



GAMES FOR HEALTH EUROPE
2025

DISCLOSURE SLIDE
for presentations at the

GAMES FOR HEALTH EUROPE 2025 CONFERENCE

I herewith confirm that there is not any conflict of interest with the conference organization or any of its sponsors.



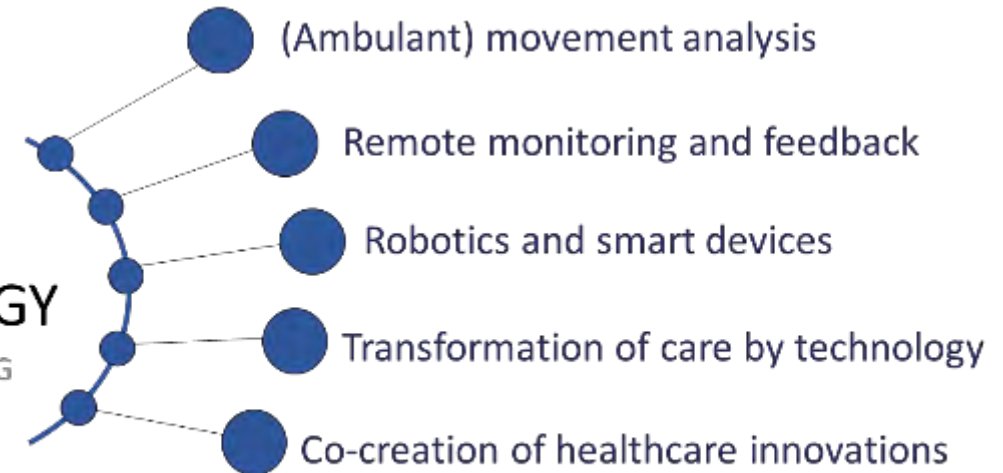
Roessingh Center for Rehabilitation

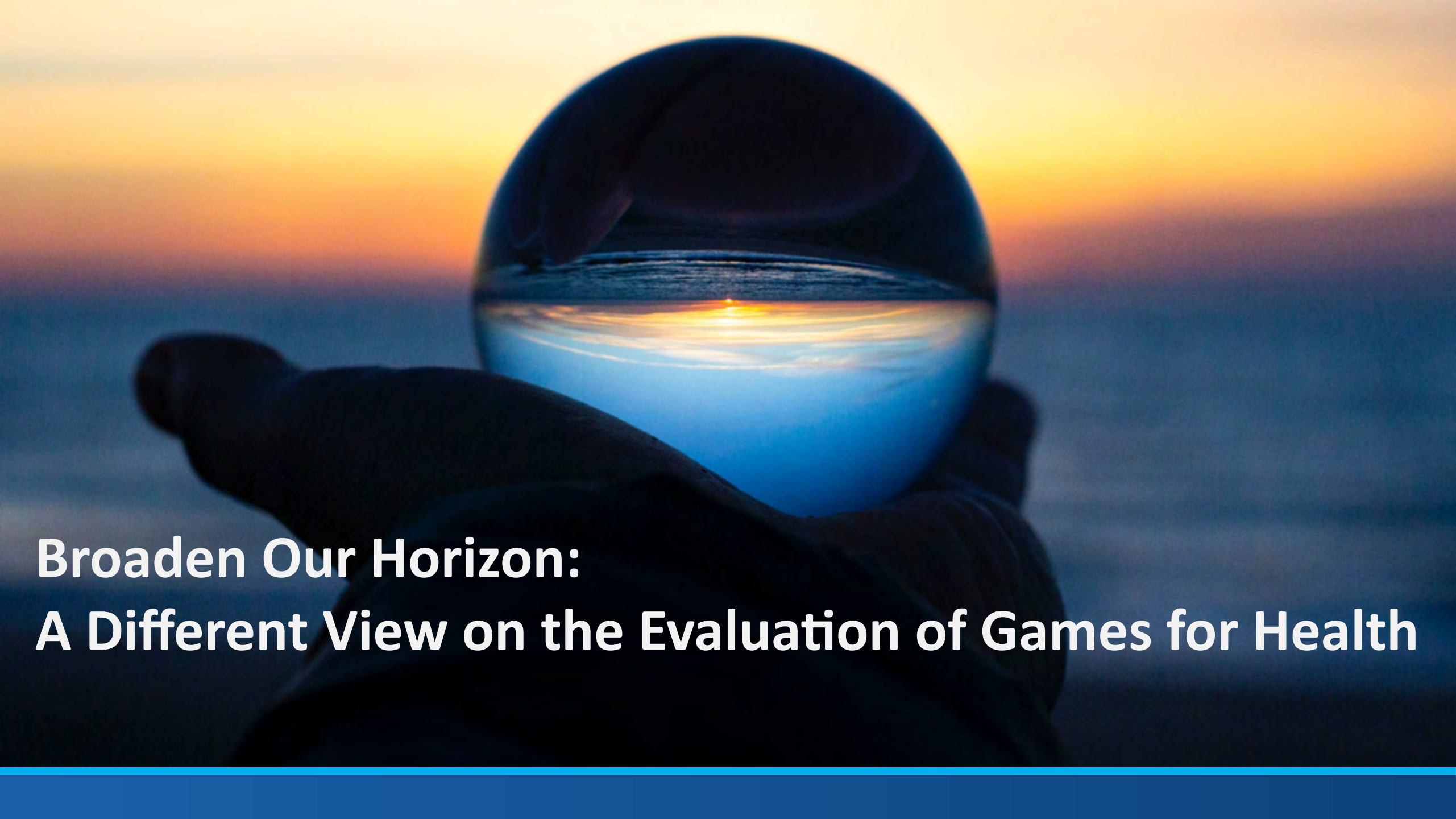
(RCR) is a rehabilitation hospital specialized in rehabilitation treatment and care.

