</sub> ≥ 90%
- Provide patient information leaflet regarding correct use of ambulatory oxygen therapy.
- Consider weaning down or removing if not being used or is not mobile outdoors
- Health status, check B/P, pulse, weight and height, Spirometry if indicated.
- Smoking status and cessation advice.
- Perform capillary blood gas analysis if SpO<sub>2</sub> indicates LTOT assessment
- Discuss exercise and Pulmonary Rehabilitation if appropriate.
- Discuss flu/pneumococcal vaccination.
- Develop a personalised care plan in partnership with the patient.
- Record Quality of Life Measurement using MRC Dyspnoea Scale every 6 months
- Offer a patient Satisfaction questionnaire annually.

## **LTOT: Oxygen 4 week home visit assessment**

A home visit will normally be organized 4 weeks after LTOT has been prescribed. If possible it is ideal to have the main carer, family member or spouse present during the visit. There are two main categories that need to be addressed Education and Assessment.

### **Education**

Discussion about the reasons for the oxygen therapy, and length of time that it should be administered (both LTOT and ambulatory). Provide appropriate patient information leaflets.

Discuss any problems that may have arisen and look at the nasal cannulae/masks ensure that they are suitable.

Ensure that the concentrator is in a suitable location away from fires, heating and not obstructing any exits.

Requirement for back-up cylinder and where it is to be sited.

Make referral to the fire service if required.

Smoking cessation advice if required and ensure that all visitors to the house will be aware of the need for NO SMOKING and of the dangers of smoking and oxygen.

Review of inhalers and inhaler technique checked.

Ensure that the contact telephone numbers for the oxygen supplier and Respiratory Nurse have been provided.

### **Assessment**

Pulse Oximetry should be recorded. If over 92% whilst on oxygen then the flow rate can stay the same. If SpO<sub>2</sub> is below 92% they will need reassessing as per flow rate change protocol.

Observe for and question about signs of hypercapnia.

Check for any signs of exacerbation/infection.

Chest examination and discussion regarding sputum and management plan.

Ensure there is an emergency course of antibiotics and steroids at home.

Review existing personalised care plans and develop new care plans in partnership with the patient.

## **LTOT: Oxygen 3 month assessment**

All patients should be reviewed by the Respiratory Nurse Specialist, Oxygen, at 3 months after initial LTOT prescription. The following should be carried out:-

- Arterial blood gas measurements with supplemental oxygen at the prescribed flow rate. Ear lobe capillary blood gases will be sampled using the ISTAT machine.
- PO<sub>2</sub> <8 kPa but no rise in PCO<sub>2</sub> of above 6 kPa, then the flow rate will be changed (see oxygen flow rate change protocol).
- Referral to hospital specialist for reassessment when there is a clinical deterioration (other than lowering of the SpO<sub>2</sub>) or symptoms of worsening Hypercapnia.
- A review of respiratory medication and inhaler technique checked.
- Spirometry performed if indicated.
- Smoking cessation and safety advice to be discussed and reinforced with patient and or/carers/family members.
- Review of ambulatory needs.
- Review existing personalised care plans and develop any new care plans in partnership with the patient.
- Refer to SOP for reducing risk from fire (see Appendix)

## LTOT: Oxygen 6 month assessment

All LTOT patients should be followed up 6 monthly with measurements of SpO<sub>2</sub> on air and LTOT.

- In patients where the SpO<sub>2</sub> is under corrected <92% on LTOT the patient will need to have a repeat blood gas assessment on oxygen to adjust the LTOT flow rate.
- Although the oxygen flow rate can be increased using Oximetry, there is a risk of worsening hypercapnia with increasing supplemental oxygen flow rate.
- Where the SpO<sub>2</sub> is noted to be at level of 92% or above on air, the patient should be visited again in 4 weeks for repeated oximetry. If the SpO<sub>2</sub> is still at 92% or above the patient should be reassessed to see if they require LTOT.

Attention should also be paid to:

- Concentrator location.
- Nasal cannulae/masks.
- Requirements for back-up cylinder.
- Check oxygen usage with the patients and their understanding of the need for compliance.
- Reinforce no smoking with patient and family/visitors.
- Check inhaler technique and concordance.
- Review of ambulatory needs.
- Review existing personalised care plans and develop any new care plans in partnership with the patient.
- Complete quality of life measurement by use of MRC Dyspnoea Scale.
- Refer to SOP for reducing risk from fire (see Appendix)

## **LTOT: Oxygen assessment 12 month annual review**

A full review of all patients on oxygen therapy is carried out annually from the date of the first appointment with the service, this consists of:

- Pulse Oximetry on both air and the flow rate of oxygen the patient is currently using at home. To qualify for oxygen SpO<sub>2</sub> on air should be <92% and >92% on oxygen. If levels are >92% on air then a further test will need to be carried out in 4 weeks.
- Full CBG via the ear lobe using the ISTAT machine will be carried out after having oxygen at the prescribed rate for 20 minutes. PCO<sub>2</sub> should ideally be <6 kPa with a level of PO<sub>2</sub> of above 8 kPa.
- If the PO<sub>2</sub> levels have fallen when on oxygen then the patient will need a further assessment on a higher flow rate. This can be carried out during the same appointment, time permitting or a further appointment made. The PO<sub>2</sub> should have risen without the PCO<sub>2</sub> having increased by more than 1.0kPa. If the PCO<sub>2</sub> has risen above the recommended rate the oxygen prescription should stay on the same rate, the patient should undergo further medical optimisation and reassessed in 4 weeks. If this continues on 2 occasions a referral (admission arranged if acidosis to Secondary Care).
- Assessment on the amount of oxygen that is being used and check patients understanding of the need of adequate compliance. Provide patient information leaflet .
- Health status check including B/P pulse, spirometry (if recommended), height and weight,
- Inhaler technique and medication concordance.
- Review existing personalised care plans and develop any new care plans in partnership with the patient.
- Complete quality of life measurement by use of MRC Dyspnoea Scale
- Refer to SOP for reducing risk from fire (see Appendix)
- Any other questions

### **Oxygen Support Visits.**

Some patients may require extra support with the understanding of and use of their oxygen therapy. It may be necessary to offer extra visits outside the pathway described in this document in order to:

- Reinforce education
- Promote correct practice and appropriate use of therapy
- Support smoking cessation
- Provide emotional support and assist with confidence building/anxiety management.
- Support with weaning off oxygen therapy
- Teaching of inhaler technique/concordance with inhaled medications.

This support will be offered by clinicians within the multidisciplinary team e.g. Respiratory Nurse Specialist, Trainee Assistant Practitioner or Assistant Practitioner.



**Patient agreement to sharing information**  
(as part of the supply of Oxygen by the Home Oxygen Service)



<b>Form issued by:</b>			
<b>Unit/Surgery</b>		<b>Address</b>	
<b>Contact name</b>			
<b>Tel no.</b>			
			<b>Postcode</b>

<b>Patient</b>			
<b>Name</b>		<b>Address</b>	
<b>D.O.B.</b>			
<b>NHS number</b>			
<b>Tel/mobile no.</b>			
<b>E-mail</b>			
			<b>Postcode</b>

My doctor or a member of my care team has explained the arrangements for supplying Oxygen at my premises, that my information will be stored in line with the Data Protection Act 1998, and I understand these arrangements, such that:

1. information about my condition/condition of the patient named above\* will be transmitted to the Home Oxygen Service (HOS) Supplier to enable them to deliver the Oxygen treatment as per the Home Oxygen Order Form (HOOF),
2. information will be exchanged between my hospital care team, my doctor, the home care team and such other teams as necessary related to the provision, and review, of my Oxygen treatment and safety,
3. the HOS Supplier will be granted reasonable access to my premises, so that the Oxygen equipment can be installed, serviced, refilled and removed (as appropriate),
4. information will also be shared with the local Fire Rescue Services team to allow them to offer safety advice at my premises and where appropriate install/deliver suitable equipment for safety, and
5. information will also be shared with my electricity supplier/distributor where electrical devices have been installed.
6. From time to time, I may be contacted to participate in a patient satisfaction survey/audit. *(should you wish not to participate please inform your HOS supplier)*
7. I understand that I may withdraw my consent at any time (at which point my HOS equipment will be removed)

\* Delete as applicable

<b>Patient's signature</b>		<b>Date</b>	
(see note 3 where signed and witnessed on patient's behalf)			

I confirm that I have responsibility for the above-named patient.

<b>Carer's signature</b>		<b>Name</b>	
<b>Relationship to patient</b>		<b>Date</b>	

I confirm that I am the healthcare professional responsible for the care of this patient and I have completed this form on his/her behalf as s/he is unable to provide/withhold consent. The patient has been given a copy of this form.

