
Measuring the impact of research in improving outcomes and value

Reflections from Academic Health Sciences Centres in the UK

Prof John Moxham, Tuesday 27 November 2018



Our mission – translate cutting-edge research and innovation into patient care, delivering **improved outcomes for patients** locally and globally

King's Health Partners

We are...

1 of 6
Academic Health Science Centres in the UK



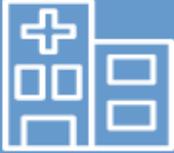
Our partners

3 NHS Foundation Trusts

- Guy's and St Thomas'
- King's College Hospital
- South London and Maudsley

1 world-leading university for health, research and education






40,000
staff



30,000
students







Delivered through clinical academic groups – focus on integrating **mind and body** and implementing **value based healthcare**

King's Health Partners

We have...

22 Clinical Academic Groups



600
clinical trials running
at any one time

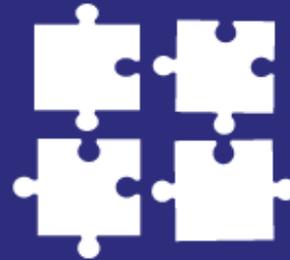


4.8 million
patient contacts per year



plans to bring together
our collective strength in
key areas to form a
number of

**Clinical Academic
Institutes &
Networks**



a patient
population of

8 million

in south London and
south east England





Dissolving the artificial boundaries between research, practice, teaching and training



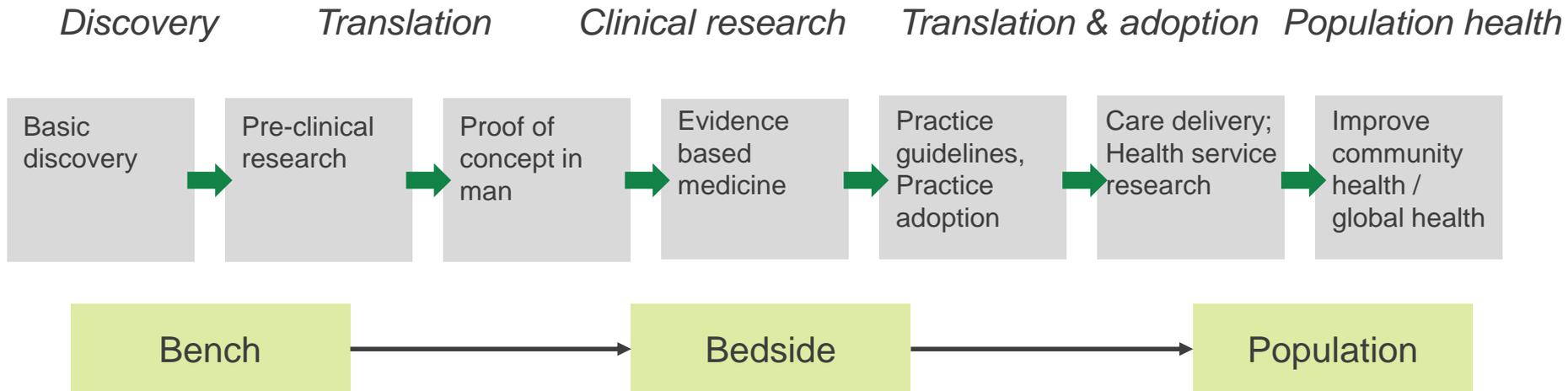
“Our clinical academic group has dissolved artificial boundaries between research, practice, teaching and training, and between the NHS and academia. Our clinicians teach, our researchers practise and our teachers research.”

“This structure is enabling us to attain our key strategic goal of assuring the translation of research findings related to medicines into practice as quickly as possible, which ultimately benefits our patients who safely receive the right medicine, in the right formulation at the right time.”

Progress report from Pharmaceutical Sciences CAG Leader to monthly meeting of all CAGs with the Executive Director of King’s Health Partners (13 November 2018) 5



For research and innovation to have maximum impact on health outcomes, we need to have academic healthcare **systems**



- Innovative ideas and discoveries can be put into practice to improve patient care irrespective of where in the continuum they arise.
- Innovative ideas and discoveries can be exported to other institutions / systems, and similarly the innovations of others can be imported into the continuum.

