Service Guidance

Pulmonary Rehabilitation

NHS England and NHS Improvement

Contents

A: Purpose of the service

USER NOTE

This guidance has been designed to assist commissioners in the delivery of Pulmonary Rehabilitation (PR) services for chronic respiratory diseases. The guidance is adaptable for commissioners to reflect local policy to include other respiratory conditions. This group includes but is not limited to chronic obstructive pulmonary disease (COPD), asthma, idiopathic pulmonary fibrosis (IPF), interstitial lung disease (ILD) and bronchiectasis.

The guidance is not mandatory, and the commissioner should review the whole of the specification to ensure that it meets local needs and, once agreed with the Provider, it should form part of a re-negotiated contract or form the relevant section of the NHS Standard Contract.

Key objectives of a Pulmonary Rehabilitation Service

The high-level objectives of the service are:

- To promote and embed pulmonary rehabilitation as an essential component in the management of patients with chronic respiratory disease and integrated with other health care services
- To improve understanding amongst health professionals of which patients will benefit and should be referred to pulmonary rehabilitation
- To reduce health inequalities through unwarranted variations in access and outcomes of care
- To provide a timely, safe and clinically effective intervention in alignment with the British Thoracic Society (BTS) Quality Standard
- To improve patients' health-related quality of life, breathlessness management, functional and maximum exercise capacity and thus reduce disability and handicap associated with chronic respiratory disease
- To ensure patients' have a positive experience
- To contribute to the National Asthma and Chronic Obstructive Pulmonary Disease (COPD) Audit Programme (NACAP) on pulmonary rehabilitation
- To have quality improvement projects based upon national quality improvement targets (using data from run charts) and locally initiated projects

- To improve completion rates from pulmonary rehabilitation for eligible patients (as a minimum to be in line with quality improvement targets outline in the NACAP pulmonary rehabilitation Audit)

- To be either fully accredited or underway in the pathway of accreditation by the Royal College of Physicians (RCP) Pulmonary Rehabilitation Services Accreditation Scheme (PRSAS)

What is Respiratory Disease?

Respiratory disease affects one in five people and is the third biggest cause of death in England (after cancer and cardiovascular disease). Lung cancer, pneumonia and chronic obstructive pulmonary disease (COPD) are the biggest causes of death.

Hospital admissions for lung disease have risen over the past seven years at three times the rate of all admissions generally[1].

Respiratory diseases are a major factor in winter pressures faced by the NHS; most respiratory admissions are non-elective and during the winter period these double in number.

Incidence and mortality rates from respiratory disease are higher in disadvantaged groups and areas of social deprivation, with the gap widening and leading to worse health outcomes. The most deprived communities have a higher incidence of smoking rates, exposure to higher levels of air pollution, poor housing conditions and exposure to occupational hazards[2].

What is Pulmonary Rehabilitation?

Pulmonary rehabilitation is an exercise and education programme designed for people with lung disease who experience symptoms of breathlessness[3].

Pulmonary rehabilitation is characterised by an individually prescribed and progressed exercise training programme and an educational package that helps people to better understand and their condition/s and symptoms to support effective self-management.

A pulmonary rehabilitation course typically lasts six to eight weeks, with two sessions of around two hours each week, and includes an individually prescribed exercise and education programme including aerobic exercise and resistance training and lifestyle support. This is complemented by patients carrying out a further session in their home environments.

Pulmonary rehabilitation courses are delivered in groups of 8-16 people and may be held in local hospitals, community venues and leisure centres. Each course is supported by a multi-disciplinary team with a clinical lead for the service. The pulmonary rehabilitation team comprises of trained health care professionals such as physiotherapists, nurses and occupational therapists.

Why is pulmonary rehabilitation important for improving outcomes?

Pulmonary rehabilitation is an essential option available within a wider, comprehensive respiratory pathway. There is sound evidence on the benefits of pulmonary rehabilitation and emerging evidence that pulmonary rehabilitation may make an impact on secondary care health utilisation.

Evidence shows that for the individual with COPD, pulmonary rehabilitation improves an individual's ability to exercise (eg improved capacity to walk further), reduces symptom burden (notably breathlessness and fatigue) and associated disability. It reduces anxiety and depression and improves health related quality of life.

Pulmonary rehabilitation is also effective after hospitalisation for an exacerbation of COPD, improving health-related quality of life in COPD (dyspnoea, fatigue) anxiety, depression, and patient control of the disease)[4]

This evidence also shows that pulmonary rehabilitation impacts upon secondary care health utilisation. Research has shown, pulmonary rehabilitation can:

- Reduce hospital admissions[5]
- Reduce inpatient hospital days[6]
- Reduce readmissions[7]
- Reduce the number of home visits[8]
- Be highly cost-effective: it is substantially below the NICE threshold for cost-effectiveness, at only £2,000 - £8,000 per QALY[9]
- Be cost-saving[10]

B: National context

National context

The NHS Long Term Plan was published in January 2019 and set the plan for the NHS for the next 10 years. Respiratory disease was identified as a national clinical priority alongside, cardiovascular disease, stroke, mental health and cancer. Expansion of pulmonary rehabilitation services is one of the key commitments within the Plan.

Respiratory disease affects one in five people in England and is the third biggest cause of death[11]. Hospital admissions for lung disease have risen over the past seven years at three times the rate of all admissions generally[12] and remain a major factor in the winter pressures faced by the NHS. Over the next ten years the NHS will be targeting investment in improved treatment and support for those with respiratory disease, with an ambition to transform our outcomes to equal to, or better than our international counterparts.

