



GUIDELINES AND AUDIT
IMPLEMENTATION NETWORK

PILOT: Audit determining if the pulmonary rehabilitation programmes within the WHSCT are tailored to the patients' needs as outlined in the Respiratory Framework

Specialty/service: Pulmonary Rehabilitation Services

Project team

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Western Health and Social Care Trust (WHSCT)

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Executive summary

Background

Pulmonary rehabilitation, consisting of exercise training combined with education and instruction in self-management, is a cornerstone of care for patients with stable chronic obstructive pulmonary disease (COPD). There is a strong evidence base that pulmonary rehabilitation reduces dyspnoea, increases functional exercise capacity and improves quality of life (Waatz et al., 2008). Pulmonary rehabilitation programs reduce acute exacerbations as well as hospital bed days and hospital admissions (Troosters et al., 2010). For these reasons pulmonary rehabilitation is recommended in guidelines for COPD management around the world. Since the current guidelines were published, there has been mounting evidence that the benefits of pulmonary rehabilitation can be extended to new populations with chronic lung diseases other than stable COPD e.g. Bronchiectasis. It has also become apparent that despite the known benefits of pulmonary rehabilitation, only a small fraction of people with COPD ever attend. This challenges us to understand the barriers to attendance and to consider new models that facilitate greater participation.

Barriers to attending Pulmonary Rehabilitation

Between 8 and 50% of COPD patients who are referred to a program never attend, while non-completion rates from 10 to 32% have been reported (Benzo et al., 2010). Transportation and travel are repeatedly identified as barriers to both agreeing to attend a pulmonary rehabilitation programme and completing the programme. Limited physical mobility, inability to use public transport, inconvenient location of the rehabilitation centre and lack of car parking are contributing factors. Those who need to travel for more than 30 minutes to the pulmonary rehabilitation centre are significantly less likely to complete the programme (Klingsberg, 2010). Participants in pulmonary rehabilitation are commonly required to attend an outpatient centre almost twice a week for 8 weeks. This is clearly a significant burden for many people with COPD who have limited mobility and financial resources, but is infrequently considered in the design of pulmonary rehabilitation services.

Competing demands and disruption to established routines has a large impact on the decision to participate in pulmonary rehabilitation (Troosters et al., 2010). This includes conflict with work commitments or caring for other family members. This suggests that a broader range of programme times and models are required. Non-attendance is also more likely if patients do not perceive that their doctor is convinced of the benefits of pulmonary rehabilitation or if the patients themselves do not believe that improvements are likely following the programme (Eaton, 2009; Phuan, 2009). While initial attendance is highly influenced by patient beliefs and perceptions, the ability to complete the programme is affected by physical illness and co-morbidity, including acute exacerbations of COPD and worsening of other medical problems (Seymour et al., 2010). Given the consistency with which this barrier is cited and the large benefits that participation in pulmonary rehabilitation may have in those recovering from an exacerbation, programmes should adopt flexible models that allow re-entry to rehabilitation as soon as patients are medically stable. Depression and current smoking have also been associated with non-completion, highlighting the need for comprehensive pulmonary rehabilitation services where such problems can be addressed (Steele, 2010). The low rates of attendance and completion at traditional pulmonary rehabilitation programmes, together with the increasing focus on community-based care for people with COPD, have renewed interest in the efficacy of community based pulmonary rehabilitation programmes.

Improving Physical Activity in COPD

Compared to healthy controls, people with COPD spend less time standing and more time sitting and lying (Steele, 2010). However, the correlation between physical activity levels and disease stage is not strong and extra pulmonary factors such as systemic inflammation and left cardiac dysfunction play an important role (Troosters et al., 2010). Higher physical activity levels are associated with better clinical outcomes in COPD. Large cohort studies show that engaging in as little as 2 hours of physical activity per week is associated with reduction in the risk of hospitalization and respiratory mortality by 30% (Phuan, 2009; Klingsberg, 2010), although these studies do not tell us whether physical inactivity causes poor outcomes or is simply a marker of worse disease status.

Rationale

Pulmonary rehabilitation should be considered as a component of the management of all disabling chronic respiratory diseases. Ensuring quality control and audit are an important element in the facilitation of this process. The features of a successful rehabilitation programme are that it:

- Is an individually tailored, multi-disciplinary intervention for symptomatic patients integrated in to their overall care;
- Aims to reduce symptoms, improve functional performance, increase participation and reduce health care costs;
- Contains effective, individually prescribed, physical exercise training together with lifestyle and self-management advice;
- Addresses the social and psychological impacts of the disease on the patients and those close to them; and
- Monitors progress with appropriate individual outcome measures and programme quality control (IMPRESS, 2008).

