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Better lung health for all

An Introduction to Key Concepts in Delivering Education in Pulmonary Rehabilitation

Dr Louise Sewell
Assistant Professor in Occupational Therapy

Coventry University

Learning Objectives:
To explore…

1. The content and guidance for PR education

2. The needs of our learners and educators

3. What we mean by remote delivery of education and understand access

4. How we can enhance the design and delivery face-to-face and remote PR education.

What is the guidance for PR education?

What is the guidance for PR education?

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BTS guidelines

British Thoracic Society guideline on pulmonary rehabilitation in adults

Charlotte E Bolton,[1] Elaine F Bevan-Smith,[2] John D Blakey,[3] Patrick Crowe,[4] Sarah L Elkin,[5] Rachel Garrod,[6] Neil J Greening,[7] Karen Heslop,[8] James H Hull,[9] William D-C Man,[10] Michael D Morgan,[7] David Proud,[11] C Michael Roberts,[12] Louise Sewell,[7] Sally J Singh,[13] Paul P Walker,[3] Sandy Walmsley,[14]
British Thoracic Society Pulmonary Rehabilitation Guideline Development Group, on behalf of the British Thoracic Society Standards of Care Committee

► Additional material is published online only. To view please visit the journal online (http://dx.doi.org/10.1136/thoraxjnl-2013-203808).

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SUMMARY OF RECOMMENDATIONS

The role of pulmonary rehabilitation

- Pulmonary rehabilitation should be offered to patients with chronic obstructive pulmonary disease (COPD) with a view to improving exercise capacity by a clinically important amount. (Grade A)
- Pulmonary rehabilitation should be offered to patients with COPD with a view to improving dyspnoea and health status by a clinically important amount. (Grade A)
- Different components within a pulmonary rehabilitation programme, such as resistance training, can influence quadriceps strength and this is addressed

Specific situations at assessment

Smoking

- Patients with COPD should be referred for pulmonary rehabilitation regardless of their smoking status. (Grade D)
- Patients referred to pulmonary rehabilitation should have their smoking status assessed and referral to smoking cessation services offered to smokers simultaneously. (√)
- Pulmonary rehabilitation provides opportunities to offer smoking cessation advice. (√)

Chronic respiratory failure

- Patients with COPD can be referred for pulmon-

British Thoracic Society

Quality Standards for Pulmonary Rehabilitation in Adults

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VOL. 6 NO. 2 2014

Respirology

CLINICAL PRACTICE GUIDELINES

Australian and New Zealand Pulmonary Rehabilitation

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ABSTRACT

Background and objective: **The aim of the Pulmonary Rehabilitation Guidelines (Guidelines) is to provide evidence-based recommendations for the practice of pulmonary rehabilitation (PR) specific to Australian and New Zealand healthcare contexts.**

Methods: **The Guideline methodol**
Appraisal of Guidelines for Resear
(AGREE) II criteria. Nine key qu
structed in accordance with the
Intervention, Comparator, Outco
reviewed by a COPD consumer grou
ness. Systematic reviews were un
question and recommendations mad
of each recommendation based
(Gradings of Recommendations, As
ment and Evaluation) criteria. Th
externally reviewed by a panel of exp

Results: **The Guideline panel**
patients with mild-to-severe COPD
to improve quality of life and exerc
reduce hospital admissions; that PR
hospital gyms, community centres or
be provided irrespective of the ava
tured education programme; that P
to patients with bronchiectasis, inte

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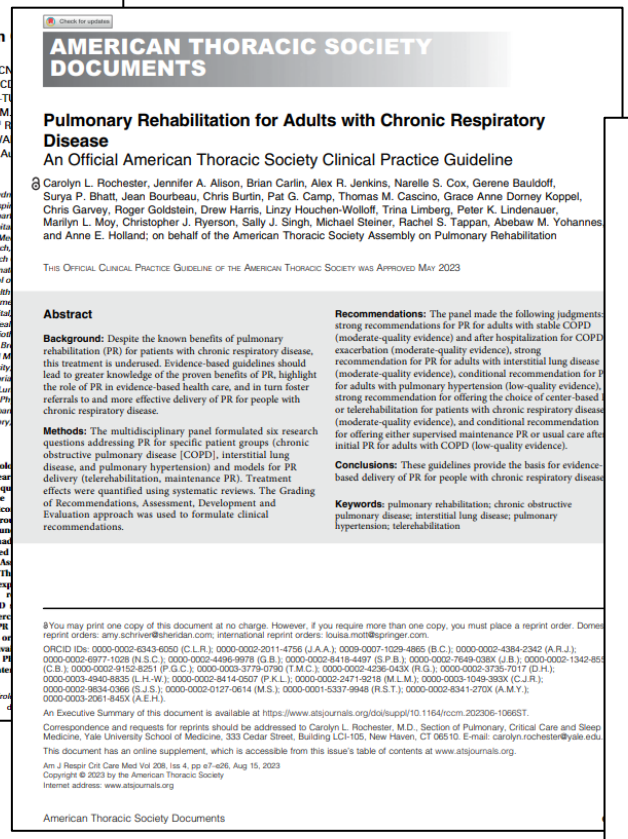

AMERICAN THORACIC SOCIETY DOCUMENTS

Pulmonary Rehabilitation for Adults with Chronic Respiratory Disease

An Official American Thoracic Society Clinical Practice Guideline

Carolyn L. Rochester, Jennifer A. Alison, Brian Carlin, Alex R. Jenkins, Narelle S. Cox, Gerene Bauldoff, Surya P. Bhatt, Jean Bourbeau, Chris Burtin, Pat G. Camp, Thomas M. Cascino, Grace Anne Dorney Koppel, Chris Garvey, Roger Goldstein, Drew Harris, Linzy Houchen-Wolloff, Trina Limberg, Peter K. Lindenauer, Marilyn L. Moy, Christopher J. Ryerson, Sally J. Singh, Michael Steiner, Rachel S. Tappan, Abebaw M. Yohannes, and Anne E. Holland; on behalf of the American Thoracic Society Assembly on Pulmonary Rehabilitation

This Official Clinical Practice Guideline of the American Thoracic Society was Approved May 2023

Abstract

Background: Despite the known benefits of pulmonary rehabilitation (PR) for patients with chronic respiratory disease, this treatment is underused. Evidence-based guidelines should lead to greater knowledge of the proven benefits of PR, highlight the role of PR in evidence-based health care, and in turn foster referrals to and more effective delivery of PR for people with chronic respiratory disease.

Methods: The multidisciplinary panel formulated six research questions addressing PR for specific patient groups (chronic obstructive pulmonary disease [COPD], interstitial lung disease, and pulmonary hypertension) and models for PR delivery (telerehabilitation, maintenance PR). Treatment effects were quantified using systematic reviews. The Grading of Recommendations, Assessment, Development and Evaluation approach was used to formulate clinical recommendations.

Recommendations: The panel made the following judgments: strong recommendations for PR for adults with stable COPD (moderate-quality evidence) and after hospitalization for COPD exacerbation (moderate-quality evidence), strong recommendation for PR for adults with interstitial lung disease (moderate-quality evidence), conditional recommendation for P for adults with pulmonary hypertension (low-quality evidence), strong recommendation for offering the choice of center-based or telerehabilitation for patients with chronic respiratory disease (moderate-quality evidence), and conditional recommendation for offering either supervised maintenance PR or usual care after initial PR for adults with COPD (low-quality evidence).

Conclusions: These guidelines provide the basis for evidence-based delivery of PR for people with chronic respiratory disease.

Keywords: pulmonary rehabilitation; chronic obstructive pulmonary disease; interstitial lung disease; pulmonary hypertension; telerehabilitation

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This document has an online supplement, which is accessible from this issue's table of contents at www.atsjournals.org.

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BTS Clinical Statement

British Thoracic Society Clinical Statement on pulmonary rehabilitation

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INTRODUCTION

The evidence-based British Thoracic Society (BTS) Guideline for pulmonary rehabilitation (PR) in adults was published in 2013.[1] There is a strong evidence base for the benefits of PR,[2] and it is one of the most cost-effective interventions for adults with chronic obstructive pulmonary disease (COPD).[3] Furthermore, PR improves exercise capacity and health-related quality of life (HRQOL) in COPD to a much greater magnitude than observed with bronchodilator therapy.[4]

Since the Guideline, there is deeper understanding of referral characteristics, outcome measures, patient selection, programme delivery, potential adjuncts and the role of maintenance following PR. The BTS Clinical Statement on PR is a narrative review which provides a snapshot of current knowledge and best practice in topical areas by providing a series of clinical practice points that are informed by evidence where this exists, or based on expert opinion and collective clinical experience where evidence is limited.