Incidence and mortality rates for those with respiratory disease are higher in disadvantaged groups and areas of social deprivation[13], where there is often higher smoking incidence, exposure to higher levels of air pollution, poor housing conditions and exposure to occupational hazards. All these factors drive to increase health inequalities in lung conditions in the most deprived communities[14]. Further variation across respiratory disease in England is shown in the Respiratory Atlas of Variation[15].

NHS England and NHS Improvement aims to increase the number of patients who would benefit by increasing referral rates to pulmonary rehabilitation from 13% to 60% by 2023. To support this expansion, the updated GP Contract includes a new Quality Outcome Framework (QOF) incentive to encourage referrals to pulmonary rehabilitation services. Targeted funding for pulmonary rehabilitation will be available to support expansion of services, and examples of good practice and models of pulmonary rehabilitation services will be made widely available.

Currently, multiple publications have recommended the use of pulmonary rehabilitation for patients who would find it appropriate.

The National Institute of health and Care Excellence (NICE) recommendations for COPD highlights pulmonary rehabilitation as a priority for implementation, recommending:

- Pulmonary rehabilitation should be made available to all appropriate people with COPD, including people who have had a recent hospitalisation for an acute exacerbation[16]

The NICE Quality Standard[17] for COPD also highlights the importance of pulmonary rehabilitation:

- Quality statement 4: People with stable COPD and exercise limitation due to breathlessness are referred to a pulmonary rehabilitation programme.
  Rationale: Pulmonary rehabilitation programmes improve a person's exercise capacity, quality of life, symptoms and levels of anxiety and depression.

- Quality statement 5: People admitted to hospital for an acute exacerbation of COPD start a pulmonary rehabilitation programme within 4 weeks of discharge.
  Rationale: Starting a pulmonary rehabilitation programme within 4 weeks of hospital discharge after an acute exacerbation reduces the short-term risk of hospital readmission and improves the quality of life and the short-term exercise capacity of people with COPD.

Primary Care Networks

The NHS Long Term Plan outlines the new service model for primary care to respond to current challenges in improving care for patients and reducing staffing pressures. The new plans focus on being more joined-up and co-ordinated in care, proactive in delivering services and more differentiated in support offered to individuals.

The development of Primary Care Networks (PCNs) provides an opportunity to deliver greater ownership and improved quality of referrals at a population level. This new way of working will also support PCN's in targeting patients in the most deprived areas; with people experiencing poorest health outcomes to develop effective approaches and interventions to address health inequalities.

Commissioners should support meaningful and sustainable interactions between the pulmonary rehabilitation service and primary care[18], whilst also exploring models of increased referral and uptake and co-production with the aim of seeing greater support and improved access to maintenance programmes post-rehabilitation.

The pulmonary rehabilitation service shall also engage with primary care around communications, accessibility and marketing. Whilst also providing access to other resources. Commissioners should support meaningful and sustainable interactions between the pulmonary rehabilitation service and primary care.

C: Scope

Patients

A pulmonary rehabilitation service is designed to meet the needs of key patient populations with chronic respiratory disorders.

Pulmonary rehabilitation shall be offered to:

- Patients with a confirmed diagnosis of COPD or other chronic respiratory disease*.
- Patient who have an MRC score of three[19] or more as per the NICE guidelines[20] and QOF indicators[21].
- Patients who have either recently had an exacerbation of COPD requiring a hospital admission or whose functional baseline has significantly altered and is not following the expected recovery path.

Carers should be encouraged to observe the exercise component and participate in the education sessions, where possible, unless a given session is specifically orientated for the patient only.

Modified Approaches to Pulmonary Rehabilitation for Patients

- Significant unstable cardiac or other disease that would make pulmonary rehabilitation exercise unsafe or prevent programme participation.
- People who are unable to walk or whose ability to walk safely and independently is significantly impaired due to non-respiratory related conditions. This should not exclude patients who have general musculo-skeletal problems where exercise is recommended. These patients may benefit from modified pulmonary rehabilitation, which may include seated exercises.
- People unable to participate in a group environment or for whom group sessions are not suitable, e.g. extreme frailty, sight or balance impairment, or for whom mental health, cognitive, personality or other communication barriers, that make group work inappropriate. These patients may require a modified approach.

Equity of access to services, venues and operational hours

Commissioners are required to ensure that reasonable adjustments are made to allow patients to gain access to services, regardless of age, disability, race, gender reassignment, religious/belief, sex, pregnancy & maternity or sexual orientation, or income levels, and deals sensitively with all service users and potential service users and their family/friends and advocates. This needs to reflect The Equalities Act 2010. Commissioners are advised that

* This group includes but is not limited to COPD, asthma, Idiopathic pulmonary fibrosis (IPF), interstitial lung disease (ILD) and bronchiectasis.

they may, depending on existing local services and resources, have to commission appropriate venues and transport services separately. Further addressing the needs of the patients such as access and language services may also be required to assist with translation requirements where patients do not speak English. There would be further engagement required with underrepresented groups to ensure that accessibility needs are met. The general points listed below will apply in all cases.