Briefly describe the reasons for undertaking this clinical audit

- To address the potential diversity in the delivery of Pulmonary Rehabilitation Programmes.
- The necessity to standardise care in Pulmonary Rehabilitation Provision.

Aim of the Audit

This audit will determine if pulmonary programmes are tailored to the individual patient's needs as outlined in the Respiratory Framework.

Objectives

- This audit will also determine whether the location of the programme meets the standards set out by NICE guidelines 2010.
- This is an audit to standardise the provision of Pulmonary Rehabilitation Programmes across the Western Health and Social Care Trust (WHSCT) Region and enable harmonisation of future services.

Methodology

The audit will include all patients attending Pulmonary Rehabilitation programmes conducted within the WHSCT, both hospital and community based programmes are to be included. The information has been collected retrospectively from between March 2011 – March 2012, and was identified from the WHSCT Pulmonary Rehabilitation Database.

Key findings

Criteria		Target (%)	<u>N=</u>	Compliance 2012
1	Standard 48 – Respiratory Framework Appropriate referral to Pulmonary Rehabilitation.	80%	Inappropriate referrals not captured on one site	All original referrals were not captured, only those who completed the programme at some level (25%+) were captured on the Southern Sector n=87 referrals (5%)
2	MRC, CATS, BODE, six minute walk	100%	223	MRC not recorded on 4 occasions CATS (Baseline not recorded on 12 base occasions. not recorded on 6 post occasions). BODE (Baseline not recorded on 18 base occasions not recorded on 101 post occasions). Six Minute Walk (Baseline not recorded on 14 base occasions. not recorded on 97 post occasions).
3	Initiation of Pulmonary Rehabilitation Programme. All patients should have 100% Attendance Rates at Pulmonary Rehab Programme.	Establish baseline with a view of increase to 60%.	223	27 patients attended 100% of the Pulmonary Rehab Programme (8.25%).
4	Smoking Cessation Referral rates	100%	50	Smoking cessation offered to 50 patients and 19 patients accepted (38%).
5	Each patient takes part in a tailored programme addressing their individual needs.	100%	223	All programmed have been individualised to accommodate the individual needs of each patient.

Recommendations

Pulmonary rehabilitation is a highly effective intervention that is a cornerstone of care for people with COPD. Emerging evidence suggests that the benefits of pulmonary rehabilitation can be extended to new populations such as patients during or immediately after an acute exacerbation of COPD, and those with other chronic lung diseases. It is clear that many eligible patients do not attend pulmonary rehabilitation and efforts must be made to overcome barriers to attendance related to patients, clinicians and health system organization.

1. In order to maximise the use of resources and time it is suggested that groups of patients [40-50] who are referred for rehab be offered an appointment for an information session in order that they can gain additional information about what the programme entails and allow them to make an informed decision before committing to enter the programme.

2. 'Acute rehabilitation' session should be set up to dovetail with the early supported discharge team and optimise the management of patients discharged from hospital following an exacerbation.

3. Classes should be stratified with respect of an individual patient's functional ability if possible.

4. Dedicated classes should be offered to younger patients with respiratory disease undergoing pulmonary rehabilitation.

5. 'Acute' rehabilitation slots should be incorporated into programme planning to allow patients requiring urgent pulmonary rehabilitation prior to surgical interventions.

6. Underlying depression or anxiety should be treated to maximise numbers of patients participating in pulmonary rehabilitation.

7. All patients being referred should be given an information leaflet on Pulmonary Rehabilitation.

8. All rehabilitation programmes should be audited prospectively with the use of databases.

Clinical audit report

Project title

PILOT: Audit determining if the pulmonary rehabilitation programmes within the WHSCT are tailored to patients needs as outlined in the Respiratory Framework.

Re-audit proposed date: August 2014

The clinical audit was undertaken in:

- *Recognition of and response to Respiratory Framework.*
- *In accordance with the British Thoracic guideline.*

Division/Type of organisation

This audit was facilitated within the Medicine Services and Primary Care and Older People's Directorate in the Western Health and Social Care Trust (WHSCT).

Disciplines involved

The healthcare professionals involved in facilitating the Pulmonary Rehabilitation process include; Doctors, Nurses, Physiotherapists, Occupational Therapists, Pharmacists.

