PROCare4Life

Personalised Integrated Care
Promoting Quality of Life for Older People

PROCare4Life
PeRsOnalized Integrated CARE Solution for Elderly facing several short or long term conditions and enabling a better quality of LIFE

vCare Final Open Event

Cláudia Louro | 29 August 2022

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PROCare4life project

Type of project: Horizon 2020 - Innovation Action

Duration: 01/01/2020 – 31/12/2022 (30/06/2023)

parkinson Madrid

KINETIKOS

AtoS

POLITÉCNICA

IFIC

Stelar

WWU
MÜNSTER

Partners: 14 partners
6 countries

Maastricht University

SIMAVI
Software Imagination & Vision

CNS

WOHLFAHRTSWERK
FÜR BADEN-WÜRTTEMBERG

> **PROCare4life** aims to contribute to the improvement of older adults' quality of life and better management of their condition, through **a personalised, integrated care solution.**

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PROCare4life project

PROCare4Life is a digital app

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PROCare4Life | Innovative aspects

Integrated care solution

Artificial intelligence at the service of users
Detection of symptoms and signs + Detection of deviations + Detection of abnormalities

Personalization | recommendations

Integrated Care Pathway model

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PROCare4Life solution | Acceptance and usability

- Lessons learned from previous RIA projects
- Users involvement | needs and requirements definition
- Brainstorm of symptoms and functionalities | Shortlisted
- PROCare4Life solution optimizations (Pilots results and lessons learned)

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PROCare4Life solution | Acceptance and usability

User requirement study

Mixed qualitative-quantitative study:
- 2 online surveys (Patients + Carers)
- 40 interviews (Key stakeholders)
- 4 workshops (HCP)

>200 participants

> JMIR Res Protoc. 2021 Jan 12;10(1):e22463. doi: 10.2196/22463.

Investigating Users' and Other Stakeholders' Needs in the Development of a Personalized Integrated Care Platform (PROCare4Life) for Older People with Dementia or Parkinson Disease: Protocol for a Mixed Methods Study

Mona Ahmed # 1, Mayca Marín # 2, Raquel Bouça-Machado # 3, Daniella How 1, Elda Judica 4, Peppino Tropea 4, Ellen Bentlage 1, Michael Brach 1
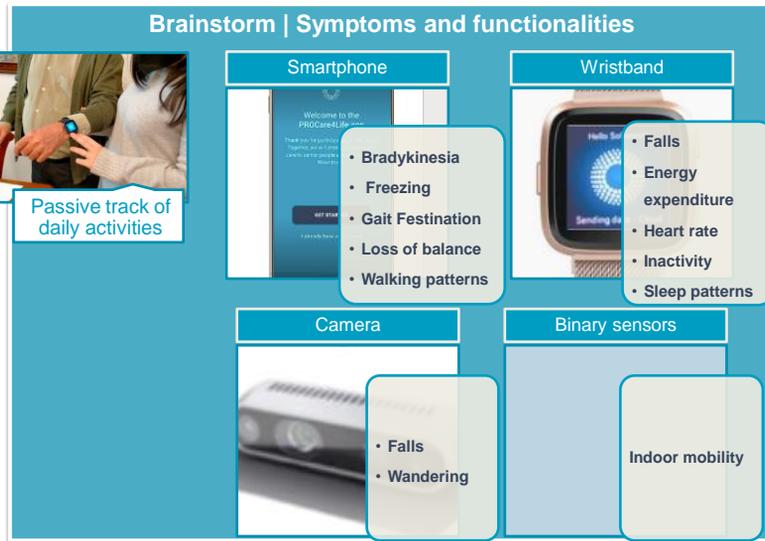
Preprint | Accepted Manuscript

End-Users and Other Stakeholders' Needs and Requirements in the Development of a Personalized Integrated Care Platform (PROCare4Life) for Older People with Dementia or Parkinson Disease: A Mixed-Methods Study

Mona Ahmed; Mayca Marín; Daniella How; Elda Judica; Peppino Tropea; Ellen Bentlage; Joaquim J. Ferreira; Raquel Bouça-Machado; Michael Brach

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PROCare4Life solution | Acceptance and usability

Brainstorm | Symptoms and functionalities

Passive track of daily activities

Smartphone
- **Bradykinesia**
- **Freezing**
- **Gait Festination**
- **Loss of balance**
- **Walking patterns**

Wristband
- **Falls**
- **Energy expenditure**
- **Heart rate**
- **Inactivity**
- **Sleep patterns**

