Incorporating PPI into the H2020 CAPTAIN Project - An eCoaching assistant for older adults and those with dementia

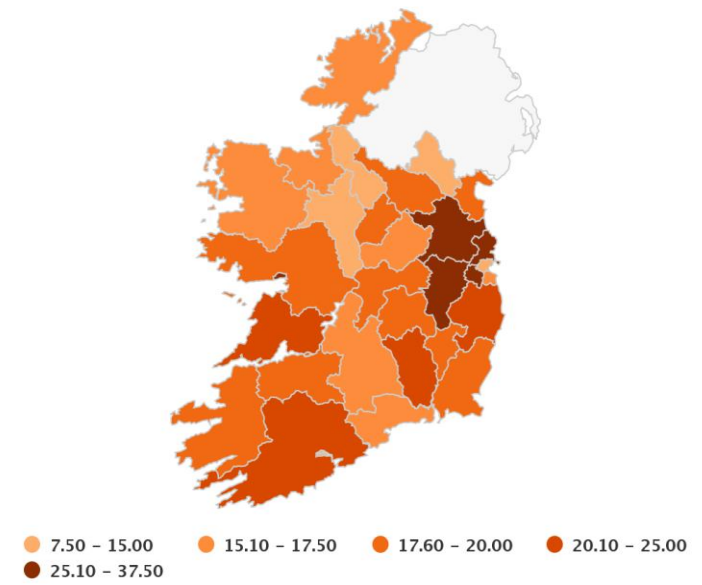Joanne Carroll & Dr. Louise Hopper

1st April 2019

Why is CAPTAIN needed?

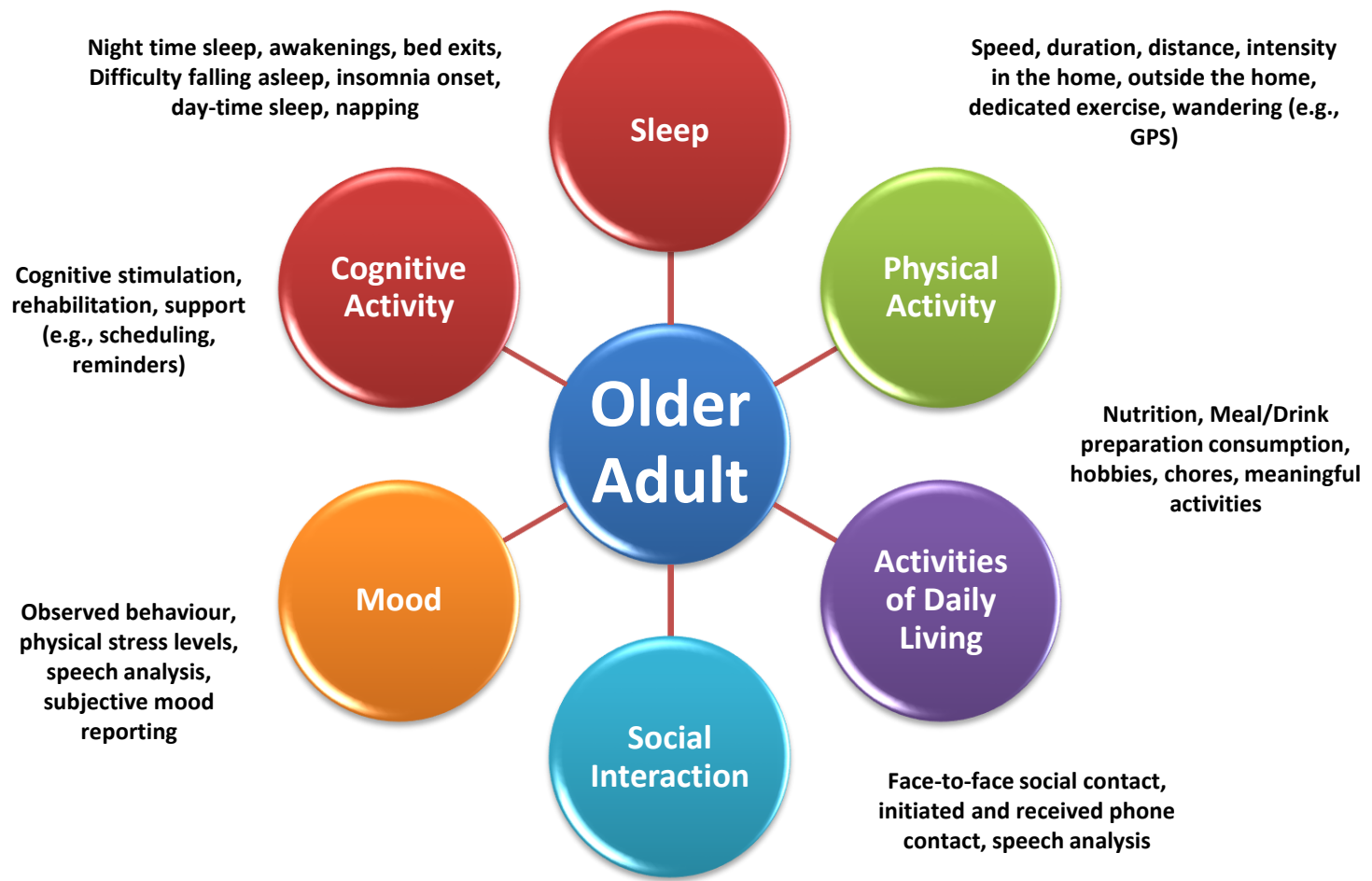*"Population ageing is one of the greatest social and economic challenges facing the EU."* – EU, 2015