(modified from Dzau et al., *Lancet* 2010, 375:949:53

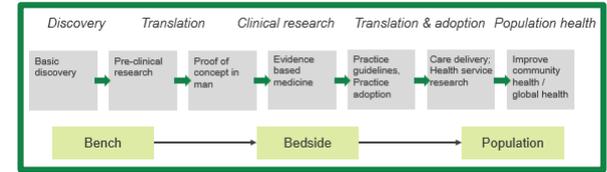


Focusing on value ensures that we deliver outcomes that matter to patients and achieve a sustainable healthcare system for all

$$\text{Value} = \frac{\text{Outcomes that matter to patients, service users and carers}}{\text{Costs of achieving those outcomes Over the complete pathway of care}}$$



Research driving high value COPD care



- Past research within King's Health Partners has demonstrated that for patients admitted with exacerbation of chronic obstructive pulmonary disease (COPD), early post-discharge outpatient pulmonary rehabilitation improved exercise capacity and reduced readmissions. (Man WD, Polkey MI, Donaldson N, Gray BJ, Moxham J., MBJ 2004; Seymour JM et al, Thorax 2010).
- The KHP Integrated Respiratory Team, led by a KHP respiratory consultant and two local GP respiratory leads increased pulmonary rehabilitation referrals by 50% - most referrals nationally.
- This has led to reduced admissions (34%) and length of stay (17%) and substantial net savings.

Chronic obstructive pulmonary disease

BMJ Journals
Thorax

Outpatient pulmonary rehabilitation following acute exacerbations of COPD

John M Seymour,¹ Lauren Moore,² Caroline J Jolley,¹ Katie Ward,¹ Jackie Creasey,³ Joerg S Steier,¹ Bernard Yung,³ William D-C Man,⁴ Nicholas Hart,² Michael I Polkey,⁴ John Moxham¹

► Supplementary data are published online only. To view this file please visit the journal online <http://thorax.bmj.com/content/vol65/issue6>

ABSTRACT Exacerbations of chronic obstructive pulmonary disease (COPD) are characterised by increased dyspnoea, reduced quality of life and muscle weakness. Re-exacerbation and hospital admission are common. Pulmonary rehabilitation (PR) administered after hospital admission for an exacerbation can improve quality of life and exercise capacity.

Objective To determine whether outpatient post-exacerbation PR (PEPR) could reduce subsequent hospital admission episodes.

Methods Patients admitted to hospital for an exacerbation of COPD were randomised to receive either usual follow-up care (UC) or PEPR after discharge. Hospital admission and emergency department attendances for COPD exacerbations were recorded over a 3-month period and analysed on an intention-to-treat basis. Secondary outcomes included exercise capacity and quadriceps strength.

Results 60 patients underwent concealed randomisation at the time of their hospital discharge (UC: n=30, mean (SD) age 65 (10) years, forced expiratory volume in 1 s (FEV₁) 52 (22)% predicted; PEPR: n=30, 67(10) years,

Reduced daily activity and quadriceps strength predict healthcare utilisation in COPD.^{9,10} Following hospitalisation for an acute exacerbation, patients are typically less active and more breathless and may remain so for several weeks.¹¹ Quadriceps muscle strength commonly falls during an exacerbation¹² and may contribute to inactivity.¹³ Multi-disciplinary pulmonary rehabilitation can improve dyspnoea and quality of life, and can generate clinically meaningful improvements in exercise capacity.^{4,14} A randomised trial of pulmonary rehabilitation in stable disease demonstrated a reduction in hospital days over a 1-year period.⁴ The physiological deficits exhibited by patients after a hospital admission are, at least in part, amenable to pulmonary rehabilitation, and their correction may help prevent re-exacerbation.

We have shown in an earlier study that pulmonary rehabilitation administered within a week of hospital discharge can generate improvements in exercise capacity. Emergency department attendances were reduced over a 3-month period and a trend towards reduced hospital admissions was

thebmj

Community pulmonary rehabilitation after hospitalisation for acute exacerbations of chronic obstructive pulmonary disease: randomised controlled study

William D-C Man, Michael I Polkey, Nora Donaldson, Barry J Gray, John Moxham

Abstract

Objective To evaluate the effects of an early community based pulmonary rehabilitation programme after hospitalisation for acute exacerbations of chronic obstructive pulmonary disease (COPD).

Design A single centre, randomised controlled trial.

Setting An inner city, secondary and tertiary care hospital in London.

Participants 42 patients admitted with an acute exacerbation of COPD.

Intervention An eight week, pulmonary rehabilitation programme for outpatients, started within 10 days of hospital discharge, or usual care.

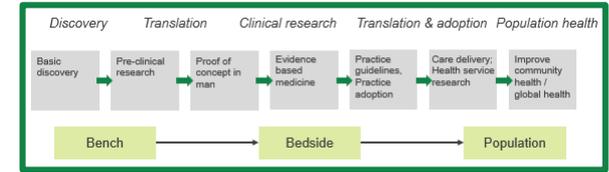
Main outcome measures Incremental shuttle walk distance,

NHS) but also to real improvements in quality of life and functional ability in breathless and vulnerable patients with COPD.

