



VCARE
VIRTUAL COACHING ACTIVITIES
FOR REHABILITATION IN ELDERLY

**THE RUNNING EXPERIENCE
OF THE VCARE PROJECT**

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 769807. 

BACKGROUND

17% of people in the European Union (EU) have a disability.

Over 33% of people older than 75 have disabilities.

The most common cause of disability is not accidents or work-place injuries but diseases. Acute disease episodes like stroke, neurodegenerative diseases, heart attack or diabetes cause the majority of long-term disabilities.



BACKGROUND

Beside the medical treatment, a **continuously applied and personalized rehabilitation** helps people with **disabilities** whose functions are limited to remain in or return to their home or community, live independently, and participate in education, the labour market and civic life.

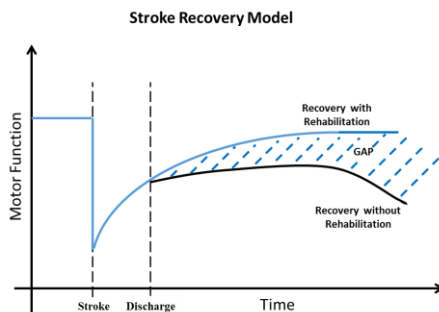
(U.S. Department of Health and Human Services 2014)



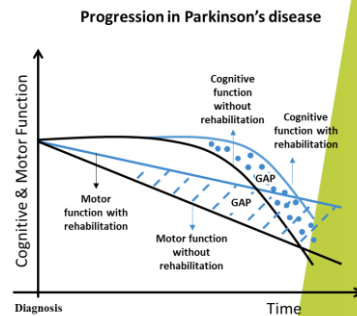
BACKGROUND



Often the continuity of the rehabilitation process interrupts with the transition to the home environment.



Modified from *Langhorne, Bernhardt, and Kwakkel 2011*



Modified from *Nocera and Hackney M E 2015*



THE PROJECT

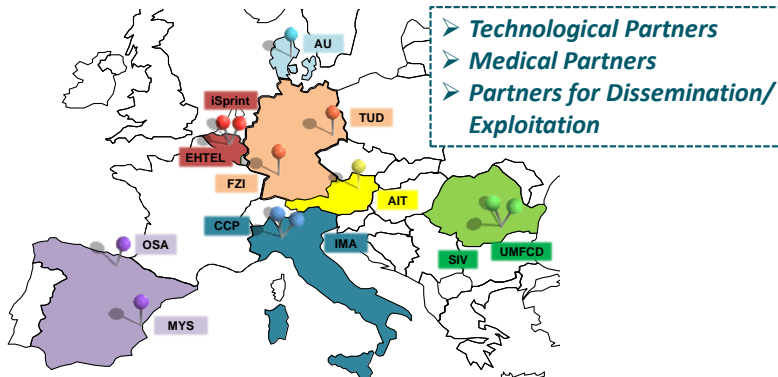
vCare

Virtual Coaching Activities for Rehabilitation in Elderly

- **Smart solution** grounded on an intelligent ICT environment
- **Highly adapted to personalized coaching activities**
- **In accordance with the clinical pathway and the context information**
- **Personalize and adapt goals** according to the progress achieved in the recovery