- Ageing Population

- Physical + Mental Wellbeing

- Maintaining Independence

Map 4.5 Percentage change in persons over 65, by county, 2011–2016

- 7.50 – 15.00
- 15.10 – 17.50
- 17.60 – 20.00
- 20.10 – 25.00
- 25.10 – 37.50

Assistive Technology Use in Six Dimensions

Introducing CAPTAIN

- **C**oach **A**ssistant via **P**rojected and **Ta**ngible **In**terfaces

- Combining new technology with existing applications designed to support the older adult

- Designed to turn the home of an older adult into an ever-present assistant

System for fall detection

Connected pico projector
for additional feedbacks

Projection on the wall can be
done with:
1. the AR lamp fixed on the wall
2. the AR lamp placed on a table
in the horizontal configuration
3. the connected pico projector
at a certain distance from the wall

AR lamp for cooking
(recipe helper interface + 3D cookbook)

Co-Design Structure

Sprint 1 & 2
- ID problems & Solutions
- Explore the potential of CAPTAIN

Co-design workshops

Co-developing CAPTAIN
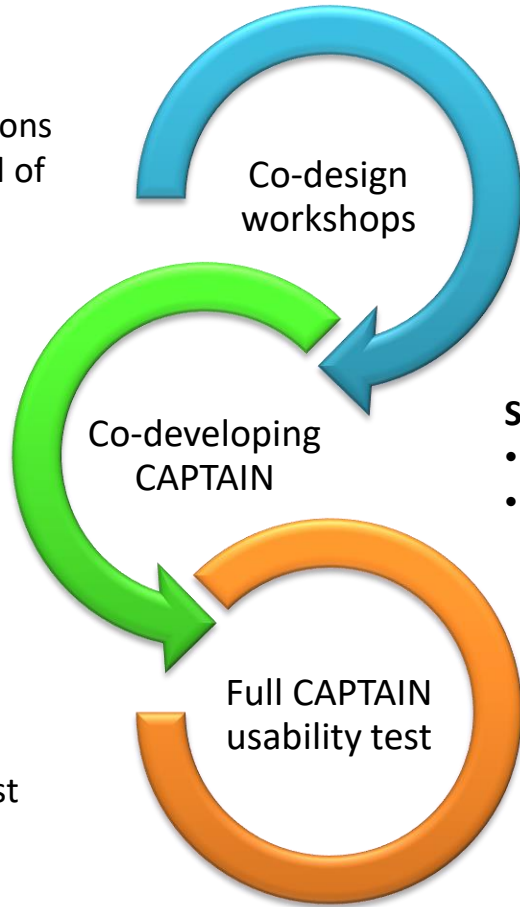
Sprints 3 - 6
- Component Solution
- Building a Full System