- Children and adults
- inpatient and outpatient settings
- Stroke survivors
- Patients suffering from chronic pain
- Traum survivors (high SCI)
- Children

As impact lab for personalised health technology, we provides scientific research on innovative healthcare technology with an end-user focus. For us co-creation with end-users and stakeholders is key to ensure that the innovation meets user needs and fits the healthcare context.

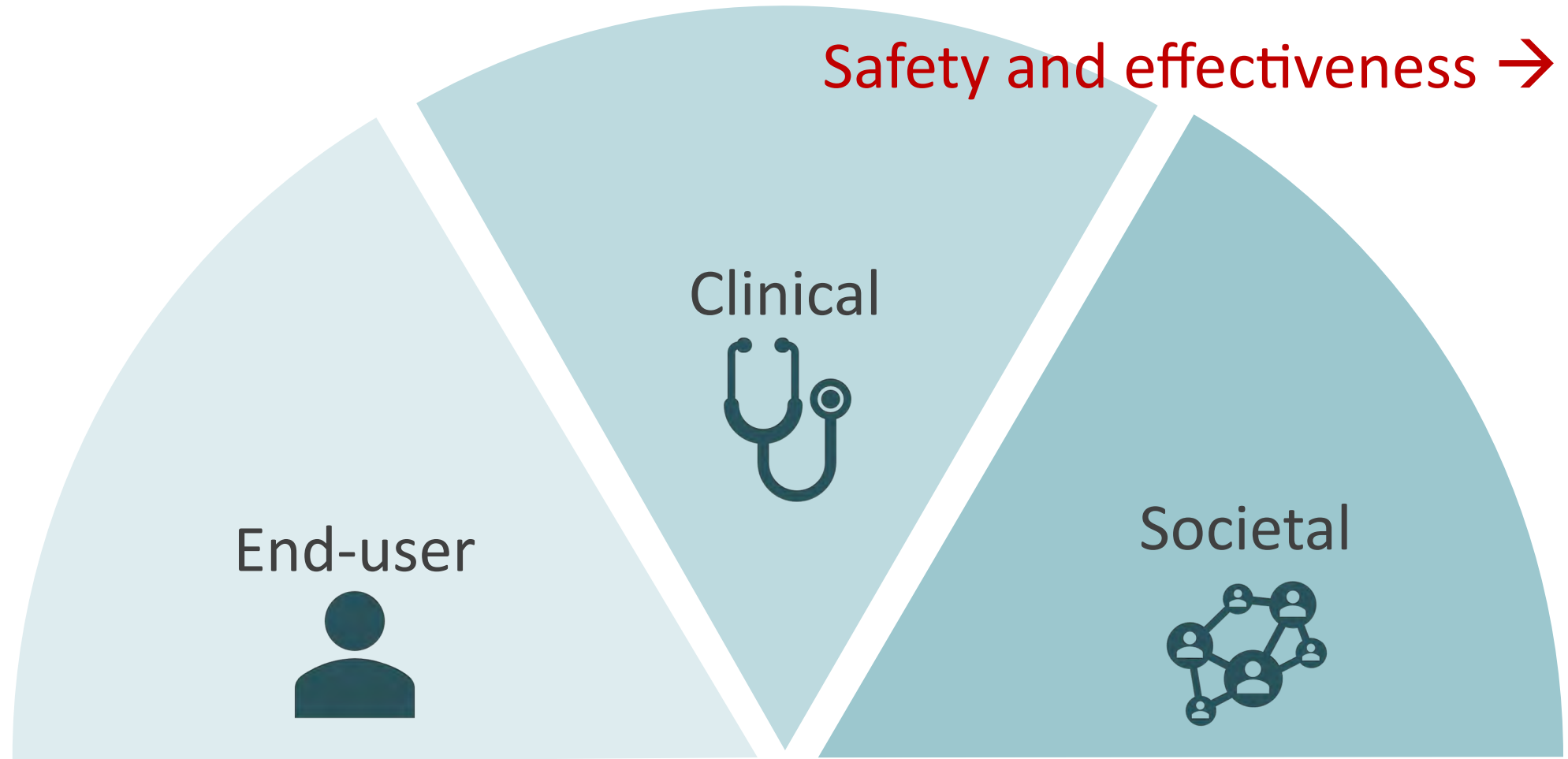
IMPACT LAB
FOR PERSONALISED
HEALTH TECHNOLOGY
REHABILITATION | HEALTHY AGEING





**Broaden Our Horizon:
A Different View on the Evaluation of Games for Health**

