



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

An official American Thoracic Society workshop report: the integrated care of the COPD patient. Proc Am Thorac Soc 2012

Pulmonary Rehabilitation the Facts

Benefits	Evidence
Improves exercise capacity	A
Reduces the perceived intensity of breathlessness	A
Improves health-related quality of life	A
Reduces the number of hospitalisations and hospital days	A
Reduces anxiety and depression associated with COPD	A
Strength and endurance training of the upper and lower limbs improves arm function	A
Benefits extend well beyond the immediate period of training	A
Improves survival	A
Respiratory muscle training can be beneficial, especially when combined with general exercise training	A

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

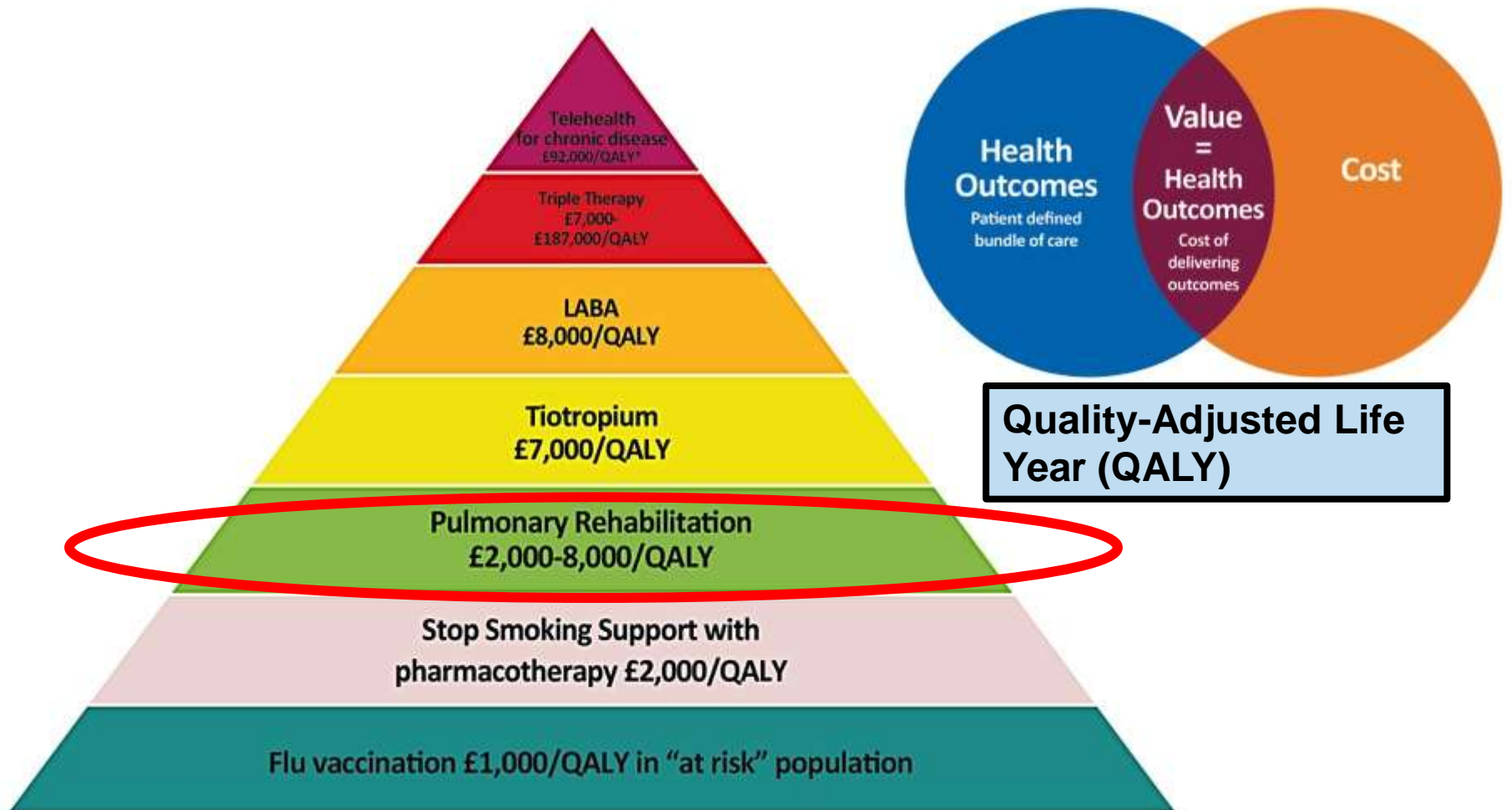
No other treatment for COPD offers collectively the same amount of outcomes. No other treatment offers the same impact on outcome results as PR does