<b>Clinician's signature</b>		<b>Date</b>	
<b>Name</b>			

## GUIDANCE NOTES

### Who may give consent?

1. It is presumed that anyone aged 16 or over is competent to give consent for her/himself unless the opposite is demonstrated. If a child under the age of 16 has 'sufficient understanding and intelligence to enable him or her to understand fully what is proposed', then he or she will be competent to give consent for him/herself. Young people aged 16 and 17, and legally 'competent' younger children, may therefore sign this form for themselves, but may like a parent to countersign as well.
2. If a child is unable to give consent him/herself, person(s) with parental responsibility for the child may provide information about their wishes in relation to the child. However, the final decision to disclose information lies with the healthcare professional in charge of caring for the child. Any decisions taken must be in the best interests of the child. Even where a child is able to give consent him/herself, a healthcare professional with responsibility for caring for the child should involve those with parental responsibility for the child's care, unless the child specifically asks the healthcare professional not to do so.
3. If a patient is mentally competent to give consent but is physically unable to sign a form, this form should be completed and signed by an independent witness as confirmation that the patient concerned gave consent orally or non-verbally.
4. Where an adult patient (aged 18 or over) lacks capacity to give or withhold consent, decisions must be taken by the healthcare professional in charge of the care of the patient. Decisions must be made in the best interests of the patient, taking into account any wishes that may have been previously expressed by the patient (for example, before he loss of capacity) and any views or wishes expressed by the patient's family or friends.

### Guidance on the law on confidentiality and consent

For a comprehensive summary, see the Department of Health publication *Confidentiality: NHS Code of Practice* available at

[http://www.dh.gov.uk/en/Managingyourorganisation/Informationpolicy/Patientconfidentialityandcaldicottguardians/DH\\_4100550](http://www.dh.gov.uk/en/Managingyourorganisation/Informationpolicy/Patientconfidentialityandcaldicottguardians/DH_4100550)

Home Oxygen Order Form (HOOF)  
**Part B (After Specialist / Paediatric Oxygen Assessment)**  
 All fields marked with a "\*" are mandatory and the HOOF will be rejected if not completed



1. Patient Details							
1.1 NHS Number*		1.7 Permanent address*		1.9 Tel no.		2. Carer Details (if applicable)	
1.2 Title				1.10 Mobile no.			
1.3 Surname*				2.1 Name			
1.4 First name*				2.2 Tel no.			
1.5 DoB*				2.3 Mobile no.			
1.6 Gender	<input type="checkbox"/> Male <input type="checkbox"/> Female	1.8 Postcode*					
3. Clinical Details				4. Patient's Registered GP Information			
3.1 Clinical Code(s)				4.1 Main Practice name:*			
3.2 Patient on NIV/CPAP		<input type="checkbox"/> Yes <input type="checkbox"/> No		4.2 Practice address:			
3.3 Paediatric Order		<input type="checkbox"/> Yes <input type="checkbox"/> No		4.3 Postcode*		4.4 Telephone no.	
5. Assessment Service (Hospital or Clinical Service)				6. Ward Details (if applicable)			
5.1 Hospital or Clinic Name:				6.1 Name:			
5.2 Address:				6.2 Tel no.:			
5.3 Postcode:				5.4 Tel no:		6.3 Discharge date: / /	
7. Order*		8. Equipment*				9. Consumables*	
		For more than 2 hours/day it is advisable to select a static concentrator				(select one for each equipment type)	
Litres/Min	Hours/Day	Type	Quantity	Conserving Device	Nasal Canulae	Mask % and Type	
		8.1 Static Concentrator <small>Back up static cylinder(s) will be supplied as appropriate</small>					
		8.2 Static Cylinder(s) <small>A single cylinder will last for approximately 8hrs at 4l/min</small>					
		8.3 Self Fill Concentrator <small>Same as static concentrator and can fill ambulatory cylinder(s) (8.5/8.6)</small>					
		8.4 Transportable Concentrator (trolley based) <small>Can be used in place of a static concentrator and / or for ambulatory use</small>					
		8.5 Standard Ambulatory Cylinder(s) <small>Cylinders for use outside of a home setting</small>					
		8.6 Lightweight Ambulatory Cylinder(s) <small>Lighter than the standard ambulatory cylinder</small>					
		8.7 Portable Concentrator (carry over shoulder) <small>Lighter weight than transportable concentrator and limited to pulse dose</small>					
		8.8 Liquid Oxygen (LOX) Dewar <small>Please select number of flasks required below</small>					
		8.9 Liquid Oxygen (LOX) Flask <small>To be used in conjunction with the LOX Dewar</small>					
10. Additional Equipment							
10.1 Humidification (not usually indicated for less than 4l/min) <input type="checkbox"/> Yes <input type="checkbox"/> No				10.2 Tracheostomy (mask only) <input type="checkbox"/> Yes <input type="checkbox"/> No			
11. Delivery Details*							
11.1 Standard (3 Business Days) <input type="checkbox"/>		11.2 Next (Calendar) Day <input type="checkbox"/>		11.3 Urgent (4 Hours) <input type="checkbox"/>			
12. Temporary Secondary Supply				13. Contact Details			
12.1 Address:  Postcode:				13.1 Name:			
				13.2 Tel no.			
14. Additional Patient Information				15. Clinical Contact (if applicable)			
				15.1 Name:			
				15.2 Tel no.		15.3 Mobile no.	
16. Declaration*							
I declare that the information given on this form for NHS treatment is correct and complete. I understand that if I knowingly provide false information, I may be liable to prosecution or civil proceedings. I confirm that I am the registered healthcare professional responsible for the information provided. I also confirm that the patient has read and signed the Home Oxygen Consent Form.							
Name:				Profession:			
Signature:				Date:			
Fax back no. or NHS email address for confirmation / corrections:							

### **OXYGEN FLOW RATES & PERCENTAGE DELIVERED**

#### **Air products.**

<b><u>Flow Rate</u></b>	<b><u>Mask</u></b>	<b><u>Nasal Cannulae</u></b>
1 l/min		24%
2 l/min	24%	28%
3 l/min		29.5%
4 l/min	28%	31%
5 l/min		33%
6 l/min	31%	35%
7 l/min		37.5%
8 l/min	35%	40%
10 l/min	40%	
15 l/min	60%	

**Masks will only deliver the % oxygen stated on the venturi barrel and must have the appropriate flow rate.** i.e. in order to deliver 28% oxygen to a patient the venturi barrel MUST be 28% and the flow rate MUST be 4 l/min. Turning the flow rate up on a 24% mask will not deliver a higher % of oxygen.

**Nasal cannulae can deliver up to 6 l/min.** however HIGH FLOW nasal cannulae can be ordered for flow rates above 6 l/min.

Any changes to masks or nasal cannulae need to be made via a Home Oxygen Order Form (HOOF), stating the changes required.

#### **Humidification**

Humidification can be ordered via a HOOF for patients who are experiencing discomfort through a dry mouth, throat or have tenacious secretions.

##### **Please Note:**

- ✦ Humidification can only be added to concentrators, however may be used with either a mask or nasal cannulae.
- ✦ Humidifiers require a supply of sterile/distilled water which is NOT supplied by Air Products, and must be changed daily.
  - ✦ Humidification works most effectively when used with a short length of oxygen tubing.
- ✦ The water bath requires careful maintenance including DAILY washing with hot soapy water.
  - ✦ Humidifiers can be ordered at no extra cost on section 7 of a HOOF.

## References

1. BTS Guidelines for Home Oxygen Use in Adults (2015)
2. Clinical Component for The Home Oxygen Service in England and Wales – BTS working group January 2006.
3. Home Oxygen Clinical Assessment and Follow-up Service Commissioning Framework.
4. Audit of Primary Care based adult oxygen assessment service baseline report – LCHS April 2007 – April 2008.

## Further information

1. DOH website – [www.dh.gov.uk](http://www.dh.gov.uk)
2. Thorax website – [www.thorax.bmj.com](http://www.thorax.bmj.com)
3. BTS website – [www.brit-thoracic.org.uk](http://www.brit-thoracic.org.uk)
4. Adult Home Oxygen Assessment Service for Lincolnshire have 4 main offices over the county, working/office hours are Monday to Friday 9am to 5pm (excluding Bank Holidays).

### **South East Lincolnshire office:**

Countywide Community Respiratory Services  
Lincolnshire Community Health Services (LCHS)  
Boston Enterprise Centre -Venture House,  
Enterprise Way  
Endeavour Park,  
Boston, Lincolnshire  
PE21 7TW  
Tel: 01205 315247 (with answer phone)  
Fax: 01205 312803

### **North West Lincolnshire office:**

Countywide Community Respiratory Services  
Lincolnshire Community Health Services (LCHS)  
Contact Centre  
Community Suite  
John Coupland Hospital  
Ropery Road  
Gainsborough  
Lincs  
DN21 2TJ  
Tel: 01522 707274 option 1  
Fax: 01427 816576

### **North East Lincolnshire office:**

Countywide Community Respiratory Services  
Lincolnshire Community Health Services (LCHS)  
Louth Locality Offices, Louth Hospital,  
High Holme Road,  
Louth.  
LN11 0QF  
Telephone: 01205 315247 option 5

**Mid Kesteven and Welland Office:**

Countywide Community Respiratory Services  
Lincolnshire Community Health Services (LCHS)  
NHS Lincolnshire (Lincolnshire Teaching PCT)  
Tollemache Road South  
Spittalgate Level  
Grantham  
Lincolnshire  
NG31 7UH  
Tel: 01476 590416 Ext 209  
Fax: 01476 579037

**Personnel issues**

This policy applies to all members of the Home Oxygen Service regardless of grade.

