Home Oxygen Service Assessment and Review (HOS-AR)

PERFORMANCE REQUIREMENTS – SPECIFICATION, QUALITY AND PRODUCTIVITY

SECTION 1 – SPECIFICATION

Care Pathway/Service	Home Oxygen Service Assessment and Review (HOS-AR)
Commissioner Lead	**Jennifer Johnston**
Provider Lead	
Period	**1st April 2021 to 31st March 2025**
Applicability of Module E (*Acute Services Requirements*)	

1. Purpose

National context and evidence base:
Most patients who are prescribed oxygen have respiratory disease, typically COPD, Cystic fibrosis or pulmonary fibrosis. People with chronic asthma or sleep disordered breathing may also benefit. Oxygen therapy is also an effective treatment for some people with cardiac or neurological disease (e.g. cluster headaches) and is an important element in palliative medicine.

Several publications at a national level have recommended home oxygen assessment and review. The Outcomes Strategy for COPD and Asthma and the subsequent NHS Companion Document to the Strategy suggested the NHS could:

- ensure routine pulse oximetry in people with COPD whose FEV1 is lower than 50% predicted to identify those who may need long-term home oxygen therapy and, for those identified, ensure structured assessment of need by a home oxygen assessment and review service

The NICE Clinical Guideline for COPD recommends home oxygen assessment and review, stating that:

- the need for oxygen therapy should be assessed in:
    - all patients with very severe airflow obstruction (FEV1 < 30% predicted)
    - patients with cyanosis
    - patients with polycythaemia
    - patients with peripheral oedema
    - patients with a raised jugular venous pressure
    - patients with oxygen saturations of 92% or less breathing air.
- assessment should also be considered in patients with severe airflow obstruction (FEV1 30–49% predicted).
- the assessment of patients for long-term oxygen therapy (LTOT) should comprise the measurement of arterial blood gases on two occasions at least 3 weeks apart in patients who have a confident diagnosis of COPD, who are receiving optimum medical management and whose COPD is stable.

And long-term oxygen therapy should be considered for people with COPD who do not smoke and who:
• have a partial pressure of oxygen in arterial blood (PaO2) below 7.3 kPa when stable or
• have a PaO2 above 7.3 and below 8 kPa when stable, if they also have 1 or more of the following:
    — secondary polycythaemia
    — peripheral oedema
    — pulmonary hypertension.

The NICE Quality Standard for COPD also highlights the importance of home oxygen assessment and review:

- People with COPD receiving long-term oxygen therapy are reviewed in accordance with NICE guidance, at least annually, by a specialist oxygen service as part of the integrated clinical management of their COPD.

The Home Oxygen Service: Good practice guide for assessment and review, published by Primary Care Commissioning, describes the content of a HOS-AR Service for people who might require oxygen therapy.

South Sefton

South Sefton has a population of approximately 155,000. There are 32 constituent practices which are split into 4 Localities, Bootle, Crosby, Maghull and Seaforth & Litherland. According to national QOF figures COPD and asthma prevalence is above the average for England.

As of October 2020 there were **patients (adults) in receipt of home oxygen in South Sefton.

Southport & Formby

Southport & Formby has a population of approximately 122,000. There are 17 constituent practices which are split into 4 Localities, Ainsdale & Birkdale, Central, Formby and North. According to national QOF figures COPD and asthma prevalence is above the average for England.

As of October 2020 there were **patients (adults) in receipt of home oxygen in Southport & Formby.

Outcomes
Principles for the HOS-AR Service mapped to the NHS Outcomes Framework domains and Indicators:

Domain 1	**Preventing people from dying prematurely:** the service will support the reduction in premature mortality, under 75 years from respiratory disease by offering prompt access to specialist respiratory care, enabling structured hospital admission and appropriate provision of home oxygen by ensuring people with COPD receive timely, evidence based treatment in accordance with evidenced based guidelines i.e. BTS
Domain 2	**Enhancing quality of life for people with long term conditions:** The service will ensure people with a respiratory condition such as COPD, Asthma is offered support to self-manage their condition. All patients who access the service should receive a mutually developed/agreed care plan, with self-management advice and guidance. Patients should have a clear understanding and be empowered to self-manage their condition outside the service environment
Domain 3	**Helping people to recover from episodes of ill-health following injury**: the service will support both admission avoidance and early supported discharge (ESD) from hospital. The service will integrate fully acute discharge teams, community services and urgent care teams ensuring eligible patients are discharged with a care package in place simplifying the management of the patient in their own or usual place of residence. The service will: • Support the urgent care teams with patients who have had an exacerbation to avoid unnecessary admittance to hospital