Safety and effectiveness → RCT



TRL 1 - TRL3

TRL 4 - TRL6

TRL 7-TRL9



The maturity of the technology

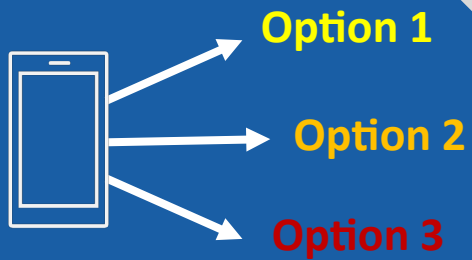


No fit between **Games for Health** and
Randomized Controlled Trials (**RCT**).

MRT

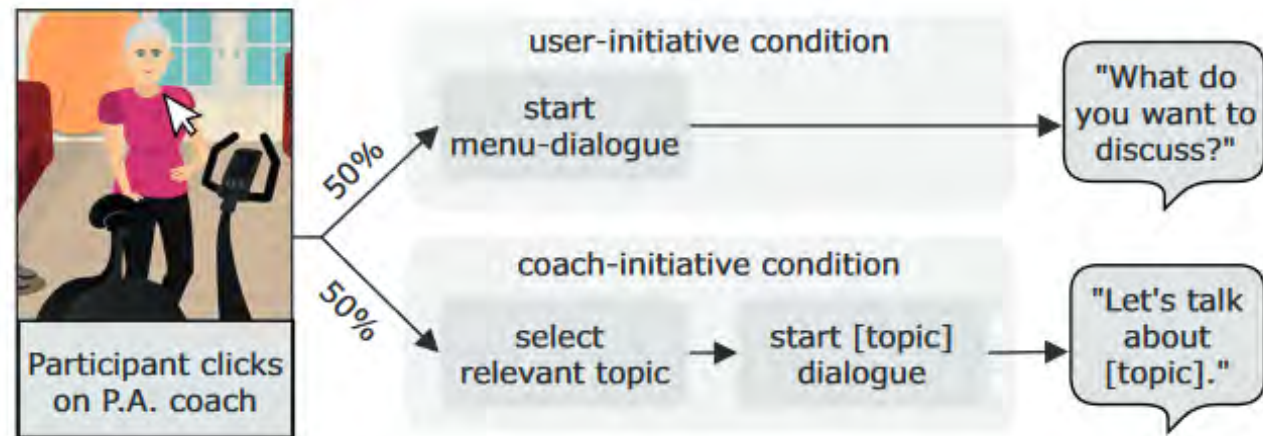
Micro-randomized trail

Klasnja et al., 2015



Cohort of end-users

- An experimental approach that can be used to build Just-In-Time Adaptive Interventions
- Individuals are randomized hundreds or thousands of times over the course of the study.
- The data can be used to investigate the effects of just-in-time intervention options



