



Pulmonary Rehabilitation Process

Standard Operating Procedure

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1 Purpose

Robust evidence has repeatedly demonstrated improved exercise capacity and health related quality of life measures including decreased breathlessness, fatigue and healthcare utilisation for patients following a Pulmonary Rehabilitation (PR). In 2015 the Cochrane Airways Board made a decision to no longer update reviews comparing pulmonary rehabilitation to conventional intervention due to consistent beneficial findings (Lacasse et al., 2015).

This protocol has been reviewed and updated in line with British Thoracic Society (BTS) PR Guidelines (Bolton et al, 2013) and BTS Quality Standards for PR (BTS, 2014), the NICE COPD Guidance and quality standards and the National Respiratory Audit Programme (NRAP).

To ensure all staff and students operating within the Pulmonary Rehabilitation Team follow the correct processes and clinical procedure outlined within this Standard Operating Procedure.

2 Aims and Scope

The aims of this standard operating procedure for the Pulmonary Rehabilitation Team are as follows:

- Patients will be offered PR with a Medical Research Council (MRC) Dyspnoea score 3-5. Patients who are MRC dyspnoea score of 2 who are functionally limited by breathlessness (BTS 2014).
- Patients with MRC 1/2 to be offered PROMOTE.
- It is recommended that all standard PR patients are offered a place within 3 months of receipt of referral.
- For all patients referred for Early Rehabilitation (ER) (Post Discharge Fast Track) to be contacted and offered home or clinic appointment within 48- 72-hours of being discharged if on a Friday.
- It is recommended that patients hospitalised for acute exacerbation of COPD (ER patients), should be offered pulmonary rehabilitation at hospital discharge and to commence within 30 days of receipt of referral.
- To ensure a firm diagnosis has been obtained and the patient has no contraindications for and is motivated for the Pulmonary Rehabilitation Programme.
- Pulmonary rehabilitation is offered to individuals with a variety of respiratory conditions other than COPD that effect activities of daily living, such as Bronchiectasis, Interstitial lung disease (ILD), Lung surgery pre and post, Lung Cancer and Asthma, however, respiratory consultant MUST refer Asthma patients.
- National NHS England ratio for pulmonary rehabilitation provisions is 1:8. However, due to the early rehabilitation, complex, oxygen and long-covid patients attending pulmonary rehabilitation groups, we do recommend a minimum 1:4 staff ratio, this will further increase if patients require 1:1.

3 Absolute Contraindications to Pulmonary Rehabilitation

- Unstable Angina.
- Recent MI <6/52.

- Recent CVA <6/52. TIA precautionary, must be medically optimised
- Unstable/Uncontrolled Arrhythmia.
- Uncontrolled Epilepsy.
- AAA>5.5 cm - require consultant/GP clearance (no resistance training).
- Acute +/- or unstable left ventricular failure (LVF) and Cor-Pulmonale.
- BMI of 16 or less.
- Severe or uncontrolled tachycardia over 120 bpm.
- Resting BP \geq 180 Systolic.
- Musculoskeletal or neurological condition which will limit patients' ability to exercise e.g. Severe OA or peripheral vascular disease.
- Patients who have significant cognitive or psychiatric impairment that would lead to the inability to follow simple commands in a group setting.

4 Home Rehabilitation Process

Following the triage process or following pre-assessment, it is determined by clinician or the referrer requesting a home assessment that the patient is more appropriate for home rehabilitation and is placed on home visit caseload.

Home rehabilitation can be offered during pre-assessment clinic if this intervention is more appropriate, or if the patient has a preference over group settings.

- A Clinician or appropriate Technical Instructor to review home visit caseload and arrange home visit.
- Completed initial assessment either therapy assessment sheet or technical instructor.
- Home rehabilitation consists of 6 weeks, x1 weekly supervised visit and expected x1 unsupervised exercise session.
- Discuss and document disclaimer.
- Complete Pre outcome measures at home: Standard list: Sit to stands in 1 minute, CAT score (COPD patients), HAD score and EQ-5D-5L. Other outcome measures can be added if clinically appropriate, such as grip and quadricep strength (using dynamometer if appropriate), SPPB.
- Outcome measures and field walk test: ISWT can be completed at the Centre if patients prefer to attend.
- Home sessions are individually tailored from the problem list and patient goals.
- Education to include topics covered in face-to-face PR program, via QR codes/YouTube/ written copies, handouts and staff delivery.
- Exercise diary to check unsupervised sessions.
- Discuss appropriate sign posting /onward referrals.

- Complete post-outcome measures (standardised as pre).
- Assessment and issuing of equipment if appropriate and patient engaging with home rehabilitation. If the patient is not appropriate for home rehab or declines input, onward referral to community therapy if equipment needs identified, unless unsafe and walking aid required.
- Identify if OT input required.
- Goals reviewed and achieved?
- Encouragement for long term lifestyle change and community exercise classes.
- Discharge letter summary to GP and discharge from service.
- To be included in NRAP data and details to be added to relevant list.

Please refer to Appendix 3 for pathway.

5 PROMOTE Process

PROMOTE is an educational and information session for newly diagnosed or highly functioning (MRC 1-2) patients with COPD or patients with a confirmed respiratory condition. The aim is to prevent disease and symptom progression and to ensure patients remain as active and independent as possible in managing their lung condition.

- MRC 1/2 or patient chooses PROMOTE intervention.
- Patient placed on PROMOTE caseload and designated T.I to review every 3 months and to contact to offer out-patient appoint either 1:1 or group format or home visit.
- Initial appointment to discuss individual needs to identify education sessions/resources toolkit required. These include breathlessness and management, exercises energy conservation, sleep and relaxation (all the education topics covered during PR programme).
- Outcome measures EQ-5D-5L completed to establish patient self-rated health.
- Onward signposting/ referrals identified – e.g.: thrive, Cente4, Continence team.
- Equipment is NOT provided and if identified by TI an onward referral to community therapy is completed.
- Follow-up call or visit if required to summarise intervention.
- Discharge summary letter to GP and discharged from care.

Please refer to Appendix 5 for pathways.

6 Referral Process: Competent Clinician

Referral pathways are via three patient pathways, either electronically through SystemOne, referral forms sent to generic email address at cpg.hopespecialistservice@nhs.net or via post.

(a) Outpatient referral pathway: This refers to referrals for outpatients from all members of the primary and secondary care health care teams – refer to Appendices 1, 2 and 3.

(b) Post exacerbation referral pathway: These are patients that have been recently admitted due to AECOPD and wish to undergo pulmonary rehabilitation following their discharge from hospital – refer to Appendix 4.

7 Assessment of Patients for Pulmonary Rehabilitation

All patients referred to the Pulmonary Rehabilitation Service will initially be offered a comprehensive one-to-one assessment by a member of the team of clinical specialists in Pulmonary Rehabilitation. This will include a review of the patient's relevant medical and social history, an assessment of their current level of exercise performance and health status. Once this has been completed the patient is able to commence the pulmonary rehabilitation programme as appropriate.