	• Support acute discharge teams and community matrons by ensuring that all people admitted with a primary diagnosis of COPD/exacerbation are assessed for suitability for ESD • Ensure that patients discharged from hospital under a ESD pathway are confident the clinical support they receive in their own home or usual place of residence • Ensure that patients admitted to hospital with an exacerbation of COPD are reviewed within 2 weeks of discharge
Domain 4	**Ensuring people have a positive experience of care:** The service will ensure that patients seen within the service are offered personalised information with support to understand it at key points throughout their care. Enabling them to make choices and to fully participate in shared decision making.
Domain 5	**Treating and caring for people in a safe environment and protecting them from avoidable harm:** All patient safety incidents, including near misses are reported to the National Reporting and Learning Service (NRLS). A report is also submitted to the CCG, accompanied by a significant event analysis demonstrating learning and any remedial actions to prevent any future occurrence. The service will also embed into this domain the agreed national incident reporting framework for home oxygen services and link to the home oxygen provider, Air Liquide (Homecare) Ltd and the regional oxygen lead.

1.1 Aims and objectives of service

The philosophy underpinning this service is that patients are able to:

- access a high quality clinical service which focuses on 'what can we do for this patient' rather than 'this patient doesn't fit into our criteria'
- be effectively managed throughout their experience in a seamless and integrated manner across CCG and the wider health economy
- Benefit from excellent communication between the HOS-AR/COPD provider and all other CCG commissioned services regardless of location e.g. primary, acute, community, social etc. and experience integrated care pathways.
- benefit from a proactive, innovative approach to service delivery, uptake and achievement of the quality targets set by the CCG.

Service description/care pathway:

Why is Home Oxygen Assessment and Review important for improving outcomes?

- Long-term oxygen therapy in appropriate individuals can improve survival rates by around 40%.
- At the same time 30% of people on home oxygen therapy currently derive no clinical benefit from it.
- In one study, at least 15,000 people were found to have no recorded oxygen usage in a six-month period, at a cost nationally of £13m per annum.
- Conversely, 20% of people with COPD would benefit from home oxygen therapy but do not get it.
- The total annual cost of the service in England is approximately £120m. CCGs that have introduced a review of their oxygen registers coupled with the introduction of a formal assessment service have reduced their annual spend by up to 20%. If the scale of savings were replicated across England, it is estimated that they could amount to between £10-20m of savings a year.

Disease areas

Adults who are prescribed oxygen often have respiratory disease, typically Chronic Obstructive Pulmonary Disease (COPD), cystic fibrosis or pulmonary fibrosis. It is also used as treatment for some hypoxic patients with cardiac disease and some neurological disorders, e.g. cluster headaches. Children with chronic lung disease who live in the community, including

survivors of premature birth, may require home oxygen although assessment for paediatric patients is out of scope for this service. Oxygen is sometimes also of value for palliation in end-of-life care.

The HOS-AR Service is designed to meet the needs of people who might benefit from home oxygen. In most cases such people will show resting hypoxaemia with a SaO2 less than or equal to 92%.

Equity of access to services, venues and operational hours

The HOS-AR service will ensure that ***every*** patient is formally assessed by appropriately qualified, trained and competent healthcare professionals using appropriate diagnostic methodology. Service quality will improve through more effective and speedier diagnosis, leading to a higher standard of clinical treatment and improved outcomes promoting quality and productivity across the CCG.

- The HOS-AR Service will need to be sited so as to be suitable and easily accessible to people. There should be adequate parking and good public transport links, with easily accessible buildings, including provision for people with disabilities.
- Special consideration should be given to those people who are most limited by their breathlessness (i.e. MRC score of 5 – housebound) with regards to the provision of transport or at home assessment.
- A risk and suitability assessment of the venue must be undertaken.[1]

Referral pathway for Oxygen assessment

The Provider can receive referrals from a broad range of sources that have made an assessment, which include but are not limited to, organisations in the following settings:

- Primary Care
    - GP's can l prescribe oxygen for their patients across the CCG, however this is limited to oxygen available on a Part A HOOF and as both CCG's have had a HOS-AR in place for some time the CCG has seen a reduction in GP initiated HOOF's . The provider will continue to work with primary care to strengthen referrals to the service.. Therefore communication and integration with our primary care colleagues and out of hour's services is essential to continue to control the initiation of oxygen in the community.
    - The service should be able to accept referrals for palliative patients who require portable oxygen, these patients may not be known to the service and so an assessment would need to be completed if necessary, within a 2 day time frame.

- Community services
    - The provider will interface with a significant unscheduled care community infrastructure whose aim is to keep patients at home wherever possible and to expedite an early supported discharge wherever appropriate. This infrastructure will provide rapid response to patients who need it and support patients who are at high risk of emergency admission or readmission. The HOS-AR service will be significant in the delivery of this agenda and will work across the patch to ensure patients have the right care, at the right time in the right place.