Camera
- **Falls**
- **Wandering**

Binary sensors
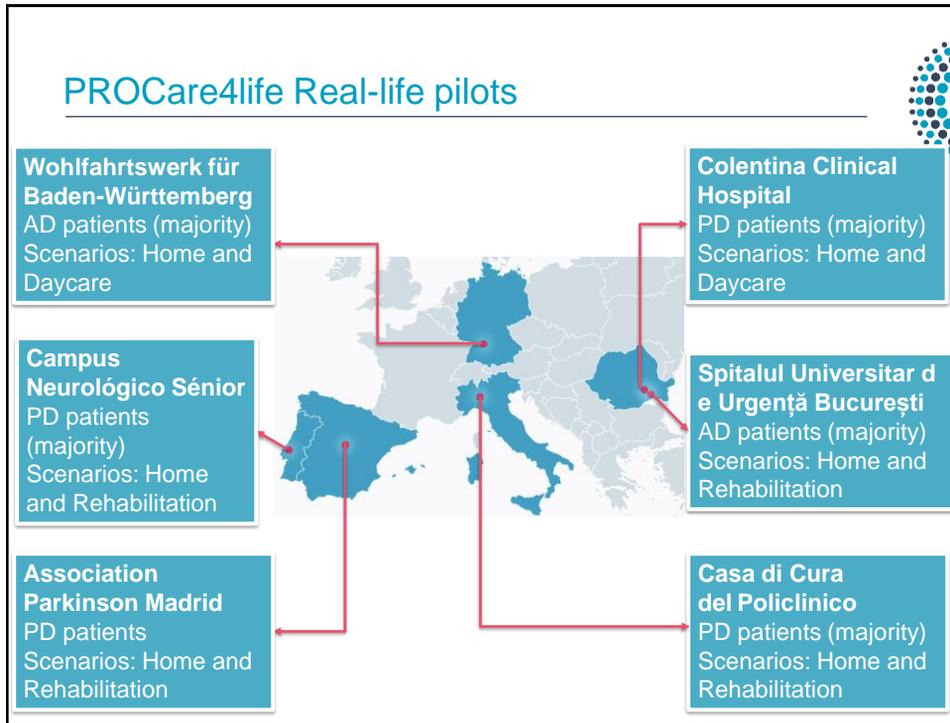**Indoor mobility**

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PROCare4Life Real-life pilots

Evaluate the feasibility of measuring disease progression and patient health status through the global functioning of PROCare4Life system
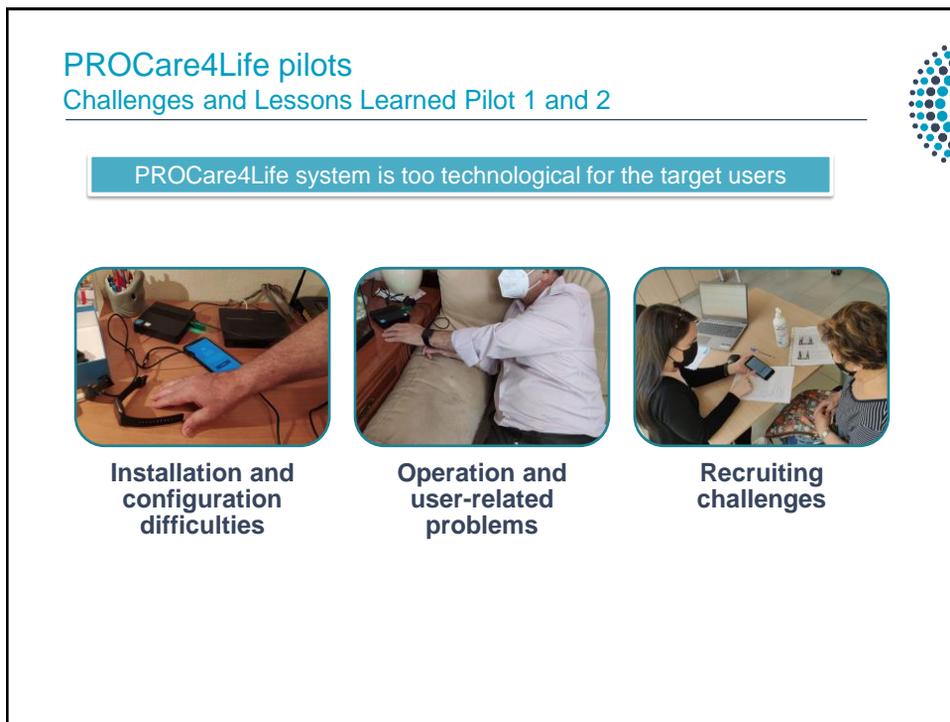
Pilot 1	Technical feasibility and usability of the PC4L system
Pilot 2	Characterization and validation of PC4L system metrics
Pilot 3 (ongoing)	Usability and clinical impact of the PC4L final version in patients with neurodegenerative diseases Usability of recommendations Replicability in other chronic conditions

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PROCare4life Real-life pilots

Wohlfahrtswerk für Baden-Württemberg
AD patients (majority)
Scenarios: Home and Daycare

Campus Neurológico Sénior
PD patients (majority)
Scenarios: Home and Rehabilitation

