Abstract details

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Title of the paper: **Technology-enabled cardiac rehabilitation through PATHway. Design and rationale for the investigation of its feasibility, clinical effectiveness and cost-effectiveness**

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Abstract text

Background Exercise-based cardiac rehabilitation (CR) favorable and independently alters the clinical course of cardiovascular diseases resulting in a significant reduction in all-cause and cardiac mortality. However, only 15-30% of all eligible patients participate in a phase 2 ambulatory program. Uptake rates of community based programs following phase 2 CR are even lower and adherence to long-term CR is extremely poor. Newer care models, involving programs that are delivered remotely such as telehealth programs, show considerable promise for increasing adherence. In this view, PATHway (Physical Activity Towards Health) is being developed and needs to be evaluated on feasibility and potential clinical benefit.

Methods In a multicentre randomized controlled pilot trial, 120 patients (m/f, age 40-80yrs) completing a phase 2 ambulatory CR program will be randomized on a 1:1 basis to PATHway or usual care. PATHway involves a complex comprehensive, internet-enabled, sensor-based home CR platform. It consists of several modules with an exercise module as the core component. PATHway provides individualized heart rate monitored exercise programs (exerclasses and exergames) as the basis upon which to provide additionally a personalized, comprehensive lifestyle intervention program (managing exercise, smoking, diet, stress, alcohol use). The control group will receive normal care. Study outcomes will be assessed at baseline, 3 months and 6 months. The primary outcome is the change in active energy expenditure. Secondary outcomes include health-related fitness (cardiopulmonary endurance capacity, muscle strength, body composition), vascular health (vascular stiffness and endothelial function), cardiovascular risk score, health-related quality of life, patient satisfaction, healthcare costs and safety. Intervention feasibility will be assessed via participant and stakeholder debrie

Discussion This study investigates the feasibility of the PATHway system in supporting patients to maintain a physically active lifestyle, and investigates it short-term effectiveness on cardiovascular health. It has the potential to furthe extend the provision of poorly accessible, hospital-based rehabilitation programs to effective, cost-effective delivery models in the community.

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(www.pathway2health.eu/).

Topic:	Training and Testing
Keyword I:	Cardiovascular Rehabilitation
Keyword II:	E-health
Keyword III:	randomized controlled trial

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