# my mhealth

The digital transformation of long-term condition management is happening now!

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# my mhealth

## Who are we?

- **The only NHS approved apps** in the newly released NHS App store
- Operate under clinical governance framework
- IGT Level 2
- **NHS Innovation Accelerator Status**
- **myCOPD is the first and only current medical app** included in the Nation Innovation Tariff from April 2017

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# What we do for patients

…..create an environment where they are empowered through a patient centred, evidence based platform, to self-manage their long-term condition, with confidence, within their chosen clinical pathway.

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# What we do for clinicians and providers

‘’We enable clinicians to manage patients remotely, efficiently, and at scale. Improving patients access to healthcare and reducing inequality’’

# COPD as an example

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‘’Since I started using, myCOPD, I have lost weight, my depression has lifted, and I see my just GP just once a year (compared with twice-monthly visits previously). I have not needed hospital treatment for 18 months.’’

# What patients say

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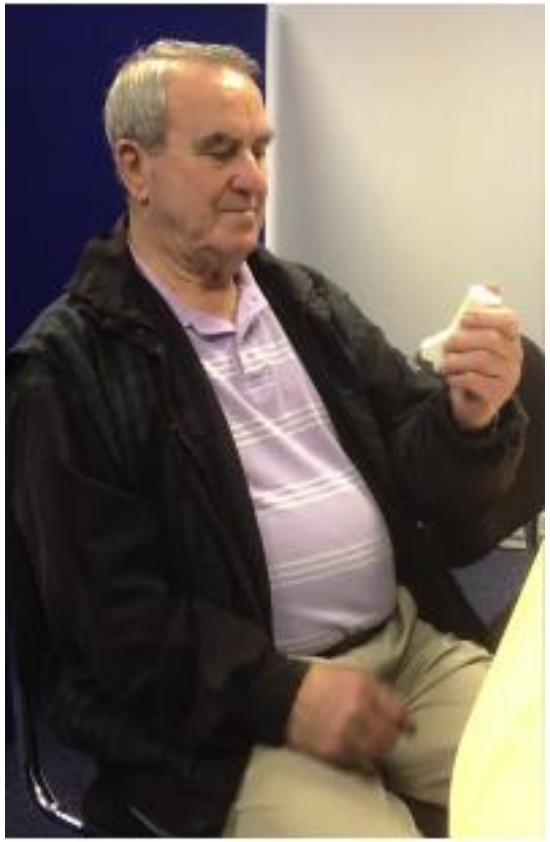

# We have seen some truly remarkable results

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# Any device – just needs the right browser

- What makes us different?
- We are device agnostic
- We deliver the best user interface on any device
- Examples of browsers with optimal performance for my mhealth apps

Internet Explorer 11 or above (Edge)

Chrome 43 or above;

Chrome 53 for Android;

Firefox 36 or above;

Safari 9.0 or above;

Opera 33 or above;

Safari and Chrome for iOS 9.0 or above.

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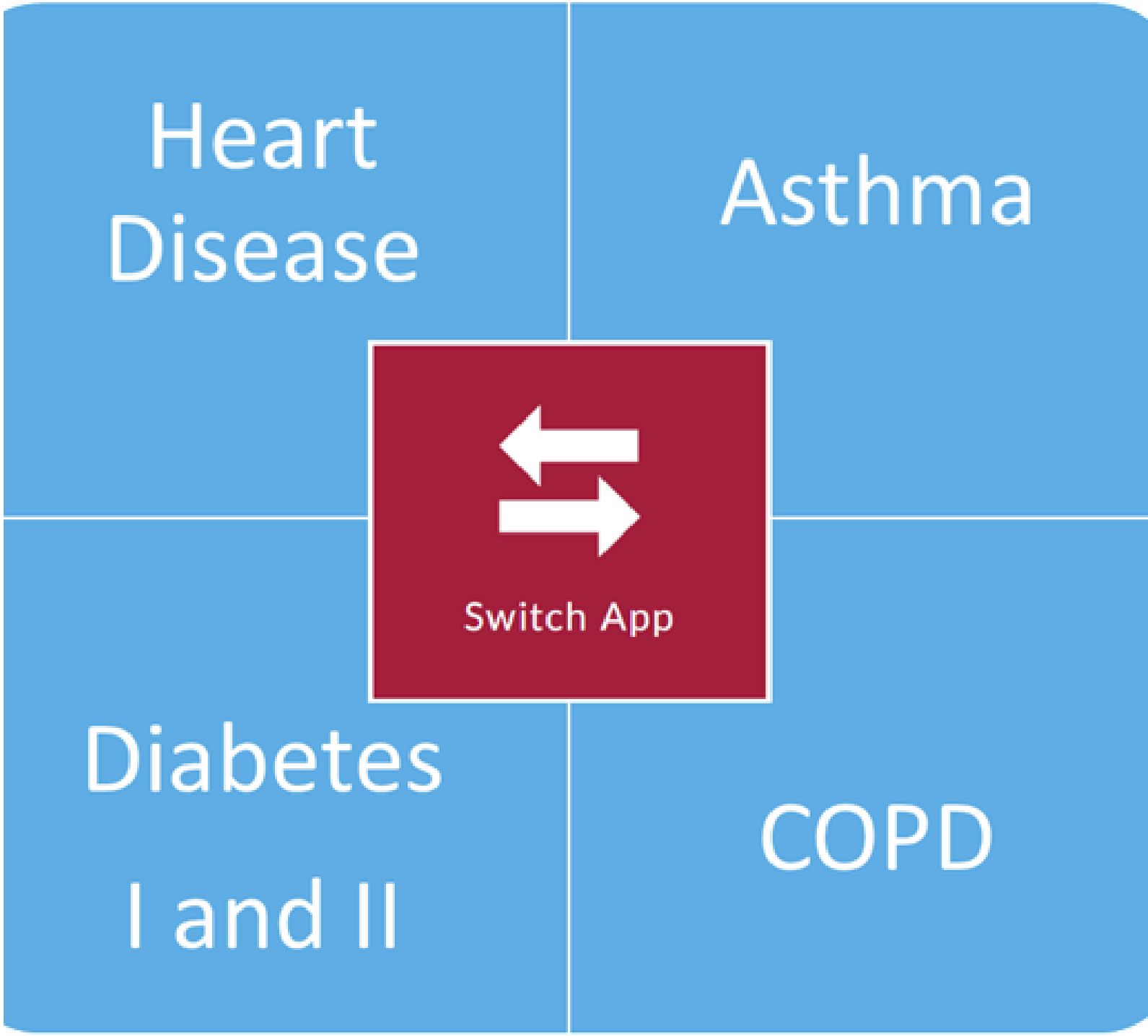
The switch app button, within each app allows the patient with multiple morbidities to move between applications seamlessly and instantly.