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

<https://www.brit-thoracic.org.uk/document-library/clinical-information/pulmonary-rehabilitation/bts-guideline-for-pulmonary-rehabilitation/>

High value (“right care”) approaches: COPD value pyramid

What about cost effectiveness of PR?



London Respiratory Team

Current Models of Pulmonary Rehabilitation in Europe

❑ Traditional

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

❑ With Minimal or Specialist Equipment

- No difference in functional outcomes and QoL

❑ Emerging Models of Pulmonary Rehabilitation

- Home-based and/or Telehealth
 - **More research required to prove the benefits and cost effectiveness**

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

PR to Become Key Rx for Lung Disease in Europe if:

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

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 be deemed appropriate to commence immediately PR due to Repts med optimisation, or referral to other services may be 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

National audit (n=670)

1.1 What type of venue is this site?

Church or community hall	31%	207
Local leisure centre or gym	22%	147
Community hospital	17%	113
Acute hospital	13%	86
Health centre	9%	58
GP surgery	2%	13
Prison	0.3%	2
Other	7%	44

What is the team composition of PR in UK

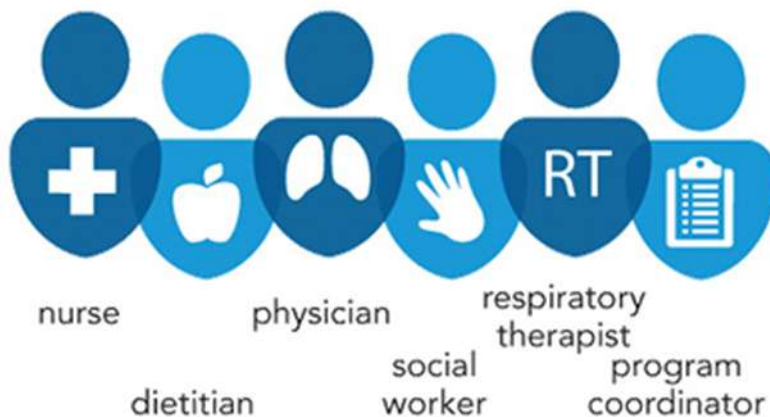
- PR services in UK are either independent – part of the wider respiratory team of the hospital or community
- However, there is increasing interest PR services to be part of the integrated respiratory team

Important advantages PR to be part of

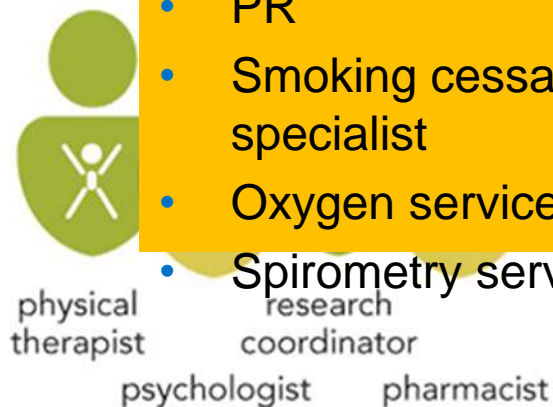
KING's IRT

- Inpatient COPD support
- Community outreach
- PR
- Smoking cessation specialist
- Oxygen service
- Spirometry service

