

PROPEL myCOPD

A Pragmatic Real-world multicentre Observational research study to exPlorE
the clinical and health economic impact of myCOPD

Project Brief

Case for Change

COPD is a condition which affects over 3 million people in the UKⁱ. It causes chronic symptoms including breathlessness and cough, limitations in exercise tolerance and acute exacerbations of COPD (AECOPD) which often lead to hospital admission. Current treatment for COPD includes inhaled medication and exercise programmes called Pulmonary Rehabilitation (PR) to improve exercise tolerance and resilience to AECOPDⁱⁱ. Currently, NHS respiratory services are struggling to provide support to patients with COPD, a recent report highlighted that 75% of people with COPD are not receiving basic careⁱⁱⁱ. There is an increasing need therefore to improve the provision of PR and to support patients to self-manage their condition effectively, this requires new approaches and pathways of care^{iv}.

myCOPD is a digital self-management and Pulmonary Rehabilitation (PR) app developed by NHS Physicians and people with COPD. It has been rigorously tested in clinical trials and has been shown to deliver similar improvements in symptoms and exercise tolerance to PR exercise-classes and to help patients admitted to hospital, recover more quickly at home^{v,vi}. myCOPD is being used by patients in different areas of the UK, but to enable adoption across the NHS, evidence for the health-economic benefits of its use is required.

A formal assessment through an observation study will provide vital evidence for the value of myCOPD in the NHS and enable us to develop a business case for its national adoption and use, which will ultimately transform outcomes for people with this common and complex condition.

The Approach

This study will explore the implementation of myCOPD by NHS respiratory services in two regions with diverse populations and challenges.

- Setting 1: In North Bristol NHS Trust and University Hospitals Bristol and Weston NHS Foundation Trust we will assess the value of using myCOPD in patients admitted to hospital with an exacerbation and its ability to help prevent re-admissions.
- Setting 2: In Cornwall Partnership NHS Foundation Trust we will work with local services to provide 'digital-PR' to isolated communities and increase the capacity and access to specialist support for self-management.

Project Aims and Objectives

The aim of this study is to use mixed-methods to understand the impact of implementing myCOPD in the NHS in the real-world. We will evaluate clinical and health economic outcomes to provide essential evidence for the development of clinical pathways and business cases to enable widespread adoption of the technology across the NHS.

Methodology

Through the qualitative arm of the study, we will conduct semi-structured interviews with targeted patients, healthcare professionals and key stakeholders, focusing on likely barriers to utilising myCOPD. We will consider this with reference to existing data from myCOPD, psychological and behavioural theories to optimise implementation and meet the needs of patients and HCPs.

A mixed methods analysis will be undertaken to evidence uptake and engagement through participant organisations, as well as how the platform may support an integrated system-based approach to COPD management. A final report on the findings will include health economic analyses to assess the potential cost-benefit ratio and budget impact of the innovation.

Outcomes

Setting 1: Acute setting

The primary outcome is to explore whether myCOPD supports patients to self-manage at home with clinical oversight reducing the risk of hospital readmission as part of the respiratory discharge bundle. Hospital readmission rates for patients with COPD over 12-months following discharge with change in annualised hospitalisation will be collected for those using myCOPD and those who choose not to. Data relating to each patient's admissions during the 12 months prior to enrolment will also be collected.

Secondary outcomes include benefits to the acute workforce, healthcare utilisation, welfare and quality of life scores, environmental social benefit, myCOPD app usage and usage feedback

Setting 2: Pulmonary Rehabilitation

The primary outcome is to explore whether using a digital blended approach increases PR delivery and completion rates with improved outcome measures. The total number of patients who were offered, started and completed PR using myCOPD to support a menu-based approach will be collected. The uptake rate, completion rate and level of completion (if not 100%) will also be analysed.

Secondary outcomes include admission data, healthcare resource utilisation, welfare and quality of life scores, myCOPD app usage and usage feedback.

Study regulations

This study will be conducted in line with recommendations for conducting clinical trials on human subjects. All eligible participants will be informed of the study, asked whether they wish to voluntarily participate and will be consented, if appropriate.

ⁱ National Institute for Health and Care Excellence (NICE). Chronic obstructive pulmonary disease in adults: Quality standard. NICE Guidel [Internet]. 2016;(July 2011):1–46. Available from: www.nice.org.uk/guidance/qs10/resources/chronic-obstructive-pulmonary-disease-in-adults-pdf-2098478592709

ⁱⁱ Bollmeier SG, Hartmann AP. Management of chronic obstructive pulmonary disease: A review focusing on exacerbations. *Am J Heal Pharm.* 2020;77(4):259–68.

ⁱⁱⁱ Global Initiative for Chronic Obstructive Lung Disease. GOLD Report 2020. *Glob Initiat Chronic Obstr Lung Dis* [Internet]. 2020;141. Available from: https://goldcopd.org/wp-content/uploads/2019/12/GOLD-2020-FINAL-ver1.2-03Dec19_WMV.pdf

^{iv} Vibeke Gottlieb, Anne Marie Lyngsø, Birgitte Nybo AF& VB. Pulmonary Rehabilitation for Moderate COPD (GOLD 2) –Does it Have an Effect? *J Chronic Obstr Pulm Dis.* 2011;8(5):380–6.

^v Bourne S, Devos R, North M, Chauhan A, Green B, Brown T, et al. Online versus face-to-face pulmonary rehabilitation for patients with chronic obstructive pulmonary disease: Randomised controlled trial. *BMJ Open.* 2017;7(7).

^{vi} North M, Bourne S, Green B, Chauhan AJ, Brown T, Winter J, et al. A randomised controlled feasibility trial of E-health application supported care vs usual care after exacerbation of COPD: the RESCUE trial. *npj Digit Med* [Internet]. 2020;3(1):1–8. Available from: <http://dx.doi.org/10.1038/s41746-020-00347-7>