The Clinical Statement is not intended to be a comprehensive review as much of the BTS Guideline remains relevant today and does not need revisiting.[1] Furthermore, BTS, alongside other respiratory societies, reviewed the current state of education in PR.[5] The intended audience are PR clinicians working within health settings in the UK and beyond. The Clinical Statement will provide a framework to inform future BTS Quality Standards for PR. We have also highlighted areas of research priority, which will be of interest to clinical researchers.

In this Statement, we highlight the growing interest in alternative models of delivering PR (eg, home based, remote supervision, use of technology), accelerated by the restrictions placed on face-to-face PR delivery during the global COVID-19 pandemic. These PR models, typically delivered remotely, might potentially increase provision of, and accessibility to PR. However, research gaps remain and it is crucial these models are optimised and carefully evaluated before widespread adoption.[2]

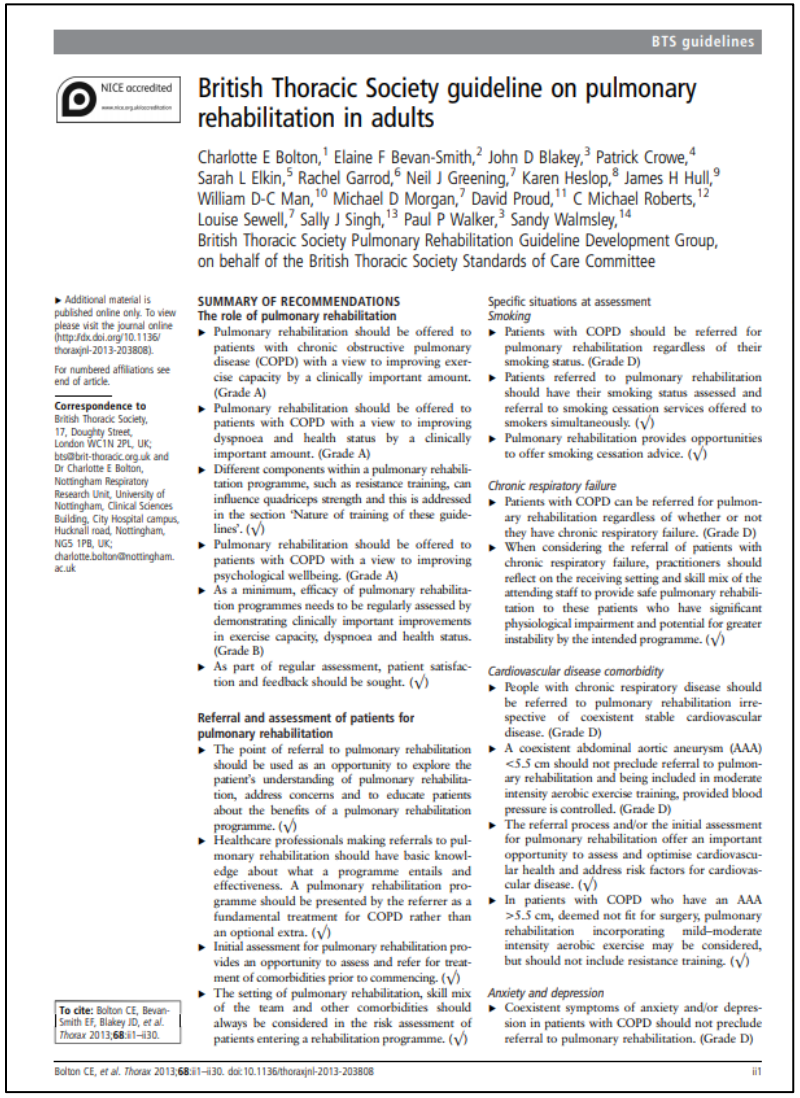
A recent international workshop report, using a Delphi process, defined essential and desirable components of PR.[6] We have adapted this to define the core components of PR (box 1), which will help health payers decide if they are commissioning an intervention that is likely to produce good outcomes.

Box 1 Core components of a pulmonary rehabilitation (PR) programme

- An initial face-to-face assessment by a suitably trained healthcare professional.
- Initial assessment must include a validated exercise test from which an individualised exercise prescription can be obtained.
- Endurance and resistance training, which is individually prescribed and progressed with regular supervision from suitably trained healthcare professionals.
- A structured education programme.
- Delivered by a dedicated team of healthcare professionals trained in exercise assessment, prescription and progression, with experience of delivering patient-focused education on chronic respiratory disease management.
- The programme model, including assessment and delivery components, must have been independently reported to be safe and effective.
- Measurement of core outcomes before and after PR. These should include a validated exercise test, measures of breathlessness and health-related quality of life, and other outcomes that evaluate core components of the intervention, such as lower limb muscle strength and disease knowledge.
- Participation in regular audit of organisational and clinical outcomes; for example, engagement with a recognised national audit programme where available.
- External peer review to monitor safe and effective practice; for example, engagement with a recognised national accreditation programme where available.

METHODOLOGY

The Clinical Statement group (CSG) was chaired by SJS and WM and included experts in a range of disciplines including respiratory medicine, rehabilitation, physiotherapy and lay/patient input. The CSG identified key areas requiring clinical practice points and the overall content was developed to reflect the scope approved by the BTS Standards of Care Committee (SOCC). Following discussions of broad statement content, individual sections were drafted by group members. A final edited draft was reviewed by the BTS SOCC before posting for public



BTS guidelines

NICE accredited

British Thoracic Society guideline on pulmonary rehabilitation in adults

Charlotte E Bolton,[1] Elaine F Bevan-Smith,[2] John D Blakey,[3] Patrick Crowe,[4] Sarah L Elkin,[5] Rachel Garrod,[6] Neil J Greening,[7] Karen Heslop,[8] James H Hull,[9] William D-C Man,[10] Michael D Morgan,[7] David Proud,[11] C Michael Roberts,[12] Louise Sewell,[7] Sally J Singh,[13] Paul P Walker,[3] Sandy Walmsley,[14]
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SUMMARY OF RECOMMENDATIONS

The role of pulmonary rehabilitation

- Pulmonary rehabilitation should be offered to patients with chronic obstructive pulmonary disease (COPD) with a view to improving exercise capacity by a clinically important amount. (Grade A)
- Pulmonary rehabilitation should be offered to patients with COPD with a view to improving dyspnoea and health status by a clinically important amount. (Grade A)
- Different components within a pulmonary rehabilitation programme, such as resistance training, can influence quadriceps strength and this is addressed in the section 'Nature of training of these guidelines'. (√)
- Pulmonary rehabilitation should be offered to patients with COPD with a view to improving psychological wellbeing. (Grade A)
- As a minimum, efficacy of pulmonary rehabilitation programmes needs to be regularly assessed by demonstrating clinically important improvements in exercise capacity, dyspnoea and health status. (Grade B)
- As part of regular assessment, patient satisfaction and feedback should be sought. (√)

Referral and assessment of patients for pulmonary rehabilitation

- The point of referral to pulmonary rehabilitation should be used as an opportunity to explore the patient's understanding of pulmonary rehabilitation, address concerns and to educate patients about the benefits of a pulmonary rehabilitation programme. (√)
- Healthcare professionals making referrals to pulmonary rehabilitation should have basic knowledge about what a programme entails and effectiveness. A pulmonary rehabilitation programme should be presented by the referrer as a fundamental treatment for COPD rather than an optional extra. (√)
- Initial assessment for pulmonary rehabilitation provides an opportunity to assess and refer for treatment of comorbidities prior to commencing. (√)
- The setting of pulmonary rehabilitation, skill mix of the team and other comorbidities should always be considered in the risk assessment of patients entering a rehabilitation programme. (√)

Specific situations at assessment

Smoking

- Patients with COPD should be referred for pulmonary rehabilitation regardless of their smoking status. (Grade D)
- Patients referred to pulmonary rehabilitation should have their smoking status assessed and referral to smoking cessation services offered to smokers simultaneously. (√)
- Pulmonary rehabilitation provides opportunities to offer smoking cessation advice. (√)