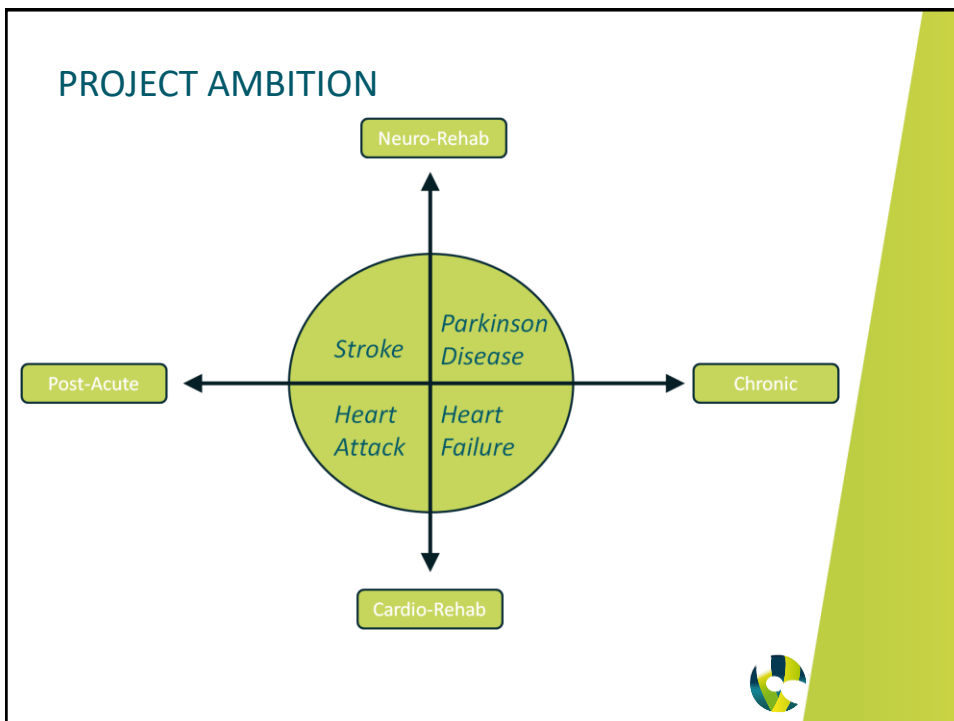
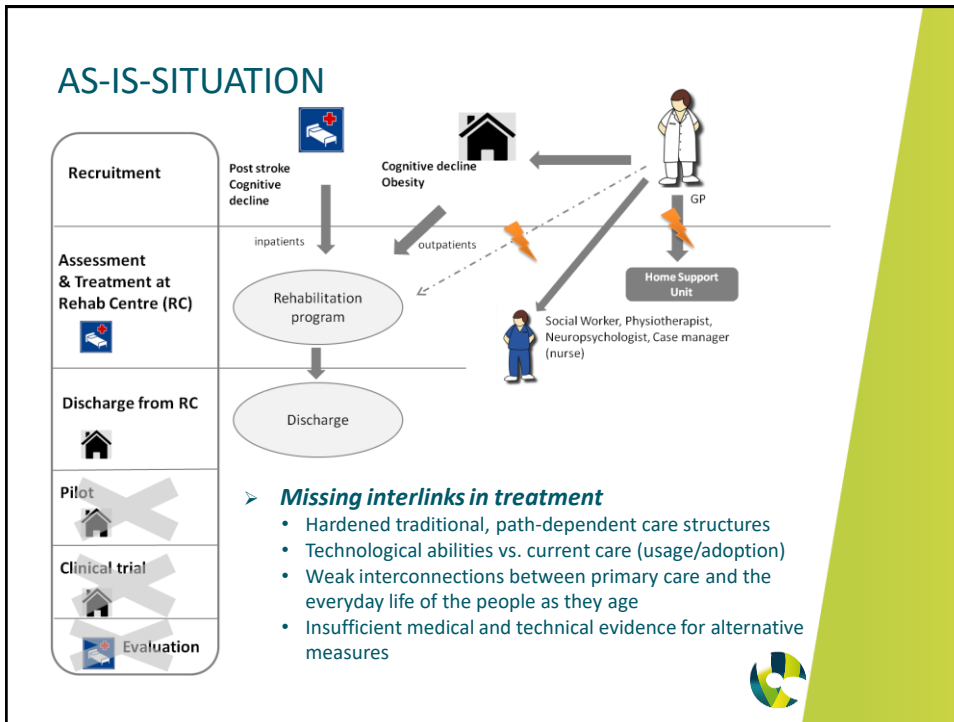