7.1 Exercise Testing

Inclusion criteria:

- Any person without any contraindications absolute or relative to exercise testing as listed below in the Exclusion Criteria.

Exclusion Criteria:

Absolute Contraindications:

- A significant change in the resting ECG suggesting infarction or other acute cardiac events.
- Unstable angina
- Recent CVA <6/52
- Uncontrolled ventricular dysrhythmia that compromises cardiac function
- Third-degree A-V block
- Acute congestive heart failure
- Severe aortic stenosis
- HOCM
- Angina < 1 month post - PTCA/stent, post-CABG
- Known left main stem stenosis
- Suspected or known dissecting aneurysm
- Active or suspected myocarditis pericarditis
- Thrombophlebitis or intracardiac thrombi

- Recent systemic or pulmonary embolus
- Acute infection – Commenced Antibiotics and/or steroids in the last 1-2 days

Relative Contraindications:

- Left main coronary stenosis
- Resting diastolic blood pressure > 100 mm Hg or resting systolic blood pressure > 180 mm Hg.
- Moderate stenotic valvular heart disease
- Known electrolyte abnormalities (hypokalaemia, hypomagnesaemia)
- Fixed rate pacemaker
- LBBB on ECG
- Angina < 1 month post – MI
- Frequent or complex ventricular ectopy
- Ventricular aneurysm
- Cardiomyopathy, including hypertrophic cardiomyopathy
- Uncontrolled metabolic disease (e.g. diabetes, thyrotoxicosis, or myxoedema)
- Chronic infectious disease (e.g. mononucleosis, hepatitis)
- Neuromuscular, musculoskeletal or rheumatoid disorders that are exacerbated by exercise
- Advanced or complicated pregnancy

(Adapted from American College of Sports Medicine – 2000)

- Increment Shuttle Walk Test

All patients meeting the inclusion criteria for the exercise component of PR will perform the Incremental (Singh et al, 1992) Shuttle Walking tests (refer to ISWT SOP) during the assessment. The outcome of these tests are used to calculate an individualised training prescription for each patient.

7.2 Assessment of Quadriceps Strength

Quadriceps strength of both legs is measured using a handheld dynamometer, unless contraindicated by osteoporosis, skin integrity or musculoskeletal reasons – refer to Quadriceps Muscle Strength Testing and Exercise Prescription SOP.

7.3 Assessment of Health Status

During the assessment, patients will complete a range of validated health status measures. These currently include:

- (a) Chronic Respiratory Disease Questionnaire Self-Reported (Williams et al 2001 & 2003)
- (b) Hospital Anxiety and Depression Scale (Zigmond and Snaith 1989)
- (c) COPD assessment Test (CAT) (Jones et al 2009)
- (d) EQ-5D-5L Source EuroQol Research Foundation. EQ-5D-5L User Guide, 2019. Latest version available from: <https://euroqol.org/publications/user-guides>

- (e) General Anxiety Disorder – GAD 7 (Spitzer et al 2006)
 - (f) Patient Health Questionnaire PHQ 9 (Spitzer et al 1999)
 - (g) Short Physical Performance Battery (SPPB) (Guralnik et al 1994)
8. Pulmonary Rehabilitation Programme

8 Programme

8.1 Programme Organisation

The Pulmonary Rehabilitation programme runs as a cohort programme every 8 weeks, twice weekly and rolling programme. Each session lasts for 2 hours with on average one and a half hours for exercise training and 30 minutes for the education programme. The cohort group runs for 16 sessions over 8 weeks, based at Val Waterhouse Centre and the 'rolling' programme, patients attend for 12 sessions, twice a week for six weeks. Patients then attend for a one-to-one discharge assessment and are given a written discharge plan, within a 2 week time frame following completion of PR.

8.2 Exercise Testing

Patients receive both aerobic and resistance training, twice weekly. Exercise training is individually prescribed and progressed from physical performance, health related questionnaires and patient goals obtained at baseline problems. Continuous and interval aerobic training are prescribed.

Walking training intensity is individually prescribed at a speed equal to 85% of the predicted VO₂ peak calculated from the Incremental Shuttle Walking Test completed in the initial assessment. A target intensity of 60% of peak work rate is regarded as a minimum for endurance intensity. The aim is to accumulate 30-60 minutes per session aiming for 20-30 min of continuous activity. Patients are provided with a home exercise diary so they can record their progress. Patients' progress is reviewed throughout with individual goals set in mid-session.

Patients are encouraged to complete an individualised home diary every day and one unsupervised home strength training session per week.

9 Procedure for Pre-Assessment Clinic Screening

9.1 Role of the Therapist (B6/7 Physiotherapist/Occupational Therapist)

- Check SystemOne to ensure compliance to patients National Data Opt Out (NDOO).
- Patients NDOO to NOT complete NRAP data.
- Discuss overview of the service and principles/commitment to PR programme.
- Consent to Ax following overview of clinic assessment, include explanation of consent to sharing.
- Document CPG consent section.

- Pressure leaflet discussed and issued.
- Complete respiratory assessment electronically on SystmOne or paper format (as a last resort and later scan to SystmOne) to include blood pressure, pulse rate, pulse oximetry, height, weight and BMI.
- If BMI <16 not appropriate for standard pulmonary rehabilitation. To offer alternative interventions (E.G. home visit for patient management plan/PROMOTE).
- BMI 16-18 offer and advise dietetic referral and monitor weight weekly.
- At halfway (week 4) if weight reduces (either unintentional or intentional weight loss) PR may be postponed until weight stable. If weight drops below BMI 16 to stop PR immediate effect and potentially discharge. Onward referral with consent.
- If BMI <16 or >30 offer referral on to Dietetics.
- If pulse oximetry indicates SpO₂ <92% at rest (in accordance with NLaG oxygen (O₂) Protocol and Referral Form) to consult with respiratory nurse specialists at DPoW. To provide patient with oxygen information.
- If patient demonstrates high levels of anxiety +/- or depression >11 to continue to complete GAD7 (anxiety) PHQ9 (depression), if appropriate to do so or has had hospital admission due to COPD within last year consider referral to Open Minds for cognitive behavioural therapy, if appropriate.
- If further intervention is required that cannot be provided by the Hope Specialist Service, or the patient is inappropriate for pulmonary rehabilitation, refer back to the GP/referrer with rationale and appropriate recommendations. Update the patient and SystmOne notes for discharge summary.
- Physical Assessment to be completed including Cx Spine, Upper Limb and Lower Limb ROM and Strength. Lx Spine ROM, neuro screen, balance if indicated. Further MSK Assessments if required, will be undertaken during the course.
- To complete 'Special' questions and 'Red Flag' questions.
- Special questions around hyperventilation/Nijmegen questionnaire if indicated.
- To plan and undertake Balance assessment, if indicated as falls risk.
- Assessment of physical capabilities for exercise, to ensure individually tailored targets.
- Auscultation of the chest (physiotherapist)
- Refer to other disciplines as required (internally/externally).
- To follow up any ongoing or previous health issues that may affect ability/safety to exercise with appropriate staff e.g., controlled epileptic fits, cardiac history etc.
- Patients have to medically optimised prior to attending PR.
- If not appropriate for pulmonary rehabilitation, consider alternate interventions, better breather, PROMOTE and home rehab, if not absolutely contraindicated. Clearly documenting rationale for exclusion.
- If patient MRC 5b then discuss home rehab/better breather and perform SPPB/STS as outcome measures - consider discussion on advance care plan, to determine if previous discussion had.