- Secondary Care
    - The provider will ensure a standardised approach and strong integration with the acute provider(s) to ensure patients are transferred over to the HOS-AR team at the appropriate time for onward management. This will include the acceptance of a minimum data set upon discharge via a discharge bundle or discharge protocol.

- Others (for example: Occupational health, private health, self-referral by patients who have an assessment)
    - Patients should be able to contact the service directly once they have been accepted by the service regarding their treatment, this may include issues around modality, issues with refills or changes in circumstances.

[1] The HOS Supplier will be expected to conduct this and may veto clinical selection if any equipment selected is deemed unsafe or is otherwise unsuitable or inappropriate.

- Other services should be able to refer to the HOS-AR service if their patient meets the appropriate criteria, such as physiotherapy services, occupational health etc. The HOS-AR service must record all patient referrals and ensure that the patient's GP is notified.

The provider will be required to interface with all the above health services to create an integrated care pathway for the patient. The CCG have several providers across its footprint and so a standardised mechanism for referrals and communication between the provider and the wider healthcare community/referrers will need to be established.

Applicable national standards e.g. NICE

- British Thoracic Society, for home oxygen use in adults 2015
- Home Oxygen Service – Assessment and Review Good Practice Guide (April 2011)
- NICE COPD guidelines (2018)
- Consultation on the strategy for services for Chronic Obstructive Pulmonary Disease (COPD) IN England.

Applicable local standards - Service Operation Procedures

- Spirometer cleaning and calibration policy
- 6 minute Walk Test (6MWT)
- Performing spirometry
- Pulse oximetry
- Arterial Blood Gases and Capillary Blood Gases (by secondary care staff)
- Individual assessment for housebound patients who potentially require oxygen therapy
- Guidance for oxygen therapy for Cardiac patients

2. Scope

HOS-AR Service Pathway

The provider must ensure good integration with a number of different patient pathways. Good communication between all staff – multidisciplinary and multi-professional – is essential: the person's record needs to be up-to-date and a home oxygen register updated and amended as appropriate. Integration with acute care is necessary if the oxygen is prescribed in acute care and to refer back for arterial blood gases where appropriate. The purpose of this specification is to set out the principal requirements and characteristics which are expected of a systematic and integrated service for HOS-AR.

Assessment for Long Term Oxygen Therapy (LTOT)
The assessment for LTOT requires consideration of four factors:

1. A confident clinical diagnosis
2. Optimal medical management
3. Clinical stability for 8 weeks prior to assessment
4. Arterial blood gases (ABG's) must be measured

The CCG expects the service to be provided to all oxygen patients in line with recognised clinical guidance as listed below:

- Formal assessment will identify patients with a PaO2 of 7.3Pa or below, who require LTOT for at least 15 hours per day. Safe initiation of LTOT requires arterial blood gas analysis
- Assessment also needs to include other criteria, where patients have a Pa02 of >7.3kPa, i.e. less than 8.00kPA and in heart failure and other respiratory diseases.

Once assessed, patients will be educated about their condition and the safe use of equipment and how this will support delivery of their oxygen therapy.

The HOS-AR service will:

- Have quality at its core, be accessible, safe effective and responsive to patients

- Be evidenced based, clinically led and continually strive to improve outcomes for patients
- Be affordable and represent good value for money
- Provide all patients with easy access to an assessment procedure and be seen within 10 working days of referral acceptance.
- Provide patient safety and dignity during assessment

The detailed requirements for each stage are set out below, including the key deliverables and associated indicators at each stage.

3. Service Delivery

Stage 1 – Identify and refer patient for home oxygen assessment

Overview

People should have a quality-assured clinical diagnosis and be medically optimised before referral. Assessment needs to be linked with regular reviews of those already prescribed oxygen, to ensure that oxygen is provided only for those who benefit clinically from it.

In considering the need for oxygen therapy, the first step is pulse oximetry, to determine whether the individual is hypoxaemic. Pulse oximetry is available in general practice to screen patients prior to referral to the HOS-AR service. People who are shown by oximetry to be hypoxaemic i.e. where SpO2 is less than or equal to 92%, and whose condition is stable, should be referred to the HOS-AR Service to have a full assessment carried out.

Any person with COPD who is hypoxaemic needs a confirmed and quality-assured diagnosis. Where the person's diagnosis is unclear or when significant co-morbidity might contribute to breathlessness or hypoxaemia, e.g. heart failure, they should be referred to an appropriate specialist physician. People with potential hypercapnic respiratory failure should be also reviewed by a physician.

People whose oxygen saturation levels are satisfactory (above 95%) do not need to be seen by a HOS-AR service.