The Multidisciplinary Team



Required Team Members




Recommended Team Members

In-patient & out-patient IRT MDM register

C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	
HOSP NO	DC from caseload	STAFF	DOA	LOCATION	IRT SERVICE NEEDS	REASON FOR ADMISSION	CODED AS	DATE OF NEXT PLANNED REVIEW	ADM IN LAST 3/12	NO OF ADMISSIONS (RESP)	NO OF ED ATTENDANCES (RESP)	SEVERITY	ACUTE INV IN LAST		
F132004	N	JFW	05/11/2018	Oliver	COPD	NIECOPD	NIECOPD	8.11.18	Y		10	Severe	N	n	No
0899147	N	JFW	14/11/2018	RDL	COPD	CAP	CAP	14.11.18	Y						
D720698	N	JFW	30/11/2018	ed	COPD	Cardiac	Cardiac	1.12.18							
R003533	y	JFW	30/11/2018	ED	Asthma	Asthma exac	Other								
0127946	N	JFW	30/11/2018	frailty	COPD	Other	Other	nil							
P757822	N	JFW	30/11/2018	david marsden	COPD	Other	Other	nil							
p329629	y	JFW	30/11/2018	ED	COPD	Cardiac	Cardiac								
A064346	y	JFW	02/12/2018	CDU	COPD										
P579727	N	JFW	02/12/2018	Murray Flaconer	COPD										
A941999	N	JFW	02/12/2018	Guthrie	COPD										
0144426	Y	JFW	02/12/2018	Byron	COPD										
0603502	N	JFW	02/12/2018	FSU	COPD										
0636944	N	JFW	02/12/2018	RDL	COPD										
F132004	N	JFW	02/12/2018	mwhiting	COPD										
P64960	N	JFW	02/12/2018	RDL	und										
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In-patient & out-patient IRT MDM spreadsheet

- Advantages of a weekly MDM meeting
- Opportunity for
- Excellent opportunity for treatment and respiratory correction
- Ascertain if all with COPD/As

King's College Hospital 
NHS Foundation Trust

COPD Discharge Bundle

To be completed before discharge for all patients admitted with an acute exacerbation of COPD for 48 hrs or more

Name _____ Hospital Number _____

<p><i>If patient is a smoker, offer smoking cessation assistance.</i></p> <p>Ex/non-smoker ()</p> <p>Already referred ()</p> <p>Referred ()</p> <p>Declined ()</p> <p>Date: _____</p> <p>Signed: _____</p>	<p><i>Pulmonary rehab. All patients advised of benefits and screened for suitability.</i></p> <p>Referred ()</p> <p>Not suitable ()</p> <p>Declined ()</p> <p>Date: _____</p> <p>Signed: _____</p>	<p><u>Introduction to self-management.</u></p> <p>COPD, Self-management & recognition of exacerbation information provided ()</p> <p>Assessed for suitability of rescue pack Y () N ()</p> <p>Date: _____</p> <p>Signed: _____</p>	<p><i>Satisfactory use of inhalers demonstrated and understood.</i></p> <p>Satisfactory technique demonstrated ()</p> <p>Date: _____</p> <p>Signed: _____</p>	<p><i>Appropriate follow-up arrangements made. All patients should be advised see their GP within 2 weeks of discharge. Other respiratory review to be arranged as required.</i></p> <p>Patient informed & agreed ()</p> <p>Date: _____</p> <p>Signed: _____</p>
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Provision for Local and National PR Audit

National COPD Audit Programme



Pulmonary rehabilitation Beyond breathing

National Chronic Obstructive
Disease (COPD) Audit Programme
Outcomes from the clinical
pulmonary rehabilitation survey
England 2015

Results and data analysis
December 2017

Prepared by:



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British
Thoracic
Society

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.

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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.

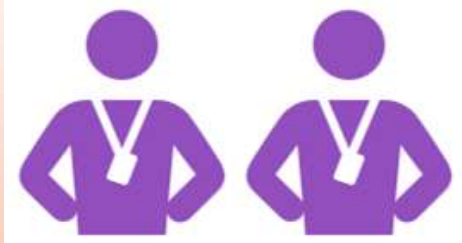
- A reduction of 1/3 of exacerbations in this patient population. This equates to 150,924 fewer exacerbations, potentially freeing up this number of GP appointments
- 26,633 avoided hospital admissions, leading to
- 106,532 hospital bed days saved.