Full CAPTAIN usability test

Real Home Trials
- Complete System Test

Maria

Age	72
Relationship	married
Children	2 sons
Specifiers	works in family business (shop)

🙂 Likes

- ➢ Cooking and trying new recipes and tastes.
- ➢ Relaxing in her house, watching movies.

🙁 Fears

- ➢ Feels sad and frustrated when she can't function properly in her everyday life (e.g. forgets something she had to do).
- ➢ Afraid of Leaving electrical devices on and causing a fire .

❤ Wants and needs

- ➢ Wants to continue doing her everyday activities and household works, especially cooking which she loved so much.
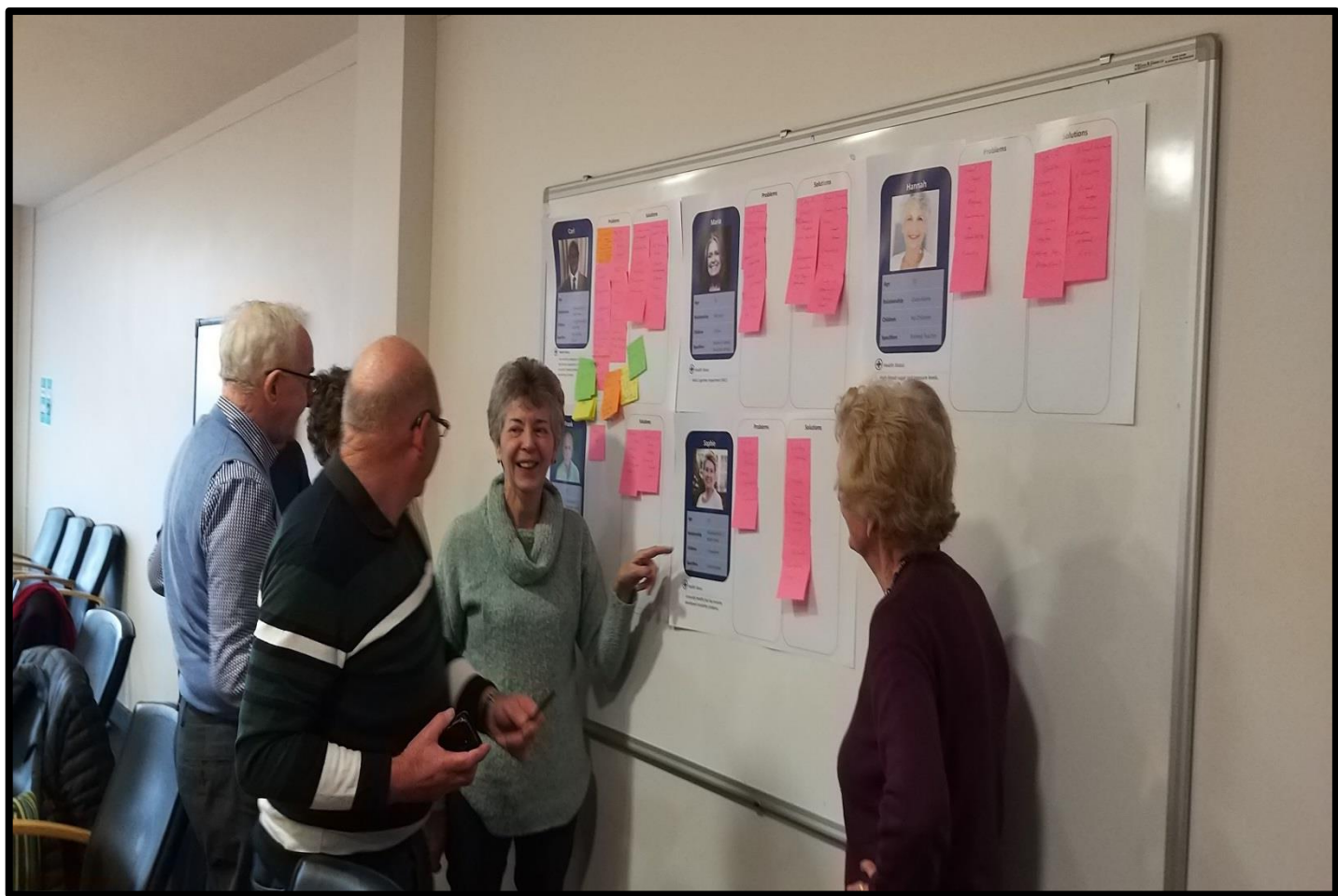
✚ Health status