Chronic respiratory failure

- Patients with COPD can be referred for pulmonary rehabilitation regardless of whether or not they have chronic respiratory failure. (Grade D)
- When considering the referral of patients with chronic respiratory failure, practitioners should reflect on the receiving setting and skill mix of the attending staff to provide safe pulmonary rehabilitation to these patients who have significant physiological impairment and potential for greater instability by the intended programme. (√)

Cardiovascular disease comorbidity

- People with chronic respiratory disease should be referred to pulmonary rehabilitation irrespective of coexistent stable cardiovascular disease. (Grade D)
- A coexistent abdominal aortic aneurysm (AAA) <5.5 cm should not preclude referral to pulmonary rehabilitation and being included in moderate intensity aerobic exercise training, provided blood pressure is controlled. (Grade D)
- The referral process and/or the initial assessment for pulmonary rehabilitation offer an important opportunity to assess and optimise cardiovascular health and address risk factors for cardiovascular disease. (√)
- In patients with COPD who have an AAA >5.5 cm, deemed not fit for surgery, pulmonary rehabilitation incorporating mild–moderate intensity aerobic exercise may be considered, but should not include resistance training. (√)

Anxiety and depression

- Coexistent symptoms of anxiety and/or depression in patients with COPD should not preclude referral to pulmonary rehabilitation. (Grade D)

What is the guidance for PR education?

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APPENDIX H: SUGGESTED EDUCATIONAL TALKS TO ENCOMPASS IN THE PULMONARY REHABILITATION PROGRAMME

- Anatomy, physiology, pathology—in health and in chronic respiratory disease.
- Medication (including oxygen therapy).
- Smoking cessation.
- Dyspnoea/symptom management.
- Chest clearance techniques.
- Energy conservation/pacing.
- Patient support groups.
- Nutritional advice.
- Managing travel.
- Benefits system and welfare rights.
- Advance directives.
- Anxiety management and relaxation.
- Goal setting and rewards.
- Relaxation.
- Confidence, self-efficacy and self-management.
- Identifying and changing beliefs about exercise and health-related behaviours.
- Loving relationships/sexuality.
- Exacerbation management (including coping with setbacks and relapses).
- The benefits of physical exercise.
- Opportunities to exercise after pulmonary rehabilitation.

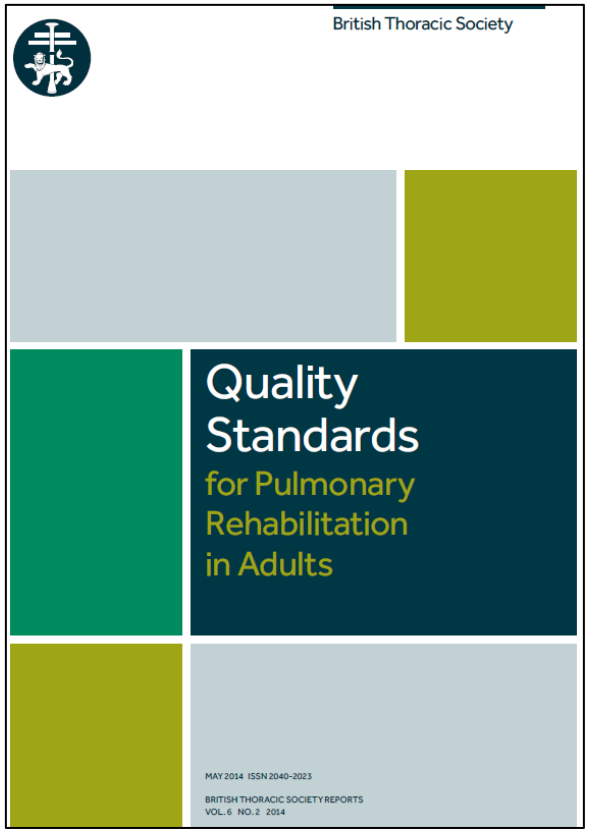
The talks should be delivered by members of the pulmonary rehabilitation staff with the opportunity to address questions. Inviting a former pulmonary rehabilitation graduate or member of a local Breathe Easy group should be considered. Supplementing the talks with written educational information is advised.

Patient satisfaction surveys and questionnaires containing disease-specific information (eg, for the Lung Information Needs Questionnaire or the Bristol Chronic Obstructive Pulmonary Disease Knowledge questionnaire) ensure quality of the educational aspects.[210 211]

Supplemental practical information is provided by the service specification for pulmonary rehabilitation at http://www.dh.gov.uk/health/2012/08/copd-toolkit/[209]

Bolton CE, *et al*. *Thorax* 2013;**68**:ii1–ii30. doi:10.1136/thoraxjnl-2013-203808

What is the guidance for PR education?



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Quality Statement

Quality statement 6	Pulmonary rehabilitation programmes include a defined, structured education programme.
Rationale	• A structured and comprehensive programme of education is an integral and essential component of pulmonary rehabilitation. • The education should be delivered by professionals competent in the relevant subject areas. • The BTS Pulmonary Rehabilitation Guideline provides a list of recommended topics - appendix H (3). • Inviting former pulmonary rehabilitation graduates or member of the local Breathe Easy group should be actively encouraged. • Supplementing talks with written education information is advised with consideration given to language, literacy and vision issues.
Quality measure	**Structure:** • Evidence of local pulmonary rehabilitation programme arrangements to ensure that all patients who are referred to pulmonary rehabilitation have access to a comprehensive programme of education in line with content set out in the BTS Pulmonary Rehabilitation Guideline. **Process:** • Proportion of pulmonary rehabilitation programmes that provide participants with a structured education programme. **Numerator** • Number of pulmonary rehabilitation programmes providing a structured education programme in line with the BTS Pulmonary Rehabilitation Guideline. **Denominator** • The number of pulmonary rehabilitation programmes nationally.
Description of what the quality statement means for each audience	**Service Provider:** • Ensure that pulmonary rehabilitation programmes have access to an interdisciplinary team who are trained and competent to deliver the educational advice outlined in the BTS Pulmonary Rehabilitation Guideline. • Ensure that the quality of the educational programme is assessed and maintained in association with patients. **Healthcare Professional:** • Ensure that all patients enrolled onto a pulmonary rehabilitation programme have access to a structured education programme that covers the areas outlined in the BTS Pulmonary Rehabilitation Guideline. **Commissioners:** • Ensure that pulmonary rehabilitation service providers have access to a team that are competent to give education advice in the areas outlined in the BTS Pulmonary Rehabilitation Guideline. **People attending pulmonary rehabilitation:** • Once enrolled onto a pulmonary rehabilitation programme, attendees should receive a structured education programme and have the opportunity to ask questions, in line with content set out in the BTS Pulmonary Rehabilitation Guideline.

What is the guidance for PR education?

"Outpatient supervised PR, **incorporating both exercise training and education** should be offered to all appropriate patients discharged from hospital, including hospital-at home and early supported discharge schemes after exacerbation of COPD"

Man et al 2023, pg 8

BTS Clinical Statement

British Thoracic Society Clinical Statement on pulmonary rehabilitation

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"**PA counselling** should be a core component of the PR educational component"