Pulmonary rehabilitation is a multidisciplinary programme of care for patients with chronic respiratory impairment that is individually tailored and designed to optimise each patient's physical and social performance and autonomy. Pulmonary rehabilitation leads to statistically significant and clinically meaningful improvements in health related quality of life, functional exercise capacity, and maximum exercise capacity in patients with stable COPD.¹⁵ Consequently, the recent guidelines on the management of COPD published by the National Institute for Clinical Excellence (NICE) and the British Thoracic Society recommend that pulmonary rehabilitation should be made available to all appropriate patients.⁵ However, the effects of early



Three Dimensions for Diabetes (3DFD) – *Diabetes and Obesity CAG*



- Three Dimensions for Diabetes is a patient centred multidisciplinary service integrating psychological and social care with diabetes care for complex multi-morbidity patients at high risk of diabetic complications.
- 1,020 patients referred into the programme.
- On referral, mean Hb A1c of 96mmol/mol (10.9% DCCT). Intervention reduced HbA1c by 16 mmol/mol, significantly reducing risk of complications.
- 60% of patients received a new diagnosis of a psychiatric disorder (60% depression).
- Reduced A&E attendances by 45%, hospital admission by 43% and bed days by 22%. Reduced incidence of depression, and increased patient satisfaction.
- Service cost £190k but saved £225k in one year. Over 5 years, predicted net savings £2,425k.
- 3DfD → Three Dimensions for Long Term Conditions



[Int J Psychiatry Med](#). 2016;51(1):3-15. doi: 10.1177/0091217415621040.

Improving quality of diabetes care by integrating psychological and social care for poorly controlled diabetes: 3 Dimensions of Care for Diabetes.

[Doherty AM](#)¹, [Gayle C](#)², [Morgan-Jones R](#)³, [Archer N](#)⁴, [Laura-Lee](#)⁵, [Ismail K](#)², [Werner A](#)².

Author information

Abstract

OBJECTIVE: Many people with persistent suboptimal diabetes control also have psychiatric morbidity and social problems which interfere with their ability to self-manage their diabetes. Current models of care in the UK do not integrate these different dimensions of care or address inequalities between physical and mental health. 3DFD (3 Dimensions of Care For Diabetes) integrated medical, psychological, and social care in diabetes for patients with persistent suboptimal glycemic control (HbA1c > 75 mmol/mol) despite guideline-based routine diabetes care, to improve glycemic control, reduce psychological distress, and improve social functioning.

METHODS: The service delivered interventions including brief psychological therapies, mental health assessments, psychotropic medications, and social support, enhanced by patient-led case conferences aiming to optimize diabetes care. 3DFD measured changes in HbA1c, psychological functioning, quality of life, rates of unscheduled care, and levels of engagement with routine diabetes care at baseline and at 12 months.

CONCLUSION: At 12-month follow-up, 3DFD patients exhibited distress reduction in

Doherty AM et al., Int J Psychiatry Med 2016; 51: 3-15.

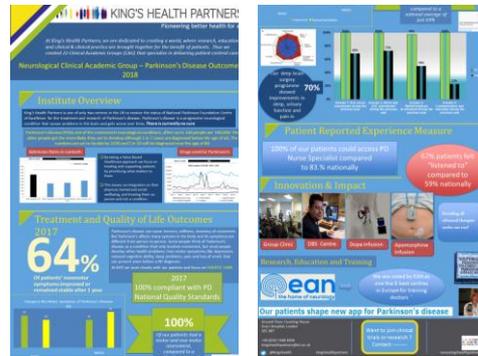


To improve value we must drive research and innovation that demonstrate improvement in outcomes that matter to patients

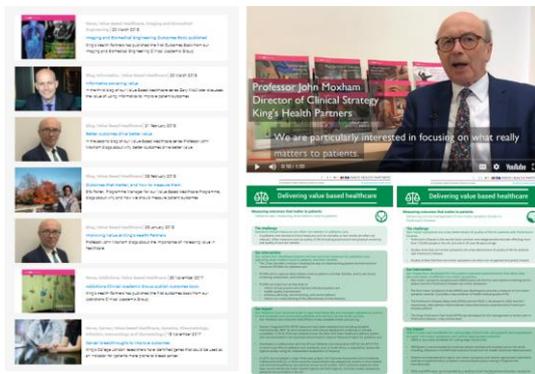
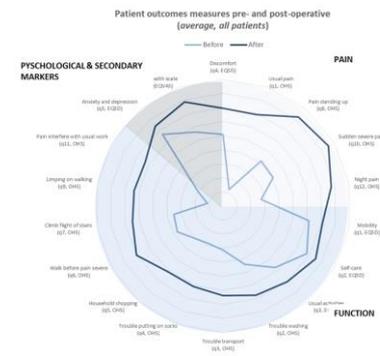
Outcomes Books



Outcomes Scorecards



Calculating Value



Communications



Sharing learning

Vital 5

“Standardised and routine recording & clinical management of these 5 key scores for all our patients

- Blood pressure
- Obesity
- Mental health score
- Alcohol intake
- Smoking habits

is a vital component to delivering consistent high quality care to all our patients”

Professor John Moxham, Director of Clinical Strategy, KHP

Vital 5