**Training**

- All members of the oxygen team must ensure that they meet the registration and fitness to practice requirements of their relevant professional governing body.
- All team members will attend Lincolnshire Community Health Services annual mandatory training.
- Any training laid out in the job description and KSF will be attained by the relevant member of the team.
- All team members must demonstrate a record of achievement of competency using Countywide Community Respiratory Service competency guidelines and documents.

**Monitoring against targets**

This service will be monitored against targets in line with requirements of the Department of Health in relation to Provision of Home Oxygen. These are laid down in the Service Specification published by DoH in 2005.

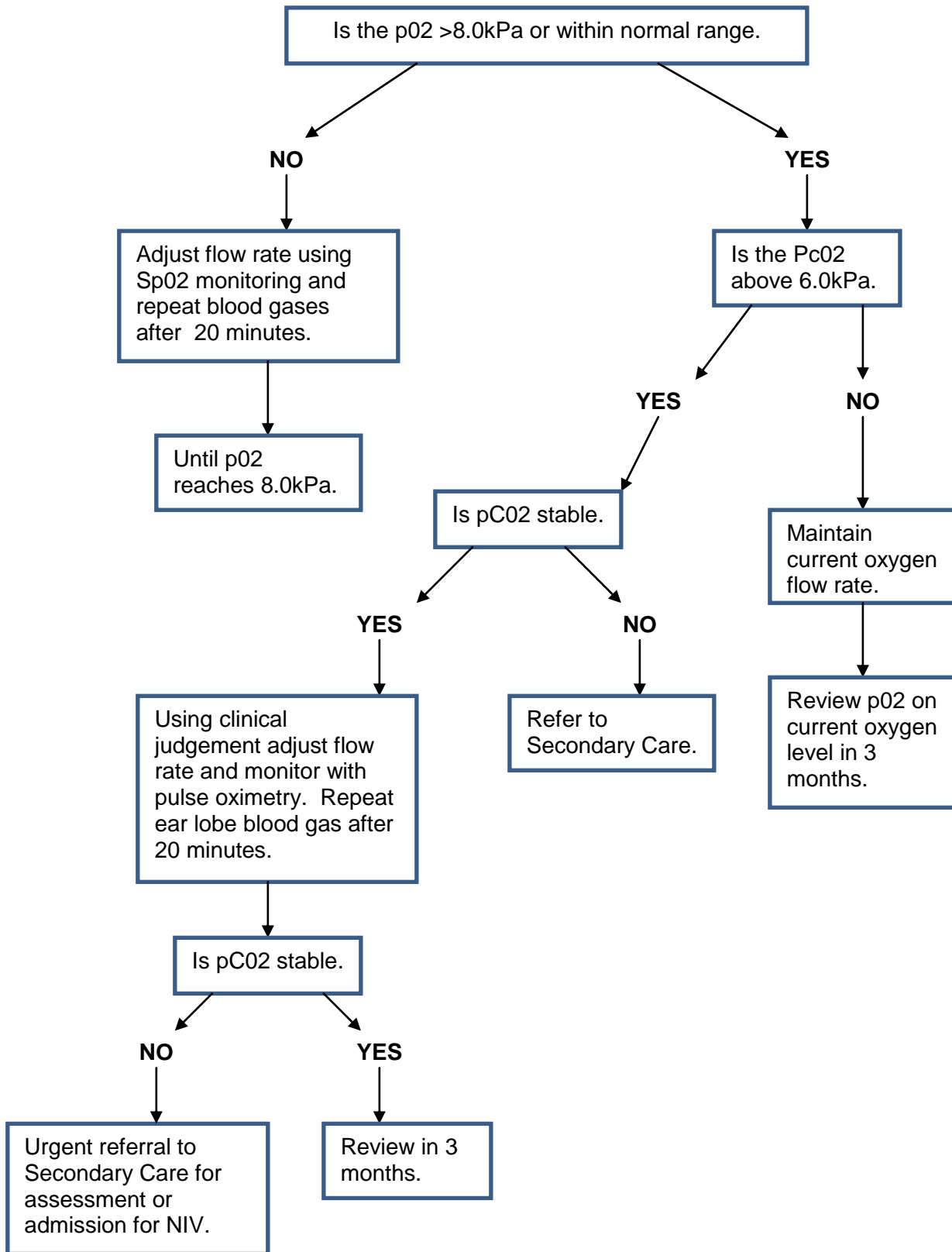
The Adult Oxygen Assessment Team will carry out Annual audit and performance reporting as laid out in the Adult Oxygen Assessment Service Key Performance Indicators .

**Related procedures, policies and protocols**

1. Procedure for taking Capillary Blood Gases.
2. Countywide Community Respiratory Services oxygen competencies.
3. Countywide Community Respiratory Services competencies.

**APPENDIX 1**

**Protocol for amending oxygen flow rate for COPD patients with LTOT oxygen Using capillary blood gases.**



**APPENDIX 2**

**HOME OXYGEN THERAPY DISCLAIMER FORM**

PATIENT NAME: .....

ADDRESS:.....  
.....

POST CODE:.....

NHS NUMBER:..... DATE OF BIRTH:.....

**General Information**

The oxygen company will supply me with a home oxygen service pack.

I will contact the oxygen company/specialist nurse if I require clarity of the contents of the service pack.

**Risk Reduction**

Smoking cessation advice has been offered and strongly encouraged.

I am aware that a risk assessment tool has been completed.

To avoid the risks of fire/explosion or injury:

- Oxygen should be switched off and all masks/nasal cannula removed before smoking.
- I will not smoke in the same room as the oxygen equipment.
- I understand that neither I nor others in the home are able to smoke when a member of Lincolnshire Community Health Service NHS Trust staff is present at the home.
- I am aware that it is dangerous to have any sparks/naked flames or use of flammable creams near the oxygen therapy.

**Safe Service**

I understand that any smoking or activities undertaken deemed to be of high risk and are witnessed by Lincolnshire Community Health Service NHS Trust staff when using oxygen, will result in reassessment and could lead to permanent removal of the oxygen therapy at any time.