Association Parkinson Madrid
PD patients
Scenarios: Home and Rehabilitation

Colentina Clinical Hospital
PD patients (majority)
Scenarios: Home and Daycare

Spitalul Universitar de Urgență București
AD patients (majority)
Scenarios: Home and Rehabilitation

Casa di Cura del Policlinico
PD patients (majority)
Scenarios: Home and Rehabilitation

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PROCare4Life pilots
Challenges and Lessons Learned Pilot 1 and 2

PROCare4Life system is too technological for the target users

Installation and configuration difficulties

Operation and user-related problems

Recruiting challenges

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PROCare4Life solution | Scalability

Pilot 1 results
PROCare4Life 1st prototype

- **Not scalable**
  - Requirement of technical skills
  - Did not allow remote updates

PROCareOS Plug and play solution

Simplified and model-independent (mini-PC) installation

Advantages
Automatic updates
Configuration via smart phone
No IP address dependency
Auto restart
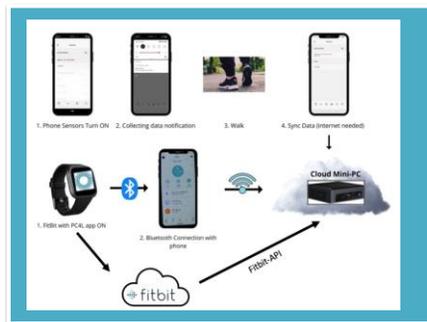Optimized processes

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PROCare4Life solution | Scalability

Pilot 2 results
PROCare4Life 2nd prototype

- **Still technologically demanding for the target population**

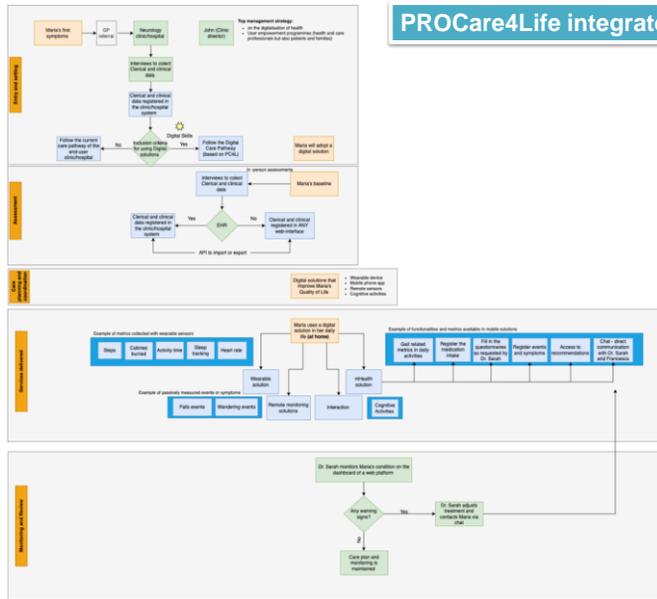**Adopt a hybrid approach**

Full system | Rehabilitation + Daycare

Cloud-based solution | Home+ Rehabilitation + Daycare

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PROCare4Life solution | Integration
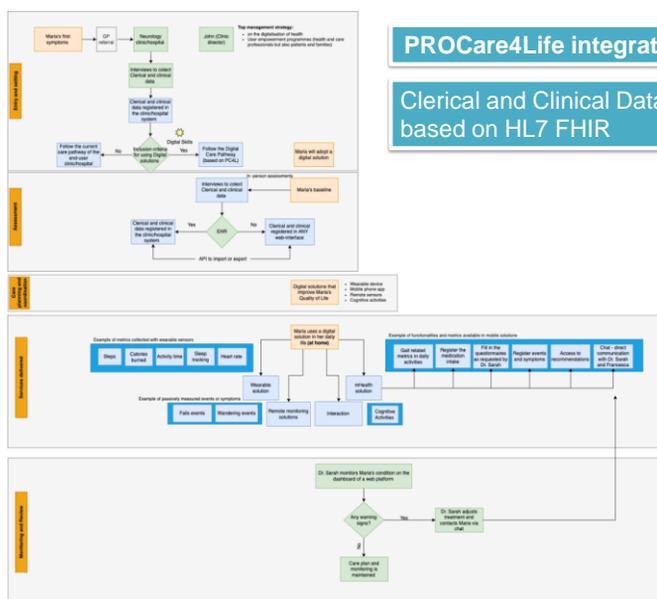

PROCare4Life integrated care pathway

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PROCare4Life solution | Integration

PROCare4Life integrated care pathway

Clerical and Clinical Data Repository based on HL7 FHIR

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PROCare4Life contributions

- Needs and requirements
- Blueprint – system architecture
- Open source API libraries
- Training materials
- Pilots lessons learned (acceptance, usability)
- Contributions to standardization
- Dissemination in events (hurdles and how we surpass)

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