- The venue will need to be suitable and easily accessible to patients in view of choice of locality and have adequate parking and good public transport links.
- The programmes shall be delivered at a suitable time and in easily accessible buildings (not restricted to medical buildings) for patients including provision for people with disabilities.
- Special consideration should be given to those patients who are most limited by their breathlessness (i.e. patients with an MRC score of five – housebound) or are unable to access public transport with regards to the provision of transport.
- Special consideration may need to be paid to the provision of pulmonary rehabilitation to accommodate race, language and gender issues and for those still working as far as reasonable practicality allows.
- A risk and suitability assessment of the venue must be undertaken, whilst also taking privacy and dignity of patient information into consideration.
- The Provider should have the capacity to offer a timely service throughout the year.

Referral sources

The Provider can receive referrals from a broad range of sources that have made an accurate COPD or other chronic respiratory condition* diagnosis, which include but are not limited to, organisations in the following settings:

- Primary Care
- Intermediate Care
- Secondary Care
- Tertiary Care
- Others (for example: Occupational health, private health, self-referral by patients who carry an accurate diagnosis)

Interdependencies with other services

Pulmonary rehabilitation is part of a wider respiratory pathway, which should be a responsive system where the patients can be within several aspects of the pathway at the same time. This will enable motivation, support and encouragement throughout, and enable prompt action in the presence of deterioration to enrol the patients into Pulmonary Rehabilitation again without losing any momentum in their integrated care pathway. This will be strengthened as onward referrals would also take place, for example, to see a psychologist or dietitian.

* This group includes but is not limited to COPD, asthma, idiopathic pulmonary fibrosis (IPF), interstitial lung disease (ILD) and bronchiectasis.

Pulmonary rehabilitation is an important element of the long-term management of COPD and as such providers will work closely with primary, secondary and intermediate care providers including diagnostic services, specialist and non-specialist community teams, social care, hospital discharge and hospital at home schemes, oxygen assessment services, palliative care/acute care service providers and the third sector e.g. British Lung Foundation.

Pulmonary rehabilitation providers as part of a wider integrated respiratory pathway involving community services and secondary care services will optimise the referral and completion of patients within the system. This will include further integration with PCNs.

D: Service delivery

Pulmonary rehabilitation pathway

The NICE guidance[22] on COPD recommends that pulmonary rehabilitation programmes include multi-component, multidisciplinary interventions, which are tailored and designed to optimise each person's physical and social performance and autonomy. It also recommends that pulmonary rehabilitation programmes should include multi-component, multidisciplinary interventions that are tailored to the individual person's needs. The rehabilitation process should incorporate a programme of physical training, disease education, and nutritional, psychological and behavioural intervention.[23]

This guidance is primarily aimed at assisting commissioners with routine programmed pulmonary rehabilitation provided in a group setting in an out-patient environment, either based in the community or in secondary care locations. There should be provision to allow patients post exacerbation to access the service within four weeks. To increase capacity alternative models may be considered but it should be noted these are not currently recommended in the quality standards and the provider should refer to the current evidence base to guide provision. These alternative models may be based upon a published evidence-base. Modified service models should follow local negotiation and all service models should be carried out in accordance with the same principles.

Although pulmonary rehabilitation can be commissioned separately, it should be part of a wider integrated respiratory care pathway with shared outcomes.

The pulmonary rehabilitation patient group has a variety of often complex needs. Patients often decline or drop out of pulmonary rehabilitation programmes for a wide variety of reasons including illness, bad weather and transport issues. Commissioners must recognise that this is not always because the service is performing poorly or unsatisfactorily. Nevertheless, providers (and the wider team) should be expected to demonstrate how they are supporting patients to fully engage and complete the course.