Patients whose level is borderline (between 92 and 95%) may need further assessment if breathless on exertion or when sleep disordered breathing is a possibility and specialist referral required

People who show intermittent or fluctuating hypoxaemia will need to be followed up and assessed more frequently.

Where a patient is referred that is not clinically stable it is expected that the HOS-AR service would delay the 1st assessment until 5 weeks post exacerbation, should a patient exacerbate prior to their appointment date the appointment should be rescheduled.

Stage 1a – Home Oxygen Assessment

Assessment

The assessment should include quality-assured diagnosis where not recorded, assessment of resting and when indicated, ambulatory finger oximetry. In addition measurement of arterial blood gases will be required annually or when indicated if sooner. If oxygen therapy is indicated, the safety, flow rate and duration of oxygen should be determined for each person (usually at least 15 hours per day for long term oxygen therapy but of shorter duration, e.g. overnight for some indications, e.g. hypoventilation).

Following consultation with the patient, the clinician should identify the nature of the equipment/delivery system most suited to the person's lifestyle. Once identified, this equipment will be ordered directly from Baywater via a specialist home oxygen order form (PART B HOOF).

The Provider should ensure that the patient who is prescribed oxygen and their family/carers understand how to use the oxygen equipment and manage their treatment. Training and written information (in appropriate languages for non-English speakers)

should be offered to the patient/carer and repeated at reviews in either a clinical or domiciliary environment. Information about safety should be provided and repeated at every opportunity.

A structured risk assessment should be conducted and documented for people being assessed for long-term oxygen therapy who meet the criteria as above. The risk assessment should cover the risks for both the person with COPD and the people who live with them, including:

- the risks of falls from tripping over the equipment
- the risks of burns and fires, and the increased risk of these for people who live in homes where someone smokes (including e-cigarettes).

The decision on whether long-term oxygen therapy is suitable should be based on the results of the structured risk assessment.

- For people who smoke or live with people who smoke, but who meet the other criteria for long-term oxygen therapy, the person who smokes should be offered smoking cessation advice and treatment, and referred to specialist stop smoking services
- Long-term oxygen therapy should not be offered to people who continue to smoke despite being offered smoking cessation advice and treatment, and referral to specialist stop smoking services.

In addition people who make regular trips out of the home for work or leisure will need assessment for ambulatory oxygen and consideration for pulmonary rehabilitation. If possible pulmonary rehabilitation should be given before ambulatory oxygen. In some cases referral to social, psychological, smoking cessation, dietary, occupational therapy and/or palliative care services will be required.

The Home Oxygen Order Form (HOOF) should be completed and sent to Baywater and details of the assessment outcome and the patient's management plan should be sent to his/her GP and, where appropriate, consultant physician and home care team.

Stage 2a - Assessment for long-term oxygen therapy

Oxygen therapy is appropriate for a clinically stable person where the arterial blood oxygen measurement is at or below 7.3 kPa (or under 8kPa if complicated by pulmonary hypertension). In such circumstances, the acceptability and safety of supplemental oxygen should be assessed by providing sufficient oxygen to increase SaO2 to 92-94% for at least 30 minutes. In people with an elevated PaCO2 (> 6.0 kPa) the blood gases should be repeated to exclude a significant (>1.0kPa) rise in arterial CO2. People with incipient hypercapnic respiratory failure or with complex co-morbidity, e.g. sleep apnoea may need to be referred for further specialist medical assessment.

The assessing clinician should explain the rationale for long-term oxygen therapy (LTOT) and its use. If ambulatory or portable oxygen is indicated the home oxygen equipment that best meets the person's needs and preferences should be provided. Examples of the different types of equipment should therefore be available for demonstration to the patient in order to facilitate informed choice and correct operation. Once chosen, the clinician should complete a home oxygen order form and send directly to Baywater.

The rationale for oxygen therapy should be explained and supported by written information. A risk assessment should be undertaken.

Stage 2b - Assessment for ambulatory oxygen

Ambulatory oxygen should not be used to manage breathlessness in people with COPD who have mild or no hypoxaemia at rest. It should be considered in people with COPD who have exercise desaturation and are shown to have an improvement in exercise capacity with oxygen, and have the motivation to use oxygen. An appropriate assessment should always be performed by a specialist. The purpose of the assessment being to assess the extent of desaturation, the improvement in exercise capacity with supplemental oxygen, and the oxygen flow rate needed to correct desaturation.

The main purpose of ambulatory oxygen is to maximise quality of life for the person on long-term oxygen therapy.

Higher flow-rates and/or pulsed oxygen delivery systems may be indicated. It is essential that clinicians are experienced in exercise assessment and are confident, competent and trained in prescribing the full complement of oxygen equipment.