Beinema, T., Op den Akker, H., Hurmuz, M., Jansen-Kosterink, S., & Hermens, H. (2022). Automatic topic selection for long-term interaction with embodied conversational agents in health coaching: A micro-randomized trial. *Internet interventions*, 27, 100502.



cmRCT

cohort multiple Randomized Controlled Trial

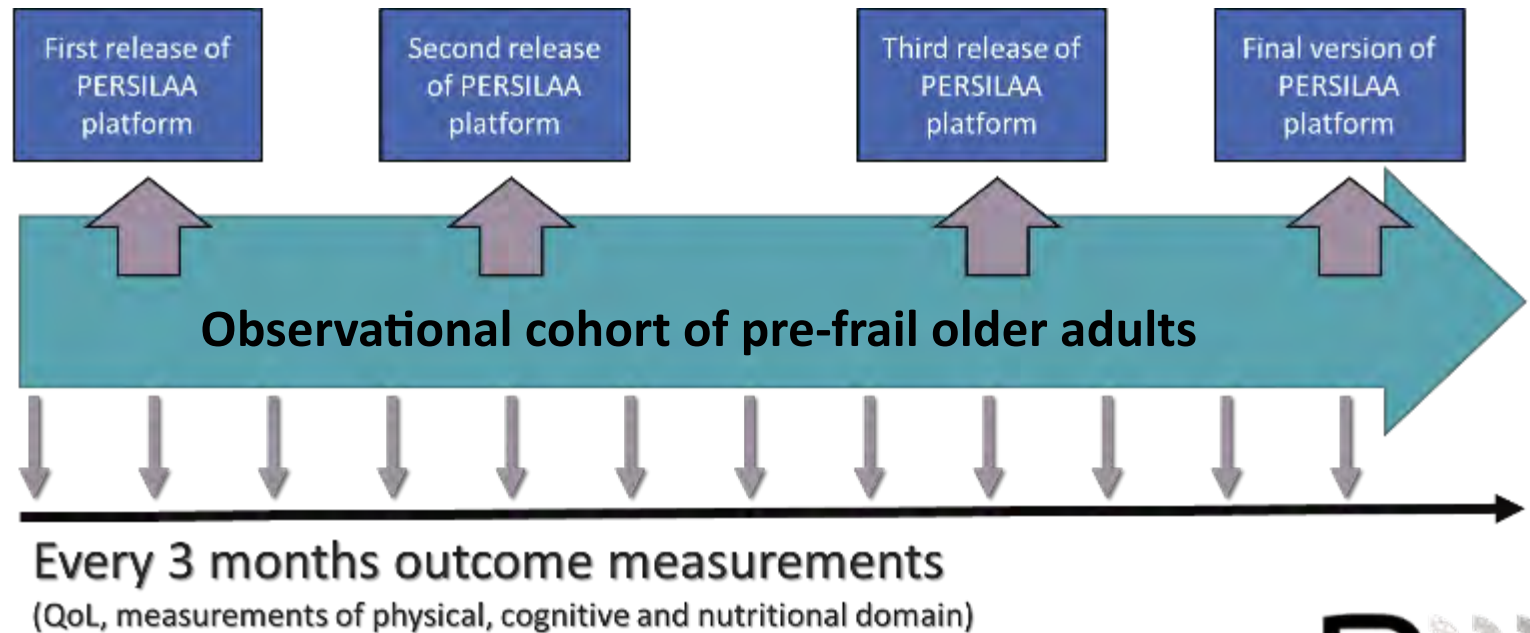
Relton et al., 2010

RCT – 1

RCT – 2

RCT – 3

- cmRCT offers the opportunity to perform or facilitate randomized trials for multiple interventions simultaneously
- The basis of the cmRCT is an observational cohort of patients with the same condition