Providing a comprehensive solution from a single user login.

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# myCOPD – Example of patient interface

- Simple registration
- Symptoms Collection
- Self management
- Rehab
- Inhaler videos
- Comprehensive education
- Mindfulness
- Chest clearance
- Notifications
- …..and much more

## How To Use

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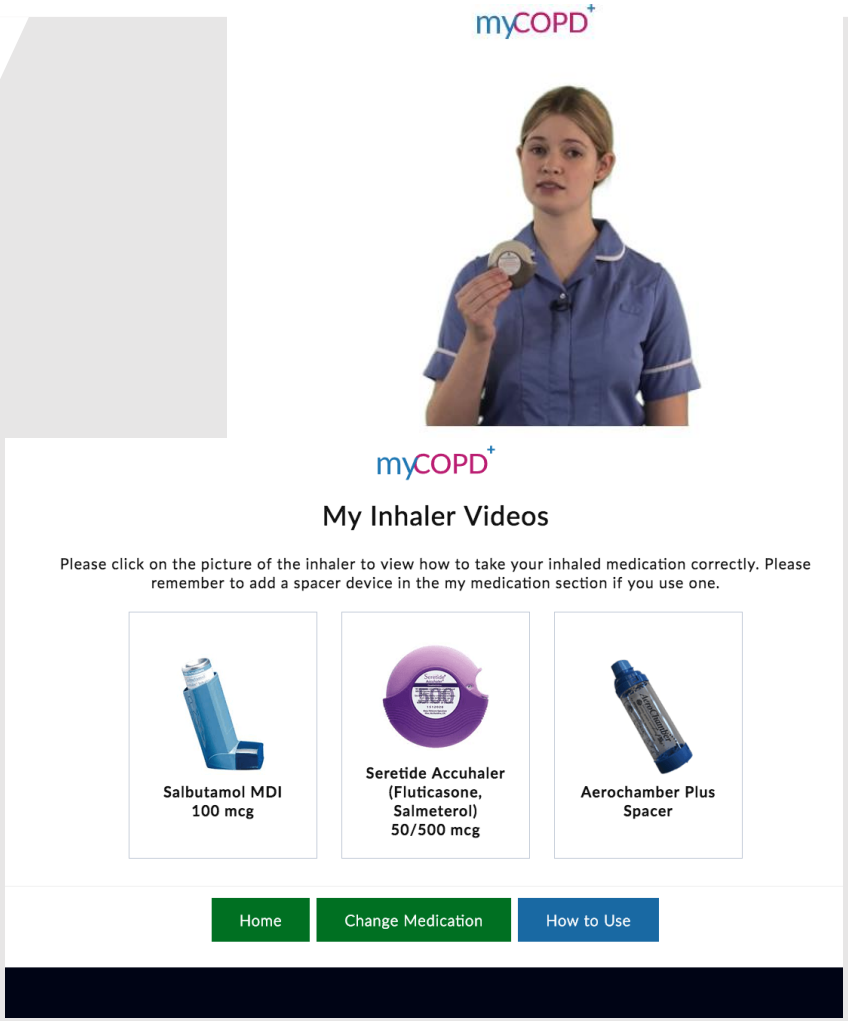
# Each app has unique medication instruction – example – myCOPD and myAsthma inhaler instruction

- Only your device shown
- Every device on the market
- Teaches correct education every time, any time
- Inhalers, nebulisers, spacers
- Corrects 98% of inhaler errors