The clinician should demonstrate the types of ambulatory equipment available and agree with the person what would best meet his/her needs and preferences. The HOS –AR service has a responsibility to ensure that the patient is using the ambulatory oxygen appropriately and be confident that they are gaining optimum benefit from its provision. This would occur once the patient has received ambulatory oxygen therapy (AOT) and reviewed in a domiciliary environment.

Stage 3a - follow up home visits

When home oxygen therapy has been started during acute illness a follow up visit that includes a review of the need to continue oxygen therapy should occur within six weeks. This specialist and holistic review should be provided by suitably competent staff.

For people starting home oxygen electively, a review at home should be undertaken in four weeks to enable re-assessment of the person's clinical status, adherence to the oxygen therapy regime (including the appropriateness of the equipment), safety review to reduce risks including fire and risk of falls and whether further action is necessary (e.g. referral back to a specialist clinician – whether respiratory or the person's main specialty – or social services). The review should be undertaken by a healthcare professional that is competent and confident to assess and advise the person.

If any adjustment of oxygen therapy is required, an amended Part B HOOF must be completed and faxed to the oxygen supplier Baywater. People who are stable should then be reviewed at 3 months and then 6 monthly at home or in a clinical setting for full oxygen review or as deemed necessary according to the patients' needs.

People whose condition is less stable will require more frequent review and follow up, including blood gas measurement. They may need referral for specialist physician review. People should be reviewed by the HOS-AR service with repeat blood gases annually when clinically indicated. People in receipt of oxygen therapy should be reviewed after any acute hospital admission or severe exacerbation.

Stage 3b - withdrawal of oxygen therapy

When at review people are found to no longer meet the criteria for oxygen therapy, this should be explained, the oxygen provision discontinued (removal order to AL completed) and other prescribed treatments reviewed. Where the person continues to meet the criteria but is not using the oxygen as prescribed, he or she should be counselled on the merits of the therapy and encouraged to increase usage to the recommended level.

Management of COPD exacerbations – Including admission avoidance/early supported discharge (ESD):
The high-level objectives are:

- To ensure prompt, optimal management and integration of care for all patients in-line with national evidence-based guidance and local guidelines on COPD and antibiotics, providing:
    - Expert care in the community when appropriate
    - Admission to hospital when required
    - Early, structured and assisted discharge of COPD patients when appropriate
- To ensure effective management of co-morbidities, optimisation of therapy, including up to date vaccination against influenza and smoking cessation intervention as appropriate
- To minimise the impact of the disease, through earlier and more effective treatment of exacerbations and fewer hospital admissions and re-admissions
- To improve symptom control, function and quality of life for all patients with the disease
- To ensure that users of the service have a positive experience
- To ensure effective communication with the patient and support self-management
- To liaise with all disciplines ensuring integration and effective communication with GP services, community and social services as appropriate

To ensure early, structured and supported discharge, the service must develop strong relationships and integrate with local Acute Providers guaranteeing:

- Undertake a review of the patient's condition, treatment regimens, need for other investigations and/or interventions and assessment of psychosocial and social needs and supportive care pathway requirements
- Assessment for oxygen therapy and NIV as appropriate and in-line with BTS guidelines
- Assessment of co-morbid conditions and complications
- Assessment of concordance with current medication, in particular oxygen therapy and other interventions, including inhaler technique
- Referral for smoking cessation support
- Referral for physical mobilisation/exercise and assessment of need for post-exacerbation rehabilitation programmes (pulmonary rehabilitation)

Pulmonary Rehabilitation:
The high-level objectives for the service would be:

- To promote and embed pulmonary rehabilitation as an essential component in the management of patients with COPD and other chronic respiratory conditions
- To improve understanding amongst health professionals of which patients would benefit and should be referred to pulmonary rehabilitation
- To improve access to pulmonary rehabilitation for eligible patients
- to improve completion rates from pulmonary rehabilitation for eligible patients
- to improve patients' confidence in the self-management of their conditions, resultant in appropriate use of other healthcare resources
- to improve patients' health-related quality of life, breathlessness management, functional and maximum exercise capacity thus reduce disability and handicap associated with chronic respiratory disease

Criteria for eligibility could be:

- patients who consider themselves functionally disabled by breathlessness (usually MRC breathlessness score of three and above)

- All patients must have a clear diagnosis of recent quality-assured diagnostic spirometry and their MRC score at time of referral. This information should be included in the referral information to the provider of the Pulmonary Rehabilitation Service.

Staff competencies:
The assessment service requires staff with the following competencies:

- The clinical lead should have a first level degree working at Band 7 or equivalent
- All members of the clinical team should have a professional qualification e.g. registered general nurse (RGN) or other relevant registered HCP
- Experience of respiratory care, a minimum of 3 years both community and hospital is essential for the clinical lead and desirable for the other clinical staff working within the service. That said no less than 3 years' experience should be considered unless that person is not aligned to the service i.e. within physiotherapy there are rotational roles that are often part of the HOS-AR service; this should not be counted as a permanent member of the team and would be at the expense of the provider not the commissioner.
- An accredited respiratory qualification in COPD and spirometry
- Independent or supplementary prescribing would be advantageous.