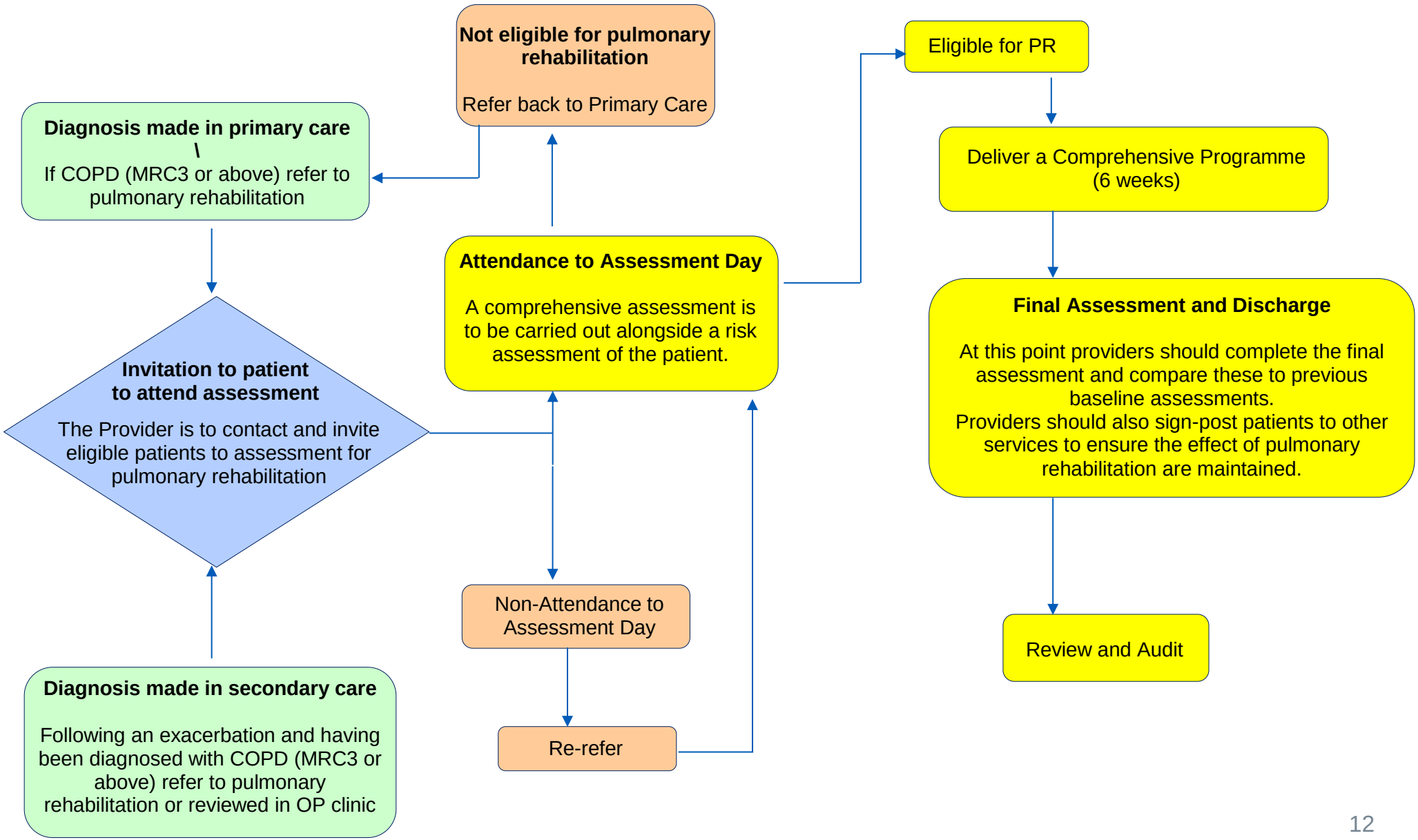
Commissioners are required to monitor uptake, dropout, completion and experience, encouraging providers to adapt their programme to improve uptake and completion rates on a continuous improvement basis. Commissioners are also encouraged to participate in the National Asthma and COPD Audit Programme (NACAP) and benchmark their services against national data. Commissioners could therefore also facilitate learning and improvement through data sharing between and amongst services and primary care[24].

Commissioners should not rely on a one size fits all approach and need to encourage innovation and new ideas and approaches to provide a greater range of choice as evidence emerges of benefit as far as possible and practicable. Patients need choice and emerging evidence of alternative models should facilitate this.

The purpose of this document is to set out the principal requirements and characteristics which are expected of a pulmonary rehabilitation service, as part of a wider integrated respiratory pathway.

An overview of the pathway can be seen below. The detailed patient pathway can be found in Annex A.