Man et al 2023, pg 12

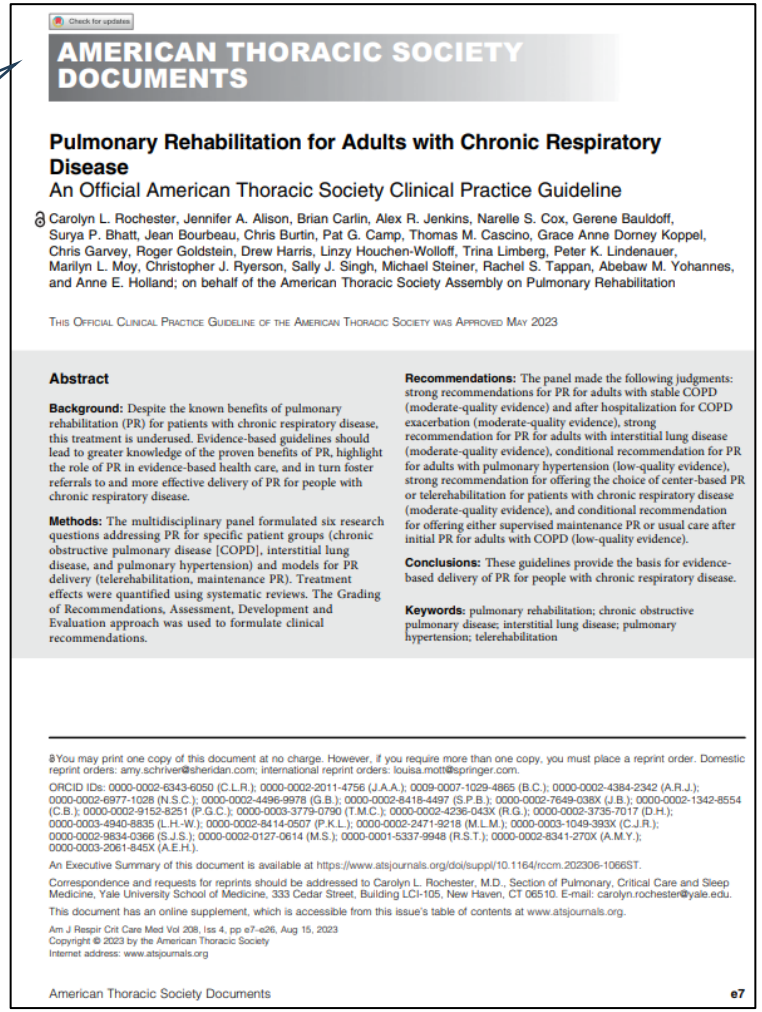
"The initial assessment should also provide the PR provider with information about **literacy, language, cultural and social needs** to help plan flexible and personalised approaches to PR delivery."

Man et al 2023, pg 5

What is the guidance for PR education?

"Core components of PR include structured and progressive individually tailored exercise training, **self-management education**, patient assessment, and outcomes measurement (3–5) delivered by a **multidisciplinary team of healthcare professionals."**

Rochester et al, 2023 pg e8



AMERICAN THORACIC SOCIETY DOCUMENTS

Pulmonary Rehabilitation for Adults with Chronic Respiratory Disease

An Official American Thoracic Society Clinical Practice Guideline

Carolyn L. Rochester, Jennifer A. Alison, Brian Carlin, Alex R. Jenkins, Narelle S. Cox, Gerene Bauldoff, Surya P. Bhatt, Jean Bourbeau, Chris Burtin, Pat G. Camp, Thomas M. Cascino, Grace Anne Dorney Koppel, Chris Garvey, Roger Goldstein, Drew Harris, Linzy Houchen-Wolloff, Trina Limberg, Peter K. Lindenauer, Marilyn L. Moy, Christopher J. Ryerson, Sally J. Singh, Michael Steiner, Rachel S. Tappan, Abebaw M. Yohannes, and Anne E. Holland; on behalf of the American Thoracic Society Assembly on Pulmonary Rehabilitation

This Official Clinical Practice Guideline of the American Thoracic Society was Approved May 2023

Abstract

Background: Despite the known benefits of pulmonary rehabilitation (PR) for patients with chronic respiratory disease, this treatment is underused. Evidence-based guidelines should lead to greater knowledge of the proven benefits of PR, highlight the role of PR in evidence-based health care, and in turn foster referrals to and more effective delivery of PR for people with chronic respiratory disease.

Methods: The multidisciplinary panel formulated six research questions addressing PR for specific patient groups (chronic obstructive pulmonary disease [COPD], interstitial lung disease, and pulmonary hypertension) and models for PR delivery (telerehabilitation, maintenance PR). Treatment effects were quantified using systematic reviews. The Grading of Recommendations, Assessment, Development and Evaluation approach was used to formulate clinical recommendations.

Recommendations: The panel made the following judgments: strong recommendations for PR for adults with stable COPD (moderate-quality evidence) and after hospitalization for COPD exacerbation (moderate-quality evidence), strong recommendation for PR for adults with interstitial lung disease (moderate-quality evidence), conditional recommendation for PR for adults with pulmonary hypertension (low-quality evidence), strong recommendation for offering the choice of center-based PR or telerehabilitation for patients with chronic respiratory disease (moderate-quality evidence), and conditional recommendation for offering either supervised maintenance PR or usual care after initial PR for adults with COPD (low-quality evidence).

Conclusions: These guidelines provide the basis for evidence-based delivery of PR for people with chronic respiratory disease.

Keywords: pulmonary rehabilitation; chronic obstructive pulmonary disease; interstitial lung disease; pulmonary hypertension; telerehabilitation

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An Executive Summary of this document is available at https://www.atsjournals.org/doi/suppl/10.1164/rccm.202306-1066ST.

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This document has an online supplement, which is accessible from this issue's table of contents at www.atsjournals.org.

Am J Respir Crit Care Med Vol 208, Iss 4, pp e7–e26, Aug 15, 2023

Internet address: www.atsjournals.org

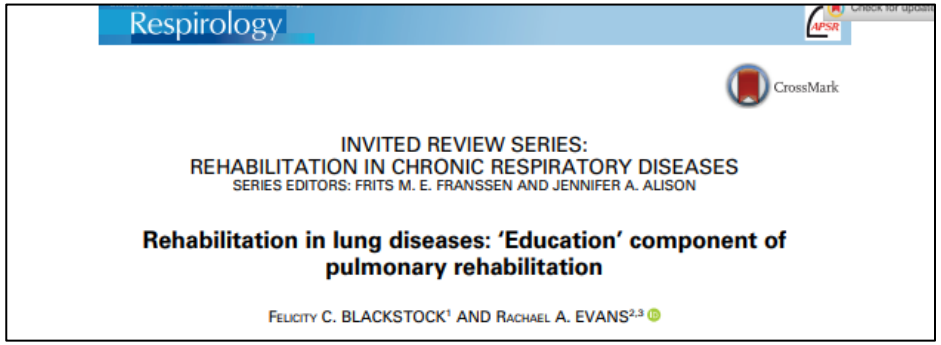
"Moreover, although many of the published RCTs regarding PR focus on exercise training, PR is much more than exercise training alone. **Although less easily proved, patient education (181) and health enhancing behaviour change are considered by PR experts to be essential components of PR to optimize patients' outcomes** (3)."

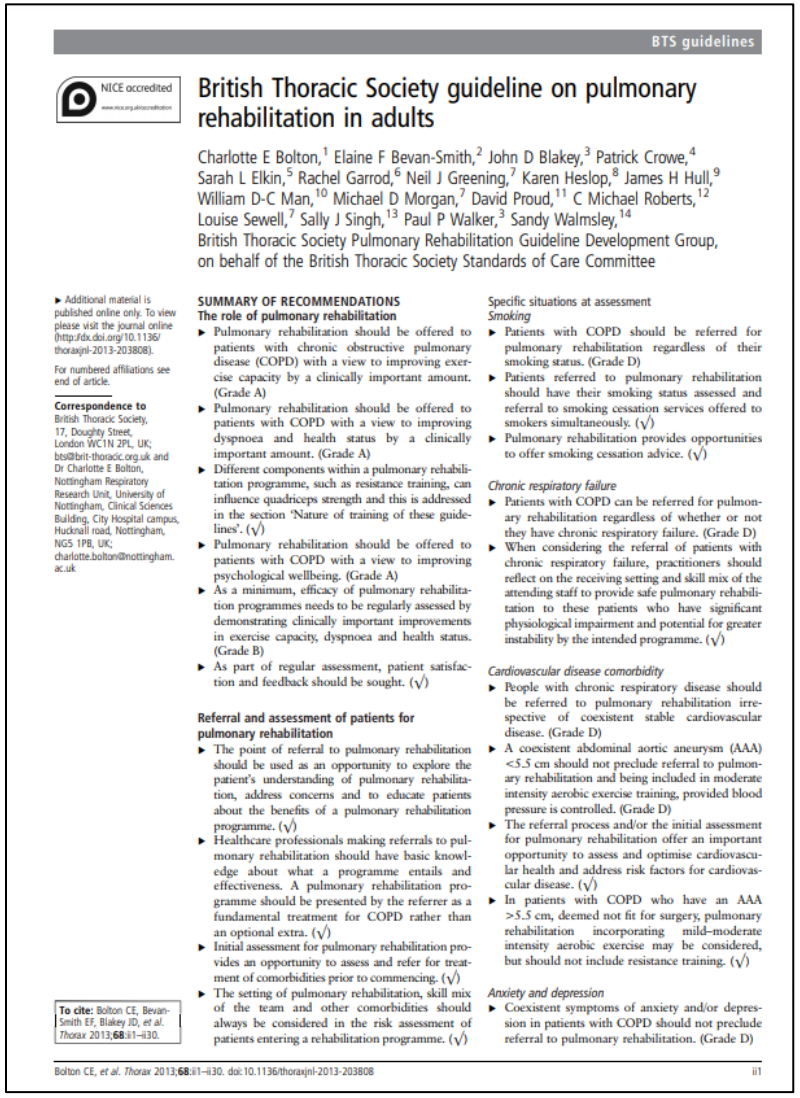
Rochester et al, 2023 pg e19

Pre Covid Education in PR

What is the guidance for PR education?