Project lead

Project Lead - *Dr Terry Mc Manus Consultant Respiratory Physician, SWAH (WHSCT).*

Deputy Project Manager –Mary Mc Menamin, Respiratory Co-ordinator, Spruce Villa, Gransha Park

Other staff members involved

Project Team

Name	Job Title/Specialty	Trust	Role within Project (data collection, Supervisor etc)
Dalrene Masson	GAIN: Audit Dept	HSC Trust	Data analysis
Diane Mackey	Audit Dept	WHSCT	Data analysis

Background/rationale

These Pulmonary Rehabilitation standards are central to the Respiratory Framework and this will be used as a benchmark against the provision of pulmonary rehabilitation across the Western Health and Social Care Trust. It is important to acknowledge that there are geographical inequalities within the WHSCT; however the recent appointment of a Pulmonary Rehabilitation Nurse within the southern

sector in the Trust will help to address these inequalities. This clinical audit therefore, was undertaken to establish a baseline of Pulmonary Rehab service provision.

Aim

- ✓ Is Pulmonary Rehabilitation Programmes within the WHSCT compliant with the Respiratory Framework?

Objectives

- ✓ To ensure the Pulmonary Rehabilitation standards implicit within the Respiratory Framework are met.
- ✓ To ensure that all Pulmonary Rehabilitation Programmes within the WHSCT are undertaken in line with BTS guidance.

Standards/guidelines/evidence base

The standards and guidelines that this audit has been compared practice against are encompassed within the Respiratory Framework and British Thoracic Society.

Sample

- ✓ *All patients attending Pulmonary Rehabilitation Programmes in the WHSCT in a 1 year period from 1st March 2011 to 1st March 2012 were included in the audit.*
- ✓ *There were a total of (n=223) participants had undertaken Pulmonary Rehab during this period.*

Data source

Within this clinical audit a diverse array of data was used to incorporate the following: E.g. health records, patient survey, respiratory instruments (e.g. MRC, HADS, BODE) observations (spirometry, blood pressure, SaO₂), 6minute walk, height, weight, were recorded.

Audit type

This clinical audit is a criterion based patient survey employing standards within the Respiratory Framework.

Methodology – including data collection methods

This clinical audit was conducted in the Western Health and Social Care Trust

- ✓ A data collection tool was developed (*see appendix I*)

Data collection

- ✓ Two Clinical Nurse Specialists and a Pulmonary Rehabilitation Nurse employed an Access database and a patient referral proforma and this process was collected retrospectively.
- ✓ The Clinical Nurse Specialists and Pulmonary Rehabilitation Nurse collected the data.
- ✓ Data validation – The accuracy of the information was cross checked by another Respiratory Nurse Specialist, on one site only.

Data analysis

- ✓ The computer systems used incorporated MS Excel and MS Access.
- ✓ The data analysis was validated and checked by the Clinical Nurse Specialist (Helena Phelan) and The Pulmonary Rehab Nurse (Breige Leonard) for accuracy.
- ✓ The Report writing was completed by Mary Mc Menamin (Respiratory Co-ordinator).
- ✓ A poster presentation outlining the key findings was presented at the Irish Thoracic Scientific Meeting, November 2013.

Caveat

- ✓ In cases where the relevant information had not been documented e.g. smoking status on the proforma, this was taken to be non-compliance to the standard.

Findings

- Total of n=223 participants identified
- Variable degree of completeness of data hampers analysis for smoking status (n=74), BODE index (n=134) & to a lesser extent, symptoms scores but are presented here nonetheless
- Data collection was not identical across the two sites, thereby also limiting interpretation to some extent

- Mean(SD) FEV₁; FEV₁%= 1.38 (0.59)L; 58.2 (23.4)% with median (IQR) BODE index of 6 (4-7)

Summary of results	Before	After
Peak Borg	3 (3-4)	3 (2-3)
Anxiety	9 (6-12)	8 (5-11)
Depression	8 (6-11)	7 (5-10)
SGRQ	70 (58.5-78.5)	59 (47-68)
CAT (max=40)	26 (20-32)	24 (18.5-29)
6MWT (m)	190 (115-280)	300 (117-360)

- Most attendants had COPD and had high BODE index
- Range of attendance with only minority attending for 75-100%
- Modest improvements in anxiety, depression and CAT (2 is significant)
- Impressive improvements in SGRQ and 6MWT
- Lack of uniformity at sites, gaps in data acquisition & poor completion hamper data quality

Areas of good practice:

- ✓ The provision of information sessions prior to the commencement of a Pulmonary Rehab programme.
- ✓ Facilitation of back to back programmes, thereby optimising resources (staff and time) more effectively.