- ➢ Mild Cognitive Impairment (MCI)

Methodology

Sprint 1: Outcomes

Physical & Cognitive Activity
- Physical Exercises
- Cognitive Exercises (Brain Health)

Social Participation
- Communication with Family
- Local Group Activities

Nutrition
- Interactive Recipes
- Reminders – Check Blood Sugars

Risk Avoidance
- Prompts to turn off appliances
- Check Blood Pressure (Falls Prevention)

Personal Solutions Identified

Sprint 1: Outcomes

Persona Solutions Identified				
Nutrition	Physical and Cognitive Activity	Social Participation	Risk Avoidance	Other
• **Interactive Recipes** • **Personalised diet advice** • **(e.g. increase vitamins and minerals, with GP advice)** • **General education on Diet** • **Increase motivation and ability to prepare meals** • **Weight management** • **Strategies to support self-management (e.g. taking BP, blood sugar measures)**	• Physical exercise • Home based physio program • Tips for safe mobilisation • Increase Print Size • Voice Activation • Mood management (non-pharma ideally) • Counselling • CBT (depression, anxiety) • Well-being programme • Mindfulness programme • Medication management • Cognitive exercise, brain health • Cognitive rehabilitation • Practical strategies to support memory • Links with memory assessment, support services • Support to stay engaged in ADLs • Routine • Organisation (i.e., keys in same place) and checklists • Diary • Planning Ahead	• Increase communication with family, friends • Easy to use phones • Use Social Media/ Whats App etc. • ALEXA systems • Help developing shared interests • Link with social activities/groups locally • Support to attend groups • Support calls • Befriending • Volunteer • Transport supports	• Risk management advice without impeding independence • OT assessment • Fall Prevention assessment • Falls intervention in the home (e.g. handrails) • Attend a fall prevention group • Education on bone health • Blood Pressure Machine • Blood Sugar Machine • Home Security • Reliable point of contact • Personal alarm • Fire Extinguisher • Smoke (CO) Alarm • Fire Alarm • Apps – Smart Home • Cut-off switches for gas, electricity • Prompts near cooker, kettle etc. to remind to switch off • Tracker App	• Take breaks during the working day • Assistant For Work • Support for family members so that they can effectively support the person • Power of Attorney • Education on Health • Signposting to services and supports • Technology Simplified • User Friendly • Remove fear of Technology • Availability/Financial Accessibility of Technology • Simple technology training

Impact of PPI methodology on CAPTAIN

- Communication
  - Understanding

- Accurate Development
  - Developing a system that… *"…helps me to do the thinks I want to do"*.

- Involvement
  - Inclusion
  - Working with those the system will benefit

Thank you – Any Questions?

CAPTAIN Consortium

Funding Body

For more information:

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