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# Comprehensive and individualised courses

myCOPD+

0% Complete

- Anatomy of the Lungs and What is COPD
- Exercise and COPD
- Smoking Cessation
- Medication and Treatment
- Self-Management
- Exacerbations
- Breathlessness Part 1
- Breathlessness Part 2
- Pacing Part 1
- Pacing Part 2
- Oxygen
- Chest Clearance
- Anxiety and Depression
- Nutrition
- Travelling
- Sex and Breathlessness
- Benefits
- Weather
- Pollution

Anatomy of the Lungs and What is COPD

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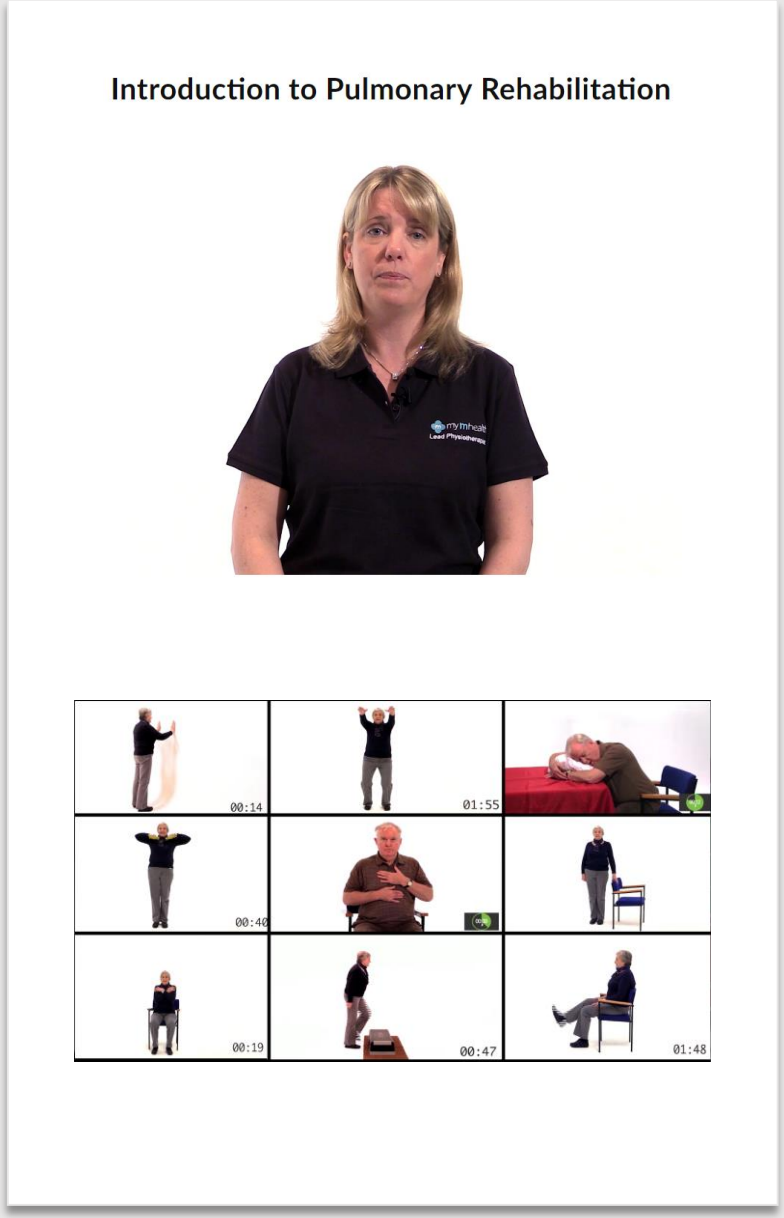


# Rehabilitation – Full evidence based Cardiac and Pulmonary Rehabilitation programs

- Evidenced based in a full RCT
- Full 6 week course into a maintenance class
- Full exercise instruction
- Announced in Washington at the American Thoracic Society Conference as non-inferior to class based programs

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# There is a unique Clinician Interface

- Allows management at both an individual and population level
- Patient list and prioritisation according to symptoms, medicine use etc.
- Individual patient management
- Allows remote clinic work and prescribing
- Provides population level medical Intelligence
- Send an appointment or message to individuals or identified populations e.g. all diabetic patients
- Clinician Education included

myCOPD+

List | Map | Send Notification | New Patient | Switch | Logout

Values | Pulmonary Rehabilitation | Checklist

Search for patient...