**Signed (patient) .....Date.....**

**I (health professional)..... deem the above person to have the capacity to understand the information provided**

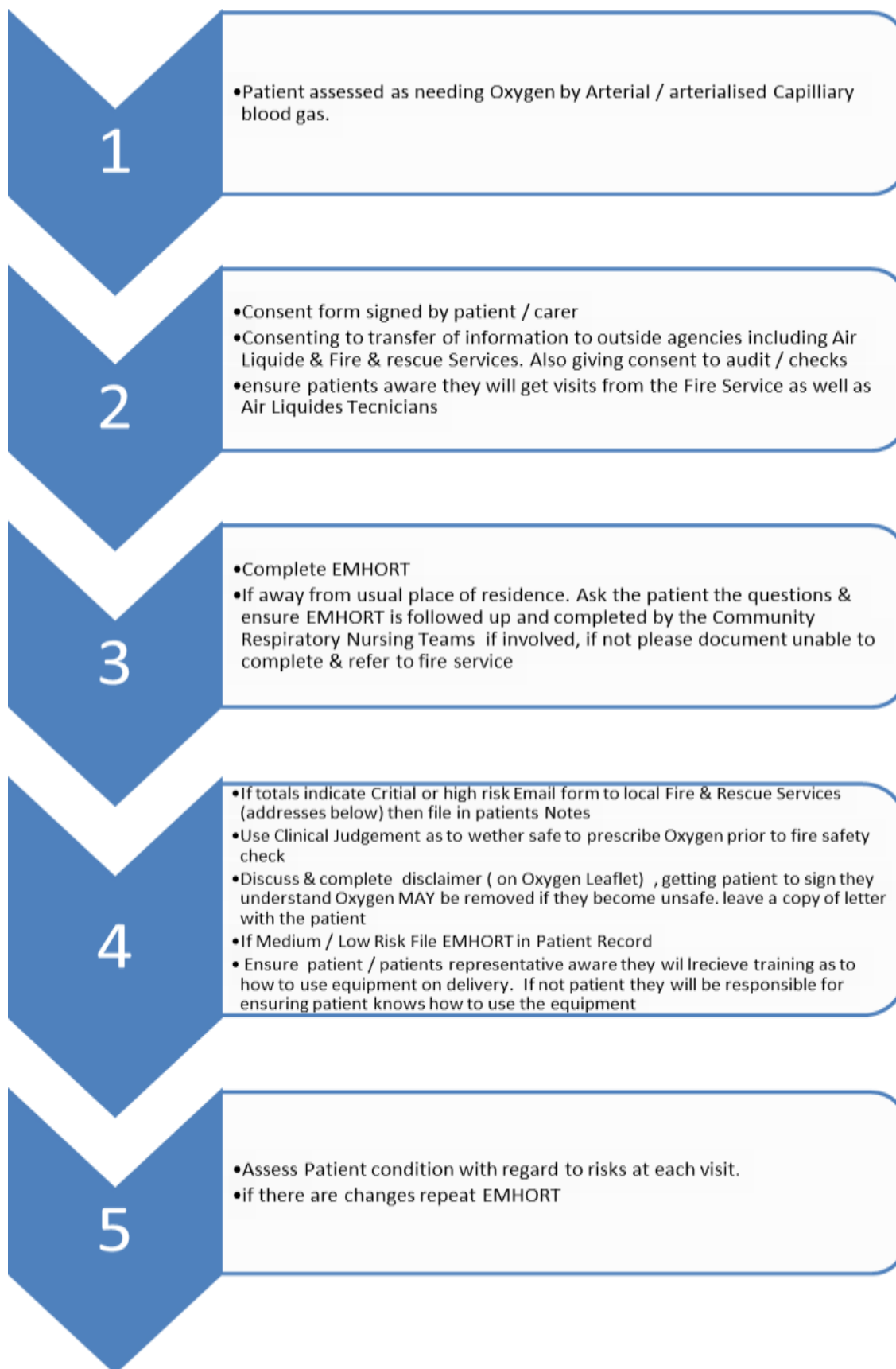
**Designation.....Date.....**





## East Midlands Home Oxygen Risk Tool (EMHORT)

### Pathway





## East Midlands Home Oxygen Risk Tool (EMHORT)

Name:	Permanent address	Tel no.	
		Mobile no.	
		<b>Preferred Contact</b>	
DOB:		Name	
M / F		Tel no.	
	Postcode	Mobile no.	
<b>Patient Assessed</b>	Home / Clinic / in patient / telephone		
<b>RISKS</b>	<b>Score</b>	<b>YES</b>	<b>Comments</b>
1. Active Smoker or Electronic cigarette user	10		
2. Evidence of unsafe discarding of cigarette ends	10		
3. No working smoke detector	2		
4 Reduced Mobility / Disability / Dementia – including sensory (hearing / sight) & falls	8		
5 Lives alone	2		
6. Confined to one room or would have difficulty escaping property unaided	8		
7. Bariatric Patient	8		
8. Known to have had previous fires, in the last 12 months.	10		
9. Evidence of hoarding – score 4 or above (see information)	4		
10. Over 65	6		
11. Gas appliances / open flames	2		
12. Other smokers in the house	4		
13. Air mattress	4		
14. Emollient creams	4		
15. History of excessive alcohol use / illicit drugs use	6		
16. Children under the Age of 5 / children of any age with disability	6		
<b>TOTAL SCORE</b>			
<b>Critical Risk 20+ / High Risk 15 – 19</b>			
	<b>Date actioned / notes</b>	<b>Signature</b>	
Use clinical judgment as to whether to prescribe Oxygen until all safety recommendations met	<b>Prescribed Y / N date:</b>		
Consider MDT prior to Oxygen commencement	<b>MDT Arranged Y / N</b>		
Inform FRS – ensure Home safety assessment arranged			
Complete risk forms / letter / Derby patient Charter ensure patient signs & keeps a copy			
Consider referral to Physio / OT / Social services			
Inform Oxygen company of high risk patient			
Discuss with Clinical lead			
Inform GP / referrer			
<b>MEDIUM RISK – SCORE 10-14</b>			
	<b>Date actioned / notes</b>	<b>Signature</b>	
Advise on Oxygen safety & warning			
Consider spot check cold call in 4 – 6 weeks to ensure compliance			
Inform Oxygen company of high risk patient			
Consider referral to Physio / OT / Social services			
Discuss with Clinical lead			
Inform GP / referrer			
<b>LOW RISK – SCORE 0-9</b>			
	<b>Date actioned / notes</b>	<b>Signature</b>	
Advice on Oxygen safety & warning			
Order Oxygen			
Inform GP / referrer of Oxygen start			



## East Midlands Home Oxygen Risk Tool (EMHORT)

EMHORT Completed by:

Name:	Profession:
Department:	
Contact Email:	
Tel No	
Date:	

Once complete if scoring:

- **Critical or High Risk** - Email form to Fire & Rescue Services and File in patients record
- **Medium Risk** - Take actions then File in patients record
- **Low Risk** - Take actions then File in patients record

EMHORT Review Date:

- Have there been any changes in the patient's condition? Yes / No
- If yes, repeat EMHORT



The notes for this tool are for guidance only & are not intended to be prescriptive – it is not to replace individualized clinical judgment. The aim is to provide information to help with safe clinical decision making throughout the East Midlands, therefore improving patient and community safety, safety for fire service personnel, reducing the number of smoking related incidents by identifying at risk situations and patients.

## How to use this tool

This tool is aimed at anyone assessing patients for Home Oxygen, i.e.: Hospitals, clinics, Community Matrons, GP's HOS-AR teams. It is aimed at giving guidance on highlighting risk levels. It should be completed before Oxygen is initiated and as part of the ongoing follow up & reviews of the patient on Oxygen, if the risks assessed alert to further action, follow the guidance as required. If assessed in secondary setting away from home environment then ask questions to ascertain immediate risk, ensure the form is completed at next home visit

## Definition of Bariatric Person

A Bariatric person is defined as a person who has a body mass index (BMI) greater than 40 and who has associated medical or health problems. The weight of a Bariatric person may therefore range from approximately 17 stones to 70 stones depending on their height weight ratio. The size and shape of the person is as much an important consideration as the weight and each person will be regarded as an individual with their own specific needs.

## Disability

Could the patient walk out of their home unaided (without a walking frame)? Does anyone in the house have sensory impairment (hearing or sight loss) Does anyone have impaired mental capacity or mental health issues – do they need referral to the mental health team? Is the person steady on their feet? Are they prone to falls do they walk with walking aids? Will they be able to walk with up to 15 metres of tubing if required? Consider referral to Physiotherapy / falls teams

## Smokers / E Cigarettes

It is recognised smokers underestimate the amount of cigarettes they smoke a day – as this is underreported it will be difficult for the patient to comply with the instructions of switching Oxygen off, waiting 30 minutes then moving into a separate room. Smokers who smoke more than 10 a day are often not engaged in appropriate health beliefs and are less likely to agree to smoking cessation support.

There are reported incidences of fires with E Cigarettes – Faulty / wrong chargers being used. & with the 'glow light' catching fire – please treat as you would active smoker

## Over 65

Older patients represent one of the highest fire risk groups due to physiological impairments, effects of medication, illness and vulnerabilities.

## Living alone

Patients who live in any accommodation (shared or not) where they live alone. A shared house with locked bedrooms is still classed as living alone, the same as living alone in a house. Also consider single parents either on Oxygen themselves or caring for children on Oxygen

## Gas applications / open flames

Wood burning stoves / open fires / gas fires / cookers hobs mobile heating appliances, candles, joss sticks, incense burners chip pans.

## Intoxication drugs /alcohol

Is there a known history of drug / alcohol use? These can affect judgment and capacity for appropriate decision making. Are they known to local drug / alcohol services?

## Children

Consider children living or staying at premises

## Others smoking in the house

Added risk that the patient may not feel empowered or authorized to deal with it




## Smoke Alarms

Are they present? When do they test them / when did they last test them



**Hoarding**

See images below. If there is evidence of hoarding at scale 4 or above score  
Select the photo below that accurately reflects the amount of clutter in your room