Clinical audit recap

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

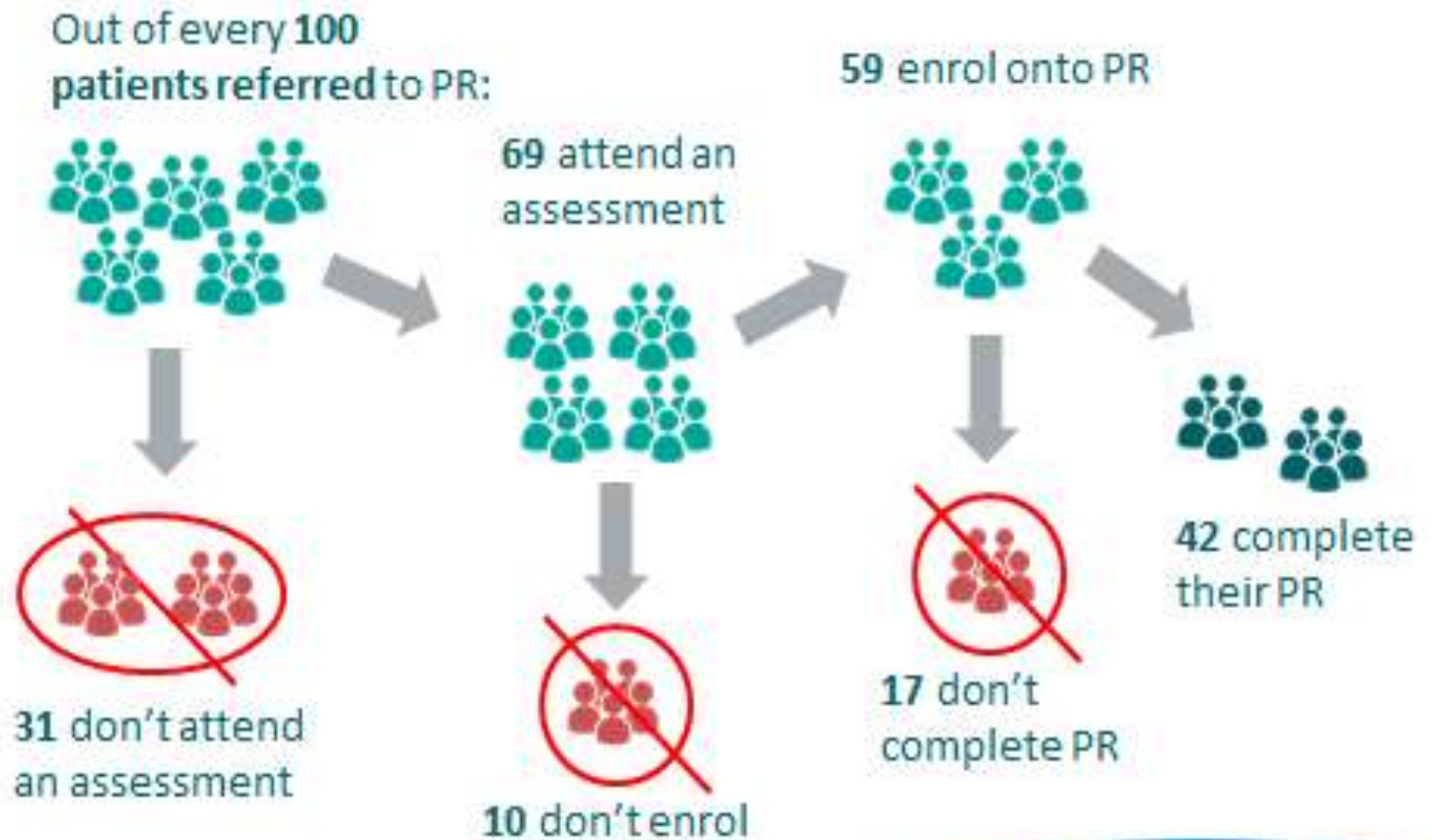


7,413 patients were included
(81% of those approached for consent)