| Severity | CAT | First name | Surname | Date of Birth | No of Exacerbations | No of Hospital Admissions |
|---|---|---|---|---|---|---|
| 31 Aug, 2017 | 19<br>13 Jul, 2017 | Kerr | Stern | 22 Jan, 1953 | Not Entered Yet | Not Entered Yet |
| 25 Aug, 2017 | | Adie | Abbey | 22 Jan, 1953 | Not Entered Yet | Not Entered Yet |
| 31 Aug, 2017 | 20<br>03 May, 2017 | Velma | MacCawley | 12 Apr, 1949 | Not Entered Yet | Not Entered Yet |
| 28 Mar, 2017 | 31<br>28 Mar, 2017 | Alma | Whittington | 12 Mar, 1955 | Not Entered Yet | Not Entered Yet |
| 30 Aug, 2017 | 15<br>25 Aug, 2017 | Samuel | Smith | 03 Feb, 1973 | Not Entered Yet | Not Entered Yet |
| 28 Mar, 2017 | 16<br>28 Mar, 2017 | Bradley | Alabaster | 29 Apr, 1983 | Not Entered Yet | Not Entered Yet |
| 28 Mar, 2017 | 25<br>28 Mar, 2017 | Carlton | Allred | 21 Jul, 1978 | Not Entered Yet | Not Entered Yet |
| 28 Mar, 2017 | 8<br>28 Mar, 2017 | Carrington | Allum | 06 Aug, 1939 | Not Entered Yet | Not Entered Yet |
| 28 Mar, 2017 | 8<br>28 Mar, 2017 | Victoria | Buckler | 29 Dec, 1956 | Not Entered Yet | Not Entered Yet |
| 27 Apr, 2017 | 22<br>28 Mar, 2017 | Chay | Amory | 12 Jul, 1964 | Not Entered Yet | Not Entered Yet |
| 28 Mar, 2017 | 26<br>28 Mar, 2017 | Bette | Aitch | 27 Apr, 1978 | Not Entered Yet | Not Entered Yet |
| 28 Mar, 2017 | 22<br>28 Mar, 2017 | Betty | Aitchison | 17 Sep, 1982 | Not Entered Yet | Not Entered Yet |
| 28 Mar, 2017 | 15 | Braden | Akroyd | 28 Nov, 1975 | Not Entered Yet | Not Entered Yet |

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# Notifications

From the patient list you can send a message to an entire, disease specific, patient population, for example send a message to your asthma patients that the flu vaccine is now available

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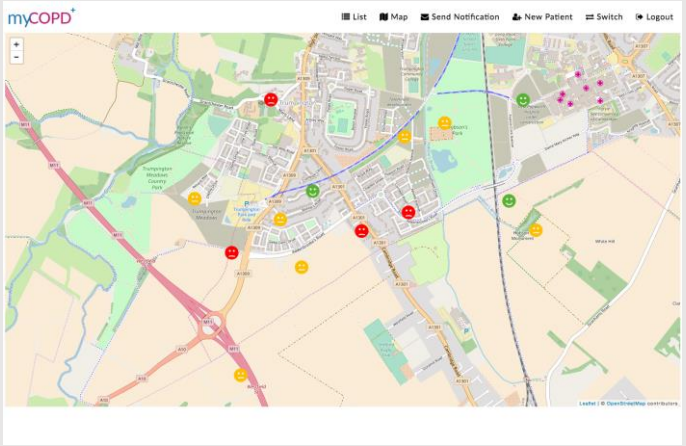
# Medical Intelligence

For patients with COPD it might be important for you to review visually the exacerbation burden in your community, or to assist the organisation of visits from community clinicians. You can do this using the map function



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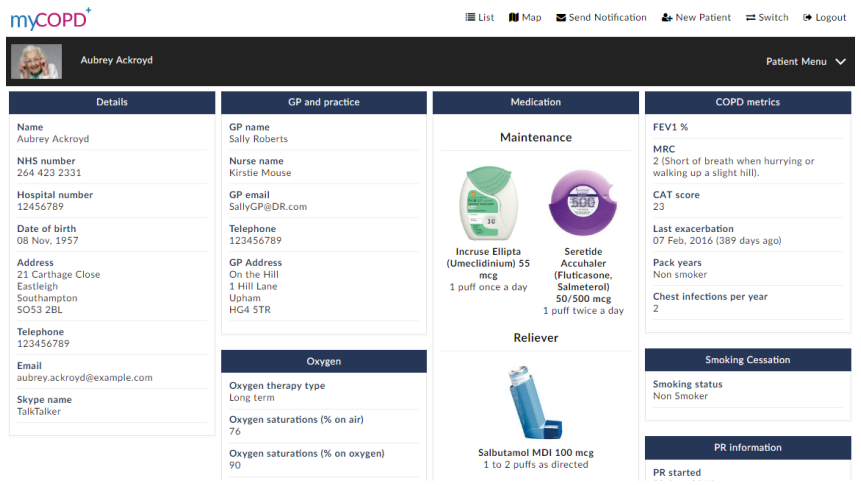
# Patient profile

- Quick overview of patient details
- Access the patient menu
- Send individual messages and appointments
- Change medication
- Medication assessment against  guidelines
- Perform Consultations
- Symptom Scores and metrics recorded and presented in graphical format
- Adapt each app to the individual



