Keywords: Respiratory/Pulmonary rehabilitation/COPD/Audit

Pulmonary rehabilitation is an effective therapy for patients with COPD. A national audit identified where it is offered, its value and how PR services can be improved

Improving pulmonary rehabilitation services

In this article...

- Gaps in knowledge about pulmonary rehabilitation services
- The benefits of PR programmes
- How PR programmes can be improved

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Abstract Beckford K (2016) Improving pulmonary rehabilitation services. *Nursing Times;* 112: 15, 12-14.
The Clinical Audit of Pulmonary Rehabilitation Services in England and Wales was the first national audit of pulmonary rehabilitation services in England and Wales. Forming part of the National Chronic Obstructive Pulmonary Disease Audit Programme, it was commissioned by Healthcare Quality Improvement Programme and conducted by the Royal College of Physicians and British Thoracic Society. The audit was undertaken to geographically map pulmonary rehabilitation services and identify how they can improve. This article summarises the key findings of the audit, and its recommendations.

Pulmonary rehabilitation (PR) is recognised as one of the most effective therapies available for people with chronic obstructive pulmonary disease (COPD) and other long-term respiratory disorders. It addresses the key clinical problem of exercise limitation caused by breathlessness and fatigue, and provides a supportive environment in which patients can become active and engage in the management of their health (Vestbo et al, 2013; National Institute for Health and Care Excellence, 2010).

PR is an individualised programme of exercise and education, the benefits of which include:

- Improved quality of life;
- Reduced breathlessness;
- Increased exercise tolerance.

It also helps to develop patients' self-management skills, as well as reducing exacerbations, admissions and bed days.

However, the way PR programmes are delivered varies significantly throughout the UK. To address these inconsistencies and ensure all patients receive the optimum care, updated evidence-based guidance on the provision of PR (Bolton et al, 2013) was followed by the development of PR quality standards (BTS, 2014). A nationally commissioned audit of PR services that measured clinical processes with outcomes assessed against these standards followed these in 2015; the outcomes of the audit were published the following year (Steiner et al, 2016) and link to Steiner et al's 2015 report of the resources and organisation of PR services. Both reports are part of the England and Wales National COPD audit programme, which also includes data from recent audits on the resources and organisation of COPD care in acute units in England and Wales, and on patients admitted to acute units with COPD exacerbations. This article reports key findings from the audit (Steiner et al, 2016).

Undertaking the audit

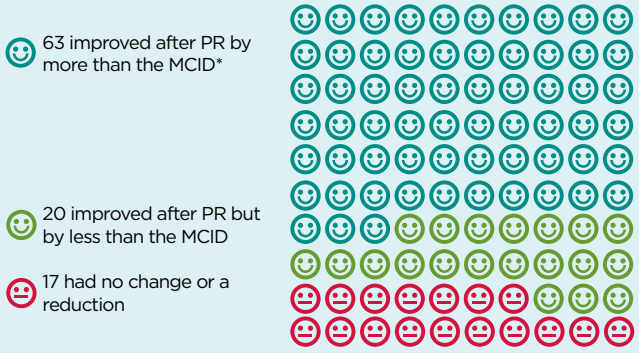
In total, 7,413 individual patient audit records from 210 PR programmes were provided during the three-month audit enrolment period (12 January to 10 April 2015). The report estimates that 73% of eligible patients assessed for PR in that period were audited in the three-month timeframe. Patients were asked to provide written consent for their data to be included and uploaded; of those approached, 87% gave their consent.

5 key points

1. **Pulmonary rehabilitation is one of the most effective therapies for people with chronic obstructive pulmonary disease**
2. **Before the audit was undertaken, it was not known where PR services were provided**
3. **PR can benefit patients by facilitating their ability to exercise, thereby improving their health status**
4. **Health professionals in primary and secondary care are missing opportunities to refer eligible patients to PR programmes**
5. **Health professionals should discuss the benefits of PR with patients to improve uptake and adherence to PR programmes**

FIG 1. EXERCISE AND HEALTH STATUS

For every 100 patients who completed either the 6MWT or the ISWT both on initial assessment and discharge:



For every 100 patients who had a health status test (CAT, SGRQ, or CRQ) both on initial assessment and discharge:

For every 100 patients who had either the 6MWT, ISWT, or a health status test, 78 achieved a MCID in at least one measure, 12 achieved improvement of less than the MCID, and 10 had no improvement in any measure

6MWT = six-minute walking test; CAT = chronic obstructive pulmonary disease assessment test; CRQ = chronic respiratory questionnaire; ISWT = incremental shuttle walking test; MCID = minimal clinically important difference; PR = pulmonary rehabilitation; SGRQ = St George's Respiratory Questionnaire.
*48m for the ISWT, 30m for the 6MWT. **Reduction in four points on total score for SGRQ, increase in 0.5 points on average of four domain scores, reduction in two points for CAT.
Source: Steiner et al (2016)

Findings of the audit

There were many positive outcomes from the PR audit – for example over 90% of patients completing a PR course had a discharge assessment where the outcomes were recorded, and 70% achieved an improvement greater than the accepted minimal clinically important difference (MCID) for the six-minute walk test (6MWT). However, while the audit found that the processes of care were, for the most part, robust and evidence-based, there were areas that could be improved, such as:

- Exercise;
- Funding;
- Programme referral and adherence.