- PR education traditionally didactic ('chalk and talk')
- There is the opportunity to educate with 20-50% of current programmes devoted to formalised group education (Blackstock and Evans 2019)
- Topics such as advance directives, early recognition of and treatment of exacerbations, promotion of physical activity and adherence to exercise have been added.
- There is still no clear consensus regarding the content of education programmes (Blackstock and Evans 2019)





BTS guidelines

NICE accredited

British Thoracic Society guideline on pulmonary rehabilitation in adults

Charlotte E Bolton,[1] Elaine F Bevan-Smith,[2] John D Blakey,[3] Patrick Crowe,[4] Sarah L Elkin,[5] Rachel Garrod,[6] Neil J Greening,[7] Karen Heslop,[8] James H Hull,[9] William D-C Man,[10] Michael D Morgan,[7] David Proud,[11] C Michael Roberts,[12] Louise Sewell,[7] Sally J Singh,[13] Paul P Walker,[3] Sandy Walmsley,[14]
British Thoracic Society Pulmonary Rehabilitation Guideline Development Group, on behalf of the British Thoracic Society Standards of Care Committee

▸ Additional material is published online only. To view please visit the journal online (http://dx.doi.org/10.1136/thoraxjnl-2013-203808).

For numbered affiliations see end of article.

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To cite: Bolton CE, Bevan-Smith EF, Blakey JD, *et al*. *Thorax* 2013;**68**:ii1–ii30.

SUMMARY OF RECOMMENDATIONS

The role of pulmonary rehabilitation

- Pulmonary rehabilitation should be offered to patients with chronic obstructive pulmonary disease (COPD) with a view to improving exercise capacity by a clinically important amount. (Grade A)
- Pulmonary rehabilitation should be offered to patients with COPD with a view to improving dyspnoea and health status by a clinically important amount. (Grade A)
- Different components within a pulmonary rehabilitation programme, such as resistance training, can influence quadriceps strength and this is addressed in the section 'Nature of training of these guidelines'. (√)
- Pulmonary rehabilitation should be offered to patients with COPD with a view to improving psychological wellbeing. (Grade A)
- As a minimum, efficacy of pulmonary rehabilitation programmes needs to be regularly assessed by demonstrating clinically important improvements in exercise capacity, dyspnoea and health status. (Grade B)
- As part of regular assessment, patient satisfaction and feedback should be sought. (√)

Referral and assessment of patients for pulmonary rehabilitation

- The point of referral to pulmonary rehabilitation should be used as an opportunity to explore the patient's understanding of pulmonary rehabilitation, address concerns and to educate patients about the benefits of a pulmonary rehabilitation programme. (√)
- Healthcare professionals making referrals to pulmonary rehabilitation should have basic knowledge about what a programme entails and effectiveness. A pulmonary rehabilitation programme should be presented by the referrer as a fundamental treatment for COPD rather than an optional extra. (√)
- Initial assessment for pulmonary rehabilitation provides an opportunity to assess and refer for treatment of comorbidities prior to commencing. (√)
- The setting of pulmonary rehabilitation, skill mix of the team and other comorbidities should always be considered in the risk assessment of patients entering a rehabilitation programme. (√)

Specific situations at assessment

Smoking

- Patients with COPD should be referred for pulmonary rehabilitation regardless of their smoking status. (Grade D)
- Patients referred to pulmonary rehabilitation should have their smoking status assessed and referral to smoking cessation services offered to smokers simultaneously. (√)
- Pulmonary rehabilitation provides opportunities to offer smoking cessation advice. (√)

Chronic respiratory failure

- Patients with COPD can be referred for pulmonary rehabilitation regardless of whether or not they have chronic respiratory failure. (Grade D)
- When considering the referral of patients with chronic respiratory failure, practitioners should reflect on the receiving setting and skill mix of the attending staff to provide safe pulmonary rehabilitation to these patients who have significant physiological impairment and potential for greater instability by the intended programme. (√)

Cardiovascular disease comorbidity

- People with chronic respiratory disease should be referred to pulmonary rehabilitation irrespective of coexistent stable cardiovascular disease. (Grade D)
- A coexistent abdominal aortic aneurysm (AAA) <5.5 cm should not preclude referral to pulmonary rehabilitation and being included in moderate intensity aerobic exercise training, provided blood pressure is controlled. (Grade D)
- The referral process and/or the initial assessment for pulmonary rehabilitation offer an important opportunity to assess and optimise cardiovascular health and address risk factors for cardiovascular disease. (√)
- In patients with COPD who have an AAA >5.5 cm, deemed not fit for surgery, pulmonary rehabilitation incorporating mild–moderate intensity aerobic exercise may be considered, but should not include resistance training. (√)

Anxiety and depression

- Coexistent symptoms of anxiety and/or depression in patients with COPD should not preclude referral to pulmonary rehabilitation. (Grade D)

What is the guidance for PR education?

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What should be included?

BTS guidelines

APPENDIX H: SUGGESTED EDUCATIONAL TALKS TO ENCOMPASS IN THE PULMONARY REHABILITATION PROGRAMME

- Anatomy, physiology, pathology—in health and in chronic respiratory disease.
- Medication (including oxygen therapy).
- Smoking cessation.
- Dyspnoea/symptom management.
- Chest clearance techniques.
- Energy conservation/pacing.
- Patient support groups.
- Nutritional advice.
- Managing travel.
- Benefits system and welfare rights.
- Advance directives.
- Anxiety management and relaxation.
- Goal setting and rewards.
- Relaxation.
- Confidence, self-efficacy and self-management.
- Identifying and changing beliefs about exercise and health-related behaviours.
- Loving relationships/sexuality.
- Exacerbation management (including coping with setbacks and relapses).
- The benefits of physical exercise.
- Opportunities to exercise after pulmonary rehabilitation.

The talks should be delivered by members of the pulmonary rehabilitation staff with the opportunity to address questions. Inviting a former pulmonary rehabilitation graduate or member of a local Breathe Easy group should be considered.
Supplementing the talks with written educational information is advised.

Patient satisfaction surveys and questionnaires containing disease-specific information (eg, for the Lung Information Needs Questionnaire or the Bristol Chronic Obstructive Pulmonary Disease Knowledge questionnaire) ensure quality of the educational aspects.[210 211]

Supplemental practical information is provided by the service specification for pulmonary rehabilitation at http://www.dh.gov.uk/health/2012/08/copd-toolkit/[209]

Bolton CE, *et al*. *Thorax* 2013;**68**:ii1–ii30. doi:10.1136/thoraxjnl-2013-203808

What should be included? Are we co-creating the curriculum?

What is the existing guidance for PR education?

ORIGINAL ARTICLE

Education in Pulmonary Rehabilitation: The Patient's Perspective

Julie S. Wilson, PhD, Brenda O'Neill, PhD, Jacqueline Reilly, PhD, Joseph MacMahon, FRCP, Judy M. Bradley, PhD

Wilson et al 2007

- Qualitative study of 32 people living with COPD across 6 focus groups.
- 6 education topics identified:

✓ disease education
✓ management of breathlessness
✓ management of an exacerbation
✓ medication
✓ psychosocial support
✓ welfare and benefits systems.

- Preference for group information sessions provided by "knowledgeable people" speaking layman's language
- Content should be supported by written information.

What should be included? Are we co-creating the curriculum? Holland et al (2019)

What is the existing guidance for PR education?

