

# Physical Activity Coaching Service for COPD Patients

## Abstract

### Introduction

Today over 65M people worldwide are diagnosed with COPD<sup>1</sup>. Integrated care strategies over the long trajectory of COPD disease range from interventions aimed at smoking cessation, promoting regular exercise and activity, optimizing pharmacotherapy and collaborative self-management<sup>2</sup>. An important self-care behavior is physical activity (PA). Research shows that higher levels of PA go hand in hand with a reduced risk for exacerbations, and thus (re)hospitalization, but also mortality<sup>3, 4, 5</sup>. On their own, patients find it difficult to be physically active and could benefit greatly from an integrated care solution addressing PA.

### Description of integrated care case

We developed an automated PA coaching service, that employs a coaching model grounded in behavior change theory to support COPD patients in becoming or staying active (e.g. after pulmonary rehabilitation (PR)). Exploratory research with patients and PR specialists clearly showed a need to address this topic. The coaching service addresses specifically the needs and capabilities of COPD patients. It provides feedback to enhance insight, and encourages activity and exercise through goal setting, daily and weekly coaching messages. It is currently in trial at Ciro+ (a PR center) in the Netherlands, where we are looking at efficacy of the service to support patients in maintaining a high PA level after intensive PR. In addition, a pilot study is running in the US where we are looking to support patients to increase PA.

### Targeted population and stakeholders

The automated coaching service targets COPD patients in all GOLD stages to support this self-management behavior at home. Such a service could also be attractive for healthcare organizations like rehabilitation centers to 1) extend their reach to the home environment while patients are in PR; 2) reach patients that are not eligible for PR; 3) reduce the duration (and cost) of PR by replacing part of PR with an automated service; and 4) extend their offering beyond PR. Health insurers could profit from potentially lower (re)admissions as COPD patients are empowered to stay active.

### Highlights and timeline

Intermediate results of the study in the Netherlands show promising trends: patients using the service are maintaining a higher activity level at home than patients that are not. In addition, we see encouraging levels of engagement and usage of the service. The study is expected to complete in 2017. US pilot and we are currently looking at the data and expect equally positive trends.

### Conclusions and (preliminary results)

The coaching system employs an evidence-based coaching rationale that is flexible enough to cater to activity maintenance as well as increase. In addition, it is not condition-specific and can be amended to coach other chronic conditions like HF, as well as healthy but vulnerable groups (e.g. the elderly). We envision such a service to fit into any home self-management telehealth system or stand-alone if activity is the only area of self-care attention.



### Lessons learned

A strong multidisciplinary team as well as close collaboration with clinical sites and partners is essential for discussion, trials and patient contact.

### Location

Netherlands

### Year

2014-2017

### Related Integrated Care keywords

- DIGITAL HEALTH: ICT (INFORMATION AND COMMUNICATION TECHNOLOGY) SOLUTIONS, DEVICES, MONITORING
- SELF-CARE AND SELF-MANAGEMENT
- PATIENT EDUCATION
- HOLISTIC AND COMPREHENSIVE APPROACH

### Pervasiveness

Small scale in a region

### Status

Completed

### Links

<https://www.ijic.org/articles/abstract/10.5334/ijic.3387/>  
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6518247/>  
<https://www.trialregister.nl/trial/4278>