RehAllianCE

Optimizing usage of new technologies in rehabilitation to improve life quality of CE inhabitants

Interreg CENTRAL EUROPE

Co-funded by the European Union

RehAllianCE

Best Practices **CATALOGUE**

Insights in Interdisciplinary Technology Development

Best Practices from:

Interreg CENTRAL EUROPE
Co-funded by the European Union
RehAllianCE

GAPR

GAPR - Upper Silesian Accelerator for Commercial Enterprises Ltd.

- HPRC- Holistic Prehabilitation and Remote Care: A Comprehensive Approach to Chronic Wound Management"
- Financing program for equipping medical entities with robotic devices for rehabilitation
- Modern neurorehabilitation with elements of interactive therapy
- Luna EMG Multi Unit Concept

1) HPRC- Holistic Prehabilitation and Remote Care: A Comprehensive Approach to Chronic Wound Management

Centrum Leczenia Oparzeń im. dr. Stanisława Sąkiela w Siemianowicach Śląskich

HBO Bank Tkanek

Objective:

- A Comprehensive Approach to Chronic Wound Management

Key Innovations:

- Prehabilitation before the treatment or operation - preparing individual plan for patient, made by inter-disciplinary team consisting of nurse, doctor and physiotherapeutic in order to physical strengthen patient through exercises, a healthy diet, and management of conditions like diabetes to aid wound healing and prevent further decline; also - psychological support, compression therapy, dietician - educating family and the patient to support recovery
- regional e-service platform “eCareMed”, which is being equipped with well-crafted and personalised education, consisting of e-care information, such as electronic medical plan, which patient has to follow, check-out every step taken, so medical staff can determine whether patient is ready for another step in his healing plan

Outcomes:

- Lowering of medium hospital stay from 14 to 10 days. Number of patients hospitalized in 2020 - 1030 p; in 2023 over 1510 patients; same number of beds – 66
- In 2023 ratio of total wound area healed was 100% in 232 cases, and only 32 patients we achieved more than 60% of wound are healed which is about 7:1, while in 2021, when project started, this ratio was 1:1
- National Health Fund defrayed nearly 29 434,91€ per patient in successful wound closure, we delivered whole process with and expense of only 9 307,11€

1) HPRC- Holistic Prehabilitation and Remote Care: A Comprehensive Approach to Chronic Wound Management

Centrum Leczenia Oparzeń
im. dr. Stanisława Sąkiela w Siemianowicach Śląskich

HBO Bank Tkanek

Financing:

- National Health Fund + Public funds; e-service was co-financed by EU

Lessons Learned:

- Process reengineering as new bottlenecks were identified
- Regulations (deregulations) in areas such as medical transport or nurse competences. We needed program to be more commonly-available in primary care
- Strengthening of medical team by introducing new specialities such as angiologist and psychologist

Potential for Transfer:

- Comprehensive, patient-centered approach to chronic wound care, such as diabetic foot or venous ulcers. The interdisciplinary collaboration between nurses, doctors, and physiotherapists provides holistic care, enhancing the integration of services and improving patient outcomes.
- The use of e-services through the regional platform, for remote monitoring and personalized care improves healthcare accessibility, particularly in areas with workforce shortages

2) Financing program for equipping medical entities with robotic devices for rehabilitation

Ministry of Health
Republic of Poland

Objective:

- To improve the quality of rehabilitation services by implementing advanced technologies in medical entities. The robots are intended to support patients in the process of physical rehabilitation, which will shorten the recovery time and increase the effectiveness of therapy.

Key Innovations:

- Funding purchase of robotic rehabilitation devices to healthcare entities. The funding pertains to the purchase of at least one robotic device by the applicant, which will be utilized for delivering healthcare services financed by public funds under a contract with a public payer.

Outcomes

- 178 beneficiaries secured funding

Financing

- the Ministry of Health

2) Financing program for equipping medical entities with robotic devices for rehabilitation

Ministry of Health
Republic of Poland

Lessons Learned

- A lack of trained specialists in operating rehabilitation robots was identified -future initiatives should include educational programs and training for medical personnel; The absence of coherent regulations and standards regarding the use of robotic devices in rehabilitation, complicating their integration into clinical practice; Too short implementation timeframe - future competitions should account for more realistic delivery and project execution timelines.

Potential for Transfer

- Simple guidelines for obtaining funding.

What we need to learn from others

- Financing and implementation models, best practices that can inspire the creation of a national plan (minimum three-year) for supporting robotic solutions, as well as educational programs/training for personnel.

3) Modern neurorehabilitation with elements of interactive therapy

Technomex

Objective:

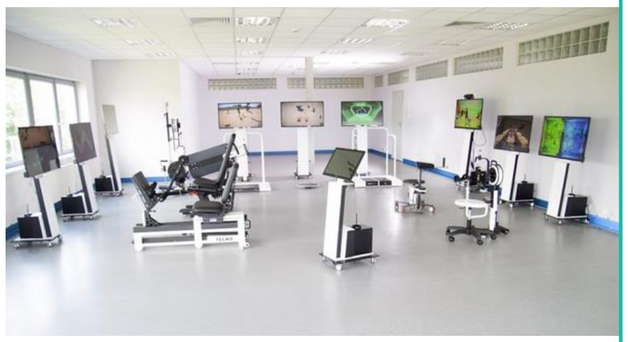
- Modern comprehensive therapy for neurological patients using robots, virtual reality and training platforms.