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# Example

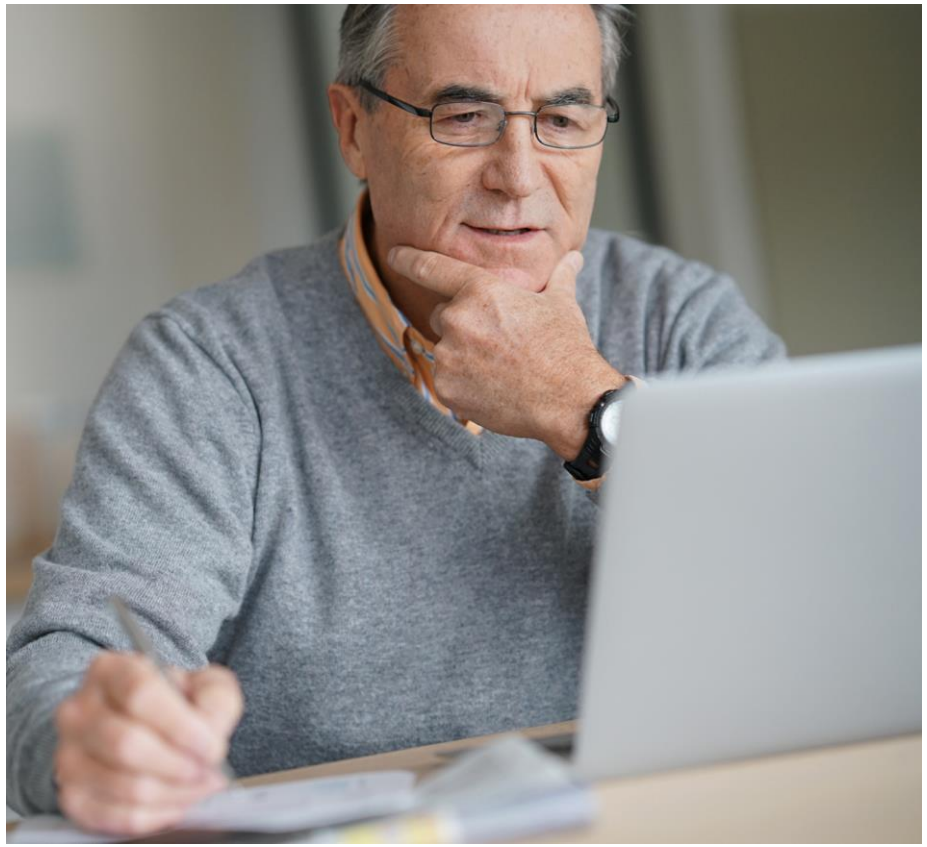
An example, myCOPD

A clinician has noticed in the patient list that his patients symptoms are severe. Accessing the patient profile page, and the patients CAT (COPD Assessment Test) reports, they notice that the symptoms have been worsening over some time.

The clinician decides to change the patients inhaler. The patient receives a notification through his myCOPD app that the inhaler has changed and that they need to pick up a new prescription.

When they next login to the myCOPD app, the patient views the new inhaler video to learn how to use their new device, reading their self management plan they can see how often, and when, they are required to use it.

The clinician can now assess the impact of their prescription change by monitoring the patients symptoms and CAT scores in reports.



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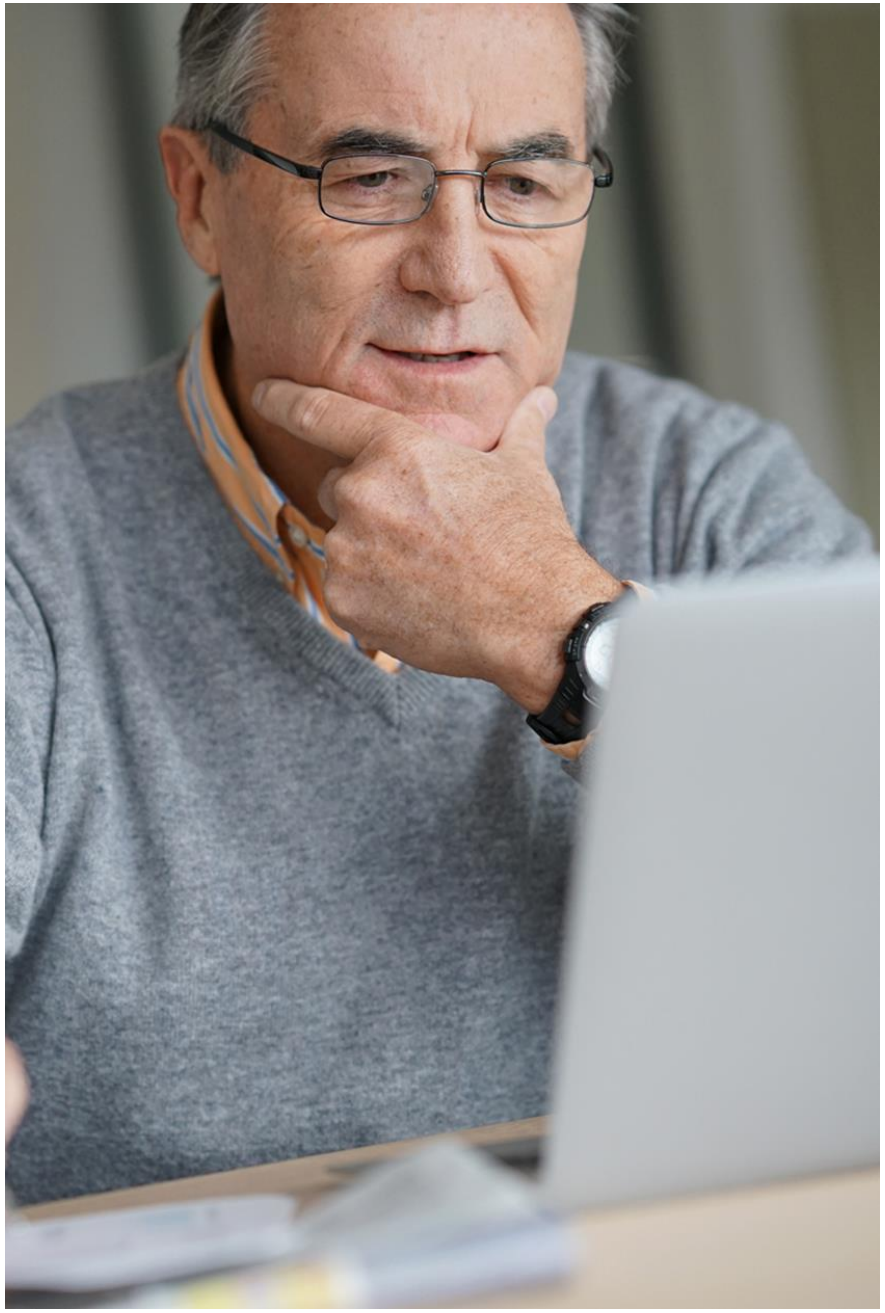