Patient Education and Counseling 102 (2019) 1125–1130

Contents lists available at ScienceDirect

Patient Education and Counseling

journal homepage: www.elsevier.com/locate/pateducou

Comprehensive pulmonary rehabilitation for interstitial lung disease: A consensus approach to identify core education topics

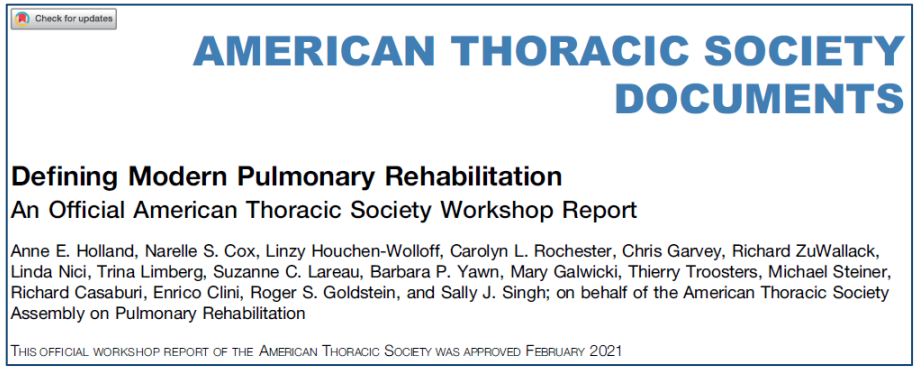
Anne E Holland[a,b,c,*], Alice Watson[b], Ian Glaspole[d,e]

Table 2
Education topics for pulmonary rehabilitation in interstitial lung disease.

Core education topics
1. Staying well with ILD – including regular vaccination, importance of exercise, good nutrition, regular vaccination, managing flare ups
2. Keeping fit and strong after pulmonary rehabilitation
3. Using oxygen therapy
4. Managing breathlessness and cough
5. Managing fatigue
6. Managing anxiety, depression and panic
Optional education topics
1. Accessing home care and support for both patients and carers
2. End of life care and advance directives
3. Tuning up the system – managing co-existing medical conditions
4. Managing medications and side effects

Defining Modern Pulmonary Rehabilitation ATS Workshop report (Holland et al 2021)

Covered in pulmonary rehabilitation education content?



PROGRAM COMPONENTS

- Upper limb training
- ACT for bronchiectasis
- ACT for cystic fibrosis
- Structured education
- Individualized education
- Self-management training
- Goal setting
- Physical activity counselling
- Smoking cessation support
- Individualized action plan for frequent exacerbators
- Home exercise program (aerobic/ resistance) to maximize gains in exercise performance during the program
- Maintenance exercise training

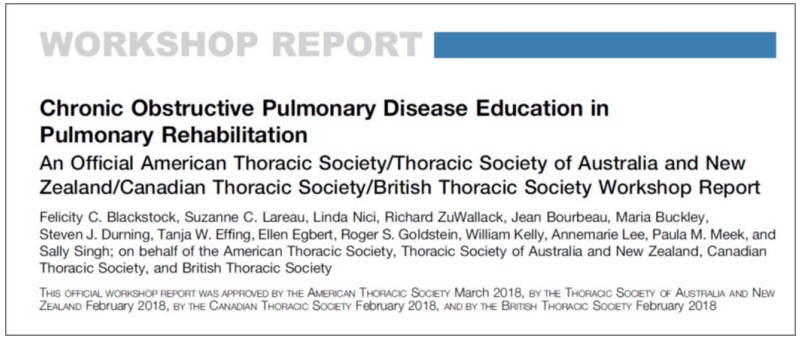
Available Literature Evaluating Education in PR

Blackstock et al 2018 p773

What is the guidance for PR education?

- Health education impacts five domains:

Knowledge	Perception of benefit	Health beliefs	Health behaviours	Health Outcomes
		?	?	



WORKSHOP REPORT

Chronic Obstructive Pulmonary Disease Education in Pulmonary Rehabilitation

An Official American Thoracic Society/Thoracic Society of Australia and New Zealand/Canadian Thoracic Society/British Thoracic Society Workshop Report

Felicity C. Blackstock, Suzanne C. Lareau, Linda Nici, Richard ZuWallack, Jean Bourbeau, Maria Buckley, Steven J. Durning, Tanja W. Effing, Ellen Egbert, Roger S. Goldstein, William Kelly, Annemarie Lee, Paula M. Meek, and Sally Singh; on behalf of the American Thoracic Society, Thoracic Society of Australia and New Zealand, Canadian Thoracic Society, and British Thoracic Society

This official workshop report was approved by the American Thoracic Society March 2018, by the Thoracic Society of Australia and New Zealand February 2018, by the Canadian Thoracic Society February 2018, and by the British Thoracic Society February 2018

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Quality Education Design Principles: Assessing Learner Outcomes

COPD Knowledge Questionnaires:

- Bristol COPD Knowledge Questionnaire – BCKQ (White et al 2006)
- Lung Information Needs Questionnaire – LINQ (Hyland et al 2006)
- COPD Knowledge Questionnaire -COPD-Q (Maples et al 2010)
- Understanding COPD Questionnaire – UCOPD (O'Neill et al 2012)

Table 3. Patient knowledge questionnaires in chronic obstructive pulmonary disease

Questionnaire	Description	Scoring	Psychometric Properties	Time to Complete (*Min*)
BCKQ (31)	Assesses patient's knowledge about topics related to COPD (e.g., symptoms, exercise, preventative measures, inhaled steroids).	65 items. Scoring of true +1 and 0 false. Scoring based on percentage of items answered correctly.	Test retest $r = 0.71$	15–20
COPD-Q (32)	Assesses knowledge of COPD.	13 items, scores range from 0 to 13 based on correct responses; higher scores indicate greater correct responses.	Cronbach's $\alpha = 0.73$ Test retest ICC = 0.90	Not available
LINQ (33)	Assesses patients' need for information about their COPD to guide clinical encounters. Six domains include: disease knowledge; medicines; self-management; smoking; exercise; and diet.	17 items. Scoring based on summing the items from each domain. Scores range from 0–25 with higher scores indicating higher need for information.	Cronbach's $\alpha = 0.72$ Test retest Each domain $r = 0.66$–0.98	6
UCOPD (34)	Assesses understanding of COPD, managing symptoms of COPD and accessing help and support (part A, 18 items) and satisfaction with education program (part B, 6 items).	24 items. Scoring calculated on percentage for parts A & B with scores ranging from 0 to 100% (greater understanding, confidence etc.).	Total score $r = 0.89$ Cronbach's $\alpha = 0.62$ Test retest Section A ICC range = 0.87–0.96 Section B, Wilcoxon signed rank test (no difference) $P > 0.05$ Cronbach's α range = 0.78–0.95	7

Definition of abbreviations: BCKQ = Bristol COPD Knowledge Questionnaire; COPD = chronic obstructive pulmonary disease; COPD-Q = COPD Knowledge Questionnaire; ICC = intraclass correlation coefficient; LINQ = Lung Information Needs Questionnaire; UCOPD = Understanding COPD questionnaire.

Blackstock et al 2018 p.772

What are the needs of our learners and educators?

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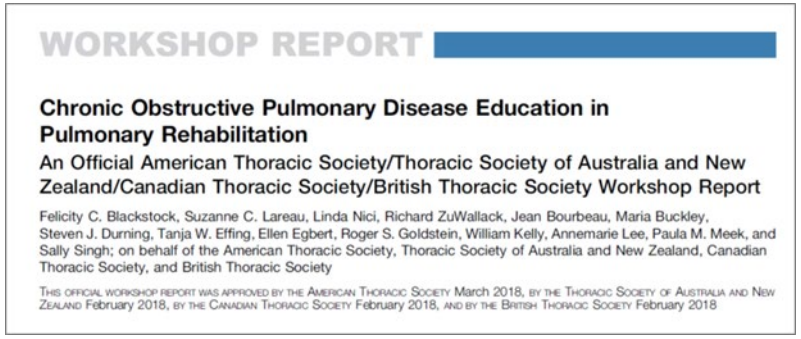
Potential Barriers to learning in PR Education

What are the needs of our learners and educators?

Effects of Psychological Factors on Learning

Effects of Cognitive Impairment on Learning

Effects of Health Literacy on Learning



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THIS OFFICIAL WORKSHOP REPORT WAS APPROVED BY THE AMERICAN THORACIC SOCIETY March 2018, BY THE THORACIC SOCIETY OF AUSTRALIA AND NEW ZEALAND February 2018, BY THE CANADIAN THORACIC SOCIETY February 2018, AND BY THE BRITISH THORACIC SOCIETY February 2018

Blackstock et al 2018

Do you measure these?

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Potential barriers to learning in PR programmes

What are the needs of our learners and educators?