OVERVIEW OF THE PATIENT PATHWAY



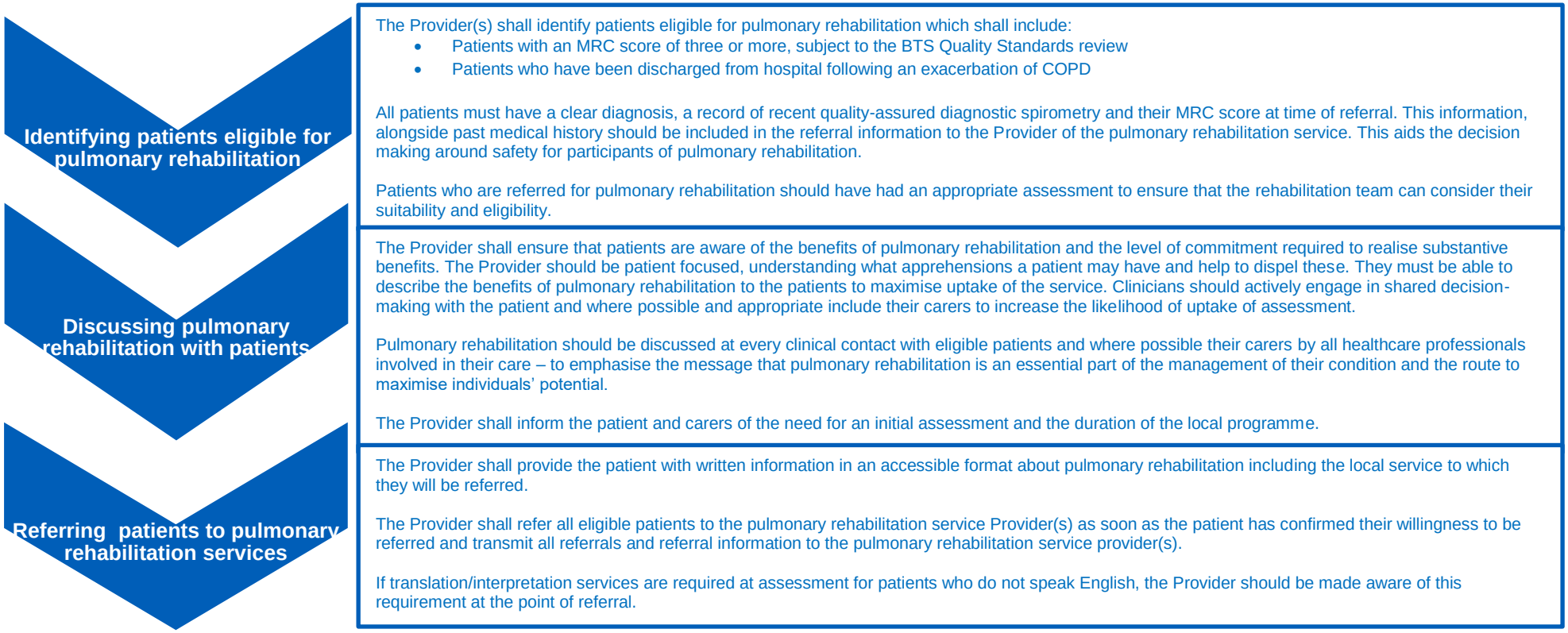
ANNEX A: Patient Pathway

STAGE 1: Identify and Refer Patient

Prior to referral all eligible patients should be on optimal medical management for their disease severity and symptomatic control.

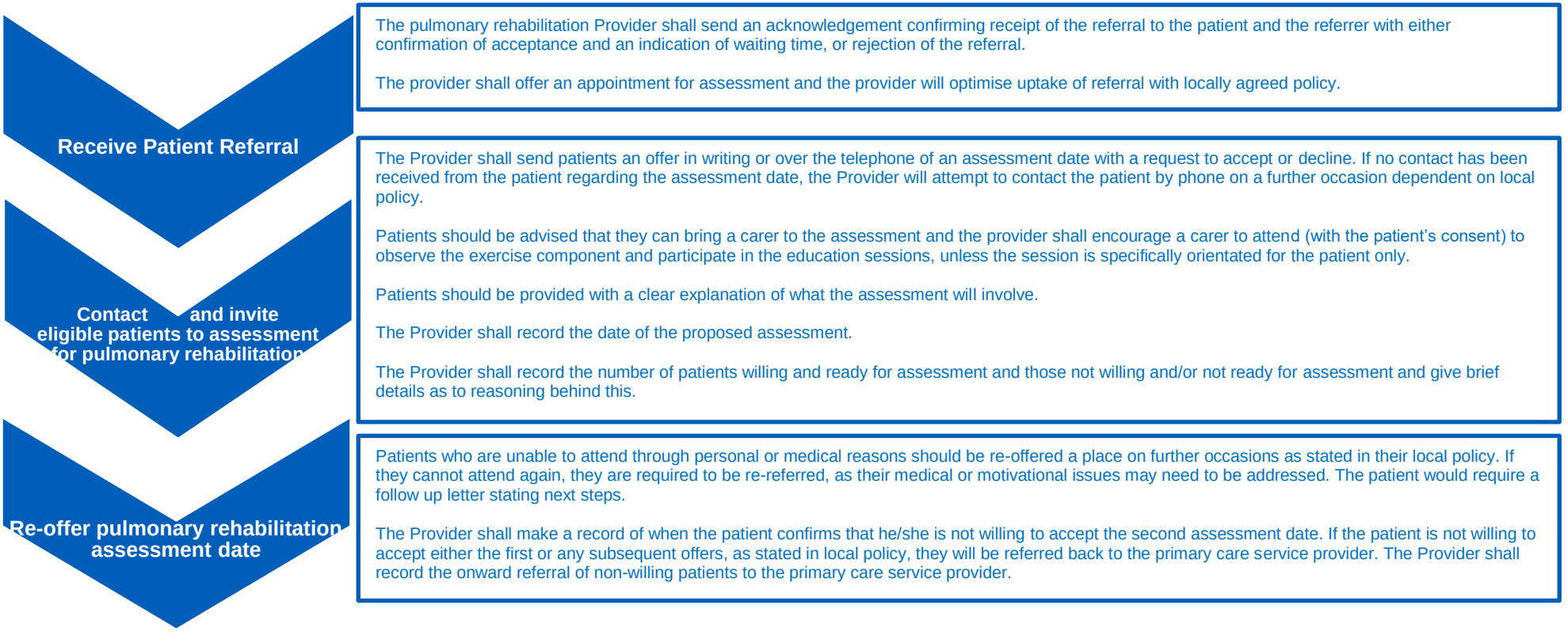
Clinicians should actively engage in shared decision-making with the patient to increase the likelihood of uptake of assessment for pulmonary rehabilitation[25]. All referring clinicians should understand and promote the benefits and overall health gains and improved quality of life of attending pulmonary rehabilitation.

At the time of referral, patients should be given a full explanation of pulmonary rehabilitation and its benefits, and details of the local service, in the most appropriate way(s). At this vital stage, patients need to agree to the referral and understand the importance of attending the programme in its entirety. The Provider shall also discuss the patient's prognosis at this stage.



STAGE 2: Manage referral and recruit patient

The Provider should process the referral and assessment within a maximum 90 days, as per BTS guidance, however, this should then be followed up with commencement of the rehabilitation programme within two weeks. Adequate administrative support is required by personnel other than clinicians.



STAGE 3: Assess patient for pulmonary rehabilitation

Each patient attends a comprehensive assessment, by a specialist(s) in pulmonary rehabilitation where they participate in a review of their general health, respiratory condition and its medical management. This may result in recommendations to the referrer to either optimise treatment or conduct further investigations or refer to a more appropriate service prior to proceeding onto the programme.

The individual needs of the patient should be identified at the assessment, and a pulmonary rehabilitation programme should be tailored accordingly.