210 PR services
participated
(Out of 230 eligible)

Recap - completion of PR



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Setting higher standards

Health status improvements

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



61 improved by more than the MCID



13 improved but by less than the MCID



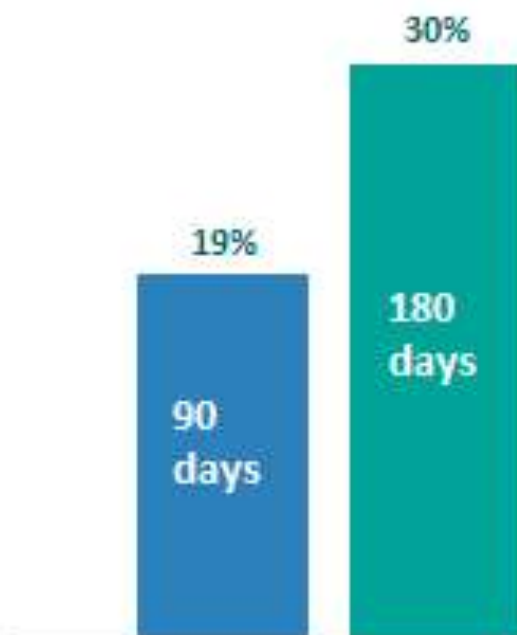
26 had no change or a worse score.

^a COPD Assessment Test

^b St George's Respiratory Questionnaire

^c Chronic Respiratory Questionnaire

Admission rates



Patients assessed for PR



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People with at least one admission
within 180 days of PR assessment



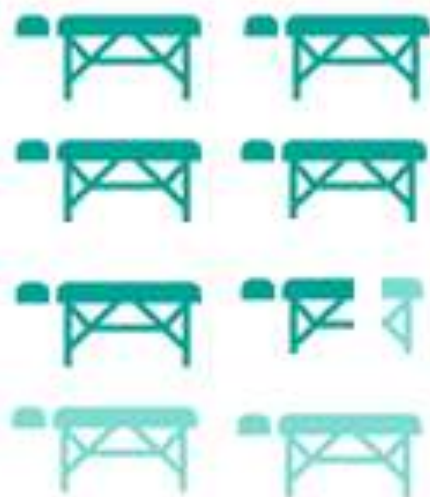
People who
completed
PR



People who
did not
complete
PR

Setting higher standards

Bed days for those that were admitted



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

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



Patients who **completed** their PR course was **4.8 days**



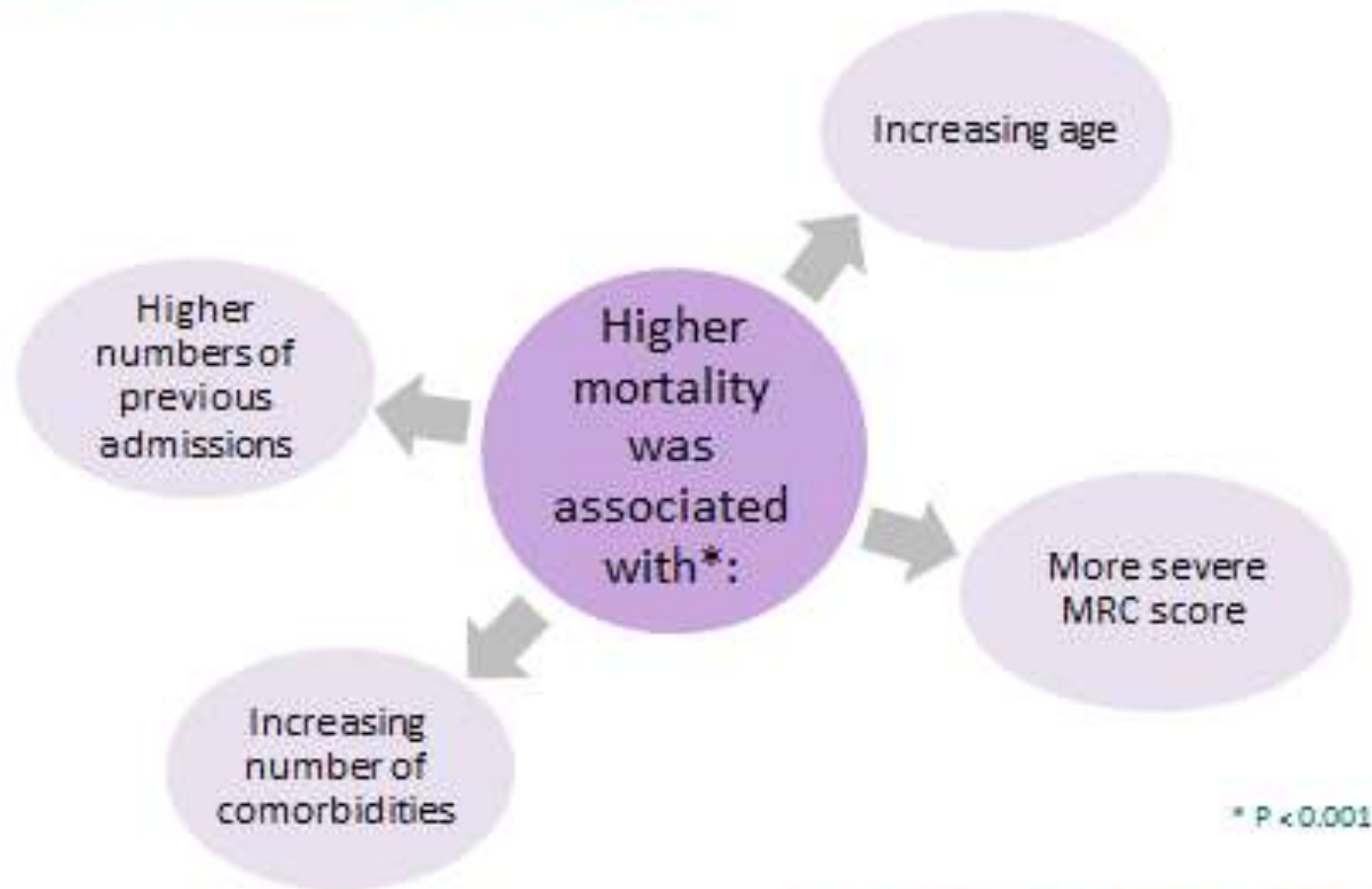
Patients who **did not complete** their PR course was **9.6**



