Current Pulmonary Rehabilitation Models in Europe

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Pulmonary Rehabilitation

Introduction

- “Pulmonary rehabilitation is a comprehensive intervention based on a thorough patient assessment followed by patient-tailored therapies that include, but are not limited to, exercise training, education and behaviour change, which are designed to improve the physical and psychological condition of people with chronic respiratory disease and promote the long-term adherence to health-enhancing behaviours”

  Am J Respir Crit Care Med 2013

- PR is a core component of the integrated care of people with chronic respiratory disease

Summary of Recommendations for the use of Pulmonary Rehabilitation as a treatment in COPD by the BTS

No more research needed to prove the clinical effectiveness of Pulmonary Rehabilitation as a key treatment in COPD

No other treatment for COPD offers collectively the same amount of outcomes. No other treatment offers the same impact on outcome results as PR does.

High value ("right care") approaches: COPD value pyramid

What about cost effectiveness of PR?

- Quality-Adjusted Life Year (QALY)

- Pulmonary Rehabilitation: £2,000-8,000/QALY
- Stop Smoking Support with pharmacotherapy: £2,000/QALY
- Flu vaccination: £1,000/QALY in "at risk" population

London Respiratory Team
Current Models of Pulmonary Rehabilitation in Europe

- **Traditional**
  - Outpatient in Hospital or Community
    - i. Recreational Centres
    - ii. Church halls

- **Emerging Models of Pulmonary Rehabilitation**
  - Home-based and/or Telehealth
    - More research required to prove the benefits and cost effectiveness

- **With Minimal or Specialist Equipment**
  - No difference in functional outcomes and QoL
**Current Range of Settings in PR**

- **Inpatient pulmonary rehabilitation**
  - **Advantages:**
    - Comprehensive. Usually 4 weeks long.
    - Suitable for patients with severe disease, or for those who have difficulties in accessing an outpatient setting.
    - It has been shown to provide similar benefits to those seen in outpatient settings.
  - **Disadvantages:**
    - Higher cost and in some countries, lack of health insurance coverage.

- **Outpatient pulmonary rehabilitation**
  The most common model in most European countries. Based in the hospital or in community.
  - **Advantages:**
    - Cost-effective
    - Safe and widely available
    - Evidence Based

https://www.erswhitebook.org/chapters/pulmonary-rehabilitation/
Current Range of Settings in PR

- Home-based rehabilitation with face to face expert support or telehealth:

**Advantages:**
- It can cover a wider geographical area
- Requires specialist training
- Patient can be followed up remotely
- Maybe, the most convenient method for the patient

**Disadvantages:**
- More expensive than conventional outpatient PR
- Lack of opportunity for group support,
- Limited input of multidisciplinary team,
- Variable availability of exercise equipment,
- Lack of safe facilities more difficult to streamline standard operational procedures

https://www.erswhitebook.org/chapters/pulmonary-rehabilitation/
A Recent Statement by BLF, on a 5 Year Plan for Healthy Lung

What is needed?

- Healthcare delivery systems should make conventional pulmonary rehabilitation available to all patients who are likely to benefit.

- Strategies for maintaining the benefits of pulmonary rehabilitation on a long-term basis are needed.

- Further research is required in order to optimise pulmonary rehabilitation. It should be tailored to the needs of the individual patient; the optimal schedule (intensity and duration of exercise training) should be defined; and the usefulness of other components beyond exercise should be clarified.

- More research is required in order to evaluate the benefits of pulmonary rehabilitation in respiratory diseases other than COPD.

- Telehealthcare in COPD seems to have an impact on the HRQoL of patients, reducing the frequency of hospital attendance. However, further research is needed to clarify its role as telehealthcare trials have included it as part of more complex packages.