Risk Assessment

The Provider shall use the information provided by the referrer to form part of the risk assessment. This must include:

- Diagnosis
- Recent spirometry
- Relevant medical history including co-morbidities including any mental health aspects.
- MRC dyspnoea score
- Oxygen saturation if available
- clinical tests if recent, relevant and available e.g. blood culture or arterial blood gas results
- Drug management

In addition, the Provider shall consider the following elements, which may impact upon the time, location or booking process required to enable the patient to attend the appointment:

- Special mobility needs
- Special access needs
- Any oxygen requirements identified
- Literacy needs
- Vision or hearing needs, e.g. large print communication and educational material
- Vaccinations
- Cognitive Impairment

Comprehensive Assessment

The Provider shall undertake an individual comprehensive assessment based on all the information provided and the face-to-face assessment, including:

- Comprehensive medical review of patient to include respiratory history, exacerbations, hospital admissions, and all major co-morbidities
- Current drug management
- Social circumstances
- Smoking status and onward referral to smoking cessation services
- MRC dyspnoea score review
- Base line observations – heart rate, blood pressure, height, weight
- Nutritional assessment (including BMI), as stated in the BTS Quality Standards
- Oxygen requirements– if further assessment identified, to be referred on to appropriate services
- Assessment of exercise capacity with correct number of practice tests to achieve validity (6-minute walk tests or incremental shuttle walk tests) over an appropriate length course (30m or 10m respectively) with measures of oxygen saturation and breathlessness as stated in the BTS Quality Standards,
- Assessment of peripheral muscle strength, as stated in the BTS Quality Standards
- Assessment of quality of life, psychological status and nutritional status using validated measure(s), as stated in the BTS Quality Standards
- Assessment of functional status using a validated measure, as stated in the BTS Quality Standards
- Screen to identify those at potential risk of drop out – e.g. where there are musculoskeletal, motivation and/or medication issues
- Literacy, language and cultural needs
- Education needs using a validated measure

The Provider shall refer any medical issues identified at the assessment that need addressing prior to starting the programme back to primary care or secondary care as necessary. The Provider shall refer any other issues identified at the assessment that need addressing, onto the appropriate services.

The Provider shall retain the results of the baseline assessment, and with regard to the specific quality of life, function and mood measures, and exercise capacity test, use the results to benchmark the patient's progress, by repeating these again at the end of the programme.

Patients who demonstrate any musculo-skeletal problems that impact on their ability to perform the exercise capacity tests will not be excluded from the programme, unless their problems prevent them from participating in any form of exercise. This may require consideration when reporting upon their individual progress at the end of the programme.

STAGE 4: Final Assessment and Discharge

Final assessment is important to establish effectiveness of the programme in achieving individual goals, physical performance, self-confidence and disease impact on quality of life.

Final assessment can take place once the patient is ready to be discharged from the service and/or has completed the course.

Intervention outcomes in the short term include:

- Improvements in walking distance (maximal and endurance) using either the 6MWT or the ISWT
- Improvements in health-related quality of life as reflected in the validated QoL questionnaire
- Improvement in functional status using validated measure
- Reduction in anxiety and depression using (a) validated measure(s);
- Improvement in knowledge and understanding of condition using a validated measure / questionnaire.

To demonstrate the overall quality assurance and effectiveness of the pulmonary rehabilitation programme the Provider is required to demonstrate improvement on an aggregate basis to the short-term intervention outcomes as set out above (using validated measures or questionnaires in each case), in at least [X]% of patients who complete the Programme. (This is to be agreed locally within the service level agreement between the commissioner and provider).

4.1 Final assessment of patient and recording outcomes

The Provider shall re-assess the patient by repeating an individual comprehensive assessment at the end of the programme, reviewing the patient's attendance and completion of the programme and recording all goals attained. However, this can also be completed once the patient is ready to be discharged from the service, which may be prior to the end of the programme.

The Provider shall ensure that the same tools for assessment are used throughout the programme and appropriate assessment measures should be used to record final outcomes (as per guidelines).

Specific Quality of Life and other Questionnaires and exercise capacity tests should be used to benchmark the patient's progress. This includes a questionnaire covering patient experience.

4.2 Comparing the results to baseline assessments and patient set goals

The Provider shall record the patient's achievement against the baseline assessment and patient set goals, and against the pulmonary rehabilitation programme goals.

4.3 Analyse and report outcomes

The Provider shall record process and quality measures to evaluate the performance of the pulmonary rehabilitation programme. This will be included in the quarterly reporting to commissioners and input to the NACAP audit. Commissioners can access this information by requesting this from their local services.

The Provider shall collate the results and report achievement against outcomes as agreed within local contracts.

4.4 Confirming maintenance programme to maintain effects of pulmonary rehabilitation

The Provider shall ensure that an exit plan clearly outlining the maintenance options is agreed with the patient before he/she leaves the pulmonary rehabilitation programme, accessed through the health and wellbeing agenda.

The Provider shall promote the importance of continuing aerobic and resistance exercise to the patient (e.g. walking in the park, joining a leisure centre or other independent exercise).

The Provider shall endorse and recommend suitable maintenance exercise options. Exercise classes should be led by a specialist exercise instructor trained on a COPD specific course (level four register of exercise professional's course). This should include a home training programme of aerobic and resistance training (with the aim of achieving at least 30 minutes of exercise five days a week) but only after a thorough assessment by the exercise instructor.