- Clinician to complete body map/targets to include problem list, considerations, evidence base individual exercise programme - on T:/drive. To be attached to SystemOne post group.
- To add patient to list folder for NRAP
- To ensure patient is safe and has no contraindications for ISWT.
- Clinician to complete handover sheet for PR team prior to group commencing on T:/drive. To include PMH, considerations, 1:1, walking speed, OT/PT specific input.

9.1.1 Blood Sugar Monitoring

- Diabetes must be stable.
- Ensure patients have eaten prior to exercise
- Patients monitor own blood sugars and blood testing kits, if appropriate.
- Patients to have emergency sweets etc, if at risk of hypoglycaemia.
- Patients must inform staff/lead clinician if experienced any hypoglycaemia in last 24 hours.

9.2 *Role of Band 4 Technical Instructor assisting in Clinic and paperwork to be completed:*

- Discuss and complete Disclaimer electronically.
- Describe the Incremental Shuttle Walk Test (ISWT) and follow SOP/protocol.
- To include practice run for ISWT, unless clinically inappropriate and to document on SystemOne and Audit spreadsheet
- Clinicians' decision to determine who leads ISWT.
- To complete all pre-test information or supervise Volunteers documentation.
- Scores from the questionnaires should be checked and calculated correctly and then all relevant information copied across onto the summary box which is on the patient's body map on the T:/drive.
- TI/Experienced Rehab Assistant is responsible for checking and signing off all documentation, including 'buddies' questionnaires.
- TI/Rehab Assistant to highlight HADS to clinician if 11 or above, and input in the OT section on the T:/drive.
- Admin team to update PR Audit excel sheet.

10 Outcome Measure Procedure

- Measure course – 2 cones to be 9-metres apart from back-to-back (marks in corridor).
- Ensure a chair is positioned at both ends of the course and explain to the patient to sit down when needed (or chair can be brought to patient).
- Ensure all sections of pre-assessment chart are completed.

- To complete objective muscle testing of quadriceps bi-laterally, 3 attempts with 10 seconds recovery in between each attempt– if deemed safe and appropriate by clinician. Highlight best of 3. Follow the Quadriceps Muscle Strength Testing and Exercise Prescription SOP.
- Patients should not undertake ISWT with acute chest infections requiring antibiotics and/or steroids in last 1-2 days. Clinician decision post 2 days of medication.
- Commence practise ISWT – discuss the standardised procedure with the patient and pay recording.
- Lengths to be recorded by buddy/staff and recovery time recorded, including sats, HR and BORG at each level.
- At least 5-minutes rest and complete ‘Sit to Stands’ in 1-minute - following protocol/SOP.
- Complete BP post ISWT/STS test.
- Complete Chronic respiratory questionnaire (CRQ’s)/COPD Assessment Tests (CAT)/Hospital Anxiety and Depression Score (HADS). Standard instructions used (CAT only for COPD patients).
- HADS score if 11 or more on anxiety to complete GAD7, Depression 11 or more to complete PHQ9. Use of clinical reasoning with these tools, as patients may currently take anti-depressants or be under Open Minds/Navigo Mental Health Services etc. Clinician decision.
- Maximum 30-minutes rest prior to undertaking the second ISWT, unless clinically inappropriate and document reasons.
- BP retaken prior to second ISWT. Complete ISWT as standardised instructors above/via SOP. Best result taken of the ISWT.
- BP retaken when breathing back to normal.
- Patient agrees to realistic, SMART goals.
- Patient asked if they feel ok to leave.
- Offer the patient a place on the course and ensure a course appointment letter (with dates/times etc.) is given or is sent via the postal service prior to the course commencing.
- Qualified therapist to complete Problem Chart, 1st target sheet and staff handover sheet.

10.1 Procedure if unable to complete one length of ISWT

- If the patient is unable to complete one length of IWST, undertake second ISWT to establish if one length can be achieved following learned effect. If unable to revert to SPPB Protocol and consider performing this if the patient is low level. Could consider Home Rehab/ and better breather as more appropriate options. Refer to Appendix 3 and 4 Pathways.

11 Pulmonary Rehabilitation Patient Structure

- Welcome and introduction to the Team Members/Volunteers and provide name tags for the patients.

- Pulse oximeter put in-situ, although some patients may not require one.
- Target sheet explained.
- Name, NHS number, DOB and date and session number completed.
- Type of day completed.
- BP, HR and SpO2 pre-session recorded.
- GTN and inhaler (in date and checked) brought to every session. If the patient is prescribed these medications, then to be brought to every session. To be visually checked and documented at each session.
- Exercises are explained by staff to patients during the first educational session (targets to be set in collaboration with patient problem list/goals).
- Targets will be set in accordance with evidence-based practice, BTS guidance by competent staff members and clinical rationale by experienced clinician
- SpO2 to be recorded pre each exercise (percentage of oxygen in your blood, big number on display). This may discontinue once it is established it is appropriate and documented by clinician. If peripheral perfusion poor, then increased reliance on other clinical signs of hypoxia will be indicated.
- Record quantity of exercise, count, time or distance.
- Record post SpO2, if able.
- Explain individual comments at the top of targets sheets for patient/staff information e.g., GTN in-situ, 1:1 required. Staff to check and initial pre-exercise.
- BORG explained again and aim to achieve BORG 2/slightly breathless in first week (walking is the exception as this will be pace led from ISWT) Once able to control breathing to aim for BORG 3/moderately breathless throughout the sessions. Towards the end of the course to progress to BORG 4/somewhat severe and sometimes BORG 5/Severe, if appropriate, by clinical judgement by physiotherapist.
- Encourage ethos to patient's need to becoming SOB in a managed way - to make your breathing muscles work, to make them stronger so that you can improve breathing in functional terms progress.
- Saturations of 79% patients MUST stop exercising until saturations rise to >90% or pre-exercises level.
- Comments section to be completed if appropriate, this is to capture how patients have felt/feel post exercise, for example, if it was joint pain rather than SOB that stopped you. Any feedback on their progress, any factors affecting their rehabilitation potential, which could include psychological barriers or aides with memory (relaxation techniques or personal issues).
- BP, HR, SpO2 and any comments to be recorded post session.
- Structure of session to be explained:
 - Warm-up
 - Exercises with rest/recovery

- Cool down
- Education:
 - Informed importance of breathing through movements and not holding breath.
 - Maintaining good posture is important.
 - Complete leg exercises followed by arm exercise.

- UTA/DNA Policy re-iterated, as previously discussed at pre-assessment. Must attend minimum 10 sessions OR at Lead's discretion to complete post-test in most cases.

- DNA's – If patients do not attend two consecutive sessions without reason, we may discharge. See separate section.

