Exercise with my “Avatar” – Opportunities for Telerehabilitation in Cardiovascular Disease Rehabilitation *(PATHway as an example)*

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H2020 PATHway Grant Agreement 643491 (*www.PATHway2health.eu*).
Physical activity alone reduces premature death by 24%
Phase 2: Out-patient cardiac rehabilitation

Phase 3: Community based cardiac rehabilitation

Usual care

MedEx, DCU
**Problem:** Only 10% of patients recovering from CVD attend Cardiac Rehabilitation programmes in the community (phase 3)?
PATHway: allows remote participation in an individually tailored Cardiac Rehabilitation exercise program at any time from their own home or in their own community via an internet enabled, sensor-based platform.

Peer support

Home

Community

society-level "crowd-researching"
4 Key drivers to maximise effectiveness

**Behavioural Change Theory**

Self-management of condition through (self-) empowerment

**Peer support / Social interaction**

Individualised

Technology is the **facilitator** not the driver
4 Key drivers to maximise effectiveness

Behavioural Change Theory

Social interaction

Self-management of condition through (self-) empowerment

Patient and Stakeholder design driven
PATHway in more detail

Phase 3

Peer support

Phase 2

peer support
"crowd-researching"
WATCH AND GET PREPARED
We also target Life-Style change

Exercise and Lifestyle Assessment

Patient Feedback: compared to norms/guidelines

Patient sets their own goals

Given access to tips and recommendations

Given access to advanced content

Patients get Health Behaviour Change Notifications (DSS):
   Keep on track, Booster, Applaud, Advice, Arrange

Patient exercise sensed and Lifestyle behaviours logged
Exercise programme and goals: developed by the patient in collaboration with a clinical nurse (ExerClass and ExerGame) delivered by a virtual ‘Avatar’ coach.
Automatic monitoring: exercise movement and physiological response ............. and social interaction and level of enjoyment.
**Automatic monitoring**: exercise movement and physiological response ............... and social interaction and level of enjoyment.
All-day assessment: monitor participants’ physiological responses (HR) and physical activity (step count / rate).
Social connectivity/interaction: will enable small groups of remote participants to exercise together in a virtual space.

Peer support

society-level "crowd-researching"
Data mining and modelling - turning data into knowledge

Peer support

society-level "crowd-researching"
Patient Feedback

Individual Session

Summary: Day, week, month, year

Tracking personal goals

Text notification
Information for the healthcare professionals

Peer support

society-level "crowd-researching"
Society level crowd research

Peer support

society-level "crowd-researching"
ExerClass

ExerGame
Technology enabled behavioural change as a PATHway towards better self-management of CVD
A Multidisciplinary Team

Behaviour Change

Technology

Cardiac Rehabilitation

Clinical Exercise Physiology

Health Economists

Intervention Design & Implementation
Thank you

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