Key Innovations:

- Comprehensive therapy for neurological patients using robots, virtual reality and training platforms. Patient assessment before and after therapy allows for matching the therapy to the patient's current problem, and the effectiveness of the applied rehabilitation allows for faster and greater improvement in the neurological patient's efficiency.

Outcomes:

- Measurable assessment of improvement in patients' condition (improvement of gait parameters and balance).
- Comprehensive patient diagnostics thanks to the use of various devices and physiotherapeutic tests.
- Increasing the pace of rehabilitation, faster return to fitness.
- Increasing patient progress, more effective therapy.
- Reducing the costs of care.
- Family support in caring for a person requiring specialist care.
- Increasing patient independence.
- Ensuring treatment compatibility - possibility of consultation with a doctor, speech therapist, neuropsychologist.
- Ongoing implementation of modern rehabilitation methods, e.g. telerehabilitation of the hand.



3) Modern neurorehabilitation with elements of interactive therapy

Technomex

Financing:

- Commercial Financing

Lessons Learned:

- Physiotherapy for patients must be conducted in a comprehensive manner. The best effects are achieved by combining robotic, interactive and physiotherapy conducted by a physiotherapist.
- Comprehensive modern neurorehabilitation offers greater opportunities for the improvement and independence of patients with neurological diseases, causing less burden on the family and the healthcare system.

Potential for Transfer:

- The business model used in this project is based on a service-based healthcare model. The model focuses on creating value for both the healthcare system and the patients by delivering care in a more cost-effective and patient-centered manner. This is a commercially financed service.

4) Luna EMG Multi Unit Concept

EGZOTech

Objective:

- Introduction of a modern method of rehabilitation of stroke patients along with the implementation of an innovative model of the rehabilitation process.

Key Innovations:

- The robot-assisted rehabilitation (Luna EMG rehabilitation robot) as an effective tool in the functional recovery (including improvement in gait and upper limb function) for neurological patients, early stage of orthopaedic patients.
- The most unique feature is the EMG-triggered movement by which even very weak patients in severe stage may benefit from the active- assistive movement which has greater influence on neuroplasticity and patient's recovery than the passive.
- The Multi Unit Luna EMG concept means working on 4 Luna EMG devices in one therapeutic room, which can be operated by one therapist.

Outcomes:

- Increasing work efficiency
- Increasing the number of patients treated
- Reducing the time of therapists' involvement
- Reducing the costs of the rehabilitation process and, consequently, the total cost of treatment
- Treatment of patients with severe disorders
- Taking care of patient safety.

4) Luna EMG Multi Unit Concept

EGZOTech

Financing:

- Implementation of robots in a facility is possible on a rental basis, purchase is possible within private funds, additionally for two years in Poland there has been the possibility of using public support. Implementation of robots in a facility requires appropriate infrastructure and at least 1 physiotherapist.

Lessons Learned:

- The effectiveness of Luna EMG rehabilitation has been proven, among others, in the article from 2021 in rehabilitation of stroke patients. The effect was especially visible in regards to decreasing the spasticity, which was significantly lower in the robotic group after 6 weeks of therapy. This is important, when considering lowering the cost of the therapy, that we remain the same effectiveness, as in standard rehabilitation or even achieve better outcomes. The patient's safety has also remained.

Potential for Transfer:

- There is an option to rent robots for a trial period, while purchase options are available as part of a program implemented in Poland to support the use of robots in rehabilitation, financed by the Ministry of Health with the support of the European Union.

Best Practices from:

Interreg CENTRAL EUROPE
Co-funded by the European Union

RehAllianCE

PBN advanced management

at.home advanced treatment

PBN Szombathely - Pannon Business Network Association

- Smart Senior Room
- Careful Watch
- Silver Club

1) Smart Senior Room

Objective:

- To enhance senior wellbeing by demonstrating, testing, and researching digital solutions for independent living. It offers training to seniors, caregivers, and institutions, attracting high stakeholder interest and fostering innovations through the Silver Club testing network.

Key Innovations:

- integrates digital technologies to support seniors in living independently and safely. It achieves this through demonstration, training, research, and testing.
- sets the foundation for future innovations in senior care. By regularly hosting workshops and study visits for policymakers, it influences decision-making at the regional level, ensuring that the benefits
- It is a complex microenvironment, integrating multiple elements, dedicated to senior people, formal, informal care providers. It focuses on both the individual and on the infrastructure, all elements showcased as a single platform

Outcomes:

- Smart senior room boasts hundreds of visitors every year,
- 700+ visitors, 6 awareness-raising events
- Supporting start-ups and digital developments
- Building out ISO27001 Information security management
- Formal cooperation with local municipality and social care institution
- 12 on-site training for seniors, formal and informal caregivers, students

1) Smart Senior Room

Financing:

- Smart Senior Room is supported by financial contributions from several European programs, with a total of 67,300 EUR allocated to the project. The funding breakdown is as follows:

1. INTENCIVE project (IE Program) – 21,500 EUR
2. 4STEPS project (Central Europe Program) – 18,000 EUR
3. CHAIN REACTIONS project (Central Europe Program) – 27,800 EUR

Lessons Learned:

- the importance of engaging seniors early in the design and development process,
- Initial challenges included bridging the technological knowledge gap,
- close collaboration with seniors helped refine the technological aspects,
- the need for iterative testing in real-life environments to ensure long-term usability,
- the same effectiveness, as in standard rehabilitation or even achieve better outcomes,
- [at.home - Digitalization at home care (youtube.com)]

1) Smart Senior Room

	senior assistance						smart home			
	Health monitoring		Socializing	Comfort	Exercises		Safety	Commu-nication	Monitor Remote	Appliance management
	Self	Remote			Cognitive	Physical				
Demonstration	√	√	√	√	√	√	√	√	√	√
Training	√	√	√	√	√	√	√	√	√	√
Test	√			√	√					
Research	√			√						

2) Careful Watch

MAGYARORSZÁG KORMÁNYA

Objective:

Wearable device for emergency support for seniors, accessible nationwide

Key Innovations:

- The seniors can use a simple tool to contact a pre-designated contact person.
- The system includes a state-of-the-art emergency call tool linked to a nationwide remote monitoring and dispatching service
- Empowers elderly individuals to maintain their independence while providing peace of mind to both users and their families through its seamless
- Hungarian
- Gondosóra program (gondosora.hu)

Outcomes:

- 89 247 devices were deployed in the over-65 age group.
- The average age of the participants was 76 years, and the programme was used in 2890 municipalities across the country.
- An average of 1333 emergency calls were made per day.

2) Careful Watch

MAGYARORSZÁG KORMÁNYA

Financing:

- The grant is non-reimbursable, and it is co-financed from the Recovery and Resilience Facility instrument for Hungary.
  108 941 337 159 HUF (282 964 512 EUR)
  Project identity: RRF-8.4.1-21-2022-0000

Lessons learned:

- Ensuring user-friendliness for seniors unfamiliar with technology was essential, requiring the device and service to be as simple as possible
- Educating both users and their families about the system's functions and limitations proved crucial for proper utilization
- Maintaining seamless coordination between the dispatcher service and emergency responders to ensure timely assistance.
- Continuous feedback mechanisms helped refine the system, emphasizing the importance of adaptability and responsiveness to user needs.
- The nationwide programme demonstrates scalability, making it adaptable to different population densities and geographical areas.
- The system is simple, the tool is user-friendly for older people

3) Silver Club

Objective:

- To help seniors explore and test technologies that support independent living, such as health monitoring tools and smart home devices. In terms of rehabilitation, this could mean giving older people access to innovative tools and programmes that allow them to maintain their autonomy.

Key Innovations:

- Test Environment Setup: The Silver Club creates a dedicated space where seniors can safely explore and test new technologies. This includes devices designed to enhance independent living
- By partnering with companies that develop these tools, the Silver Club ensures that participants have access to the latest innovations tailored for senior care.
- Feedback is gathered through surveys, interviews, and group discussions, ensuring that the opinions and suggestions of the seniors are directly communicated to the technology providers.

Outcomes:

- Has successfully engaged a significant number of seniors, with measurable outputs such as increased participation in technology testing and valuable feedback provided to businesses.
- It has fostered greater acceptance of digital tools among the elderly, improving their confidence in using technology for independent living.
- Technology providers have utilized senior feedback to refine their products, leading to more senior-friendly innovations.

3) Silver Club

Financing:

- The Silver Club is supported by multiple stakeholders, including PBN, Agora, and the Vas County Police Department.
- The police contributed through a cybercrime prevention event, while Agora facilitated cultural community-building activities for seniors, such as museum visits.
- The Savaria Film Festival also contributed by hosting a special category on senior life experiences. Human resources include physiotherapy students, project coordinators, and technology providers, while funding supports equipment, event organization, and promotional activities.

Lesson learned:

- One key challenge during the blood pressure monitor testing was that the expected frequency of twice-daily measurements felt overwhelming to participants, disrupting their usual routines.

- While the app made tracking values easier, the pressure to measure consistently led to stress. A valuable lesson was the need for more flexibility in testing schedules to accommodate participants' daily lives.

- Nordic Walking and spine exercises highlighted the positive physical and mental impacts of regular movement, emphasizing the importance of integrating enjoyable and accessible activities into seniors' routines for long-term benefits

- Silver Club website

3) Silver Club

Connected

34 seniors in their own private households

Validated

Products have been tested already

Best Practices from:

Interreg CENTRAL EUROPE
Co-funded by the European Union
RehAllianCE

KÄRNTEN University of Applied Sciences

CUAS - Carinthia UAS -non-profit limited liability company The Institute for Applied Research on Ageing (IARA)

- Smart VitAALity Technology
- REHA2030
- Ambulant Geriatric Remobilisation

1) Smart VitAALity Technology

Objective:

- Austrian initiative focused on improving the quality of life for older adults through innovative assisted living solutions
- It integrates smart home technology and services to enhance well-being, health, and social participation

Challenges:

- Maintaining quality of life on both health and social inclusion dimensions
- Integrating both dimensions into the smart solutions (a tablet with applications and a smartwatch, added by a call centre system and an emergency alarm system) that would be easily integrated into the everyday life of beneficiaries, and thus integrated into the everyday life

Outcomes:

- The complex health and well-being support smart system, tested in 100 households, combined with designing the demo flat with smart solutions to demonstrate their potential for bettering the elderly well-being and health