# But what we must remember is that this is primarily about patient self-management

With the help of the patient, working with the clinician, the annual review time is reduced by 75%

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# Clinical trial evidence – from home and abroad

ATS 2017 Where today's science meets tomorrow's care™ | INTERNATIONAL CONFERENCE May 19 - May 24 Washington, DC

**FOR RELEASE**

**FOR MORE INFORMATION, CONTACT:**
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dmorris@thoracic.org
ATS Office 212-315-8620 (until May 17)

Session
DAY, DATE, TIME
Location:

**Online Pulmonary Rehabilitation Not Inferior to Face-to-Face Rehab**

ATS 2017, WASHINGTON, DC — Online pulmonary rehabilitation for patients with chronic obstructive pulmonary disease (COPD) was found to be as effective as face-to-face rehabilitation programs at improving patients' exercise capacity and symptom control, according to new research presented at the 2017 American Thoracic Society International Conference.

"For many patients, attending in-person classes isn't easy and we know that attendance rates are variable," said lead author Tom Wilkinson, MA, Cantab, MBBS, PhD, FRCP, of the Southampton University Faculty of Medicine at Southampton General Hospital, United Kingdom. "This study challenges the paradigm that pulmonary rehabilitation needs to be delivered using a conventional face-to-face class-based approach."

The study involved 90 patients with moderate COPD who were referred for pulmonary rehabilitation. Study participants were assigned randomly to either online or face-to-face rehabilitation. Patients were well-matched between treatment arms for age, disease severity and smoking status. Approximately twice as many (n=64) study participants were assigned to the online group as were assigned to in-person classes (n=26). The researchers were blinded to which group each person was in.

Those in the face-to-face group participated in six-week group sessions at a local rehabilitation center, while online subjects logged in to the *MyPR* application from their home computers. *MyPR*, which is part of the larger *MyCOPD* software application (app), is the first to be supported in the UK by the National Health Service Innovation and Technology Tariff, and is free for UK patients with advanced COPD.

Outcome measures for the study were patients' six-minute walking distance and scores on the COPD Assessment Test (CAT). At the completion of the study, the walking distance for online participants was not significantly less than for face-to-face study subjects. Improvements in pulmonary rehabilitation scores on the CAT were higher for the online group in all domains. (See study abstract below for statistical analyses.)

Downloaded from http://bmjopen.bmj.com/ on July 18, 2017 - Published by group.bmj.com

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## Online versus face-to-face pulmonary rehabilitation for patients with chronic obstructive pulmonary disease: randomised controlled trial

Simon Bourne,[1,2] Ruth DeVos,[1,2] Malcolm North,[2] Anoop Chauhan,[1] Ben Green,[1] Thomas Brown,[1] Victoria Cornelius,[3] Tom Wilkinson[2,4]

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► Prepublication history and additional material are available. To view these files, please visit the journal online (http://dx.doi.org/10.1136/bmjopen-2016-014580).

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### ABSTRACT

**Objective** To obtain evidence whether the online pulmonary rehabilitation(PR) programme 'my-PR' is non-inferior to a conventional face-to-face PR in improving physical performance and symptom scores in patients with COPD.
**Design** A two-arm parallel single-blind, randomised controlled trial.
**Setting** The online arm carried out pulmonary rehabilitation in their own homes and the face to face arm in a local rehabilitation facility.
**Participants** 90 patients with a diagnosis of chronic obstructive pulmonary disease (COPD), modified Medical Research Council score of 2 or greater referred for pulmonary rehabilitation (PR), randomised in a 2:1 ratio to online (n=64) or face-to-face PR (n=26). Participants unable to use an internet-enabled device at home were excluded.
**Main outcome measures** Coprimary outcomes were 6 min walk distance test and the COPD assessment test (CAT) score at completion of the programme.
**Interventions** A 6-week PR programme organised either as group sessions in a local rehabilitation facility, or online PR via log in and access to 'myPR'.
**Results** The adjusted mean difference for the 6 min walk test (6MWT) between groups for the intention-to-treat (ITT) population was 23.8 m with the lower 95% CI well above the non-inferiority threshold of −40.5 m at −4.5 m with an upper 95% CI of +52.2 m. This result was consistent in the per-protocol (PP) population with a mean adjusted difference of 15 m (−13.7 to 43.8). The CAT score difference in the ITT was −1.0 in favour of the online intervention with the upper 95% CI well below the non-inferiority threshold of 1.8 at 0.86 and the lower 95% CI of −2.9. The PP analysis was consistent with the ITT.
**Conclusion** PR is an evidenced-based and guideline-mandated intervention for patients with COPD with functional limitation. A 6-week programme of online-supported PR was non-inferior to a conventional model delivered in face-to-face sessions in terms of effects on 6MWT distance, and symptom scores and was safe and well tolerated.