Areas of improvement:

- ✓ The geographical disparity of historically no dedicated Pulmonary Rehab service provision, in the Southern Sector of the Trust, until a recent appointment of a Pulmonary Rehab Nurse.
- ✓ Acknowledgement of two individualised patient satisfaction surveys employed within Pulmonary Rehab Programmes.

- ✓ Allocation of dedicated Physiotherapy cover to address maternity leave, as Pulmonary Rehabilitation is not a PFA target and is not afforded Physiotherapy cover as a priority within current service provision.

1. In order to maximise the use of resources and time it is suggested that groups of patients [40-50] who are referred for rehab be offered an appointment for an information session in order that they can gain additional information about what the programme entails and allow them to make an informed decision before committing to enter the programme.

2. 'Acute rehabilitation' session should be set up to dovetail with the early supported discharge team and optimise the management of patients discharged from hospital following an exacerbation.

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7. All patients being referred should be given an information leaflet on Pulmonary Rehabilitation.

8. All rehabilitation programmes should be audited prospectively with the use of databases.

This proposal is supported by Dr Jenny Gingles and the Regional COPD forum. It is envisaged that this would be a pilot audit which could be replicated across Northern Ireland.

Learning points

There are significant learning points which can be identified within this audit.

- It is important to acknowledge that there were geographical inequalities within the WHSCT, however the recent appointment of a Pulmonary Rehabilitation Nurse within the southern sector within the Trust will help to address these inequalities.
- Completion of all required data fields require future attention e.g. smoking status.
- Importance of dedicated dietetics and physiotherapy to compliment the Pulmonary Rehab service.

References

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Clinical Audit Action Plan

KEY (Change status)

- 1 Recommendation agreed but not yet actioned
- 2 Action in progress
- 3 Recommendation fully implemented
- 4 Recommendation never actioned (please state reasons)
- 5 Other (please provide supporting information)

Project title	<i>PILOT: Audit determining if the pulmonary rehabilitation programmes within the WHSCT are tailored to the patients' needs as outlined in the Respiratory Framework</i>
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Action plan lead	Name: Dr Terry Mc Manus	Title: Consultant Physician	Respiratory	Contact: SWAH, WHSCT
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Ensure that the recommendations detailed in the action plan mirror those recorded in the "Recommendations" section of the report. The "Actions required" should specifically state what needs to be done to achieve the recommendation. All updates to the action plan should be included in the "Comments" section.

Recommendation	Actions required <i>(specify "None", if none required)</i>	Action date	by Person responsible <i>(Name and grade)</i>	Comments/action status <i>changes in practice, has not been actioned etc)</i>	Change stage <i>(see Key)</i>
1. Completion of empty fields	Validation checks to ensure accuracy and completion	<i>Ongoing</i>	Clinical Nurse Specialist and Pulmonary Rehab Nurse	It is anticipated that this will be an ongoing quality assurance check	<i>Action in progress</i>
2.Target GP and practice nurses	To ensure pulmonary rehab Proforma and information leaflet is circulated to all GP practices	<i>Ongoing</i>	Clinical Nurse Specialist and Pulmonary Rehab Nurse	This is a project which has not yet been actioned. Information leaflets to be drafted and circulated for consensus.	<i>Recommendation agreed but not yet actioned</i>

Appendix 1 Criteria / Standards

Criteria		Target (%)	Exceptions	Source & Strength* of Evidence	Instructions for where to find data
1	Standard 48 – Respiratory Framework Appropriate referral to Pulmonary Rehabilitation.	80%	Refusals	NICE guidelines	Patient Records and case records
2	MRC, CATS, BODE, six minute walk	100%	None	Previously validated tool	Patient Records and case records
3	Initiation of Pulmonary Rehabilitation Programme. All patients should have 100% Attendance Rates at Pulmonary Rehab Programme.	Establish baseline with a view of increase to 60%.	None attendance at PR Programme Ill health	Respiratory Framework.	Clinic attendance – Access database – Pre and Post evaluation.
4	Smoking Cessation Referral rates	100%	Refusals	Expert opinions Tobacco Strategy Good clinical practice.	Patient Records and case records
5	Each patient takes part in a tailored programme addressing their individual needs.	100%	Age, condition, geographical location deterioration in condition	Respiratory Framework	Patient Records and case records