The Provider shall ensure that as part of the maintenance programme there is ongoing access to education (e.g. Space for COPD, support groups, leaflets, Breathe Easy and through the internet and select websites). Patients shall also have access to psychological support as needed via local IAPT service.

4.5 Produce pulmonary rehabilitation completion letter

The Provider shall send a pulmonary rehabilitation programme completion letter to the patient and referrer and GP (if GP is not the referrer).

The Provider shall send a pulmonary rehabilitation programme drop out /declined letter to the patient and referrer and GP (if GP is not the referrer) when the patient does not attend after the initial assessment or discontinues the course.

4.6 Sign post patient to relevant services

The Provider shall refer all patients to long-term management providers, patient groups and support networks, shall identify voluntary and commercial lifestyle and exercise opportunities, and shall encourage the patient to take up such opportunities.

The Provider should also make clear to patients that they can partake within the programme in the future if they feel the need to do so, depending on local capacity. This can be considered after one year of the patient having completed their first course of pulmonary rehabilitation or earlier if there has been a hospital admission since completion of their first course.

4.7 Patient service feedback survey

The Provider shall collect patient feedback (eg an appropriate objective feedback survey about the patient's experience of the service.

The Provider shall collate and analyse the results of the survey and produce a summary report as agreed within local policy.

The Provider shall discuss the results of the summary report with the co-ordinating commissioner and implement coproduced quality improvements to the service based on the feedback received.

Review and Audit

The Provider agrees to work with the Commissioners:

- To review the NACAP run charts and audit reports at least annually to provide a summary of the overall results, its performance of the Service to confirm compliance with the Indicators, and agree remedial actions if required
- And allow commissioners reasonable rights of audit and access to any of the Provider's premises, personnel, the Provider's systems, sub-contractors and their facilities and premises and the relevant records (including the right to copy) and other reasonable support as the Commissioner may require whilst the Service is being provided and for twenty four months following the end of the Contract in order to verify any aspect of the Service or Provider's performance.

Annex B: Staffing, resource and safety

1.1 Content and requirements of a pulmonary rehabilitation programme

The Provider shall be able to offer all eligible patients a place at pulmonary rehabilitation assessment within 90 days. However, this is currently under review by the British Thoracic Society. This should then be followed up with commencement of the rehabilitation within two weeks.

The Provider shall ensure that the pulmonary rehabilitation programme contains individually prescribed physical exercise training, self-management advice and multi-disciplinary education.

The Provider shall ensure that goals are agreed with the patient and education needs are identified for all patients with the support of the health professional.

The Provider shall ensure that every patient has a training diary with written descriptions of endurance (both aerobic and resistance) and strength exercise training at the highest tolerated intensity (and detailing the frequency during the week the patient is expected to do this) with a requirement for incremental progress. This written information should be provided in an appropriate accessible format.

The Provider shall deliver the pulmonary rehabilitation programme with a minimum of two supervised classes a week for a minimum of 6 weeks using a multidisciplinary team and include supervised exercise sessions with additional home training as recommended by current guidelines.

The Provider shall perform assessments of individual progress by using the appropriate assessment and outcome measures (including health status and functional exercise capacity), as per local protocol and guided by the NACAP dataset.

The Provider shall ensure that all patients have an agreed a personalised maintenance plan prior to discharge from the pulmonary rehabilitation programme and check the patient's initial expectation of pulmonary rehabilitation has been met.

The Provider shall demonstrate evidence of risk assessment, and quality improvement programme to enhance patient improvement. Alongside, programme quality assurance and development through the pulmonary rehabilitation services accreditation scheme.

The Provider shall develop and maintain a governance structure for the programme, with an individual identified as holding responsibility for the quality and delivery of the programme. A patient/service user representative(s) should also be part of the programme governance structure.

To increase capacity alternative models may be considered but it should be noted these are not currently recommended in the quality standards and the provider should refer to the current evidence base to guide provision. These alternative models be based upon a published evidence-base and potentially include digital interventions.

1.2 Staff

The Provider shall ensure that the programme is delivered by a multi-disciplinary team of health care specialists experienced in pulmonary rehabilitation and behaviour change.

The Provider shall ensure that the health care specialists in pulmonary rehabilitation are supported by staff with qualities/competencies appropriate to the needs of the programme with experience of chronic lung conditions, exercise physiology and exercise assessment and the appropriate psychological inputs. This also includes administration duties to be performed by an appropriate level of staff (i.e. not necessarily clinical staff).

The Provider shall ensure that all sessions are supervised by a professional experienced in the management of chronic respiratory conditions and the delivery of aerobic, strength and resistance exercise training, with suitable expertise to adapt exercises for co-morbidities and breathlessness. They will endeavour to ensure continuity of care by ensuring that patients have the same trainer for most of their programme and measure this as part of the patient feedback survey.[26]

The Provider shall ensure that staffing/skill levels match the case mix of the patients taking part, the type of venue used and the rehabilitation programme ensuring safety to exercise

The Provider shall adhere to minimum staffing ratios recommended in the UK for pulmonary rehabilitation supervision of exercise classes (1:8) and (1:16) for education sessions, with a minimum of two supervisors in attendance, one of whom must be a qualified respiratory specialist health care professional to supervise the exercise component (NB: greater staff: patient ratio is required if oxygen users/complex patients are included)[27].