11.1 Warm Up / Cool Down

- Warm-up:
 - Preparing heart and muscles ready for exercise.
 - Pain free.
 - Stretching to wherever is comfortable.
 - Slow, controlled movements.
 - To do all movements unless informed by clinician not to.
 - Warm-up can be done in standing or sitting dependent on clinical assessment.

 - CSp: Ext/flex/rot.
 - Sh Girdle: circles backwards 'open up chest' and relaxes muscles around the shoulder, which tend to get over used in people with breathing difficulties.
 - Pectoral/chest stretch – 30 seconds hold x2.
 - TSp/LSp Rotation, arms folded across chest to wherever is comfortable.
 - Hands on tummy, above belly button at elbow level: abdominal breathing x 2 breaths, relaxing stomach out as breath in.
 - Marching with high knees on the spot, holding onto something, if necessary.
 - Marching on spot, bringing heels to buttock
 - Individual exercises completed as determined by physiotherapist following pre-assessment.
-
- Cool down:
 - Cool down – individually post session.
 - To follow the same method as the warm-up routine.

11.2 Education Sessions

- Breathing Control- (breathlessness and management)
- PR and Exercise
- External Services for long-term lifestyle change/support groups(Thrive, Age UK)
- Chest Clearance
- Respiratory disease education
- Medication
- Managing Exacerbations and confidence in managing

- Smoking Cessation
- Occupational Therapy/Functional Activity (energy conservation)
- Patient Review/Goal Setting
- Dietary education
- Breathlessness and Mood, includes anxiety management
- Relaxation and Sleep
- Advanced Care Planning
- Osteoporosis
- Continence
- Life after Pulmonary Rehabilitation

Note: Other relevant leaflets available, such as oxygen therapy / NIV / Sex and Relationships / managing travel advice.

- After 2 sessions targets prior to each group are set to encourage patients to push into moderate shortness of breath. Patients are informed that they can beat the targets and they may also struggle to meet some targets. Targets set using pre and post session BP pre and post exercise saturations and BORG scale and are only an estimate of a normal day.
- Prior to the last session, appointment to be arranged to complete post-testing. Same venue used as pre-testing due to standardisation, and CPG and service feedback forms to be completed.

11.3 Post Testing Procedure

- Post-tests must be completed 2-weeks post the Pulmonary Rehabilitation Group, and if actively infective (commenced on medication 1-2 days), do NOT complete physical post-test and re-arrange if able. Clinician decision dependent on patient presentation and symptoms.
- For those who have completed the Pulmonary Rehabilitation course attending 10 sessions (Lead's discretion).
- Completion of all outcome measures, same outcomes as on initial assessment: (CRQ's, HAD, CAT).
- Ensure walking aids are used for ISWT/SPPB as per initial procedure.
- Agreed goal reviewed.
- Quadricep muscle testing completed bi-laterally. Height, weight and BMI measured.
- BP, HR, Sats recorded throughout as per pre-assessment.
- Patients issued with PR certificate, individually tailored exercise programme including regression/progression methods, long-term goals. Booklets also include resources/QR codes for recap of educational sessions. Individually programmes are updated to SystemOne.
- Patient feedback completed digitally (service specific and organisationally).
- Patient informed of results as compared back to pre-tested and certificate/diary issued.
- TI/RA to update service audit and ensure all post-testing paperwork is legible and signed.

- Later and low priority to be scanned onto SystmOne and shredding (following scanning protocol and ONLY staff that are competent – see staff competencies).
- Patient encouraged to return to PR+ or activities at home/local agencies on a weekly basis.
- Patient to confirm they feel OK to leave.
- Staff must sign off testing sheets in line with the Records Management Policy, which can be located on SharePoint Document Store.
- Clinical lead or qualified to complete discharge letter and any onward referrals.
- Appropriate clinician to complete NRAP data and completion rate percentages including reasons for 'dropouts.'
-

12 Follow-up who DNA a Clinic/Pulmonary Rehabilitation Session

- If patient DNA's clinic appointment, Clinical Lead or TI, if deemed appropriate by Lead, to contact the patient to ascertain reason and to rearrange another appointment, a maximum of 2 appointments offered (further appointments at discretion of clinician).
- If patient's UTA via reception, then the Admin Team to re-book new appointment slot and document on SystmOne, and then to inform the relevant clinician.
- Post sessions, if a patient has not contacted Hope Specialised Service to inform us they are not attending session and this has not been documented or tasked to relevant staff, they are UTA, this should be marked as an DNA on the register.
- Clinical Lead or experienced Technical Instructor to contact the person if they DNA on 2 consecutive occasions.
- If the person does not have a justifiable reason for missing x2 sessions, they should be discharged from the service: document this on SystmOne and discharge from service(s), completing discharge letter and reasons for discharge.

13 Rehabilitation Plus

Rehabilitation plus is an independent exercise group led by a Band 4/Technical instructor (T.I), based at Val Waterhouse Centre and Immingham Christian Centre. The purpose of rehab plus is to encourage and provide an environment where patients can continue to exercise and improve both physically and quality of life.

- Explanation that PR + is available on completion of the course and refer patients back to 'life after rehab' booklet to support the lifelong commitment to exercises.
- Other physical/social/emotional groups activities should be encouraged, and sign posted.
- Staff ratio (TI) 1:15 and staff member in building (Band 3/4) 16 or more 2:16 (Band 3/4).
- Prior to attending rehab plus, patients are required to contact admin team to book an induction.

- Patients have to be completely independently with mobility/ability to undertake exercises/access equipment OR must be accompanied by family/carer/friend to support/supervise/assist if applicable.
- Inductions are completed by TIs who undertake/reiterate service processors, such as fire evacuation, risk assessment, disclaimers.
- Patients (final) target and body map from PR group are accessed to provide a baseline for their first session in rehab plus.
- Patients are risk assessed for equipment and can only use equipment previously used on group. Patients will require further risk assessment from TI for equipment progression.
- Patient files will contain disclaimer, body map, targets and tailored exercise programme.
- Structure explained – available up to twice weekly, capacity dependent and includes 2-weeks advance booking. During busy periods, availability will be reduced to once weekly to ensure adequate staff ratio, patient safety and to ensure fairness/inclusiveness to all new patients.
- Sessions are less formal, supervised by TI/or training equivalent, but opportunity to use equipment independently, no targets set by physiotherapist but encouraged to set own targets/goals for maintenance and progression of exercises as required.
- No formal monitoring of BP/Saturations during PR+, although for safety some patients will be monitored on an individual basis.
- If patients do not attend rehab plus within 3 months of completing PR they will need a health screen questionnaire by TI to ensure no medical/relevant changes. This can be reviewed by clinician if indicated by TI. If no longer appropriate will be advised to not attend and to seek GP for re-referral to service.
- If patients undertake a significant change in medical condition (for example recent CVA/Myocardial infarction/mental health crisis point) either TI or clinician will discuss they are currently not safe to attend independent exercise programme and may be advised to seek GP to gain re-referral if appropriate.
- Patients accessing rehab plus are technical no longer under our care and would have been discharged from SystemOne. Therefore, consent is required to access SystemOne if relevant documentation included.