Beneficiaries

- Senior population

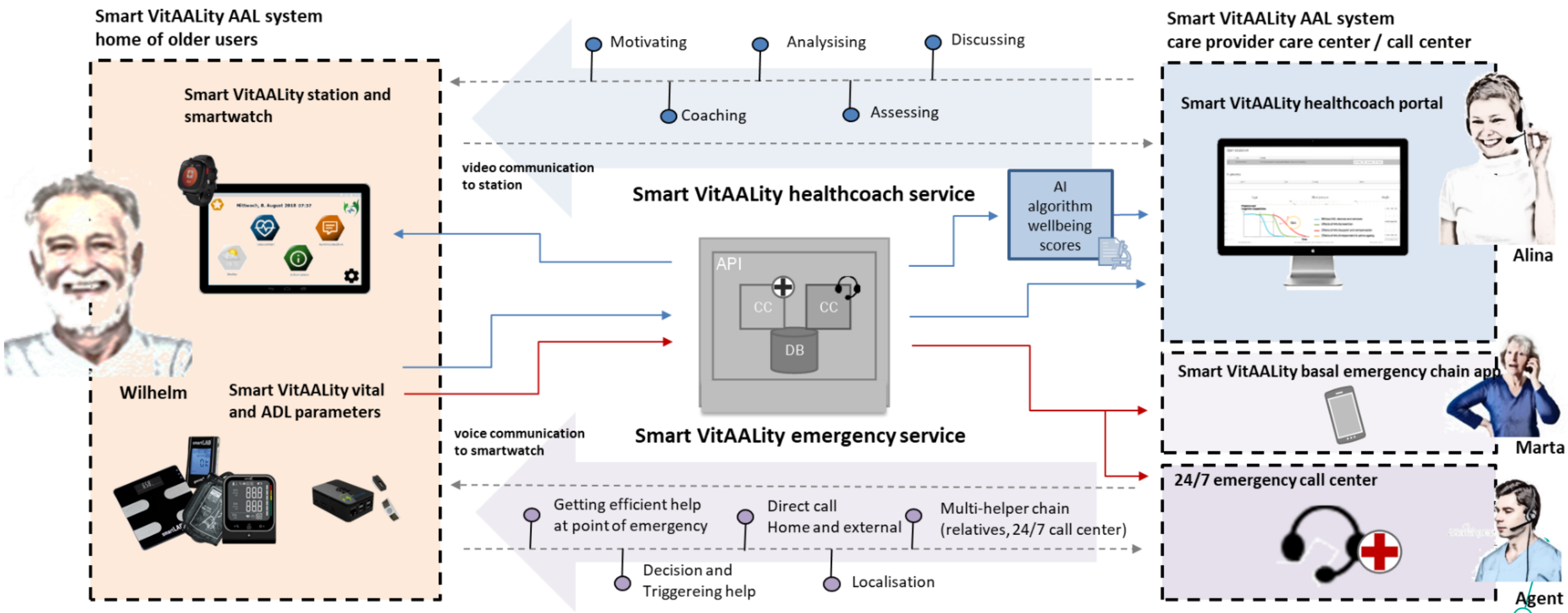
Lessons Learned:

- Social participation is more dependent on the existence of local networks that provide technological support compared to health-promoting systems

Potential for Transfer:

- A multi-domain evaluation (UX, acceptance, efficiency and socio-economic potential) was implemented in Austria in a real life longterm setting for AAL products.
- In relation to AAL projects relatively big sample (n=250 households) – over a period of 18 month a real life evaluation was implemented

1) Smart VitAALity Technology



2) REHA2030

OBJECTIVE:

- The project aims at telerehabilitation at home as a user-friendly service to overcome post-clinical therapy gaps in the region
- The main task is to develop a service model for post-clinical home rehabilitation of stroke patients and the development of the necessary technology platform

Challenges:

- The lack of disposable rehabilitation services in place for stroke patients living in distant rural

Outcomes:

- Internet-based guidance of specialist therapeutic personnel
- Technical solutions focused on usefulness and integration into everyday life
- Development of the robotic rehabilitation device

Beneficiaries

- Stroke patients in the rehabilitation

Lessons Learned:

- The phase of co-creation together with interdisciplinary teams (stroke experts, care-persons, nurses, technology developers, etc.) was characterized by an underestimation of resources concerning the interdisciplinary, participative research process. UCD based (following ISO 13407) should have been extended already in the planning phase

Potential for Transfer:

- How a participative development of REHA processes could be implemented in terms of a national (Austria) setting
- How this process could be transferred to a transnational setting (Slovenia)

2) REHA2030

P 579

Human centered design for a flexible, multi-professional telerehabilitation system: Results from an initial real-life evaluation within the project REHA2030