The Provider shall ensure that there are sufficient numbers of staff available to allow for annual leave, training, sickness, maternity leave, paternity leave or change to parental leave.

The Provider shall ensure that all staff attend updates and training sessions as needed to maintain their competencies and continue professional development. This will include specialist training within pulmonary rehabilitation, including adherence to the accreditation.

1.3 Equipment

The Provider shall provide suitable and safe equipment for use as part of the pulmonary rehabilitation programme and shall ensure that all equipment is maintained in a safe condition, according to the manufacturer's recommendations. The following essential equipment is required:

- Oximeters, BP monitor, Weight scales, Height chart
- Stop watches (for assessments and exercise sessions, one for each patient)
- Weights and resistance equipment
- Music player, 2 bright cones, 10 metre tape measure for incremental shuttle walk tests (30 metre tape for six metre walking test (6MWT)).
- Chairs
- Telephone access

- Emergency equipment – oxygen, oxygen delivery devices, salbutamol and spacer devices, aspirin, adrenalin, glyceryl trinitrate (GTN) and defibrillator.
- Laptop / Projector/ Flip Charts / White Boards and supplementary written material for educational sessions
- Appropriate aerobic exercise equipment.

1.4 Exercise sessions

The Provider shall ensure that supervised exercise sessions including aerobics, strength and resistance training are performed at least twice a week for a minimum of six weeks with encouragement to undertake additional home training. The Provider shall ensure that every individual has a written prescription of endurance and strength exercise training at the highest tolerated intensity (above 60% peak performance/VO_2) with evidence of increments and progress. The provider shall adhere to the following exercise prescriptions:

- Aerobic exercise – walking is the most accessible form of exercise, but other forms of exercise can be considered. This can be completed either supervised or unsupervised at home.
- Intensity of aerobic exercise – wherever possible, prescribed at the highest possible level, progressed and monitored: a minimum of 60% and up to 85% of an individual's maximum exercise capacity.
- Frequency of aerobic exercise – twice weekly supervised exercise as a minimum, supported by a minimum of one additional home exercise session per week, to total a minimum of three sessions per week overall.
- Duration of aerobic exercise – initially aiming for 20-30 minutes of continuous exercise in each session, then increasing intensity once achieved; this may be comprised of two or more bouts of shorter time periods until the patient is able to achieve the desired 20-30 minutes continuous aerobic exercise. An essential minimum of six weeks, with no maximum upper duration.
- Strength training – both upper and lower limbs. Core exercises can be included.

1.1 Education sessions

The Provider shall ensure that baseline education needs are identified as part of developing the pulmonary rehabilitation patient plan.

The Provider shall ensure that tutors are competent to deliver high quality and appropriate education sessions and are familiar with chronic respiratory disease patient's needs.

The Provider shall carry out educational sessions/courses that cover a range of issues, including:

- Normal Respiratory Physiology and mechanics
- Understanding COPD/chronic respiratory diseases their pathophysiology, causes and treatment
- How to equip the individual to improve knowledge, skills and confidence to self-manage

- The importance of exercise
- Relaxation techniques and stress management
- Medicines management and exacerbations
- Psychological impacts and minimising their effects
- The role of family and carers in managing the conditions
- How to manage breathlessness, breathing control, chest clearance, positioning, pacing and energy conservation
- smoking and smoking cessation services if appropriate
- The benefits of regular physical activity and exercise, and how to undertake physical activity and exercise safely and effectively
- Nutritional advice and eating strategies, including nutritional supplements where appropriate
- Lifestyle issues e.g. climate changing, relationship management
- The benefits of improved experience from improved exercise capacity or increased quality of life.

The Provider shall ensure that written information is made available in an appropriate and accessible format with consideration for example of literacy, language and vision issues.

The Provider shall ensure that the quality of education is assessed through patient satisfaction surveys or through validated questionnaires, which are focused on patient feedback. The patient experience data should be used to drive locally coproduced quality improvements.

1.6 Safety

The Provider shall be aware of the importance of patient safety and ensure that appropriate safety facilities are available. The Provider shall ensure that resuscitation facilities and/or procedures are available, and that staff have had recent training. In the case of emergency, suitable interventions administered that are appropriate to the location.

For patients who desaturate on exercise and require ambulatory oxygen, the prescription of which has been determined by an ambulatory oxygen assessment, the Provider shall ensure that these patients attend PR with their own ambulatory supply. If an increase, either temporary or permanent, in the prescription is required for the pulmonary rehabilitation programme and exertion, the Providers will liaise with the local oxygen service to arrange. Oxygen will be part of the emergency equipment provided.

Annex C: Data

This is the minimum data set to be requested by commissioners:

- How many patients were referred for pulmonary rehabilitation?
- How many (and rate) patients came to first assessment appointment?
- How many (and rate) patients started pulmonary rehabilitation?
- How many patients completed pulmonary rehabilitation?
- The size of waiting list
- Waiting time to access the service
- Waiting times, broken down by site if delivered at more than one site
- Waiting time between assessment and commencing rehabilitation programme
- Outcome of treatment assessed using as a minimum, measures of exercise capacity, dyspnoea and health status. (Taken from British Thoracic Society quality standards ie Changes in pre and post assessment)
- The percentage of people and carers surveyed who are satisfied with the service
- Health Inequalities to be noted: monitoring ethnicity, gender, smoking status and deprivation; looking at access and uptake around these groups.

This information is to be sent alongside audit data to commissioners.

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