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Setting higher standards

Mortality within 180 days



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Setting higher standards

And so, what next?

The Importance of Development National Quality Indicators for PR

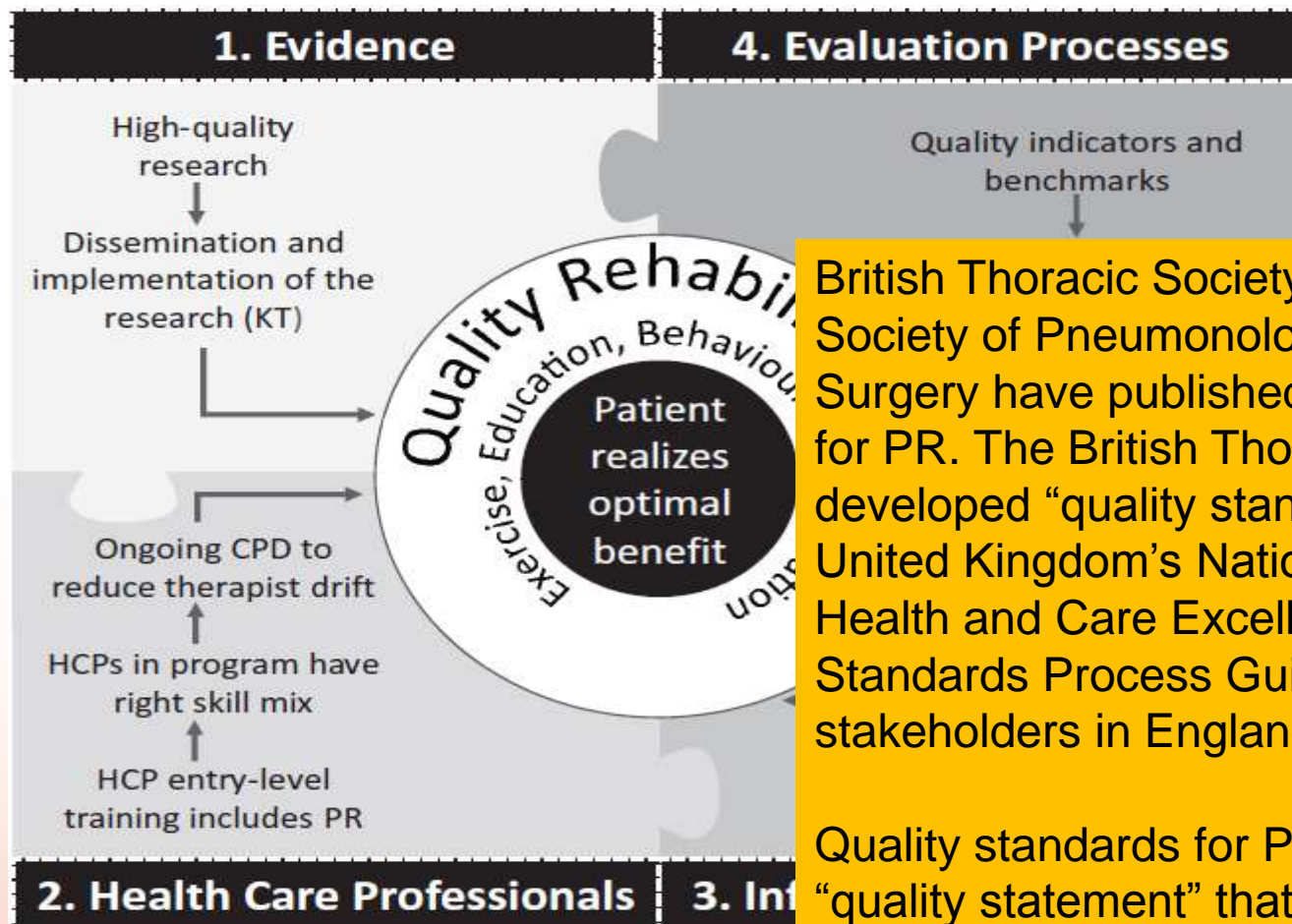


Figure 1.

Components of quality pulmonary rehabilitation. CPD=continuing professional development, HCP=health care professional, KT=knowledge translation
Copyright 2018 by Pat G. Camp.

British Thoracic Society and the Spanish Society of Pneumology and Thoracic Surgery have published quality indicators for PR. The British Thoracic Society developed “quality standards” based on United Kingdom’s National Institute for Health and Care Excellence (NICE) Quality Standards Process Guide,³⁸ for the use of stakeholders in England.