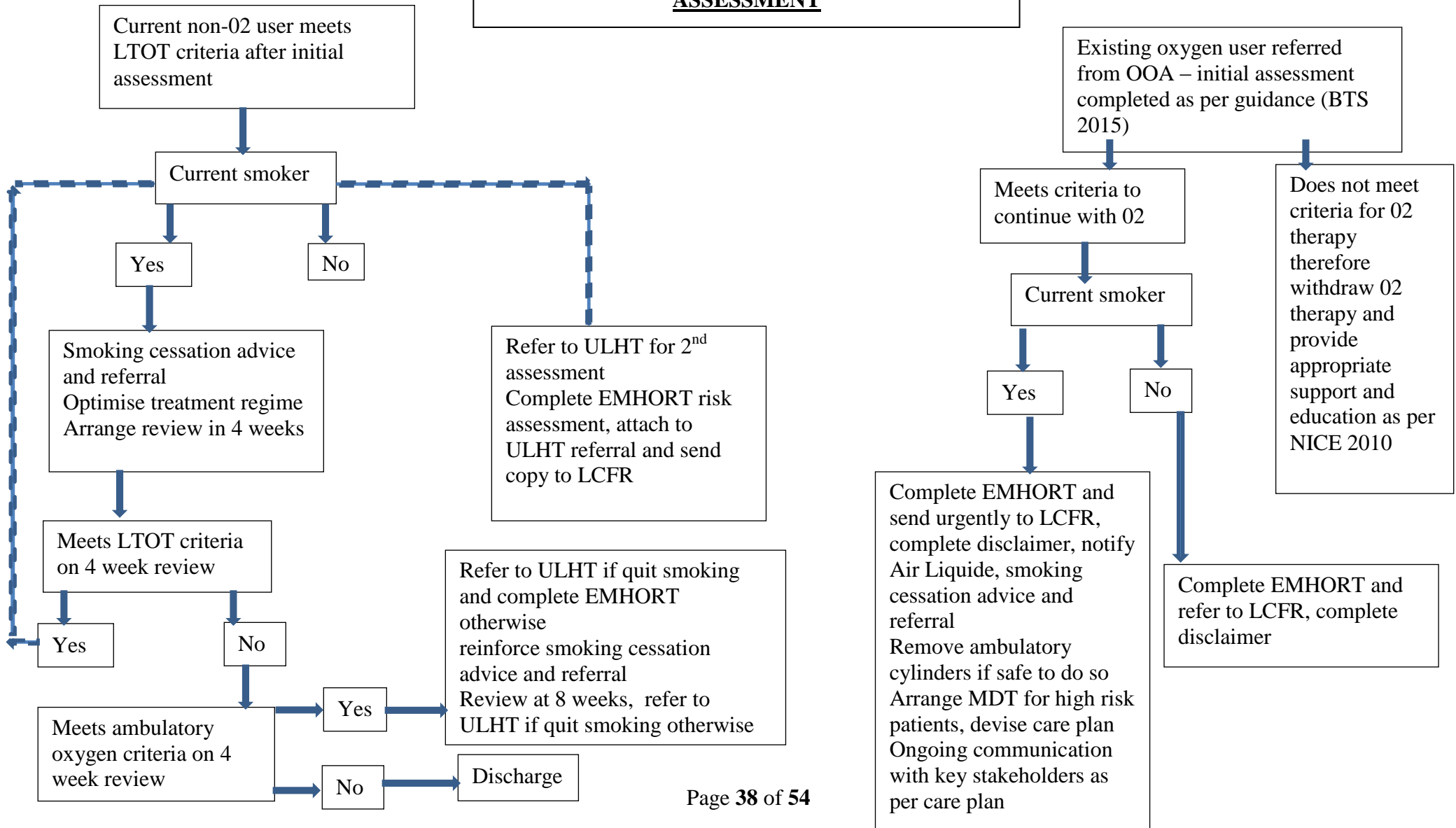
 <p>A 3x3 grid of nine photographs showing increasing levels of clutter in a kitchen. The clutter includes items on the floor, on the counter, and in the sink. The selected image (score 4) shows a significant amount of clutter on the floor and counter.</p>	<p><b>Kitchen</b></p>
 <p>A 3x3 grid of nine photographs showing increasing levels of clutter in a living room. The clutter includes items on the floor, on the sofa, and on the coffee table. The selected image (score 4) shows a significant amount of clutter on the floor and sofa.</p>	<p><b>Living Room</b></p>
 <p>A 3x3 grid of nine photographs showing increasing levels of clutter in a bedroom. The clutter includes items on the floor, on the bed, and on the desk. The selected image (score 4) shows a significant amount of clutter on the floor and bed.</p>	<p><b>Bedroom</b></p>