The team should have appropriate administrative support (band 3) and operate within a clear clinical accountability structure. They should also have access to a respiratory physician i.e. respiratory consultant/GP with special interest if required.

It is anticipated that the team will be multidisciplinary and have a strong community base with clear integration with the local acute providers in order to manage patients with respiratory disease within the community. Providers will be expected to deliver the service in a patient centric manner, which provides one holistic assessment that can then determine the appropriate care package.

The HOS-AR service should have knowledge of other conditions causing hypoxaemia and of the suite of modalities provided by Baywater.

4. Referral, Access and Acceptance Criteria

Documenting results and Oxygen Register

The Provider shall ensure that the records of all referrals for HOS-AR assessment and those patients who receive HOS therapy are made available to GPs in order to have this information recorded in care plans.

In-line with GDPR, the Provider will be afforded the local oxygen register (Invoice) and concordance reports and will have an implementation period to review and update to accurately reflect the provision of home oxygen therapy. The Provider shall employ a comprehensive and rigorous system of data collection, storage, retrieval and transmission in order to clinically verify and reconcile the information provided by the oxygen supplier and to maintain an accurate oxygen register including:

- a comprehensive record of the identities and numbers of people who have been referred for an HOS-AR assessment and who have been provided with HOS therapy
- appropriate records of the HOS-AR assessments, follow up home visits, adjustments to HOS treatment and review and details of when HOS therapy is withdrawn

The Provider will report all the above information to the CCG through performance reporting mechanisms which are set out in the KPI's, patient confidentiality and data protection requirements should be observed at all times in this process. Population covered; currently there are approximately *** patients on oxygen in the Southport and Formby area *** in South Sefton.

Process

On receipt of a referral the HOS-AR service will review all of the information, and if required will contact the referrer via telephone if any information is missing, e.g. Patient phone number, NHS number, etc. It is anticipated that the HOS-AR service will seek to achieve and maintain a lead-time from referral to clinical appointment to 10 working days.

Where there is clinical data missing or where the referral may be viewed as inappropriate the team will then either make a clinical decision to accept or contact the referring HCP to discuss the patient and to understand why they have been referred for assessment. During this discussion a decision will be reached as to if an assessment is appropriate or not and if not how should the patient be managed. The decision will be based on what is right for the patient not on the referral criteria for the HOS-AR Service.

Referral accepted

Once a referral is accepted and a patient appointment has been made a copy of the appointment letter will be sent to the referring HCP and GP. This will be either via NHS mail, secure fax or post, depending on the individual's preference.

HOOF received (No referral)

Where HOS-AR services receive a confirmation HOOF to initiate oxygen without a referral for assessment they will firstly check the clinical code and age of the patient. If it is an adult patient with an appropriate clinical code they should contact the initiating HCP, by telephone at the point of a HOOF being received requesting a formal referral for the patient into the HOS-AR service for full assessment , or confirm that an assessment is not required e.g. end-of-life palliative. The HOS-AR service

should offer training or meet with the local team to discuss the benefits of a direct referral rather than completing a HOOF. If it is paediatric the team will contact the HCP and offer a home safety check and support for the paediatric team(s).

Location:
The assessment should take place within premises that are in accordance with appropriate physiology testing facilities especially with respect to infection control, risk assessment and health and safety policy; and are spacious enough to allow for the patient's capacity for exercise to be assessed safely when assessment of ambulatory oxygen therapy requirement is performed. The assessment can also be carried out in the person's own place of residence, provided that infection control, risk assessment and health and safety policies are adhered to.

Patients will be offered a choice of date, time and location for a clinical appointment, once confirmed these details should be confirmed in writing to the patient along-with information specific to a home or clinic appointment informing patients what to expect as part of their assessment.

Home visits are undertaken outside of these clinics times.

Equipment:
The assessment requires measurement of arterial and/or capillary blood gases as well as oximetry and spirometry, such equipment must be available and properly maintained. In addition, a variety of oxygen equipment, for both long-term and ambulatory equipment must be available in order to assess the person appropriately and ensure the provision of the most appropriate modality for their needs. Please refer to a comprehensive list of equipment for oxygen therapy assessment that is a recommendation rather than a mandatory instruction.