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.

NICE committee development of quality standards for PR

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

(<https://www.brit-thoracic.org.uk/standards-of-care/quality-improvement/pulmonary-rehabilitation/>).

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

- ❖ PR Programmes may differ from country to country and within county 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 ?

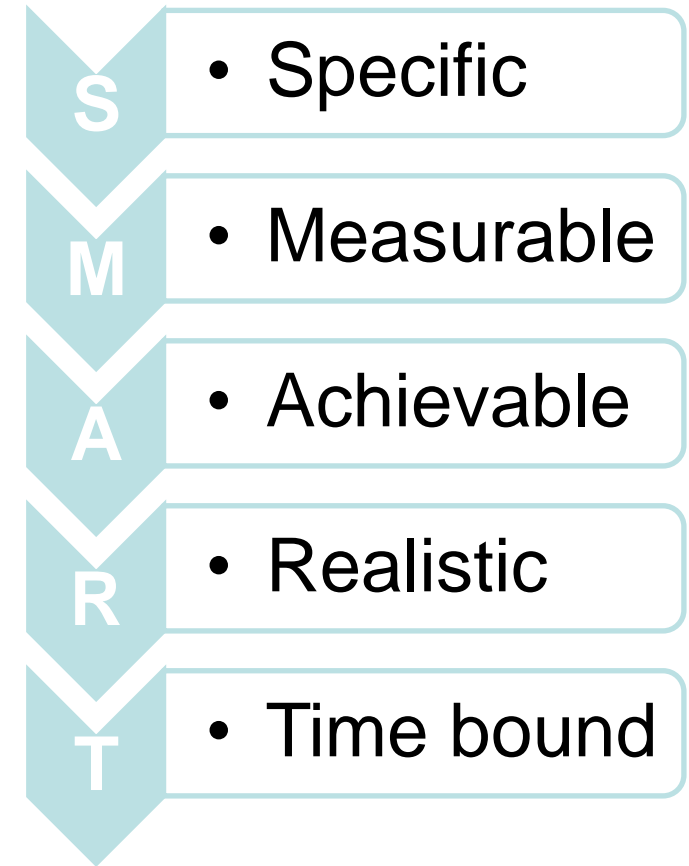
Look for areas where you can **realistically** make improvements.

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**.



Any questions