*Refer to separate Rehabilitation Plus Standard Operating Procedure (SOP).

14 Safety

All clinical staff have completed a gym induction, including equipment use with competent trainer and are safe to risk assess patients on/off all equipment.

Walking practice outdoors away from gym will require two staff with mobile phones. Must be minimum band 4 level and can include a band 3 (rehabilitation assistant) or experienced volunteers as the second person.

Walking practice in annex car park must be supervised by at least one clinical staff (Band 3 or above). This will be risk assessed by the staff/clinical monitoring walking.

Cones will be placed at entry to car park to highlight to drivers entering the car park to slow down and wait for cones to be removed, due to pedestrians present.

During PR classes, a band 4 or above must be present in the gym. If the clinical lead steps up the T.I must be present and aware to temporarily lead short-term.

15 Managing Pulmonary Exercise Groups During Extreme Weather

15.1 Scope

To ensure the safety of patients and staff in conducting pulmonary exercise sessions in room temperatures exceeding 23 degrees. It is the responsibility of the staff and clinical lead to monitor the temperature of the rooms, within the community, prior to exercising commences, to modify exercise programmes if indicated or escalate concerns to duty Band 7.

It is the responsibility of the duty Band 7 to make a decision to cancel classes and that all staff are aware of the procedure relating to how patients are managed.

The above is not applicable at Val Waterhouse Centre, due to air conditioning system. However, if the indoor temperature exceeds 28 degrees all classes could be cancelled.

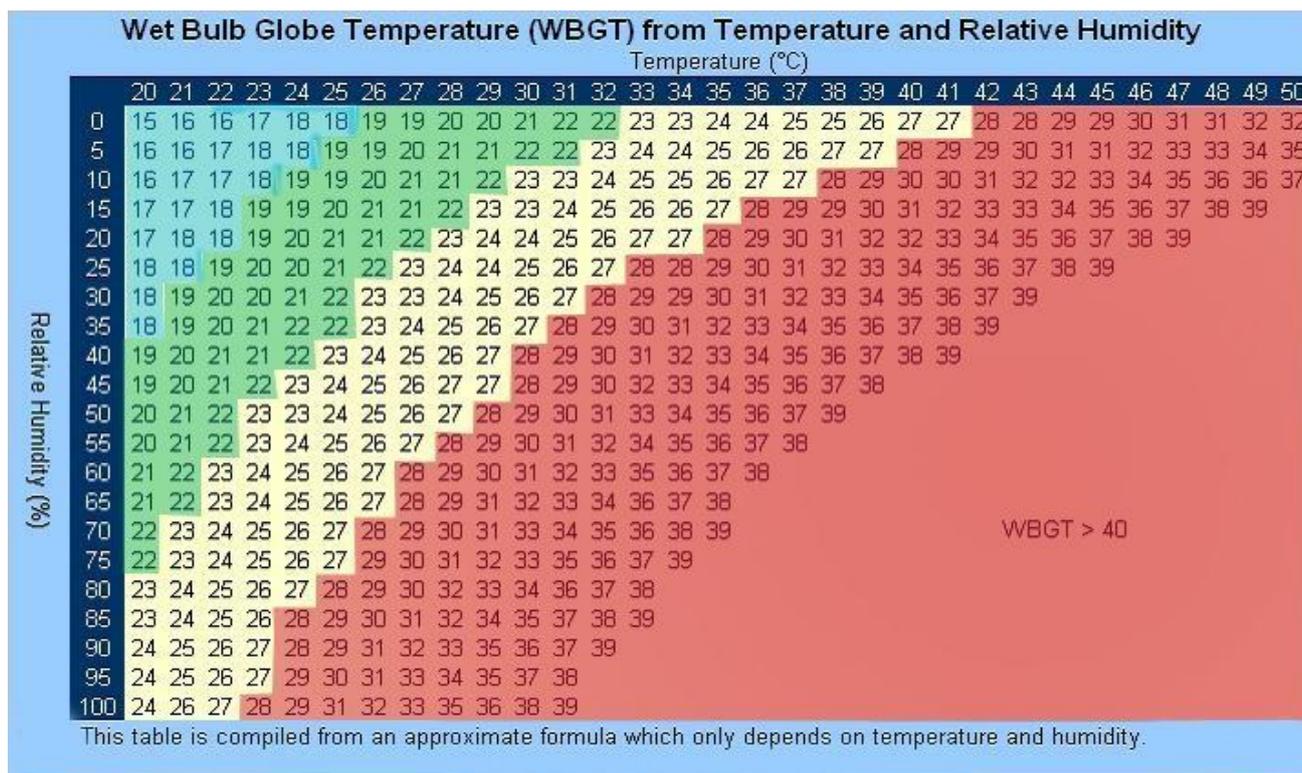
Temperature 23-28 degrees:

- Admin or clinical staff to identify forecast/room temperatures as far in advance as possible.
- If temperature is above 23 degree, to alert duty Band 7 and discuss group modifications.
- If temperature above 23 degrees, and/or humidity is above 65%, an adapted exercise programme can be prescribed to ensure patients are working at a lower level but still beneficial to their cardiorespiratory health.
- Patients will be encouraged to self-monitor symptoms and breathlessness via BORG scale. Observations (HR, BP, oxygen saturations) will be checked and monitored by clinical staff to determine if safe, using clinical reasoning.
- If patients consent to exercise, they need to be informed of the change/adapted programme. Reducing exercise intensity, duration, increasing rest periods.
- Patients will be encouraged to increase fluid intake and water will be available throughout.
- Patients will be given the option to participate or not and to start to cool down at any time during the session, if they feel fatigued etc.

Temperature 29 degrees or above:

- If temperature is above 29 degrees and/or humidity is above 65% the duty Band 7 must be informed and the class/transport should be cancelled if there are no possible alternate arrangements or whether the patient risks out way the benefits.
- If class cancelled, clinical staff and admin to update transport driver and patients prior to class commencing.

15.2 Managing Exercise in Extreme Temperatures



As per international WBGT guidance

- Cross reference temperature and humidity to obtain WBGT.

WBGT	RISK OF THERMAL INJURY	ACTION TO BE TAKEN
<18	Minimal	CONTINUE AS NORMAL
18 to 22	Moderate	Encourage extra drinks
>23 but <28	High	Reduce exercise duration to ½. ↑ Drinks (↑ time between exercises to allow this.)
>28	Extreme	Cancel class

- Refer to table to determine course of action if temperature is raised.

- The WBGT measures thermal stress. It is a more reliable indicator than ambient temperature as it takes into account humidity. The higher the humidity, the less likely the chance to cool off through the evaporation of sweat.
- WBGT is not the same as temperature in degrees Celsius, i.e. 35 degrees Celsius 20% relative humidity is approximately a WBGT of 27.6 degrees Celsius.

Sports Medicine Australia Recommends:

- Ideally patient should drink ~ 500mls (2-3 glasses) before exercise.
- During exercise patients should be encouraged to drink 200mls (1-2 glasses) every 15 minutes during activity.
- Following exercise patients should drink more than they are thirsty for. (~500mls is recommended).