### Strengths and limitations of this study

- ► This study explored the efficacy and safety 'myPR', a novel method for delivering pulmonary rehabilitation by online support compared with conventional face-to-face delivery in classes using a randomised controlled trial to explore whether the online programme was non-inferior to the standard model.
- ► Due to the nature of the intervention, only patients with access to the internet at home could be included in the study.
- ► Further limitations of this study include the limited sample size, and the absence of long-term follow-up. Larger studies are required to explore the health-economic benefits of this model and applicability in different healthcare settings.

### INTRODUCTION

Chronic obstructive pulmonary disease (COPD) is a highly prevalent condition, which results in gradual loss of lung function, increasing symptoms and functional limitation over time.[1] Pulmonary rehabilitation (PR) is a non-pharmacological intervention at the core of management of COPD, aimed at reducing the burden of symptoms by increasing exercise tolerance and improving self-management. With an established evidence-base, PR has been placed at the centre of interventions for COPD and its provision is mandated by the National Institute for Health and Care Excellence (NICE) as a key pillar of integrated care.[1] The model of care for providing PR is traditionally a face-to-face, structured programme of exercise training and education completed in a supervised, centre-based setting over an established protocol of a minimum of 6 weeks.[2]

While PR has been shown to improve functional performance and physical activity[3] and greater activity levels have themselves been associated with reduced risk of hospitalisation,[4] access to programmes can be problematic for some patients and the impact of conventional PR is limited by



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# We have the team and the doctrine to help you transform the healthcare digital landscape

## The digital transformation team provide:

My mHealth clinicians appraise the current pathway and work with local clinicians to identify where the my mhealth apps will be distributed and implemented

Project managers then help with the app deployment, are key points of communication and are digital ambassadors for the local community and provide reports on progress and feedback on metrics

There is then 2 days local training – 2hrs per individual – for clinicians and administrators

Develop with the provider and commissioners a 'local' tile which will provide local information for patients on services such as patient groups, clinical contacts etc. and is an opportunity to present videos of local clinicians introducing this product to their patients

Digital Transformation Team

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# Digital Transformation Plan

my mhealth

Digital Transformation Team

## System Activation

- Across pathways
- Infrastructure
- Enable systems

## Clinician/CCG Activation

- Training
- Assess Pathways
- Account Set-up
- Communication

## Patient Activation

- Face-to-Face
- Self-registration
- Communication
- DTS

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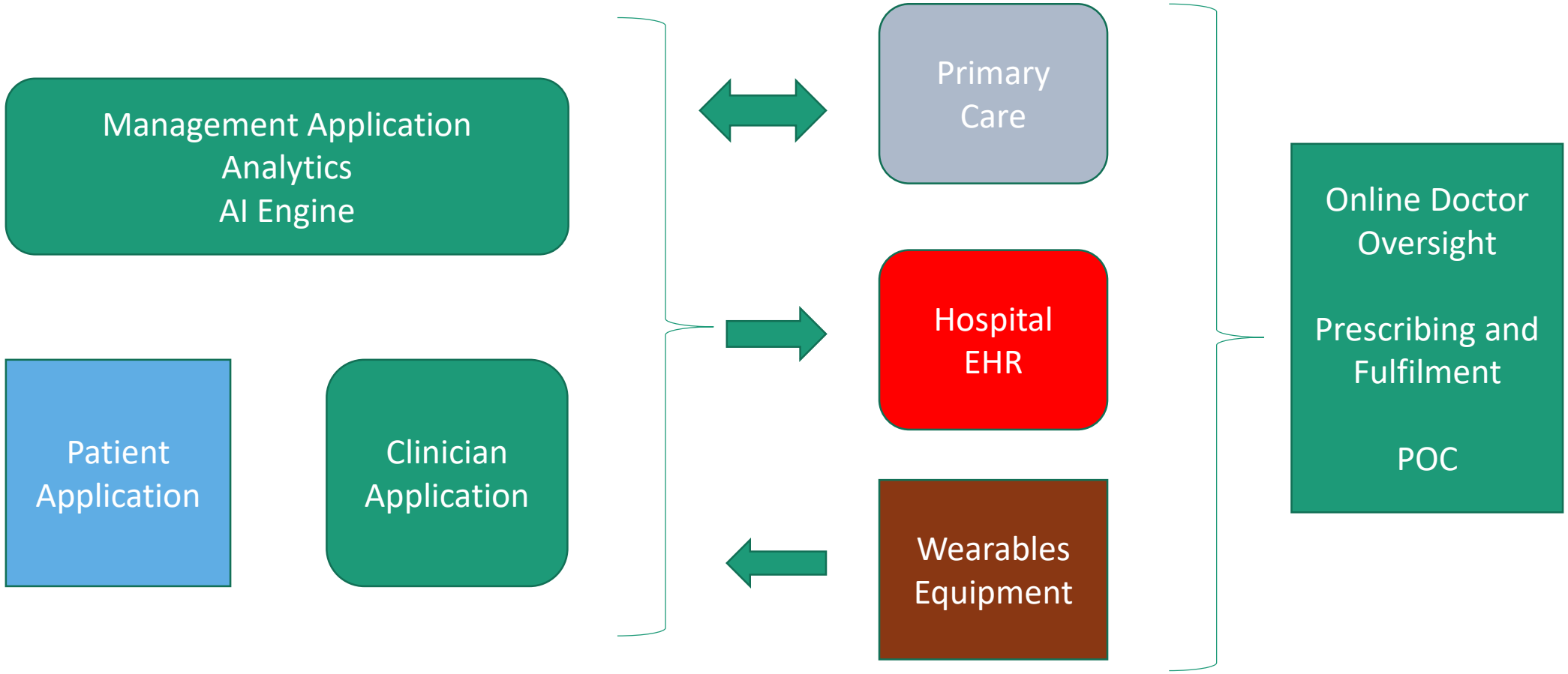
# System wide integration – during 2018