Equipment for oxygen assessment:

- 1 x standard oxygen concentrator
- 2 x high-flow concentrators
- 1 x standard conserving device
- 2 x standard ambulatory cylinders (as a minimum)
- Helios H36 liquid oxygen Dewar (providing continuous and demand flows)
- Helios H850 adult flask (goes with Dewar above)
- Helios H300 adult flask for assessing for lightweight provision
- Various consumables
- TOC and POC to be ordered when cohort of patients identified and brought into clinic prior to assessment – not necessary as a permanent feature

Exclusion criteria and thresholds

Exclusion criteria for this Service:

- People who cannot clinically benefit from home oxygen.
- Children – Please see Paediatric section below
- People who have not had a clinical assessment and quality assured diagnosis (except palliative patients who are not assessed or reviewed through the normal service. Palliative patients should have evidence of hypoxaemia. Some assessment of equipment may be needed and thus prescribers for palliative patients may need to discuss individual patient needs with the HOS-AR service).

Community and acute teams have developed their own systems and processes which can be inconsistent and change with every provider. Depending on the age of the child and who initiates oxygen the onward referral to community nursing teams and other community services is variable and inconsistent. The BTS guidelines recommend a follow-up by community children's nurse or nurse specialist within 24 hours of discharge from an acute setting. There has never been a system in place for paediatric home oxygen and discharge information is sporadic, not reliable and not timely.

The CCG is financial responsible for all Home Oxygen provision including paediatric initiation and so are accountable for ensuring that the prescribing is appropriate and monitored safely.

The new HOS-AR service model will enable the service lead to be caretaker for the whole Home Oxygen cohort (patient register) and responsible for full reconciliation and validation including concordance review across the CCG area. They will work in partnership with paediatric teams to ensure that paediatric patients who are receiving home oxygen are identified and fully assessed in the community by working with the acute trusts on joint protocols for discharge and follow up.

The HOS-AR ownership of the entire patient register including paediatric patients will reduce the risk by ensuring that the CCNT know the patients within their remit and what their needs are and ensuring consistent liaison with the specialist children's teams in the acute trusts. This management will aim to provide optimum oxygen therapy safely in the home, lessen the risk of emergency admissions and ensure that oxygen is given to those patients who need it. It is understood that as subject matter experts the HOS-AR service will provide additional training to the paediatric teams on the equipment provided for the paediatric home oxygen service. This will also be provided on an "as required" basis ensuring any changes in equipment are fully briefed to the teams and that new team members have an understanding of the equipment and processes. The training will also include safety with a focus on paediatric patients e.g. the hazards of the use of creams which can be a particular issue for paediatric patients, along-with travelling and the provision of oxygen therapy.

Transition and integration for the transfer of paediatric patients into the adult HOS-AR service:
The successful transfer from paediatric to adult services should be the culmination of a period of planned transition and should not be entirely driven by the patients' age. As such, the HOS-AR service should work with the local acute and community services with the input of the young person concerned to achieve a smooth transition for both the young person and their families/carers. The identification of appropriate patients for transition should be age and developmentally appropriate throughout, in many circumstances it will take place by 18 years of age – it is important to avoid set age limits.

Interdependence with other services/providers

- Merseyside Fire and Rescue
  - MFRS will work in partnership with Baywater and individual HOS-AR services to undertake safety checks where risks have been identified from the Field based risk assessment. Households where people smoke have a higher risk of domestic fire which could be potentially dangerous when liquid or cylinder oxygen is involved. Fire services are alerted by Baywater as part of this process whenever liquid or cylinder oxygen is installed.
- Sefton Metropolitan Borough Council
  - Risks may be identified which are not directly related to oxygen provision but would need to engage with social services/social care agencies to ensure the best outcome for the patients and ensure their safety and wellbeing at all times.
- Service providers in the private sector. i.e. nursing and residential homes –
  - The provider will be required to liaise and build relationships with social care partner organisations for patients who reside in a social care setting should they be initiated on oxygen therapy.
  - The provider will offer educational and clinical support to those non-specialist organisations ensuring the patient receives optimum benefit from the prescribed therapy.
- North West Ambulance Service (NWAS)
  - Whilst ambulance services now employ universal precautions (28% oxygen) with respect to the risk of high concentration oxygen in acutely unwell people with COPD, and others at risk from oxygen induced hypercapnia, people known to be at risk should be advised and oxygen alert cards provided. In some cases, a specific protocol (PSP) may be appropriate depending on local ambulance service arrangements.
  - In order to minimise the risk of hypercapnic respiratory failure, the ambulance service should also be notified in the event of emergency transport to hospital.
- Baywater – Home Oxygen provider