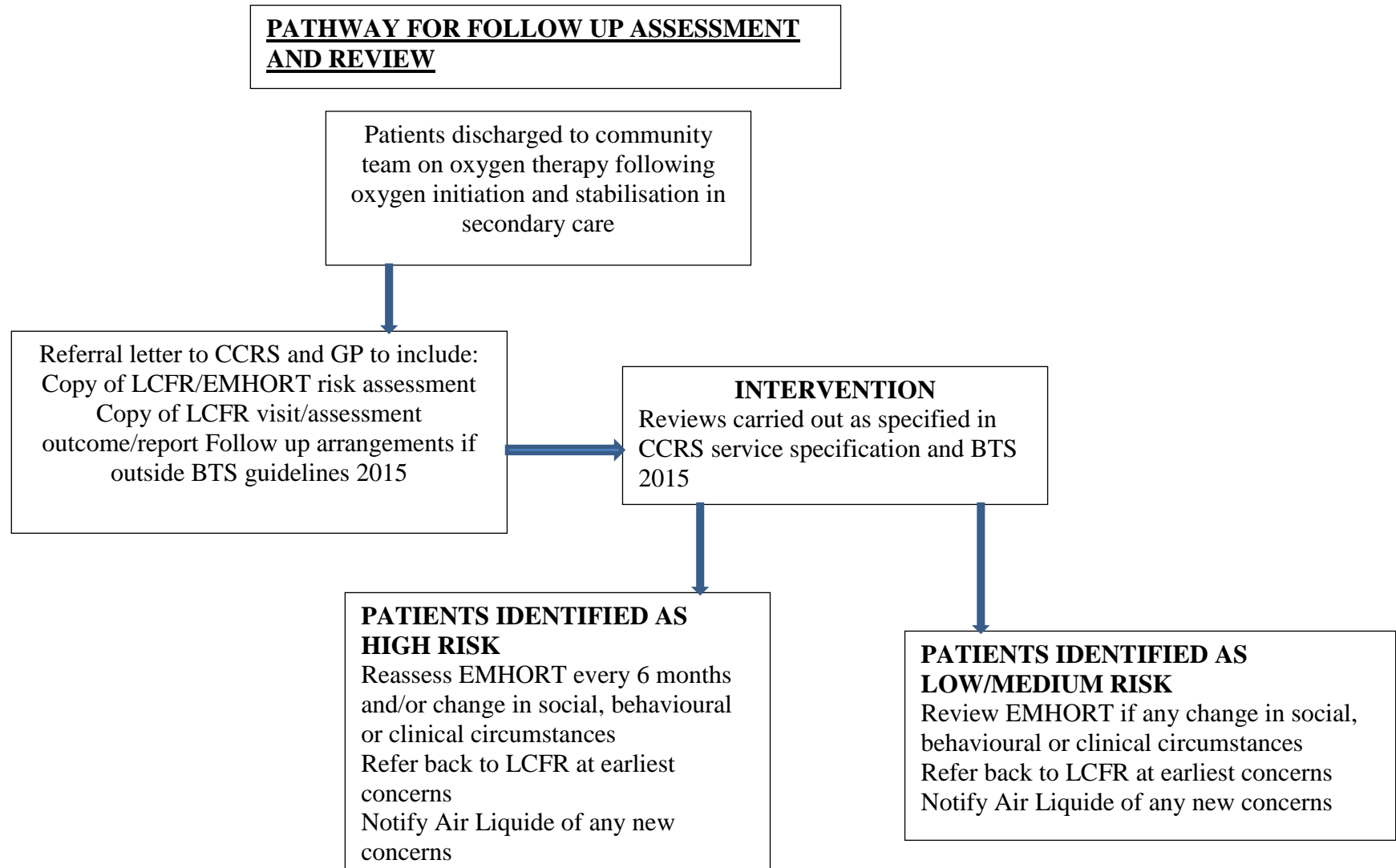
**APPENDIX 3**

**STANDARD OPERATING PROCEDURE FOR MINIMISING THE RISK FROM FIRE WHEN ORDERING HOME OXYGEN FOR COPD PATIENTS**

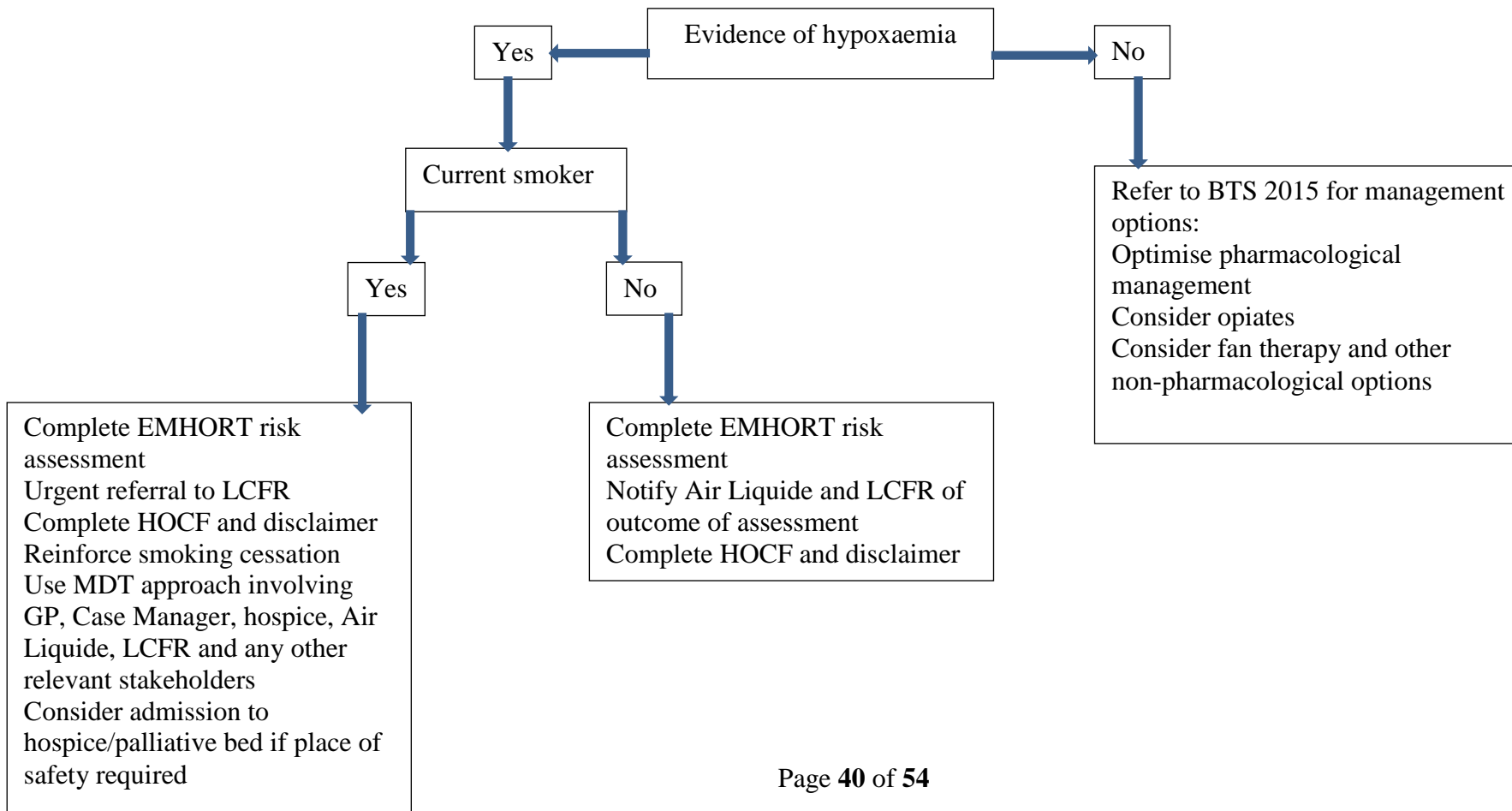


**PATHWAY FOR NEW REFERRALS FOR FIRST ASSESSMENT**



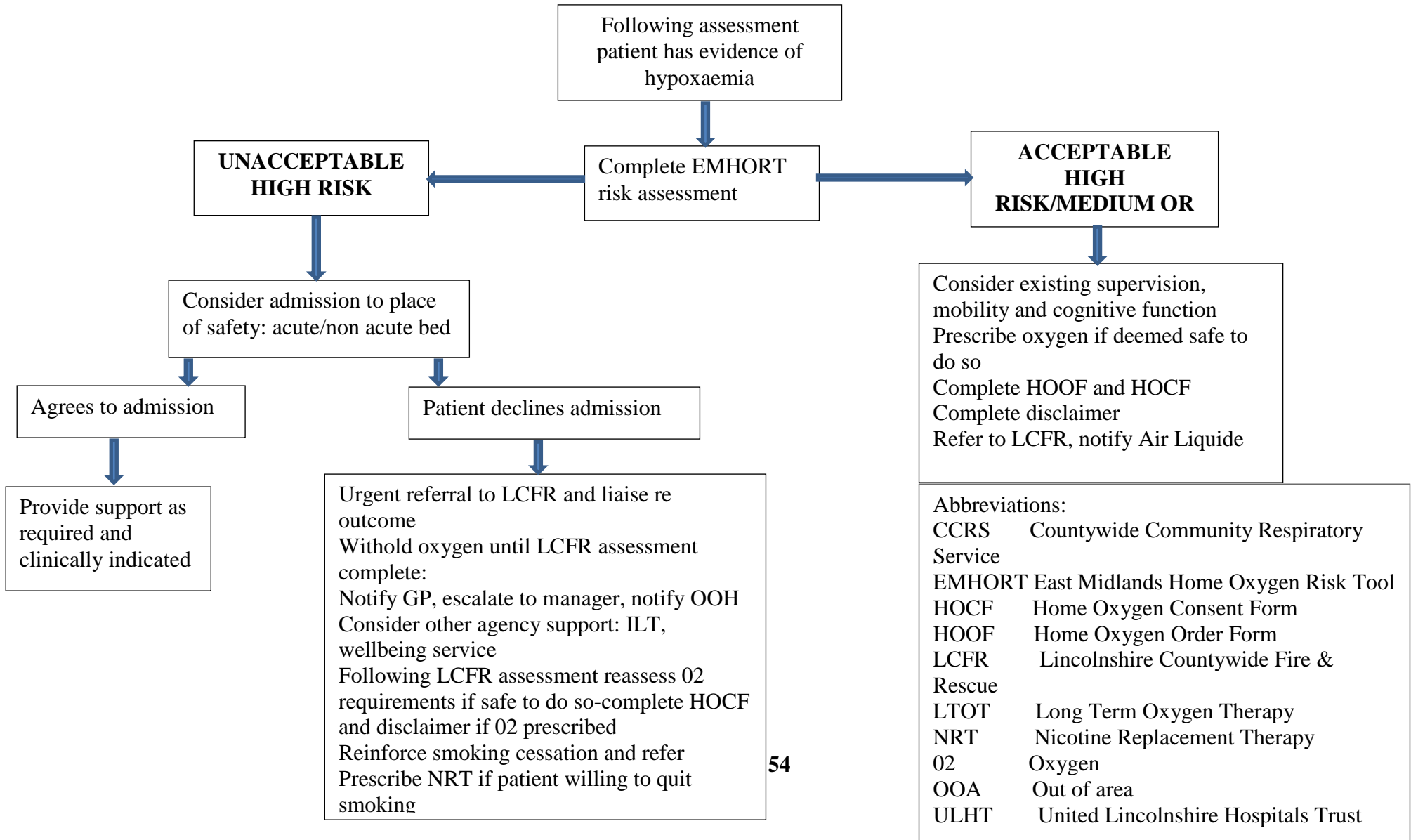


**PATHWAY FOR PRESCRIBING OF  
PALLIATIVE OXYGEN**





**FOR CURRENT SMOKERS REFERRED TO EAD/ARAS PATHWAY SERVICE**



**Competencies for Oxygen Assessment**



Objective	Knowledge level 1 basic	Knowledge level 2 intermediate	Knowledge level 3 advanced	Skills level 1	Skills level 2	Skills level 3	Attitudes	Method of assessment
<p>(Level 1) To understand the rationale for clinical assessment and prescription of domiciliary oxygen assessment</p> <p>(Level 2) To support clinical assessment for home oxygen therapy and provide follow up care</p> <p>(Level 3) To clinically assess a patient's requirement for home oxygen therapy, initiate and titrate oxygen therapy within the patient's home according to clinical need in line with national and local guidance and protocol, and provide patient-centred holistic follow up care.</p>	<p>Understands the definition of Long Term Oxygen Therapy, Ambulatory oxygen Therapy and Short Burst Oxygen Therapy. Awareness of Anatomy and Physiology of respiratory tract. Safe use of oxygen concentrator and portable cylinder including storage. Understands the importance of a no smoking/ naked flame environment Aware of the dangers of petroleum based lotions and creams Knows what to do in the event of a power failure Understands the necessity for risk assessment in the patient's home and what this comprises. Has an understanding of the indications for pulse oximetry (SpO2) and can identify normal range. Identifies pulse oximetry outside normal parameters.</p>	<p>Support all those at level one , Be competent in knowing the pathway for referral. Assessment skill for ensuring patients using o2 and their carers are safe in the community when using their O2. (full risk assessment)</p> <p>Knows what the indications for home oxygen are as per BTS guidelines.</p> <p>Has knowledge of strategies for supporting patients with management of breathlessness other than oxygen therapy.</p> <p>Is able to identify patients whose oxygen therapy is sub-optimal based on spO2 and respiratory assessment.</p> <p>Understands the rational for flight assessment, is able to explain the implications to the patient and advise on travelling with oxygen therapy.</p>	<p>Understands Capillary blood gas analysis and referring through the relevant pathways of treatment i.e. for adjusting flow rates LTOT, EMERGENCY O2</p> <p>Act as advisor and resource for other health care professions decision making. Facilitating and helping facilitate staff through the patient's O2 journey and flagging up the prognostic indicators for considering end of life.</p> <p>Has comprehensive knowledge of acid-base balance including compensation mechanisms and is able to fully interpret capillary blood gas analysis .</p> <p>Is able to make clinical decisions about initiation, titration or withdrawal of oxygen therapy based upon accurate interpretation of blood gases (as per BTS Guidance)</p>	<p>Pulse oximetry. Able to recognise: Pallor Cyanosis Difficulty in breathing Irritability Panic. Can explain to patients about correct use of oxygen therapy. Can ensure oxygen tubing/ nasal prongs are free from obstruction at all times. Can use a portable oxygen cylinder and oxygen concentrator. Can teach patients and carers how to take care of nasal prongs/masks and oxygen tubing. Can teach skin care and care of sore and broken skin. Recognise the red flags and referral criteria. Identifies when humidification may be indicated for a patient's oxygen therapy and is able to complete an order .</p>	<p>Can complete HOOF form.</p> <p>Is able to do capillary sampling for blood gas analysis and interpretation</p> <p>Can recognise when patient is reaching prognostic indicators for palliative care. Is able to identify patients whose oxygen therapy is sub-optimal based on spO2 and respiratory assessment.</p> <p>Is able to clinically recognise the patient whose hypoxia is attributable to acute exacerbation of COPD and seeks advice and support appropriately.</p> <p>Is able to use a wide range of interpersonal skills in order to educate, advise, reassure, influence, reinforce and support patients in managing their breathlessness and behaviours associated with use of their home oxygen therapy</p>	<p>Is competent in the procedure of taking earlobe blood gases and interpretation of the results. Is up to date with BTS, local and national guidelines and referral pathways in order to support other staff of all disciplines through the patient's journey.</p> <p>Advanced communications skills in order to support staff and patients through the Oxygen assessment pathway.</p>	<p>Non-judgemental Supportive Encouraging</p>	<p>Direct Observation Case studies Q&amp;A Portfolio</p>