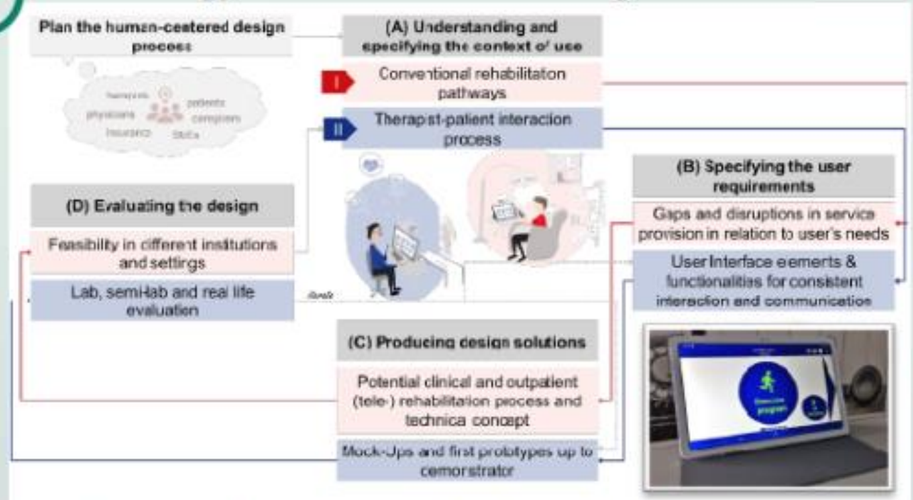
Daniela Krainer*, Peter Schubert, Lukas Wohofsky
FH Kärnten gGmbH, Engineering & IT, Klagenfurt, Austria
*Corresponding Author: Daniela Krainer | d.krainer@fh-kaernten.at| +43 5 90 500 3225

Interreg SLOVENIJA - AVSTRIJA SLOVENIEN - ÖSTERREICH

KÄRNTEN University of Applied Sciences

REHA 2030

1 Methodology: Human Centered Design



Krainer, D., Wohofsky, L., Schubert, P. (2022): Design Requirements for a (Tele-)Rehabilitation Platform: Results from a Participatory Process. Studies in health technology and informatics, 290, 224-231. https://doi.org/10.3233/SHTI220173

2 Technology Platform: Components

1. **Patient data administration:** personal data, assessments, therapy goals and plans
2. **Exercise program:** tailored exercises or programs, scheduled in the calendar, with images or videos, device supported exercises, serious games
3. **Activity monitoring:** statistical data and visualization of conducted exercises, success rate (games) or measured parameters (e.g. hand force from Pablo)
4. **Communication:** video call and chat function
5. **Feedback and diary:** direct feedback on the daily condition and the exercises and a private diary for the patient
6. **Therapy reporting:** regular documentation and semi-automatic creation of therapy reports

3 Trial Setting and Evaluation Design

Clinical setting
- outpatient tele-therapeutic aftercare
- 6 therapists (occupational, physio, speech)
- 3 patients
- instruction in clinics; 4 weeks post-clinical aftercare

Freelance Setting
- 1 occupational therapist
- 1 patient
- 10 sessions (f2f & synch)
- 10 weeks

Research Questions
- How does REHA2030 work in real life?
- Is it usable and user friendly?
- Does it support the therapy and training?
- Is it practicable?

Evaluation Methods
- Technology affinity
- Telehealth Usability Questionnaire
- Pre/Post test interview
- Usage characteristics

4 First Results

4 patients **7** therapists

20 weeks of teletherapeutical treatment of patients

53 mean age of patients

16 videocalls were planned

569 exercises have been performed by patients

2800 minutes of training performed by patients

3,5 (of 6) technology affinity score of patiens

4,2 (of 6) technology affinity score of therapists

8 requests at the support hotline

71 positive rated training programs by patients (of 73)

Usability Questionnaire: Comparison Therapists vs Patients

KÄRNTEN University of Applied Sciences

3) Ambulant Geriatric Remobilisation

Ambulante Geriatrische Remobilisation elisabethinen

Objective:

- The project focuses on outpatient geriatric remobilization as an alternative to inpatient care for elderly, multimorbid patients

Challenges:

- Capacities of the geriatric care system
- Capacities of independent life of elderly patients after the hospitalization

Outcomes:

- Care plan in the domestic environment, based on the interdisciplinary geriatric team of medical and rehabilitation professional staff, as well as psychological and social care professionals
- Regular staff visits with evaluation of the care plan coordinated with the general practitioner, whose interventions remain autonomous
- Family members learn how to assist the elderly relative in need in a sensitive and efficient manner

Beneficiaries

- Patients: Reduction of the hospital care days and readmissions, integration of the remobilisation into the existing everyday life routine, reduction of the fall risk
- Family members: Possibility to care more effectively and in domestic context
- General practitioners: Coordination of care with the interdisciplinary geriatric care unit
- Geriatric care unit: More efficient care, that leads to shorter interventions and reduction of hospital readmissions.

Lessons Learned:

- Coordinating care between hospitals, caregivers, and primary providers
- Adapting patients' homes to accommodate therapeutic needs
- Training family members or lay caregivers to assist with care
- Selecting the right patients for outpatient care was critical to avoid rehospitalization