16 Associated Documents

CPG SOP – Quadriceps Muscle Strength Testing and Exercise Prescription

CPG SOP – Pulmonary Rehabilitation: 1 Minute Sit to Stand Test

CPG SOP – Incremental Shuttle Walk Test (ISWT)

CPG SOP – Rehabilitation Plus

17 References

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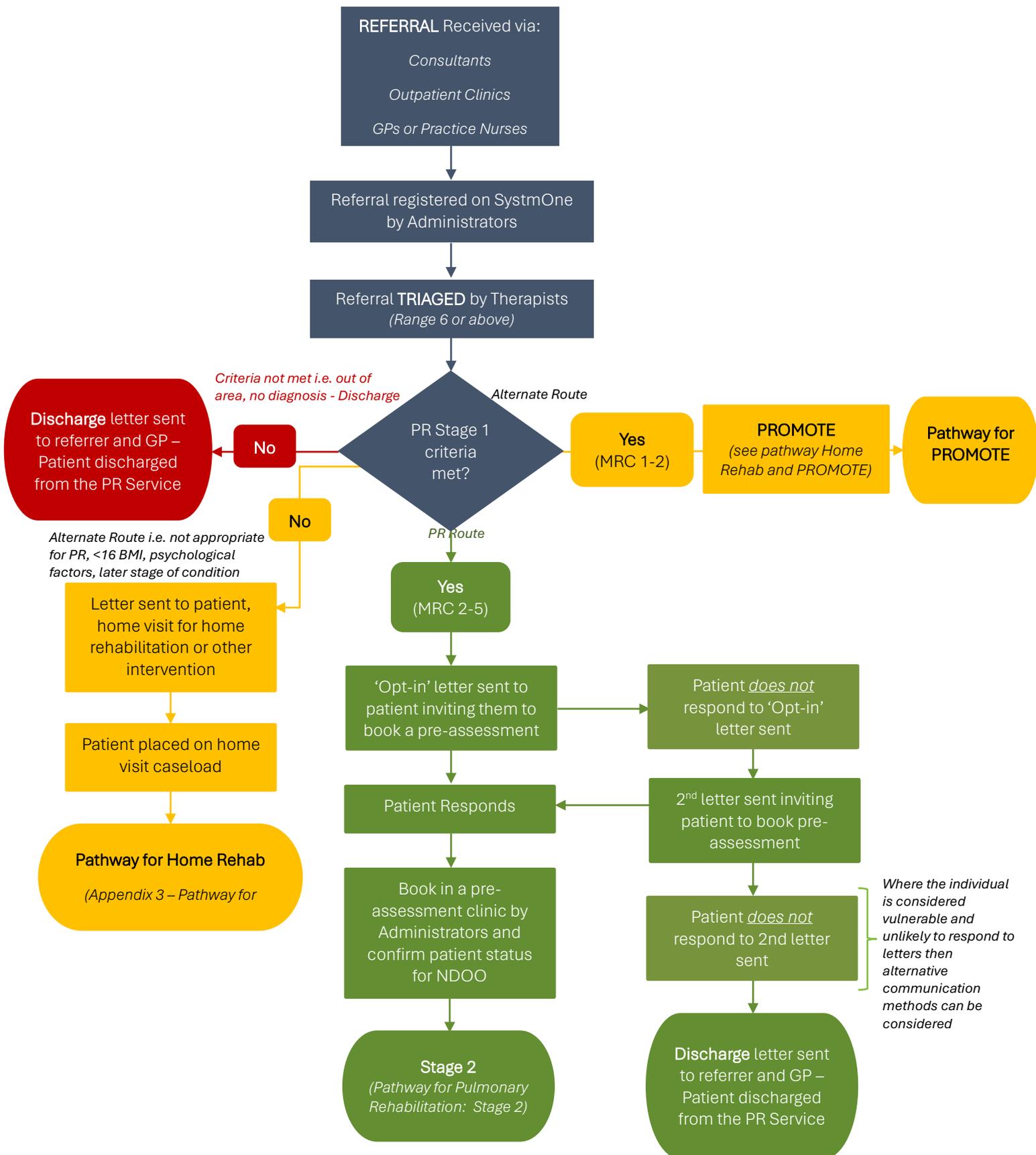
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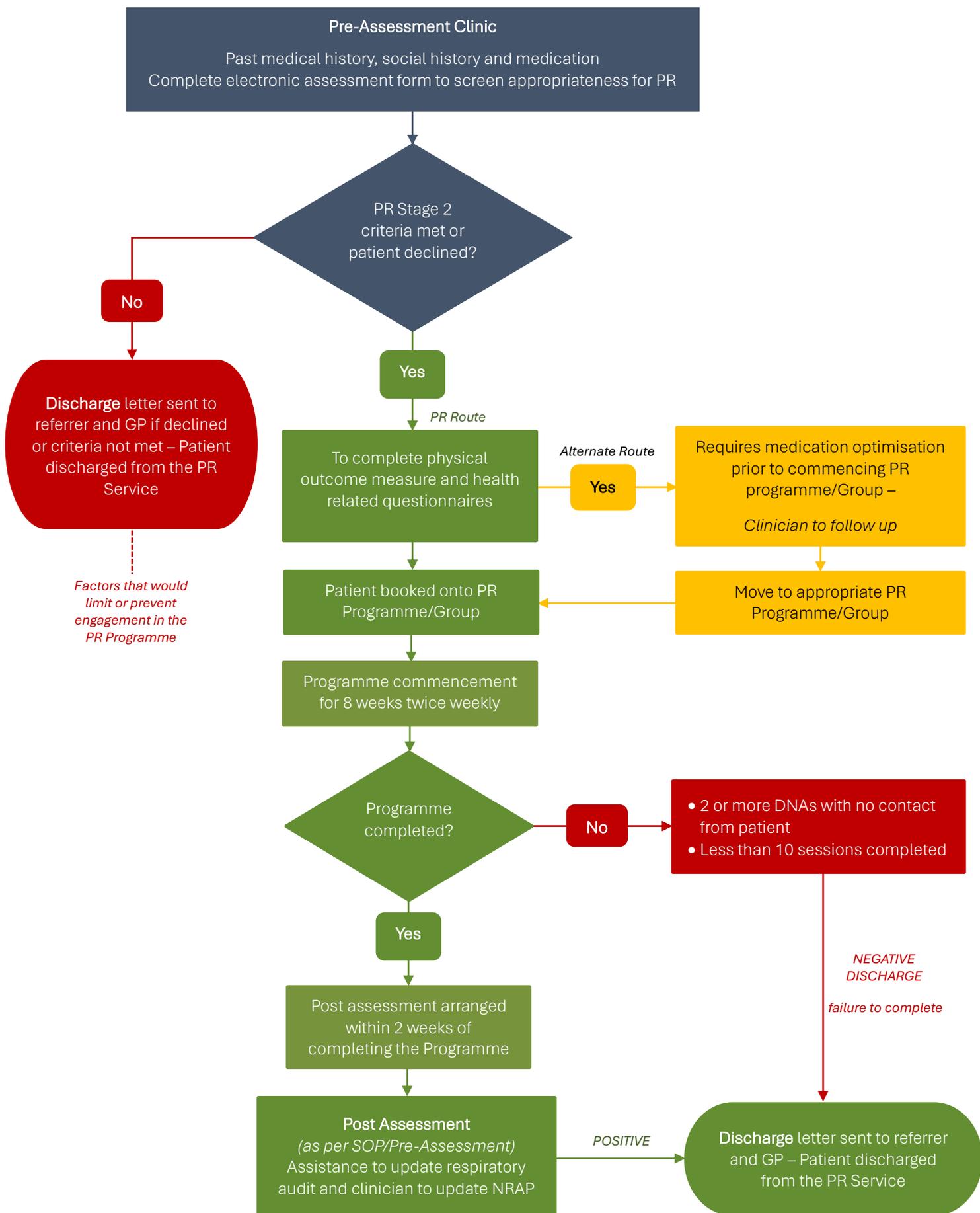
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18 Appendices