Effects of Psychological Factors on Learning

- Hospital Anxiety and Depression Scale (HADS)
- Beck Depression Inventory(BDI)
- Generalised Anxiety Disorder Scale (GAD-7)
- Patent health Questionnaire (PHQ-9)

Effects of Cognitive Impairment on Learning

- Executive Clock drawing test (CLOX)
- Mini Mental State Exam (MMSE)
- Montreal Cognitive Assessment (MoCA)

Effects of Health Literacy on Learning

Blackstock et al 2018

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What is health literacy?

What are the needs of our learners and educators?

- Health literacy is:

"The personal characteristics and social resources needed for individuals and communities to access, understand, appraise and use information and services to make decisions about health."
WHO https://www.who.int/healthpromotion/conferences/7gchp/track2/en/

- Health information is currently too complex for 43% of the population in England Rowlands et al (2015)

- Low health literacy levels linked to low socioeconomic status and is a determinant of health

What are the needs of our Educators? Who are they?

What are the needs of our learners and educators?

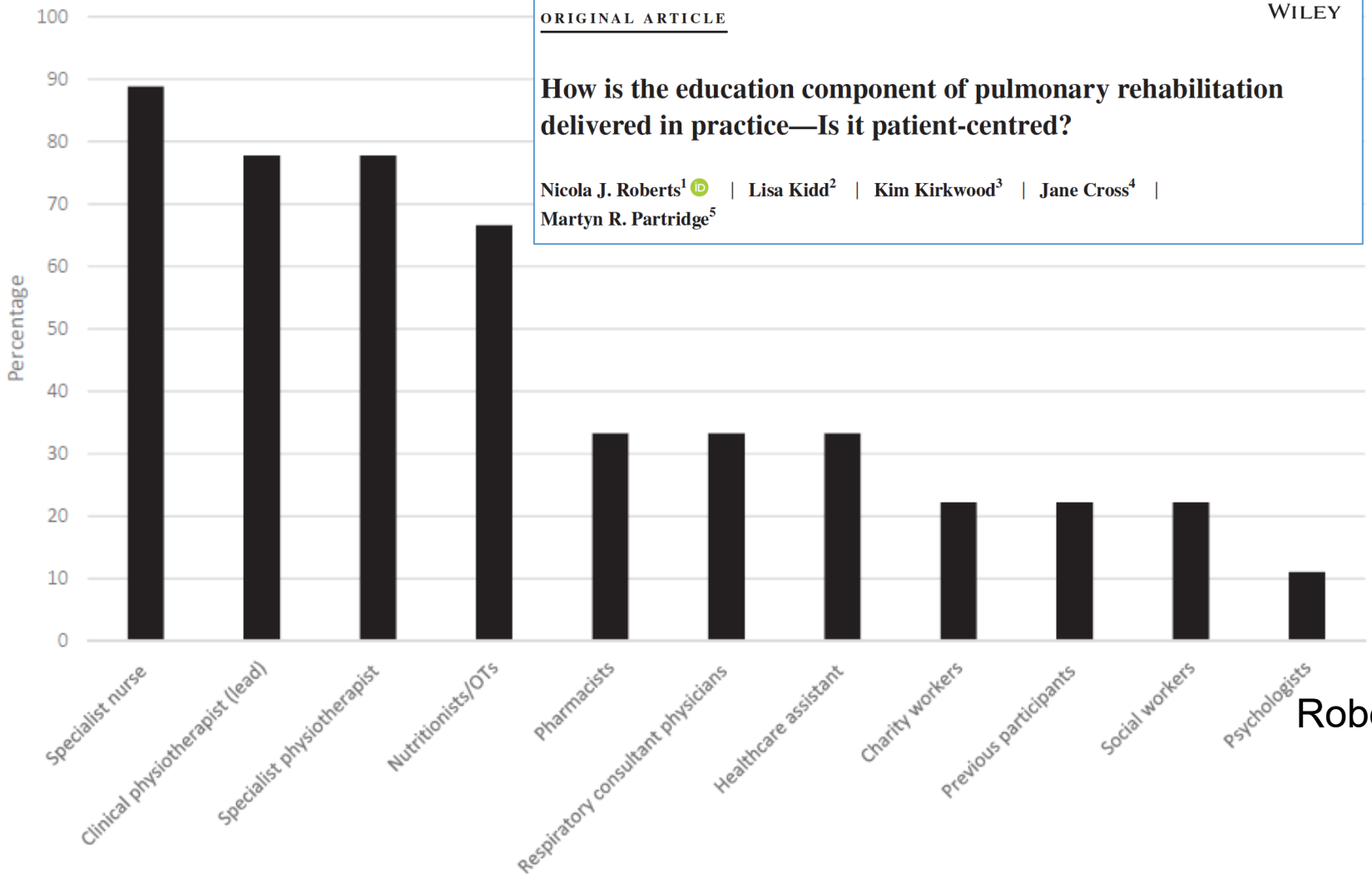
Received: 14 August 2020 | Accepted: 1 April 2021
DOI: 10.1111/crj.13371

ORIGINAL ARTICLE

WILEY

How is the education component of pulmonary rehabilitation delivered in practice—Is it patient-centred?

Nicola J. Roberts[1] | Lisa Kidd[2] | Kim Kirkwood[3] | Jane Cross[4] | Martyn R. Partridge[5]



Roberts et al 2021

What are the needs of our Educators?

What are the needs of our learners and educators?

- Is specialist clinical knowledge enough to be able to teach effectively (Bourne et al 2017)?
- Are educators peer assessed?
- Is patient or learner feedback collected?
- Are health professionals supported to identify development needs as educators?
- How confident are we in managing group dynamics?

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Management of Group Dynamics: Know your group…

Stop them tactfully and limit speaking time

The talker

Against everyone and everything – try to use their experience where you can so they are listened to

The ‘against member’

Can be very helpful – thank them and use their contribution

The ‘wise one’

The ‘tricky one’

Try to involve in non-threatening ways e.g. Ask them easy questions and then thank them for their contribution – make them feel validated

The ‘shy one’

Stay calm – try to limit their contribution by involving other group members ‘ That’s interesting – what do others think?’

The ‘knower’

Anxious to show you what they know – use their contributions but try to avoid them from alienating the rest of the

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3. What we mean by remote delivery of education and understand access

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Options for Remote Education in PR

3. What we mean by remote delivery of education and understand access

	Synchronous	Asynchronous
Deliver remote group education sessions using MS teams, Zoom, Attend Anywhere etc.	✓	X
Established Online Self-management platforms	✓	✓
Provide access to existing video content such as: DVDs, videos on public platforms e.g. YouTube	X	✓
Provide access to written materials (hard copies or online)	X	✓

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Accessing and Delivering Digital Remote Education

3. What we mean by remote delivery of education and understand access

Impacting both patient and provider…

Digital Access

+ or -

Digital Confidence

=

Digital Inequalities

https://www.pickpik.com/despaired-businessman-business-despair-disappointment-frustration-4634

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Digital Education in PR: Who has access?

3. What we mean by remote delivery of education and understand access

Check for updates

Research letter

Chronic Respiratory Disease

Chronic Respiratory Disease
Volume 17: 1–4
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Digital habits of PR service-users: Implications for home-based interventions during the COVID-19 pandemic

Oliver Polgar[1], Maha Aljishi[2,3], Ruth E Barker[1,3,4], Suhani Patel[1], Jessica A Walsh[1,5], Samantha SC Kon[1,4], William DC Man[1,3,5] and Claire M Nolan[1,5]

Research Letter

Chronic Respiratory Disease

Chronic Respiratory Disease
Volume 19: 1–3
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DOI: 10.1177/14799731221075647
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Digital habits of pulmonary rehabilitation service-users following the COVID-19 pandemic

Oliver Polgar, MSc[1], Suhani Patel, MSc[1,2], Jessica A Walsh, MPH[1], Ruth E Barker, PhD[1,2,3], Karen A Ingram, BSc[4], Samantha SC Kon, PhD[1,5], William DC Man, PhD[1,2,4,*] and Claire M Nolan, PhD[1,6,*]