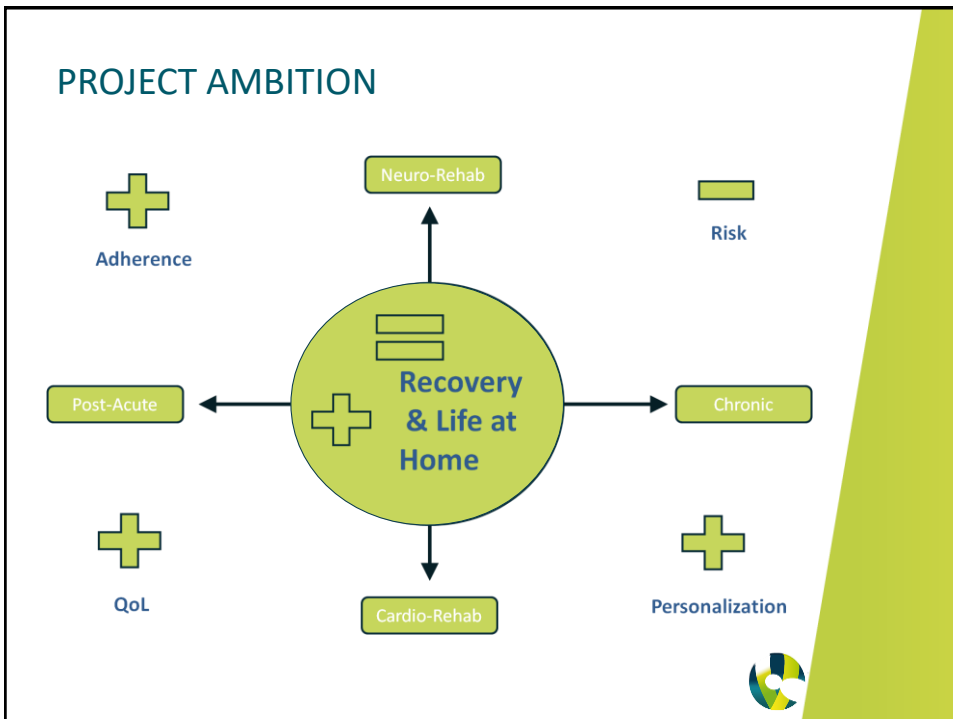
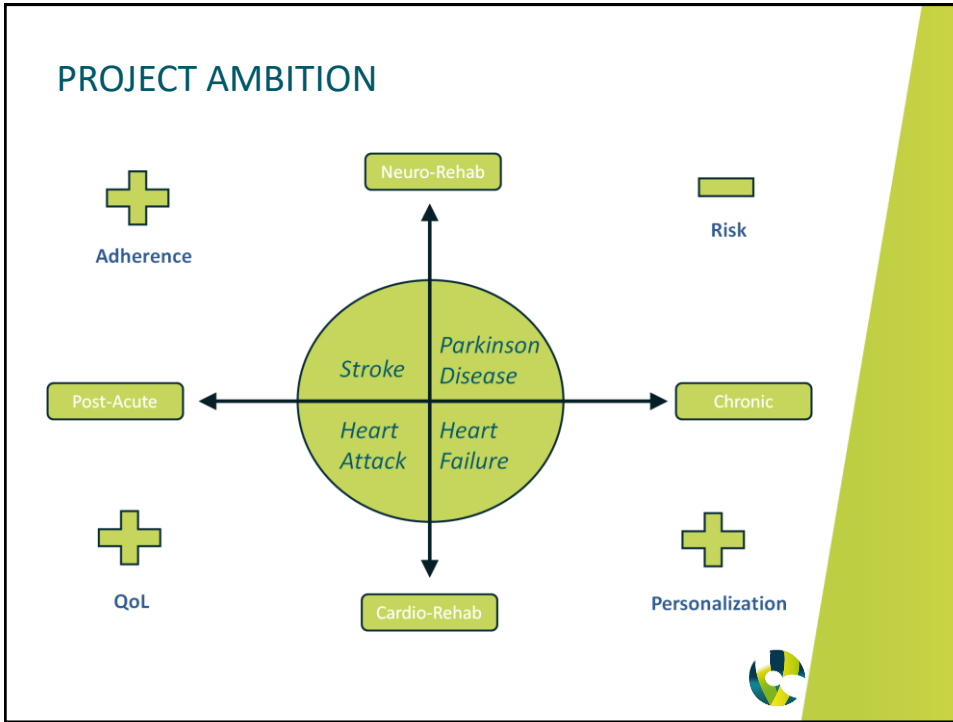
THE PROJECT CONSORTIUM



TUD. TU Dresden, Chair of Wirtschaftsinformatik, esp. Systems Development, Dresden, Germany; **FZI.** Forschungszentrum Informatik am Karlsruher Institut für Technologie, Karlsruhe, Germany; **CCP.** Casa di Cura Privata del Policlinico, Milan, Italy; **IMA.** Imaginary SRL, Milan, Italy; **AIT.** Austrian Institute of Technology, Vienna, Austria; **MYS.** TSB Real Time Location Systems, Valencia, Spain; **OSA.** Servicio Vasco de Salud Osakidetza, Vitoria-Gasteiz, Spain; **SIV.** Siveco Romania SA, Bucarest, Romania; **UMFCD.** Universitatea de Medicina si Farmacie "Carol Davila" din Bucuresti, Bucarest, Romania; **AU.** Aarhus Universitet, Aarhus, Denmark; **iSprint.** Innovation Sprint, Brussels, Belgium; **EHTEL.** European Health Telematics Association, Brussels, Belgium.







TECHNICAL PROPOSALS

Physical exercises:

- Serious Games (Kinect based)
- Functional exercises monitored by wearable sensors and/or a video based system to measure subject's performance
- Treadmill

Cognitive exercises :

- Serious Games (Tablet based)
- Virtual reality (Kinect based)

Daily Activity Monitoring:

- Wearable or environment sensors to encourage a more active lifestyle or to prevent adverse events (falls, inactivity)



VCARE CONCEPTS

CONTINUITY OF CARE is concerned with **quality of care over time.**

It is the process by which the patient and his/her **physician-led care team** are cooperatively involved in ongoing health care management toward the **shared goal of high quality, cost-effective medical care.**

REHABILITATION is a treatment or treatments designed to facilitate the process of recovery from injury, illness or disease to as normal a condition as possible.



PILOTING

Phase 1

Rehab Team simulates the final user (patient) for a first clinical evaluation

Phase 2

Patient uses the coaching program in hospital (Simulation of *in home Real-life*)

20 patients will be recruited in each clinical site

Phase 3

Patient uses the coaching program in their home setting (in home Real life)

A subset of 10 patients from each group will continue a personalized rehabilitation at home (6 months observation). The remaining 10 patients will serve as comparison group.



STATUS & PROGRESS OF THE PROJECT

- First medical requirements and use cases are derived
- Outline of the technical architecture
- Next: Selection of concrete coaching services



SUCCESS *Let's improve rehabilitation!*

Stay tuned to our project!





THANK YOU

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www.vcare-project.eu

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