Forewords

Professor Sir Michael Marmot
Director of Institute of Health Equity UCL and President of the British Lung Foundation
Increase accessibility:

- By developing robust models for alternative forms of delivery
- Defining the role of telehealth and other new technologies, Advocating for funding to ensure viability of existing pulmonary rehabilitation programs,
- Increase clinicians and patients awareness of the benefits of PR
- Identify and overcome barriers to participation
- Ensure there is adequate training and skills to clinicians involved with the programme
- Provide specialist training and educational opportunities to clinical staff involved in PR

ERS/ATS guidelines
PR Patient Pathway in UK

Referral
• Referrals received from Primary and Secondary care. Triaged and placed on waiting list- information letter sent to patient

Initial Assessment
• Comprehensive respiratory review offered to patient; Resp Physio to undertake: HPC,PMH, spirometry (if not reliable by GP), walking test, SPO2,HR, BP
• HR-QOLs, psychological screening, CO monitoring (if current smoker) and exercise testing
• Motivational interviewing based approach for behavioural change and goal setting
PR Patient Pathway in UK

Referral to PR / MDM or to other services

- Following initial Ax, patient is allocated to hospital or community PR (depending on pt functional status and comorbidities). Pt may not deemed appropriate to commence immediately PR due to Reps med optimisation, or referral to other services may required or discussion at MDT

PR programme

- 6 – 8 weeks of twice weekly sessions
- Group based breathlessness management and exercise
- Educational sessions

Re-assessment

- Reviewing patient goals, HR-QOL, psychological status and exercise capacity
- Transfer to suitable community based exercise programme
PR Audit 2015_ Type of Venues PR takes place in UK

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<th>Type of Venue</th>
<th>National Audit (n=670)</th>
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<td>Church or community hall</td>
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<td>Local leisure centre or gym</td>
<td>22% 147</td>
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<td>Community hospital</td>
<td>17% 113</td>
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<td>Acute hospital</td>
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What is the team composition of PR in UK

- PR services in UK are either independent – part of the wider respiratory team of the hospital or community

- However, there is increasing interest PR services to be part of the integrated respiratory team

Important advantages PR to be part of a

KING’s IRT
- Inpatient COPD support
- Community outreach
- PR
- Smoking cessation specialist
- Oxygen service
- Spirometry service

The Multidisciplinary Team

- Nurse
- Physician
- Social worker
- Respiratory therapist
- Program coordinator
- Physical therapist
- Research coordinator
- Psychologist
- Pharmacist

Required Team Members

Recommended Team Members
# In-patient & out-patient IRT MDM register

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**Notes:**
- Y: Yes, N: No, N/A: Not applicable
- Actions such as Oxygen at home, Action plan, etc., can be found in the respective columns.
• Advantages of a weekly MDM meeting

• Opportunity for training for all IRT members

• Excellent opportunity to optimise patients' treatment and discuss complex patients with respiratory consultant

• Ascertain if all in-patients have been discharged with COPD/Asthma Bundle
Are We Delivering Optimal Pulmonary Rehabilitation? The Importance of Quality Indicators in Evaluating Clinical Practice

Pat G. Camp, Walden Cheung

Pulmonary rehabilitation (PR) is a complex intervention that has been shown to improve exercise capacity and quality of life, reduce dyspnea, and decrease the risk of exacerbations and hospitalization. Although the evidence for PR is strong, the translation of this evidence into clinical practice remains a challenge, and important gaps in care exist. To date, most research in PR has focused on questions related to treatment efficacy. Less attention has been paid to confirming whether the strong evidence base of PR has been effectively translated to this complex clinical setting. Policy makers and other stakeholders in PR are calling for the establishment of core standards and quality indicators in PR to evaluate existing programs and improve patient care. However, what are quality indicators, and how are they used? This Perspective explores quality assurance in the context of PR and introduces the concepts and uses of quality indicators that can be used to evaluate and improve the quality of care.
A report by the BLF on COPD published in December 2017

Pulmonary rehabilitation should be offered to anyone with COPD with a Medical Research Council (MRC) breathlessness grade of 3 or more. People with COPD who attend pulmonary rehab classes spend 50% less time in hospital, are 26% less likely to be readmitted and have lower levels of related anxiety and depression. However, recent audits have found that two thirds of those eligible aren’t referred.