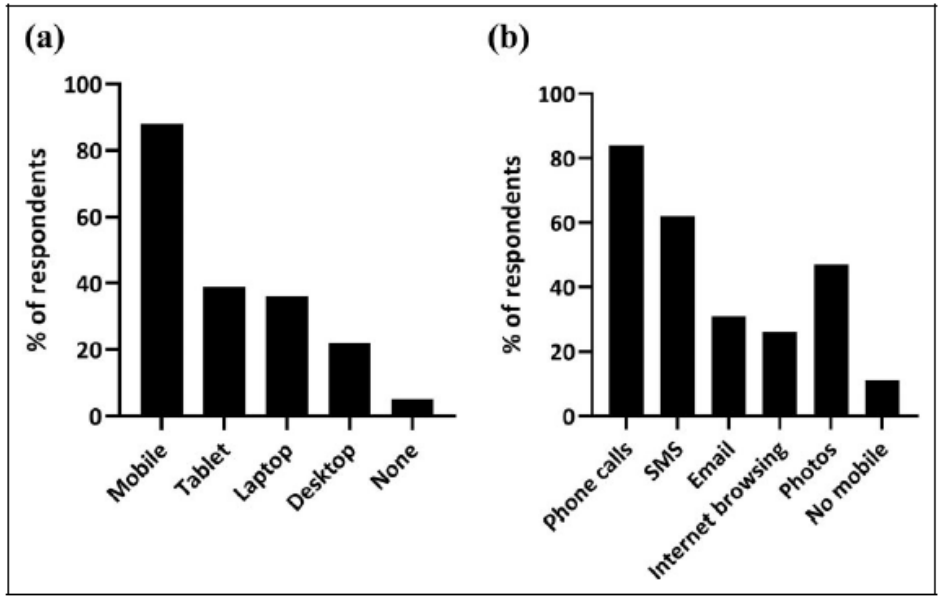


Figure 1. (a) Percentage of respondents with access to digital devices (b) Percentage of respondents using mobile phone functions. SMS: Short Message Service (Text messaging).

- Compared Cohort 2021 with Cohort 2020 (Polgar et al 2020)
- 17% had never accessed the internet compared to 33% in 2020 cohort
- digital literacy skills may be better amongst those currently on pulmonary rehabilitation waiting lists compared with before the COVID-19 pandemic.
- But – no increase in patient preference for web-based pulmonary rehabilitation 14% for 2020 cohort vs 15% for 2021 cohort

Spoken sessions vs. videoed content

3. What we mean by remote delivery of education and understand access

- PR based in two acute hospitals in Leicester, UK
- Comparison of education delivered via DVD versus face-to-face delivery
- No difference in improvement in BCKQ scores between groups
- No significant difference in patient satisfaction

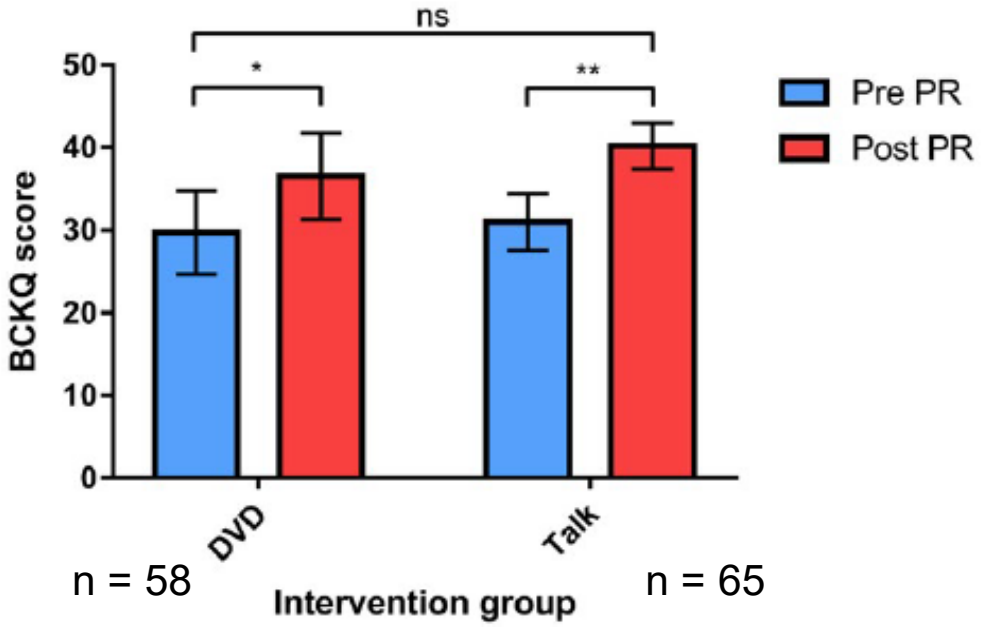
Received: 27 April 2018 | Revised: 7 August 2018 | Accepted: 10 August 2018
DOI: 10.1111/crj.12954

ORIGINAL ARTICLE

WILEY

Evaluation of multidisciplinary pulmonary rehabilitation education delivered by either DVD or spoken talk

Sarah Ward[1] | Louise Sewell[2] | Sally Singh[3]



Ward et al 2018 Clin Resp Jnl

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How can we enhance the design and delivery of face-to-face and remote PR education?

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Pedagogic Principles to Guide PR Education

How can we enhance the design and delivery of face-to-face and remote PR education?

- Principles of andragogy state that learning should:
  - Be active
  - Be meaningful to the patient
  - Be supported by concrete and constructive feedback
  - Include strong encouragement to become active in their own learning

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Effective delivery strategies

How can we enhance the design and delivery of face-to-face and remote PR education?

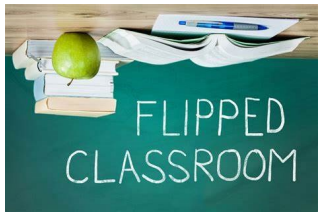
Consider:

- Duration of sessions - attention spans (15-20 mins)
- Peer-to-peer learning
- Demonstrations
- Case studies
- Don’t forget low/no tech strategies for audience responses
- Flipped classroom techniques

The flipped classroom in adult education

How can we enhance the design and delivery of remote PR education?

- Content introduced outside the 'classroom' and activities based on this content taking place in the 'classroom‘
- Techniques often referred to as 'blended learning' if content is placed online and the reviewed face-to-face
- Evidence of improved outcomes in adult education and is commonly used
- BUT can or should this be transferred to PR settings?

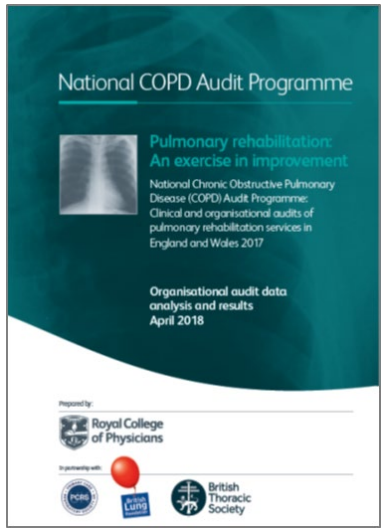


National COPD Audit Programme: Resources and organisation of PR services in England and Wales 2017

3.2 How is education provided (tick all that apply)? (QS6)

	2017 audit (n=187)	2015 audit (n=224)
Not applicable	0% (0)	0% (0)
Face-to-face taught group sessions	100% (187)*	99%
Written handouts	94% (176)	94%
DVD given to patients	10% (19)	14%
CD given to patients	14% (27)	14%
Information on dedicated website	18% (33)	17%
Other	3% (5)**	5%

* Face-to-face group sessions ONLY were provided by 5% (10).
** ‘Other’: DVD shown in group/session (3), YouTube videos (1) and targeted patient discussion group filmed education talks (1).



https://www.rcplondon.ac.uk/projects/outputs/pulmonary-rehabilitation-exercise-improvement-combined-clinical-and-organisational

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Session Aims…

What is the guidance for PR education?

What do we mean by remote delivery of education and where is the evidence?

What are the needs of our learners and educators?

How can we enhance the design and delivery of face-to-face and remote PR education?

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4 Key Take Home Messages

1. Consider re-evaluating and co-creating pulmonary rehabilitation education based on the cognitive, psychological, literacy levels and learning needs of the individual patient – one size may not fit all…

2. Incorporate educational design best practices e.g. review pedagogical approaches, technology –enabled learning etc.

3. Be clear about the learning outcomes of the education programme: Are we aiming to increase knowledge or can the role of education in PR be further explored to promote long term behaviour change?

4. There may be a need to provide faculty development – do we need to 'teach about teaching?'

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