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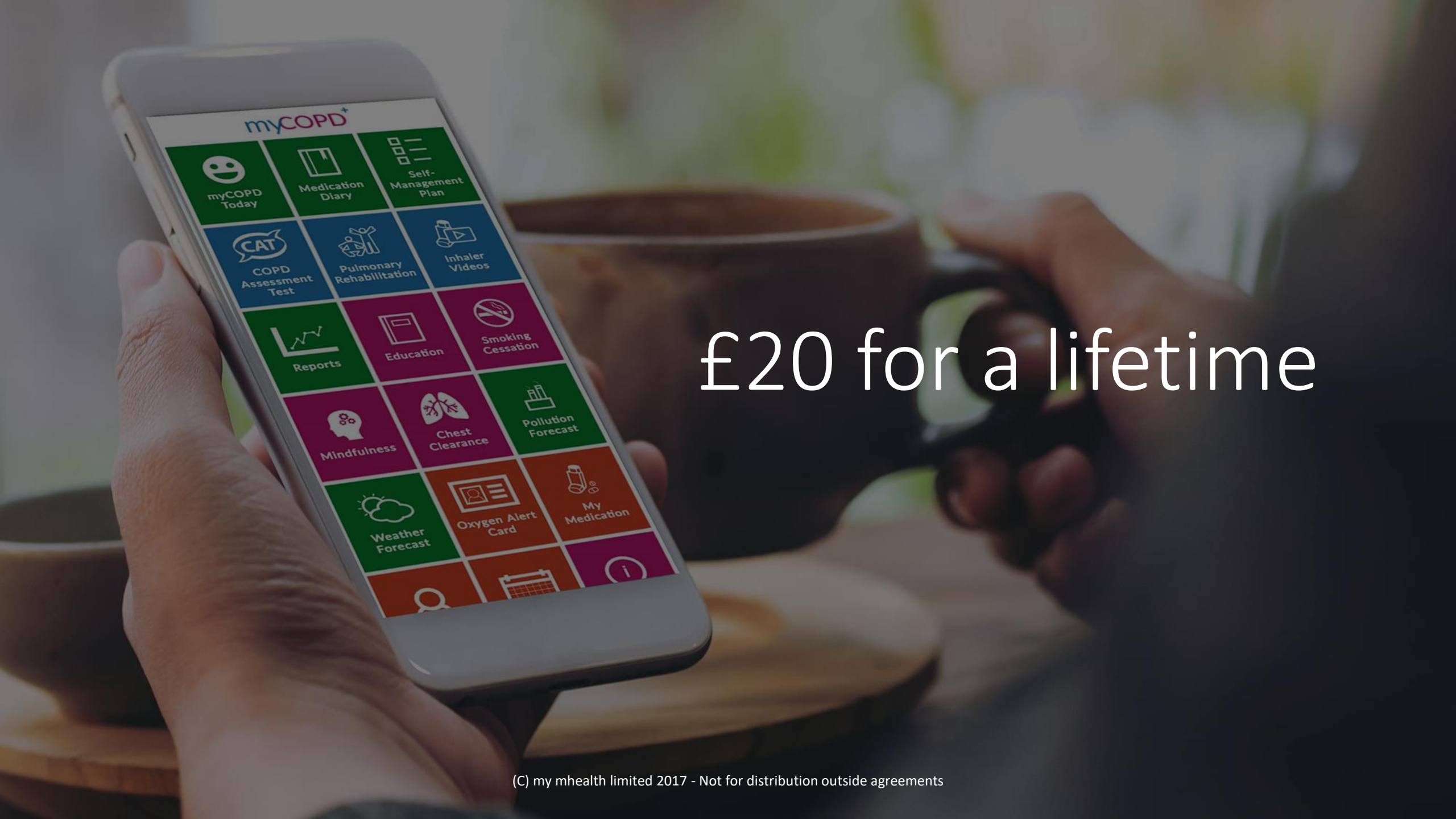


# £20 for a lifetime

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