The audit found that the accurate prescription of exercise training and the provision of ongoing exercise plans could be improved. The benefits and changes in exercise performance and health status that patients can experience during PR can be seen in Fig 1 (Steiner et al, 2016).

Despite being aware of the clinically important benefits and outcome measures provided by PR, funding and commissioning of PR programmes also varied – some had insecure funding, which hampered staff recruitment and service development.

The audit also showed that large numbers of patients who had been referred to PR either did not attend an initial assessment (31% of those referred) or did not complete the programme (17% of those referred) (Steiner et al, 2016). This is illustrated in Fig 2. However, when compared with the number of eligible patients with COPD (Medical Research Council (MRC) dyspnoea scale grade 3 or worse) – estimated using the data in primary care databases – it is evident that many patients who would benefit from PR are not being referred at all (Keating et al, 2011). There is also good evidence that patients benefit from attending PR within one month of a hospital admission for an exacerbation of COPD; despite this the audit indicates that only 2% of patients are referred as part of a post-exacerbation PR pathway.

The audit revealed that waiting times for PR are also variable throughout England and Wales, with 37% of those referred waiting longer than three months from the point of referral to starting a PR programme. This also varied between cohorts and rolling programmes, with those referred to a cohort programme waiting one month longer than those for rolling programmes.

Key recommendations

The audit highlights how PR programmes can improve their processes and delivery to drive service improvement (Box 1). It is essential that referral for PR moves to the top of the agenda when discussing treatment options with patients who have COPD and other long-term respiratory diseases. In addition, referral routes need to be streamlined and straightforward.

How health professionals "sell" PR to patients needs to improve, as all PR programmes struggle with low patient uptake and high drop-out rates. This, along with the under-referral to programmes from primary care, point to major reasons why some PR programmes are failing to deliver the targets set by commissioners. In addition, there are many reasons why patients drop out – including exacerbations and hospitalisation, lack of transportation, lack of motivation – but how health professionals initially promote PR and how they tell patients what will be expected of them to complete the PR course will all help to improve this.

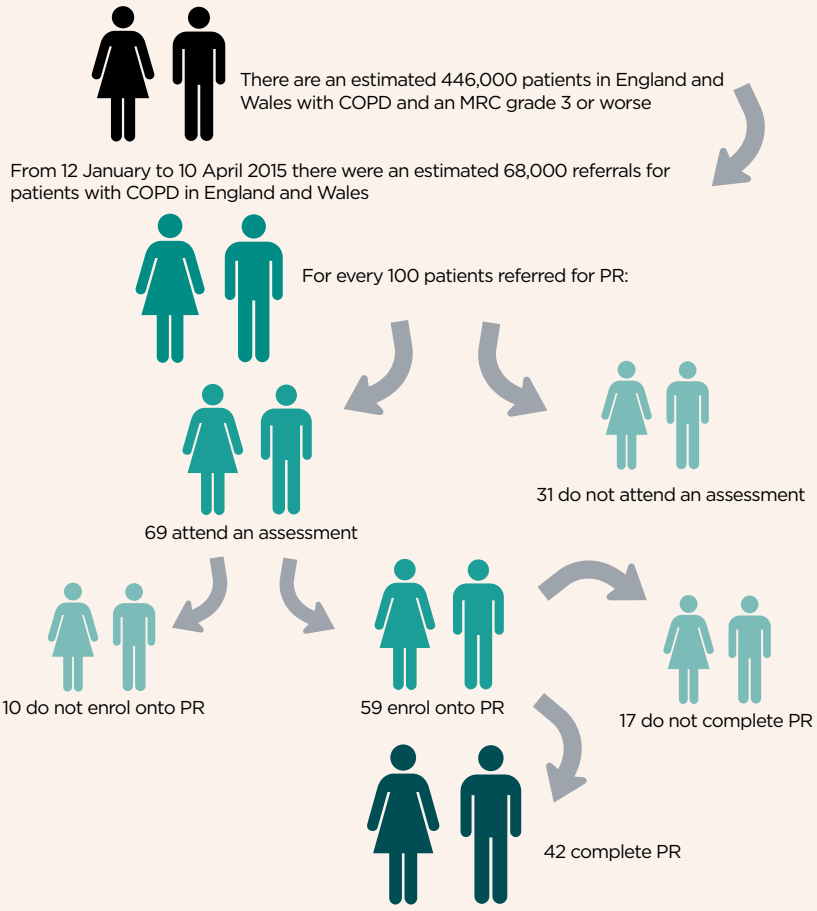
Health professionals working in primary care should:

- Think about referral to PR for all patients who have an MRC score of >2;
- Have a good understanding of what PR is, where it is held in their locality and how "selling it" to patients can help those patients;
- Go and see their local PR programme, if possible, to see how it is run – this will help gain a better understanding and enable them to meet the teams who are delivering it.

Individuals working in secondary care should:

- Discuss the benefits of attending PR with any patient who has been admitted to hospital with an exacerbation of COPD;

FIG 2. DROP-OUT RATES



COPD = chronic obstructive pulmonary disease; MRC = Medical Research Council dyspnoea scale; PR = pulmonary rehabilitation. Sources: Health and Social Care Information Centre (2014); Steiner et al (2016, 2015)

BOX 1. KEY RECOMMENDATIONS

Improve access to pulmonary rehabilitation

- Providers and commissioners should ensure robust referral pathways for PR are in place and that PR programmes have sufficient capacity to assess and enrol all patients within three months of receipt of referral
- Referral pathways should be developed to ensure all patients hospitalised for acute exacerbations of COPD are offered referral for PR and that those who take up this offer are enrolled within one month of discharge
- Providers and commissioners should work together to make referrers (including those working in general practice and community services) and patients fully aware of the benefits of PR, to encourage referral
- PR programmes should take steps to ensure their services are sufficiently flexible to encourage patients who are referred for PR to complete treatment

Improve care provided by PR programmes

- All PR programmes should examine and compare their local data with accepted thresholds for clinically important changes in the clinical outcomes of PR and with the national picture. For all programmes, this should prompt the development of a local plan aimed at improving the quality of the service provided
- PR programmes locally should review their processes to ensure all patients attending a discharge assessment for PR are provided with a written, individualised plan for ongoing exercise
- PR programmes locally should review their processes to ensure all outcome assessments are performed to acceptable technical standards

» Ensure that any referral to PR is added to the COPD discharge care bundle and discussed with the patient.

Next steps

Steiner and Roberts (2016) state that the main aim of the PR audit is to identify the potential interventions that can enhance referrals, completion rates and outcome measures to make PR the cornerstone of COPD management at a national and international level. Support for the national PR audit has been remarkable and it is hoped that the findings will lead to an improvement in access and quality of service provision, and that the work will continue to be undertaken by the Pulmonary Rehabilitation Quality Improvement Group, whose aim is to provide a competency framework and guide for undertaking PR. **NT**

References

Bolton CE et al (2013) British Thoracic Society guideline on pulmonary rehabilitation in adults. *Thorax;* 68: (Suppl 2), ii1-30.

British Thoracic Society (2014) *Quality Standards for Pulmonary Rehabilitation in Adults.* Bit.ly/BTSPRQualityStandards

Health and Social Care Information Centre (2014) *Quality and Outcomes Framework 2013-14.* Bit.ly/QOF2013-14

Keating A et al (2011) What prevents people with chronic obstructive pulmonary disease from attending pulmonary rehabilitation? A systematic review. *Chronic Respiratory Disease;* 8: 89-99.

National Institute for Health and Care Excellence (2010) *Chronic Obstructive Pulmonary Disease in over 16s: Diagnosis and Management.* nice.org.uk/cg101

Steiner M et al (2016) *Pulmonary Rehabilitation: Time to Breathe Better. National Chronic Obstructive Pulmonary Disease (COPD) Audit Programme: Clinical Audit of Pulmonary Rehabilitation Services in England and Wales 2015. National Clinical Audit Report.* Bit.ly/RCPBreatheBetter2016

Steiner M et al (2015) *Pulmonary Rehabilitation: Time to Breathe Better. National Chronic Obstructive Pulmonary Disease (COPD) Audit Programme: Resources and Organisation of Pulmonary Rehabilitation Services in England and Wales 2015. National Organisational Audit Report.* Bit.ly/RCPBreatheBetter2015

Steiner MC, Roberts CM (2016) Pulmonary rehabilitation: the next steps. *The Lancet Respiratory Medicine;* 4: 3, 172-173.

Vestbo J et al (2013) Global strategy for the diagnosis, management, and prevention of chronic obstructive pulmonary disease: GOLD executive summary. *American Journal of Respiratory and Critical Care Medicine;* 187: 4, 347-365.

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