## **APPENDIX 5**

### **PROCEDURE**

#### **Obtaining an arterialed capillary blood gas sample and analysis using i-STAT blood gas analyser.**

Capillary blood gas analysis is required in order to:

- Confirm the presence of hypoxaemia (low levels of oxygen in the blood) in patients with COPD who may require home oxygen therapy, as part of the oxygen assessment process
- Assess for hypercapnia (high levels of Carbon dioxide in the blood) and its response to oxygen prior to the initiation of oxygen therapy.

Clinicians must be competent in the following procedure and in the interpretation of arterialed blood gases prior to carrying out oxygen assessments on patients.

#### **Equipment**

Examination gloves

Transvacin cream/Hot water

Alcohol swab

Tissues

Butyl rubber wad

Auto lancet

200 microlitre Capillary tube

Gauze

G3+ i-STAT cartridge (which has been at room temperature for a minimum of 5 minutes)

i-STAT analyzer.

#### **Consent**

The patient must be fully informed about the procedure and explanation must be given about the risks and benefits of capillary blood gas sampling and analysis in order to obtain patient's verbal consent to the procedure. Consent should be documented in the patient's clinical notes.

#### **Technique**

1. Wash hands.
2. Physically prepare the patient by seating them comfortably, removing earrings, ask the patient to hold back long hair, and place a tissue to protect clothing around the neckline and shoulder.
3. Wearing gloves, liberally apply Tranvasin cream to earlobe to dilate the blood vessels. Leave for a minimum of 10 minutes. (If the patient is sensitive to the cream apply warm water to the earlobe by soaking gauze and holding to the earlobe)
4. Take a single G3+ cartridge by tearing the top of the sleeve and handling carefully at the slide edges (NOT at the front and back as touching the contact pads can potentially effect the accuracy of the results, and NOT by holding it at its centre as this may release the calibration fluid and render the cartridge unusable).
5. Prepare the blood gas analyzer:
  - Press bottom right button to switch machine on.
  - 'Test menu' will appear. Press 2 (labelled i-STAT cartridge).
  - Scan or enter operator ID' appears on the screen. Input own ID – date of birth or other agreed ID. Press enter.
  - 'Scan or enter patient ID' appears on screen. Input patient's NHS number. Press enter.
  - 'Scan cartridge LOT number a picture appears on the screen with 'Insert cartridge'.
6. Wipe off Tranvasin cream with a tissue and clean all residue of cream from the earlobe with an alcohol swab.
7. Wearing gloves, support the back of the earlobe with a disc, press auto-lancet firmly against the earlobe as near to the lower tip of the pinna as possible and press to activate the lancet.

8. Ask the patient to tip their head slightly to the side of the ear used for the procedure, hold the capillary tube horizontal and against the forming blood droplets which should run into the tube immediately as they are formed.
9. Fill the capillary tube to just over the midway mark (> 100 mcl). The blood flow should be adequate to fill the capillary tube without squeezing the earlobe (as this can result in plasma in the sample which can affect the accuracy of the results). The blood flow should not be in contact with atmospheric air for more than a few seconds as this will affect the partial pressure of oxygen and carbon dioxide and lead to erroneous results. Do not allow bubbles of air within the capillary tube for this same reason.
10. Once sampling is complete the site should be covered by gauze and light pressure applied to prevent further bleeding.
11. Place the G3+ cartridge on a flat, clean surface. The tip of the capillary tube should be placed over the well on the right corner of the cartridge and the reservoir should be completely filled with blood up to the tip. The sample will not be analysed if the reservoir is under or overfilled.
12. Fold the snap closure over the sample well and press firmly but carefully in place.
13. Pick up the cartridge (holding the sides), align the top edge and contact pads of the cartridge with the cartridge port at the bottom of the analyzer and insert it into place by pushing slowly until it clicks into place.
14. Do not attempt to remove the cartridge while the message 'cartridge locked' remains on the screen. This will result in damage to the analyzer.
15. When the results are displayed on the screen the cartridge is safe to remove.
16. Document results in patient's clinical notes.
17. Dispose of sharps in a sharps bin (including auto-lancet, capillary tube and cartridge). The butyl rubber wad is single patient use and should be disposed of in clinical waste along with all tissues, gauze and swab waste.
18. Remove gloves and wash hands.
19. Explain capillary blood gas analysis to the patient and develop management plan in partnership with the patient.

Author: Sarah Baldam (Respiratory Nurse Specialist)  
Adult Oxygen Assessment service  
NHS Lincolnshire

Review date: November 2016

## **APPENDIX 6**

### **WITHDRAWAL OF HOME OXYGEN THERAPY**

It is felt that there will be two distinct groups of patients that will differ greatly ie those patients who will be agreeable to having oxygen withdrawn if there is no continued clinical need for oxygen and those who will not be willing to have it withdrawn. The protocol therefore will have to be adapted for those patients who are not willing to have it withdrawn compared to those who would be willing.

At present if the patients resting oxygen saturations are >92% (SpO<sub>2</sub>) breathing room air or >94% with evidence of peripheral oedema, polythycemia or pulmonary hypertension then it is considered safe for oxygen to be withdrawn

The Process for this will be:

#### Visit 1

- Full review
- If the SpO<sub>2</sub> is  $\geq 92\%$  or  $\geq 94\%$  with above conditions after 20 minutes without oxygen advise the patient that oxygen is not clinically required and provide them with leaflet explaining oxygen withdrawal.
- Advise patient to start weaning oxygen by reducing the amount they were originally instructed to use their oxygen by of a minimum 50% during this period and advise that the oxygen will be removed at 4 weeks
- Ask the patient to keep an oxygen diary e.g. that they have used or felt the need to use their oxygen.
- Provide any contact telephone numbers for advice on matters concerning their oxygen during this period.

#### Visit 2 /Telephone call at 2 weeks

- Assess the patients reduction in oxygen usage
- Ask the patient to stop using the oxygen for one whole week
- Discuss the patient's oxygen diary and usage.

#### Visit 3/ Telephone call 4 weeks

- If there is agreement with the patient and it is considered safe to do so based on their resting SpO<sub>2</sub> result then the oxygen will be withdrawn.
- Contact Air Liquide for removal of equipment request.

There will be a number of oxygen users who have a very high physiological reliance on oxygen. It is envisaged that these patients may require extensive support and alternative treatments to replace the

oxygen. However it is also felt that certain individuals with whatever support is available will still refuse to have their oxygen withdrawn.

Those patients who refuse to have the oxygen withdrawn will receive the same number of assessments as those who agree to have it withdrawn.

In addition they should have one of or a combination of the following:

- More frequent visits for a short period following the oxygen withdrawal to monitor SpO<sub>2</sub> and provide support and education.
- Referral to Pulmonary Rehabilitation to address psychological issues related to breathlessness.

If the patient still refuses to have the oxygen withdrawn despite all the above measures then a letter must be sent to the GP informing them that the oxygen is not clinically required and that the CCG will continue to be charged for the equipment. Patient to have annual appointment for safety check

#### References

- 1) British Thoracic Society Guidelines -BTS Guidelines for Home Oxygen use In Adults.
- 2) Protocol for Withdrawal Home Oxygen Therapy –Sunderland Clinical Commissioning Group.
- 3) Rationalising Oxygen use to improve patient safety and reduce waste-The Impress step by step guide.

# Home Oxygen Therapy Removal

## Information and Advice for Patients

### Community Respiratory Service

Following an assessment of your breathing and oxygen levels it has been decided that you no longer clinically need to have oxygen at home. Your current oxygen reading is which is a normal and safe level to have the oxygen removed.