5. Discharge Criteria and Planning

The HOSAR provider should have clear links with the hospital respiratory team and should be available to assess patients who may require oxygen prior to discharge.
Patients who have recently been discharged from hospital are "at risk" of exacerbation and readmission. Other predictive factors for risk include level of dyspnoea (MRC) and use of oral corticosteroids. There are many variables that can affect this cohort of patients, therefore it is appropriate to assume that all patients who use the commissioned service who have a diagnosis of COPD are "at risk". The HOS-AR service must work in partnership with all stakeholders to support both admission avoidance and early supported discharge looking to be an integral part of the Pathway, particularly during the first 2 weeks of discharge when the patient is most vulnerable. A fundamental part of this process is promoting self-management and empowerment of the patient to self-manage their condition outside of the service environment.
The assessment form should be included with the patient hospital records. A copy of the form should be sent to the general practitioner so that they are informed that the patient is receiving oxygen also a copy to the community team for reference. The HOS-AR service will assist with all hospital discharges the acute providers.
Provision of long term oxygen therapy should be avoided on hospital discharge, when patients are recovering from an exacerbation. If oxygen is to be initiated this should be following arterial blood gases (ABGs) and the modality ordered that meets the most appropriate needs of the patient. Patients should be reviewed 8 weeks later to assess blood gases when they are clinically stable.

However some patients may have marked symptomatic hypoxaemia. For these patients, it is reasonable to provide a temporary source of supplemental oxygen (e.g. IOT or temporary concentrator). Home oxygen equipment should be discontinued where arterial blood gases improve and where oxygen therapy is no longer required. The temporary oxygen supply is usually prescribed for up to a 6 week period by the HOS-AR service.

Following a decision to provide LTOT it is expected that the patient receives education and written information about the reason for oxygen provision and principles of oxygen therapy. This education may be supplied by a variety of people, including specialist nurse, physiotherapist, technologist/scientist or doctor. It is important that a spouse/family member or carer attends the education session(s) with the patient and that the carer's needs are adequately addressed within the education programme.

In the event of discharge from the service due to oxygen being removed or if the patient dies, there is the requirement to ensure that an appropriate cancellation of oxygen therapy provision to the oxygen provider is issued in writing, and assurance that this is acted upon by the oxygen provider.

As part of assuring best use of NHS resources on discharge, appropriate patient management is required in order to ensure that the discharge of the patient does not present alternative related pressures to NHS services.

6. Last Year of Life

The World Health Organisation describes palliative care for adults as an approach that improves the quality of life of patients and their families facing the problems associated with life-threatening illness, through the prevention and relief of suffering by means of early identification and impeccable assessment and treatment of pain and other problems, including physical, psychosocial and spiritual issues.

To manage patients in the last year of life the HOS-AR service should:

- Ensure a patient has adequate relief from pain and other distressing symptoms (this would likely include liaison with Macmillan and palliative care teams)
- Reduce exacerbation rates

- Integrate with palliative care services to invoke a support system to ensure the patients live as actively as possible until death
- Integrate with palliative care services to assist the patient and families/carers with the most appropriate modalities of oxygen therapy
- Participate in the provision of high-quality and seamless end of life care

The HOS-AR service will identify patients where a prognosis of death within 6-12 months and assess for patient and family for palliative care needs associated with oxygen therapy. The Gold Standard Framework (GSF) provides a valuable mechanism in primary and community care for effective patient centred planning during the last 12 months of life, focusing on effective communication, co-ordination and continuity.

It is anticipated that the HOS-AR service will identify and initiate contact with all palliative care teams within both CCG areas working closely with them to agree care pathways. This should include participation in the management of a palliative care register in primary care to ensure regular review and assessment. The HOS-AR service will focus on appropriate respiratory care being maintained whilst maximising a partnership approach to facilitate optimum therapeutic intervention.

SECTION 3 – SUMMARY OF BASELINE QUALITY, PERFORMANCE AND PRODUCTIVITY REQUIREMENTS

3.1 Quality

Indicator	Threshold	Method of Measurement	Period of Activity Covered	Consequences of Breach
Patient Experience	Improvement programmes are developed in response to issues highlighted when gathering patient experience across all services. Appropriate implementation. Demonstrate improvement in patient satisfaction in subsequent surveys	POS quarterly report	[for local definition]	POS to report at Part 1 of the Board at the next Board Meeting within a specific report on: Non-compliance against Quality Contract Outcomes. The contract performance process outlined under clause 32 and 33
Annual Review of Customer Care literature	Annually updated Customer Care literature	Copy of literature	[for local definition]	POS to report at Part 1 of the Board at the next Board Meeting within a specific report on: Non-compliance against Quality Contract Outcomes. The contract performance process outlined under clause 32 and 33
Self-reported experience of patients and users	Participate in surveys as stated in Schedule 3 Part 5	Survey Results	[for local definition]	POS to report at Part 1 of the Board at the next Board Meeting within a specific report on: Non-compliance against Quality Contract Outcomes. The contract performance process outlined under clause 32 and 33.