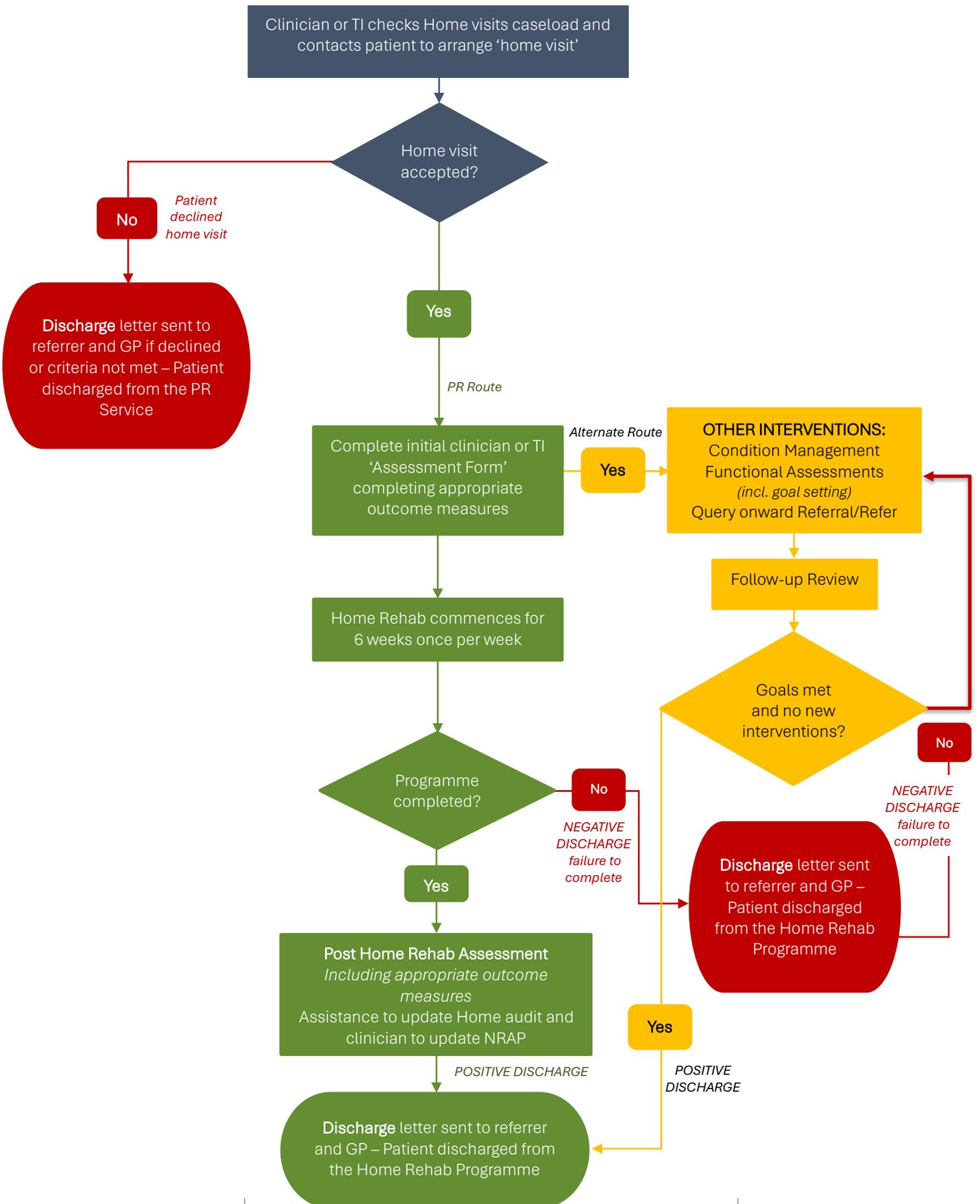
18.1 Appendix 1 - Pathway for Pulmonary Rehabilitation: Stage 1



18.2 Appendix 2 - Pathway for Pulmonary Rehabilitation: Stage 2 (Face to Face or Virtual)



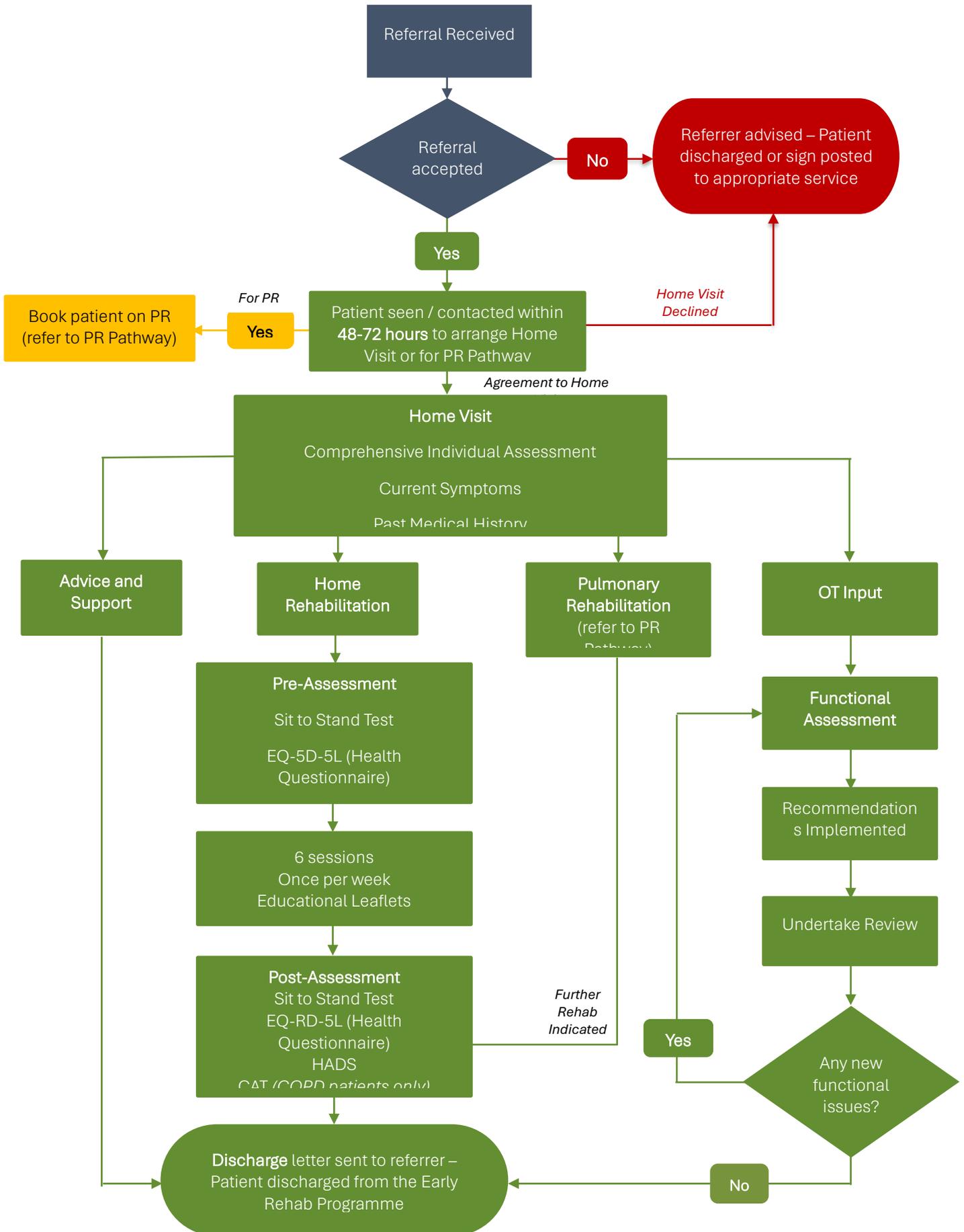
18.3 Appendix 3 - Pathway for Home Rehabilitation