#### Why don't I need oxygen anymore?

You don't need oxygen therapy anymore because the assessment has shown that it is not beneficial for you. This may be because your breathlessness is caused by your lung or heart condition, not your oxygen levels.

Too much oxygen can be bad for your body because it can cause your carbon dioxide levels (waste gas your body produces and is breathed out) to increase which may make you unwell. Therefore it is important that oxygen therapy is only used by people whose tests have shown that they really need it, as there may be other more effective ways for you to manage your symptoms.

It is normal to feel worried about stopping oxygen therapy, but be assured that this is a very positive step for you.

#### If I don't need oxygen anymore, why does my breathing feel better when I use it?

When you are feeling breathless, you have been using the oxygen to calm your breathing down, so it is not the oxygen that helps reduce your breathlessness but the reassurance that the oxygen gives you that has a calming influence on your breathing. Although your body does not need the oxygen your mind is telling you that you do as over time you have become psychologically dependent on the oxygen and learnt to heavily rely on it.

Another reason your breathing feels better when using the oxygen is that the pressure or flow of oxygen into your mouth or nose makes your brain feel like you can breathe easier.

To overcome this, you will need to manage your breathlessness in other ways.

## How else can I manage my breathlessness?

The Community Respiratory Service will give you advice and strategies to help you manage your breathlessness. These may include:

- Breathing techniques

- Body positioning
- Anxiety management
- Using a hand-held fan on your face (this can give the same relief as oxygen)
- Pulmonary rehabilitation programme (an exercise and education treatment programme to help you improve your fitness and learn how to manage breathlessness)

## **When will my home oxygen therapy be stopped?**

You will be weaned off the oxygen slowly; you will not just have it removed and be left alone. You will also be given plenty of advice on how to cope with your breathlessness without using oxygen therapy, reassurance and an individual oxygen removal plan.

## **Contact details**

If you have any questions or concerns you can contact the Community Respiratory Service by telephoning:

01522 308890/03001234868

Monday – Friday 9am-5pm

## **Sources used for the information in this leaflet**

- NHS Primary Care Commissioning, 'Home Oxygen Service – Assessment and Review: Good Practice Guide', April 2011
- NHS Improvement – Lung, 'Improving Home Oxygen Services: Emerging learning from the National Improvement Programme', April 2011



## Policy Monitoring Template

Minimum requirement to be monitored	Process for monitoring e.g. audit	Responsible individuals/ group/ committee	Frequency of monitoring/audit	Responsible individuals/ group/ committee (multidisciplinary) for review of results	Responsible individuals/ group/ committee for development of action plan	Responsible individuals/ group/ committee for monitoring of action plan
All	Audit	Community Respiratory team	Biannual	Community Respiratory team	Community Respiratory team	Community Respiratory team

## Equality Analysis

**Name of Policy/Procedure/Function\*Policy for assessment and review of patients on home oxygen**

**Equality Analysis Carried out by:**

**Date:**

**Equality & Human rights Lead:**

**Date:**

**Director\General Manager:**

**Date:**

**\*In this template the term policy\service is used as shorthand for what needs to be analysed. Policy\Service needs to be understood broadly to embrace the full range of policies, practices, activities and decisions: essentially everything we do, whether it is formally written down or whether it is informal custom and practice. This includes existing policies and any new policies under development.**

**Section 1 – to be completed for all policies**

A.	Briefly give an outline of the key objectives of the policy; what it's intended outcome is and who the intended beneficiaries are expected to be	To ensure that oxygen assessments are carried out for COPD patients in accordance with national guidance and in a timely manner. To ensure that the prescribing and ongoing provision of oxygen is appropriate and safe at all times.		
B.	Does the policy have an impact on patients, carers or staff, or the wider community that we have links with? <b>Please give details</b>	Impacts on COPD patients and staff		
C.	Is there is any evidence that the policy\service relates to an area with known inequalities? <b>Please give details</b>	n/a		
D.	Will/Does the implementation of the policy\service result in different impacts for protected characteristics?			
		Yes	No	
	Disability		x	
	Sexual Orientation		x	
	Sex		x	
	Gender Reassignment		x	
	Race		x	
	Marriage/Civil Partnership		x	
	Maternity/Pregnancy		x	
	Age		x	
	Religion or Belief		x	
	Carers		x	
<b>If you have answered 'Yes' to any of the questions then you are required to carry out a full Equality Analysis which should be approved by the Equality and Human Rights Lead – please go to section 2</b>				
The above named policy has been considered and does not require a full equality analysis				
<b>Equality Analysis Carried out by:</b>		Karen Cox		
<b>Date:</b>		15/1/16		

## Equality analysis

<b>Title:</b>
<b>Relevant line in:</b>
<b>What are the intended outcomes of this work?</b> <i>Include outline of objectives and function aims</i>
<b>Who will be affected?</b> <i>e.g. staff, patients, service users etc</i>
<b>Evidence</b> <i>The Government's commitment to transparency requires public bodies to be open about the information on which they base their decisions and the results. You must understand your responsibilities under the transparency agenda before completing this section of the assessment.</i>
<b>What evidence have you considered?</b> <i>List the main sources of data, research and other sources of evidence (including full references) reviewed to determine impact on each equality group (protected characteristic). This can include national research, surveys, reports, research interviews, focus groups, pilot activity evaluations etc. If there are gaps in evidence, state what you will do to close them in the Action Plan on the last page of this template.</i>
<b>Disability</b> <i>Consider and detail (including the source of any evidence) on attitudinal, physical and social barriers.</i>
<b>Sex</b> <i>Consider and detail (including the source of any evidence) on men and women (potential to link to carers below).</i>
<b>Race</b> <i>Consider and detail (including the source of any evidence) on difference ethnic groups, nationalities, Roma gypsies, Irish travellers, language barriers.</i>
<b>Age</b> <i>Consider and detail (including the source of any evidence) across age ranges on old and younger people. This can include safeguarding, consent and child welfare.</i>
<b>Gender reassignment (including transgender)</b> <i>Consider and detail (including the source of any evidence) on transgender and transsexual people. This can include issues such as privacy of data and harassment.</i>
<b>Sexual orientation</b> <i>Consider and detail (including the source of any evidence) on heterosexual people as well as lesbian, gay and bi-sexual people.</i>
<b>Religion or belief</b> <i>Consider and detail (including the source of any evidence) on people with different religions, beliefs or no belief.</i>
<b>Pregnancy and maternity</b> <i>Consider and detail (including the source of any evidence) on working arrangements, part-time working, infant caring responsibilities.</i>

**Carers** Consider and detail (including the source of any evidence) on part-time working, shift-patterns, general caring responsibilities.

**Other identified groups** Consider and detail and include the source of any evidence on different socio-economic groups, area inequality, income, resident status (migrants) and other groups experiencing disadvantage and barriers to access.

## • Engagement and involvement

Was this work subject to the requirements of the Equality Act and the NHS Act 2006 (Duty to involve) ? (Y/N)

How have you engaged stakeholders in gathering evidence or testing the evidence available?

How have you engaged stakeholders in testing the policy or programme proposals?

For each engagement activity, please state who was involved, how and when they were engaged, and the key outputs:

**Summary of Analysis** Considering the evidence and engagement activity you listed above, please summarise the impact of your work. Consider whether the evidence shows potential for differential impact, if so state whether adverse or positive and for which groups. How you will mitigate any negative impacts. How you will include certain protected groups in services or expand their participation in public life.

Now consider and detail below how the proposals impact on elimination of discrimination, harassment and victimisation, advance the equality of opportunity and promote good relations between groups.

**Eliminate discrimination, harassment and victimisation** Where there is evidence, address each protected characteristic (age, disability, gender, gender reassignment, pregnancy and maternity, race, religion or belief, sexual orientation).

**Advance equality of opportunity** Where there is evidence, address each protected characteristic (age, disability, gender, gender reassignment, pregnancy and maternity, race, religion or belief, sexual orientation).

**Promote good relations between groups** Where there is evidence, address each protected characteristic (age, disability, gender, gender reassignment, pregnancy and maternity, race, religion or belief, sexual orientation).

**What is the overall impact?** Consider whether there are different levels of access experienced, needs or experiences, whether there are barriers to engagement, are there regional variations and what is the combined impact?

**Addressing the impact on equalities** Please give an outline of what broad action you or any other bodies are taking to address any inequalities identified through the evidence.

**Action planning for improvement** Please give an outline of the key actions based on any gaps, challenges and opportunities you have identified. Actions to improve the policy/programmes need to be summarised (An action plan template is appended for specific action planning). Include here any general action to address specific equality issues and data gaps that need to be addressed through consultation or further research.

Please give an outline of your next steps based on the challenges and opportunities you have identified. Include here any or all of the following, based on your assessment

• **For the record**

**Name of person who carried out this assessment:**

**Date assessment completed:**

**Name of responsible Director/ General Manager:**

**Date assessment was signed:**