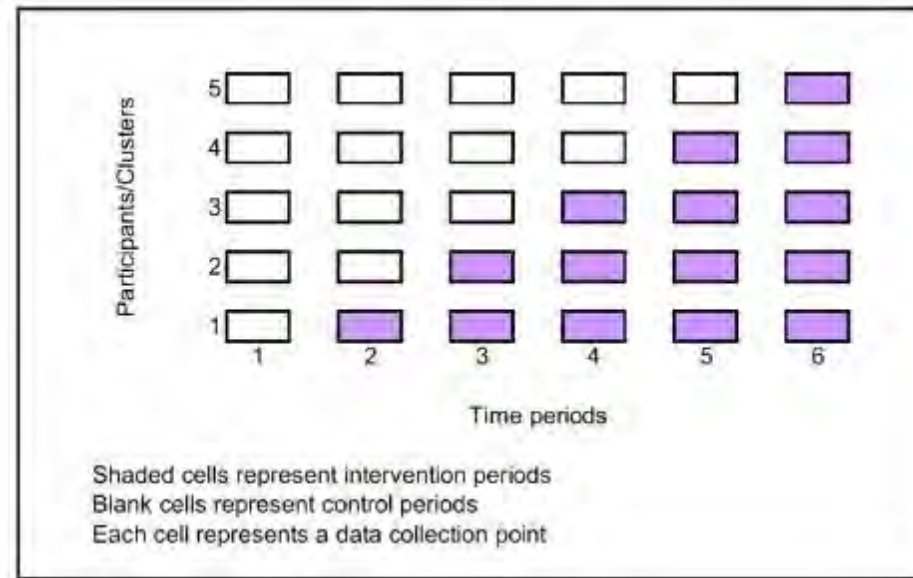
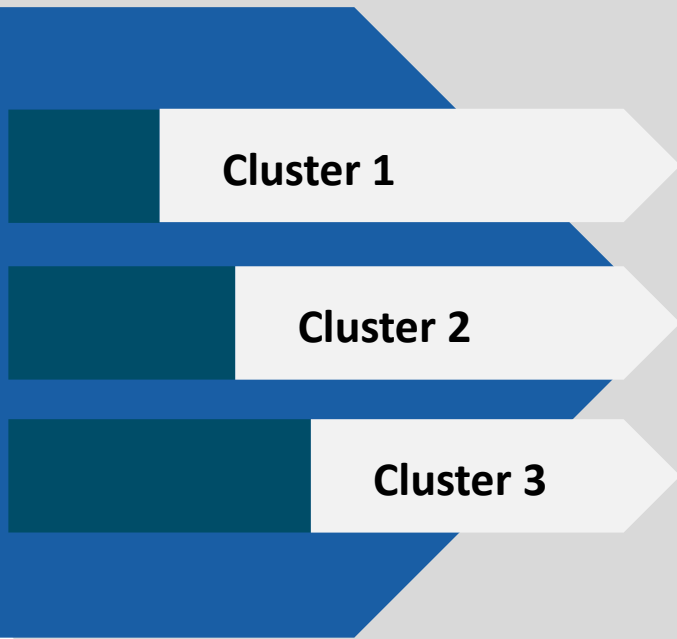


Dekker-van Weering, M., Jansen-Kosterink, S., Frazer, S., & Vollenbroek-Hutten, M. (2017). User experience, actual use, and effectiveness of an information communication technology-supported home exercise program for pre-frail older adults. *Frontiers in medicine*, 4, 208.

SWT

Stepped wedge cluster randomised trial

- The stepped wedge is a pragmatic study design with the focus on implementation
- It is an alternative to parallel cluster trial designs
- Randomisation on cluster level instead of individual level (general practice, hospital ward, or hospital)