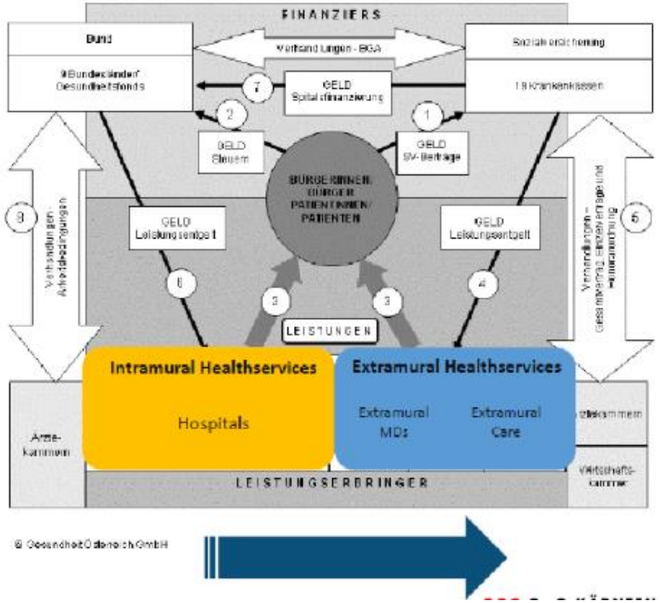
3) Ambulant Geriatric Remobilisation

Ambulante Geriatrische Remobilisation
elisabethinen

POTENTIAL FOR TRANSFER:

- The complex interdisciplinary geriatric team that evaluates on regular basis the effectiveness of a geriatric care plan, coordinated with the one of general practitioner, may lead to the care costs reduction and wellbeing raise of the geriatric patients.
- It also activates and informs family members and gives them opportunity to care more adequately and sensitively.
- The motto “as little hospital as necessary” may be an inspiration.

- Acceptance ➡ Efficiency ➡ Cost / Benefit
- Effects **and** the Financing systems?
- Effects **on** the Financing systems?
- Austrian health system as example



Best Practices from:

Interreg CENTRAL EUROPE
Co-funded by the European Union
RehAllianCE

BioRegio STERN

BioRegio STERN Management GmbH

- Actimi platform
- Fraunhofer IPA - Innovative mechatronic systems in MedTech and Reha – IMSiMR
- Mobilise-D IMI 2019-2024
- Apelvo
- IntegraSkin

1) Actimi platform

Objective:

- Easy and secure remote patient monitoring of major chronic diseases like Heart Failure, Diabetes, COPD etc.

Key Innovation:

- Facilitate doctor-patient communication from appointment-based to continuous care.
- External measuring devices with patient tablet the complete distribution of necessary measuring devices such as blood pressure, ECG and scales is handled by Actimi.
- Collected data is then stored in Actimi´s data-secured FHIR backend and can be shared via open API to EHR systems.
- With a modular approach and a wide feature sets for full flexibility across use cases and patient populations.
- Physicians and caregivers who register in Actimi´s web app can now view their patients' collected data and contact them if their health deteriorates.
- With the support of individual care plan builder and MDR-certified alert engine.

Outcomes:

- Telemonitoring significantly improves patients' quality of life and reduces both hospitalizations and mortality

Financing:

- 100 % reimbursement through German health insurances for chronic heart failure

Lessons Learned:

- Accessibility for patients and doctors is key with a 5 minute learning curve for patients and easy monitoring for doctors and nurses

Potential for Transfer:

- Actimi´s developed platform enables various application/solution fields, see https://actimi.com/en/

2) Fraunhofer IPA - Innovative mechatronic systems in MedTech and Reha – IMSiMR

Fraunhofer IPA

Objective:

- To maintain, restore and/or increase human mobility through actively driven technical systems like prostheses, orthoses and exoskeletons. Experts from the fields of ergonomics, physiotherapy, sports science and orthopaedics support product development in the fields of industry, medical technology and rehabilitation. High-tech labs and a wealth of experience, also in developing roadmaps or translating into a business plan.

Key Innovation:

- They can support you from the biomechanical analysis of the human being to the development of mechanical or mechatronic components or systems through to the subsequent evaluation on the human being or on the machine.
- Mechanical product characterization (prostheses, orthoses, shoes, exoskeletons,…) e.g. according to ISO standards 16955 22675 "Virtual Orthopedic Lab – Simulation Environment for developing Orthopedic products": Biomechanical simulation to aid the development and testing of orthopedic products virtually in the product development process.

Outcomes:

- Product development and analysis/evaluation (biomechanical, mechanical or simulation based) of body worn systems see https://www.ipa.fraunhofer.de/en/expertise/biomechatronic-systems.html
- Financing: partially via funded projects (e.g. funded by BMBF), contracted work – paid as service provider from industry/research

Lessons Learned:

- In addition to the need for a deep understanding of biomechanical forces through support systems, it is equally important for the best results to keep the needs of the human being in mind in order to achieve a high level of acceptance.

Potential for Transfer:

- This department within the Fraunhofer IPA is developing tailor made solutions or supports with their expertise and infrastructure which could be also interesting for other regions to approach.

3) Mobilise-D IMI 2019-2024

Objective:

- Producing validated and accepted digital mobility outcomes to monitor the daily life gait of people with various mobility problems, aiming to improve follow-up and personalized care.

Key Innovation:

- Comprehensive analysis and selection of Digital Mobility Outcomes and associated algorithms for a Technical Validation Study, incorporating literature review, previous work, and testing against existing data.
- Development and definition of protocols and devices needed for algorithm validation.
- Sensor validation using a sensor-agnostic approach, including standardised lexicon for mobility outcomes to inform algorithm development and future work.