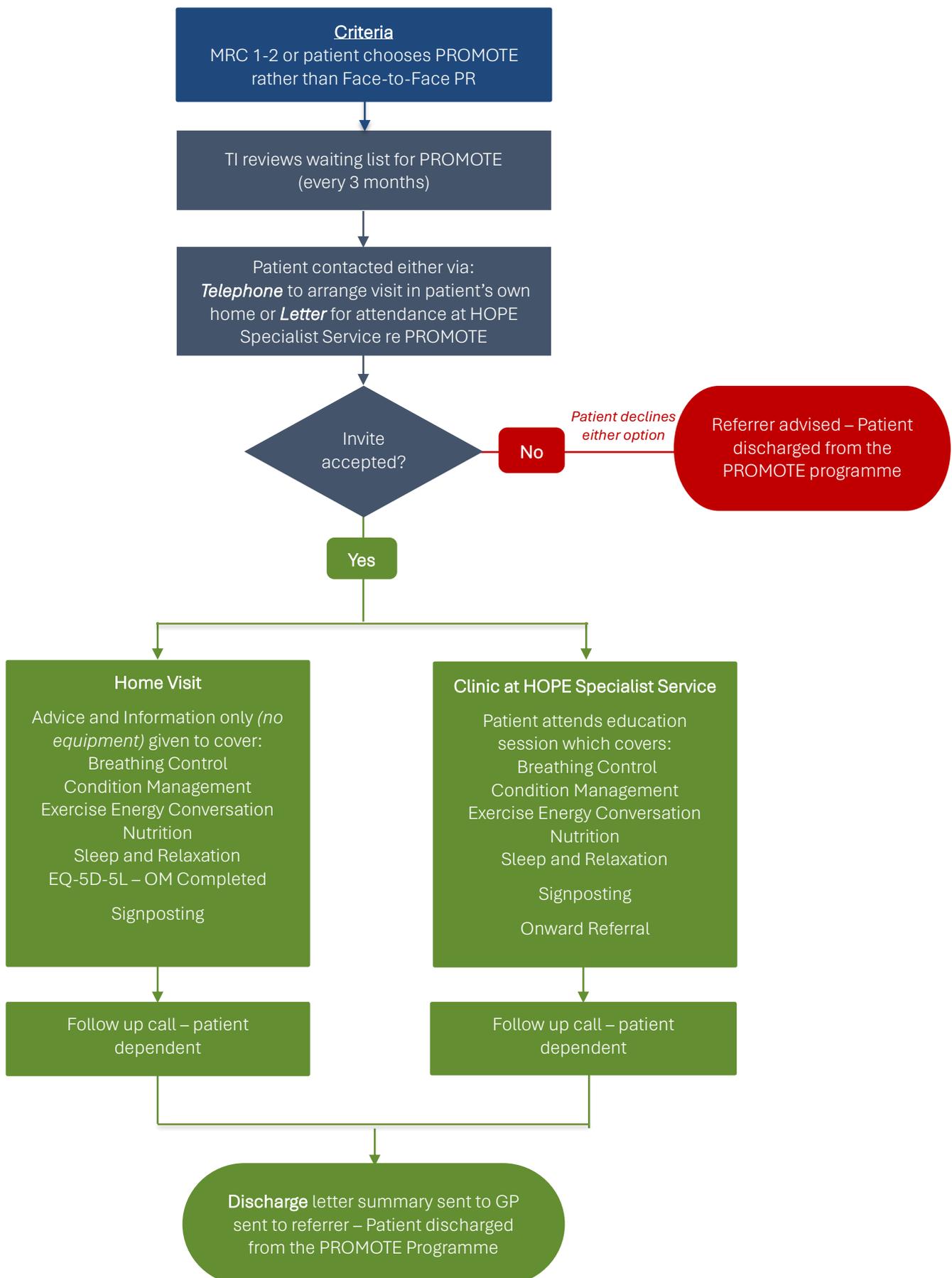
Uncontrolled once printed.

Always refer to the master digital document on the document store.

18.4 Appendix 4 - Pathway for Early Rehabilitation



18.5 Appendix 5 - Pathway for PROMOTE



18.6 Appendix 6 – Disclaimer

Patient Name:

DOB:

NHS Number:

DISCLAIMER

WHILE YOU ARE TAKING PART IN THIS PULMONARY REHABILITATION PROGRAMME, IF YOU:

- FEEL DIZZY
- BECOME SEVERELY SHORT OF BREATH
- NOTICE ANYTHING OUT OF THE ORDINARY
- FEEL ANY CHEST PAIN

STOP IMMEDIATELY AND INFORM A MEMBER OF STAFF

- 1) I have been informed of the above information and agree to stop and inform a member of staff if any of the above symptoms occur.

- 2) I understand that if I fail to attend two successive sessions without good reason and do not inform a member of staff of my absence by telephone prior to the session, I will be asked to leave the programme.

- 3) I hereby give/do not give (delete as applicable) my permission for photographs of myself and information gathered about me during the Pulmonary Rehab programme to be used by Care Plus for the future promotion of the Pulmonary Rehab programme and/or related articles.

- 4) I understand that following an episode of diarrhoea and/or vomiting, I must be clear for 48 hours before attending clinic sessions. If I am unable to attend sessions I will contact and inform staff.

Signed Date

Print Name