SCED

Single case experimental designs

Krasny-Pacini & Evans, 2018



A B A C

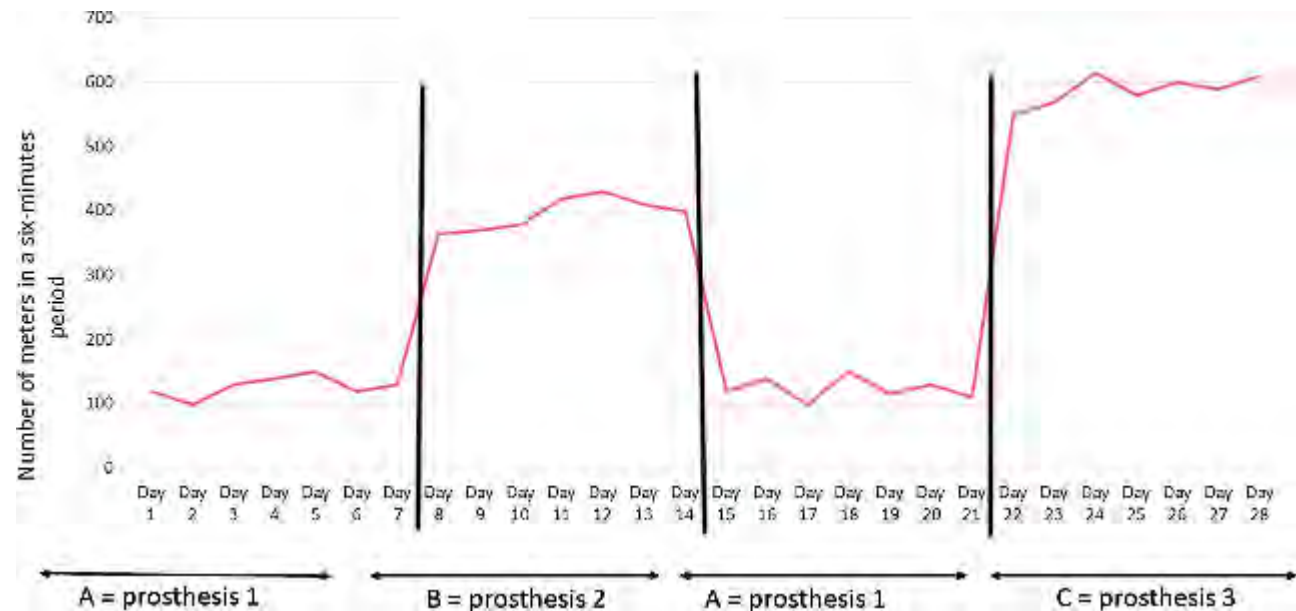


A C A B

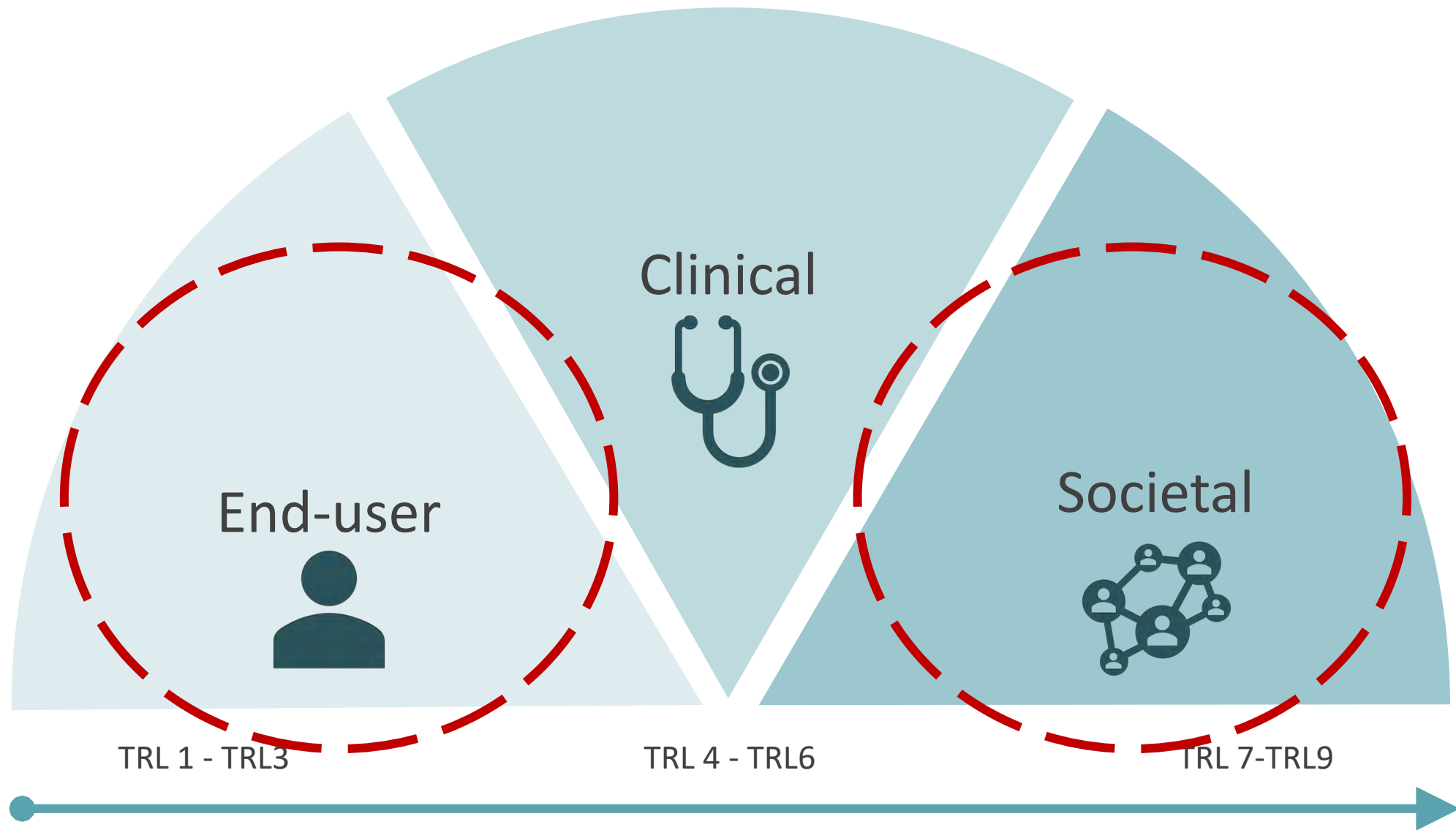


A B A C

- SCED methodology aims to test the effectiveness of an intervention or to compare the relative effectiveness of two or more interventions.
- One of the most challenging aspect of SCED methodology is finding an adequate outcome measure to assess intervention effectiveness.



Krasny-Pacini, A., & Evans, J. (2018). Single-case experimental designs to assess intervention effectiveness in rehabilitation: A practical guide. *Annals of physical and rehabilitation medicine*, 61(3), 164-179.