Outcomes:

- Successful Digital Mobility Outcome validation in patients and healthy cohort via the Technical Validation Study.
- Submission of two Qualification Advice requests to the EMA, resulting in two letters of support, and a pre-Letter of Intent submitted to the FDA for regulatory advice.
- Link to access data management platform: https://mobilise-d.eu/data/

Financing:

- 5-year, IMI-funded project

Lessons Learned:

- News, publications

4) Apelvo

apelvo

Objective:

- Pelvic floor muscle training focusing on women around the time of birth, women in or after the menopause and men before or after radical prostatectomy. These groups often suffer from incontinence. Pelvic floor muscle training can help with symptoms of incontinence and erectile dysfunction.

The envisaged user evaluation of Apelvo is intended to capture the user need – in particular, the difference between men and women. Based on this, the need of two products will be determined.

Key Innovation:

- A system for gamified, electromyography-controlled pelvic floor training,
- For therapeutica use in the treatment of incontinence and erectile dysfunction,
- Use in nursing homes/residential centres for disabled people.

Expected outcomes:

- Gender-equitable healthcare, improvement of access to care between urban and rural areas.

Financing:

- Self-payer.

Lessons Learned:

- Originally as life-style product, potential for rehabilitation applications.

Potential for Transfer:

- Further digital training programs for physiotherapy, speech therapy, ergotherapy and psychotherapy.

5) IntegraSkin

IntegraSkin
ONE STEP AHEAD IN PERSONALISED DERMATOLOGY

Objective:

- IntegraSkin develops dermatology diagnostics by enabling the identification of the molecular mechanisms of disease in each patient. This personalized medicine approach is a natural consequence of advances in biomedicine. In this regard, OMIC technologies allow thousands of disease-relevant parameters to be measured from a small tissue sample, while Artificial Intelligence translates the interaction of these disease-relevant parameters into therapies applicable to each patient.

Key Innovation:

- **Biopsy-friendly innovation**: Skin-based experimental protocols can be adapted to other medical specialties, simplifying biopsy challenges for organs like the liver, brain, or heart.
- **Comorbidity insights**: Advanced analysis identifies interactions between comorbidities and medications in individuals, offering unique insights unavailable with other systems.
- **Disease discovery**: ISK developed a method to identify patient subpopulations (endotypes) for repurposing existing drugs or targeting new drug candidates.

Expected outcomes:

- A tailored, evidence-based therapy for Chronic Inflammatory Skin Conditions (CISCs), achieved through advanced multiparametric methodologies, AI-driven analysis, and personalized insights to optimize treatment and minimize side effects.

Financing:

- Self-payer

Lessons Learned:

- Symptom-based diagnosis is insufficient; Trial-and-error treatment has limitations; Tailored approaches are essential

Potential for Transfer:

- Skin's biopsy-friendly nature allows the transfer of established experimental protocols and analytical pipelines to more challenging medical specialties, such as the liver, brain, or heart.

Best Practices from:

Interreg CENTRAL EUROPE
Co-funded by the European Union

RehAllianCE

NSB project

NSBproject

- Smart Rehab Room
- Virtual Reality Relaxation Scenarios
- Self-Help+ (ALBA)

1) Smart Rehab Room

SAN CAMILLO IRCCS SRL

Objective:

- Enhance rehabilitation efficiency and patient outcomes by integrating advanced technologies

Key Innovations:

- Smart devices for therapy and patient monitoring.
- Shift from one-to-one to one-to-three therapist-to-patient ratio.
- Advanced cloud-based data management and monitoring.

Outcomes:

- 30% Increase in Productivity: More patients treated without increasing costs.
- Clinical Efficacy: Maintained safety and effectiveness.
- Cost Savings: Up to 30% reduction with optimized therapist allocation.

Financing:

- Horizon 2020 Project, Business Plan developed for the tech provider.

Lessons Learned:

- Effective resource and staff training for new technologies.
- Secure, scalable data management.
- Continuous evaluation for improving therapy plans.

Potential for Transfer:

- Applicable to hospitals worldwide for better resource utilization and patient care.

2) Virtual Reality Relaxation Scenarios

FONDAZIONE BRUNO KESSLER

Objective:

- Enhance emotional well-being and reduce anxiety in elderly individuals and vulnerable populations.

Key Innovations:

- Immersive VR environments for relaxation and stress management.
- Customizable natural landscapes, audio guides, and interactive elements.
- Multi-platform support (Oculus, Android, Windows).

Outcomes:

- Improved emotional states and reduced anxiety.
- Adaptable to individual needs.

Financing:

- Public health initiatives and research grants

Lessons Learned:

- Training healthcare providers on technology use.
- Addressing physical discomfort for certain users.
- Importance of user-friendly design and accessibility.

Potential for Transfer:

- Customization of VR environments for targeted populations.
- Collaboration between healthcare providers and tech developers.
- Application scalability to broader healthcare settings.

3) Self-Help+ (ALBA)

Objective:

- Provide accessible, scalable mental health support for pregnant women and breast cancer patients

Key Innovations:

- Virtual coach delivering cognitive-behavioral therapy (CBT).
- Integration of WHO's Self-Help Plus (SH+) protocol.
- Weekly psychoeducational sessions via a digital platform.

Outcomes:

- Enhanced mental well-being and stress management.
- Adaptability for other vulnerable groups.
- Scalability for regional and international healthcare systems.