- A reduction of 1/3 of exacerbations in this patient population. This equates to 150,924 fewer exacerbations, potentially freeing up this number of GP appointments
- 26,633 avoided hospital admissions, leading to
- 106,532 hospital bed days saved.
Clinical audit recap

- Ran in England and Wales, including patients who were assessed for PR between January and April 2015.

7,413 patients were included
(81% of those approached for consent)

210 PR services participated
(Out of 230 eligible)
Recap - completion of PR

Out of every 100 patients referred to PR:

- 31 don’t attend an assessment
- 10 don’t enrol
- 69 attend an assessment
- 59 enrol onto PR
- 42 complete their PR
- 17 don’t complete PR

Royal College of Physicians

Setting higher standards
Recap - health status improvements

For every 100 patients who completed the 6MWT\(^a\) or the ISWT\(^b\) both at assessment and discharge:

- 63 improved by more than the MCID\(^c\);
- 20 improved but by less than the MCID, and
- 17 had no change or a worse score.

\(^a\) Six minute walk test
\(^b\) Incremental shuttle walk test
\(^c\) Minimal clinically important difference

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Setting higher standards
Health status improvements

For every 100 patients that had a health status test (either CAT, SGRQ, or CRQ) upon initial assessment and discharge:

- 61 improved by more than the MCID
- 13 improved but by less than the MCID
- 26 had no change or a worse score.

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*COPD Assessment Test
* St George's Respiratory Questionnaire
* Chronic Respiratory Questionnaire

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Setting higher standards

KING'S HEALTH PARTNERS
Admission rates

- People with at least one admission within 180 days of PR assessment
  - 30%
  - People who completed PR (24%)
  - People who did not complete PR (38%)

- Patients assessed for PR
  - 19% in 90 days
  - 30% in 180 days

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Setting higher standards
Bed days for those that were admitted

Mean bed days in the 180 days following PR assessment for:

- Patients who completed their PR course was **4.8 days**
- Patients who **did not complete** their PR course was **9.6 days**

Overall, the mean number of bed days spent in hospital within 90 days was **5.5** and within 180 days was **7.3**

Royal College of Physicians

Setting higher standards
Mortality within 180 days

Higher mortality was associated with:

- Increasing age
- More severe MRC score
- Higher numbers of previous admissions
- Increasing number of comorbidities

* P < 0.001

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Setting higher standards
And so, what next?
The Importance of Development National Quality Indicators for PR


Quality standards for PR included a “quality statement” that describes best practice of a specific component of PR, and a “quality measure,” which is used to assess the quality of care.
10 Quality Standards developed for PR:

- 3 regarding eligibility and referral,
- 1 that refers to duration of program and frequency of session,
- 2 regarding PR program components,
- 1 regarding a maintenance exercise plan,
- 1 regarding outcome measurement, and
- 2 regarding standard operating procedures.

These standards form the basis of a regular audit of programs as well as the development of a national PR surveillance and accreditation system

How to streamline PR performance at National and International Level – Message to take Home

- PR Programmes may differ from country to country and within country differences may exist depending on local available resources and funding opportunities,

- however, all PR services should be streamlined to operate with the minimal quality standards and to be underpinned by local standard operational procedures (SOPs).

- These quality standards should be the fundamental component for a PR service to be deemed reliable, efficient and effective.

- Provision for development of national quality standards is paramount in every European country in order to be eligible to operate with safety and reliability.
Use QI methodology to develop a reliable and efficient PR programme – Area for Improvement?

Look for areas where you can **realistically** make improvements.

Build a **team** and understand your **stakeholders**.
- Meet regularly to **performance manage** yourselves, and have **clear responsibilities**.

Plan how you will **achieve** your aim.

Aims should be **SMART**.

- **S**pecific
- **M**easurable
- **A**chievable
- **R**ealistic
- **T**ime bound
Any questions