Financing:

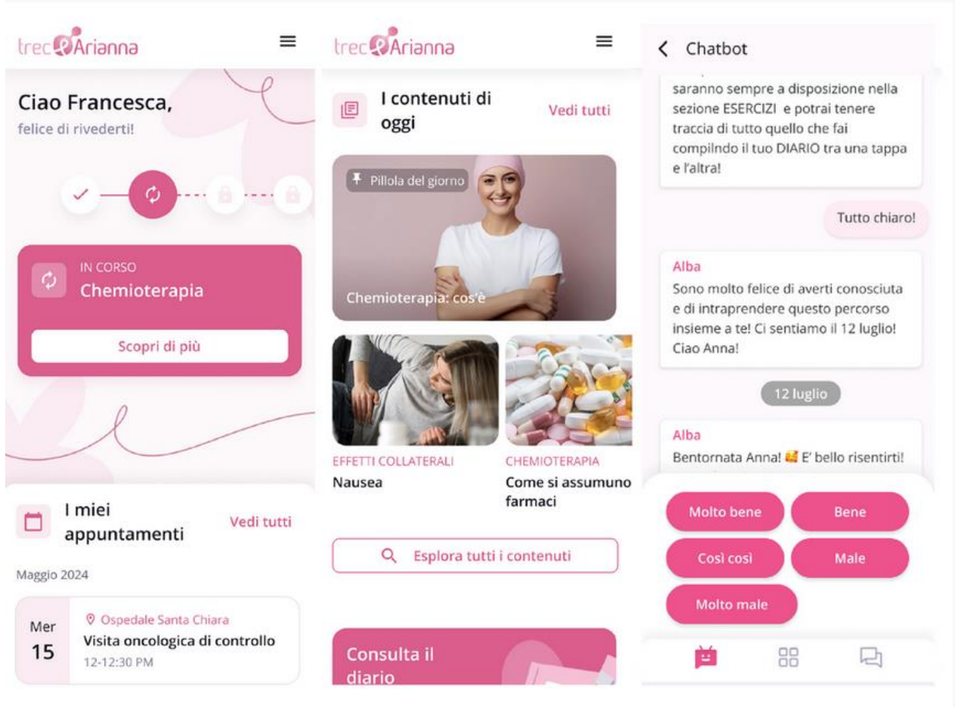
- Publicly funded, possibility to have the APP open access.

Lessons Learned:

- Tailoring content to user-specific needs (pregnancy vs. cancer care).
- Simplifying navigation for broader user acceptance.
- Training non-specialist facilitators for digital health solutions.

Potential for Transfer:

- Co-design approach with iterative feedback.
- Adaptation to diverse healthcare contexts and populations.
- Accessibility through open-access models.



Best Practices from:

Interreg CENTRAL EUROPE
Co-funded by the European Union

RehAllianCE

ProMIS
PROGRAMMA MATTONE INTERNAZIONALE SALUTE

ProMIS - Programma Mattone Internazionale Salute

- THCS - Transforming Health and care system

1) THCS - Transforming Health and care system

Objective:

- Enabling health and care systems transformation through research and innovation

Key Innovations:

- Research Actions: Filling knowledge gaps with evidence-based studies.
- Implementation: Testing and scaling solutions across regions.
- Capacity Building: Trainings, study visits, and technical assistance.

Outcomes:

- Increase funding opportunities and strengthen the research and innovation community.
- Fill knowledge gaps.
- Increase the ability to implement innovation.
- Intensify cooperation among countries and regions and beyond health and care sectors.
- Increase stakeholders' involvement and capacity building

Financing:

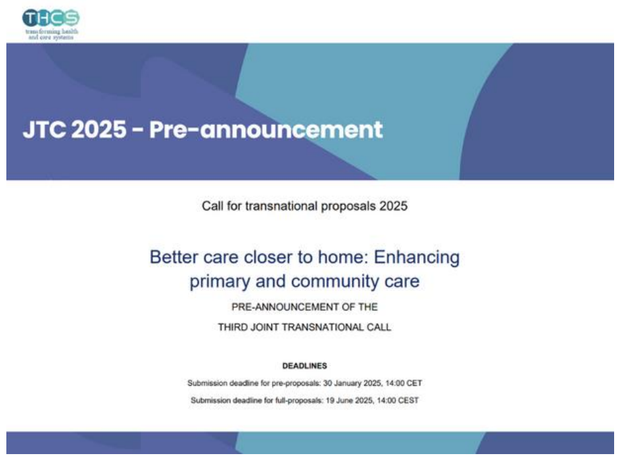
- Horizon Europe Framework Programme.

Lessons Learned:

- Project is ongoing, but early results show potential for wide-scale healthcare improvement.
- In 2023 Calls, the total funding was €35.3 million.
- Challenges include aligning regional priorities and ensuring transferability.

Potential for Transfer:

- Transnational Innovation Calls: Tailored solutions adaptable to 26 different regions and needs.



Interreg CENTRAL EUROPE

Co-funded by the European Union

RehAllianCE

For further information

[Website]

[Facebook page]

[LinkedIn page]

This publication has been developed within the RehAllianCE project, supported by the Interreg CENTRAL EUROPE Programme with co-financing from the European Union. Its content is the sole responsibility of the authors and the project partnership and does not necessarily reflect the views or positions of the Interreg CENTRAL EUROPE Programme, its programme bodies or the European Union. Neither the programme authorities nor the European Union can be held responsible for any use that may be made of the information contained herein.