The maturity of the technology

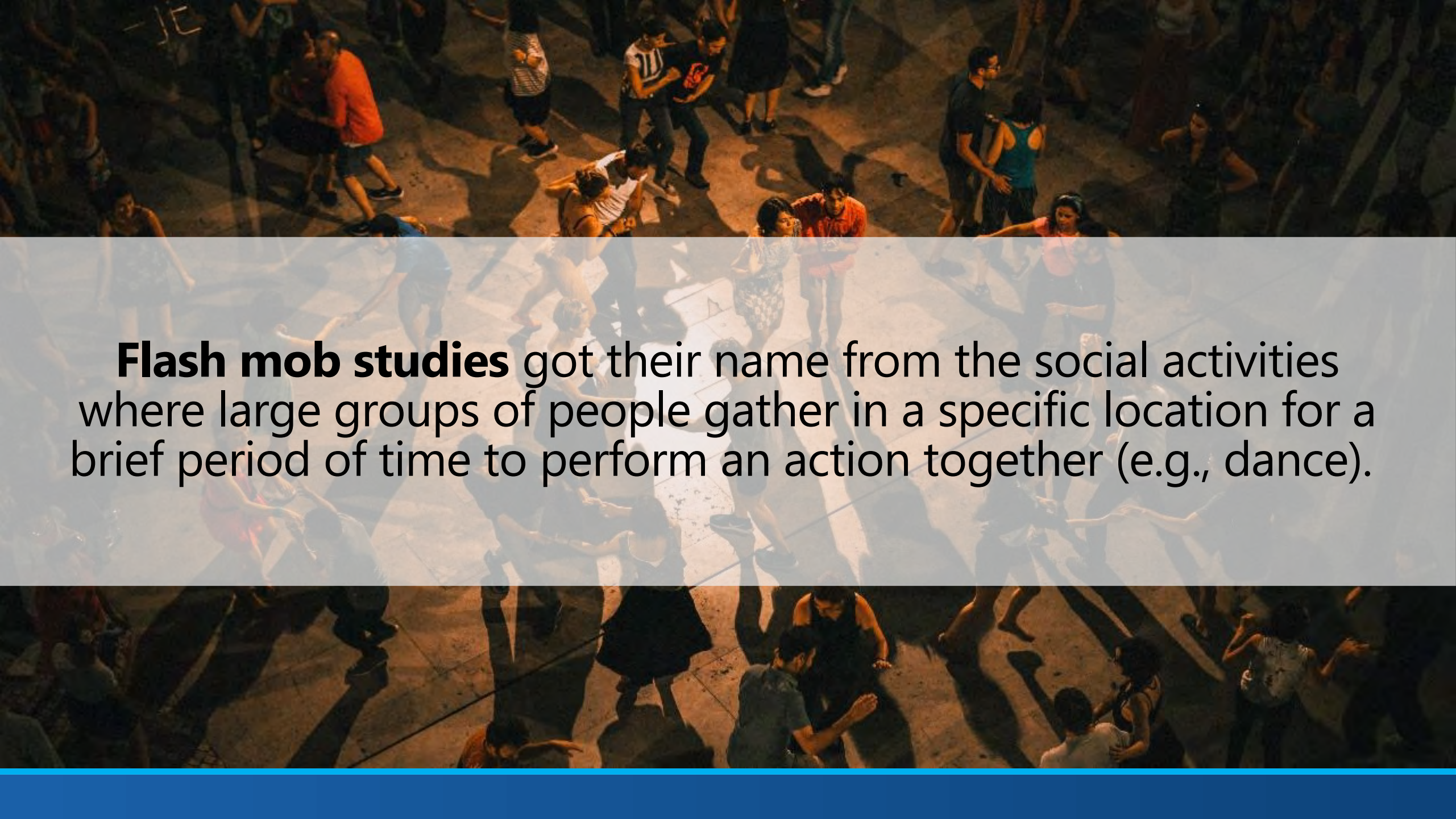


End-user perspective



Acceptance studies

Formative / summative usability studies

An aerial, high-angle photograph of a large group of people gathered in a public square or plaza at night. The scene is illuminated by warm, golden light, likely from street lamps or stage lights, creating long shadows and a vibrant atmosphere. The people are engaged in various social activities, with many appearing to be dancing or moving in a coordinated fashion. The crowd is dense, and the overall mood is one of collective celebration or social interaction. A semi-transparent white banner is overlaid across the center of the image, containing text.

Flash mob studies got their name from the social activities where large groups of people gather in a specific location for a brief period of time to perform an action together (e.g., dance).



In research this means that data is collected on a large scale (e.g., in multiple locations at the same time, or involving many participants) in a short period of time.

Scale-Up4Rehab is building a **virtual rehabilitation clinic** that facilitates blended care, accessible from home with support from healthcare professionals.

5 countries:



7 clinical pilot sites:



- VR clinic (platform)
- Applications



- Flasmob study
- Central point at Roessingh Center for Rehabilitation
- Just one day!
- N=25

- Iterative approach together with end-users (pt and hcp to determined use-case (successful)

Scale-Up4Rehab is building a **virtual rehabilitation clinic** that facilitates blended care, accessible from home with support from healthcare professionals.

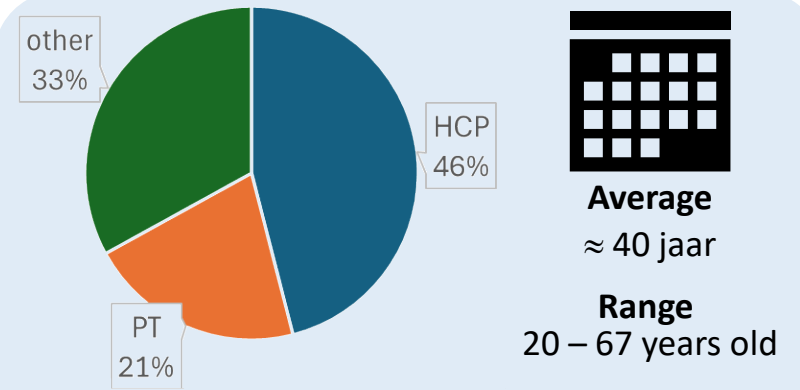
5 countries:



7 clinical pilot sites:



- VR clinic (platform)
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Ease of use	Intention to use	Usefulness
Positive 96%	Positive 83%	Positive 46%
Neutral 4%	Neutral 17%	Neutral 46%
Negative 0%	Negative 0%	Negative 8%

- More variation in exercises
- Options for personalisation
- Increase usefulness



Societal perspective



Costs

Societal impact



Which innovations are worthwhile?



Limited **resources** and **capacity** in healthcare force us to make choices about which innovations will be continued and scaled up.

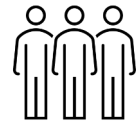
Social Return on Investment

- The internationally recognised SROI method offers the possibility to predict in advance, to monitor and to evaluate the societal value of an innovation.
- In addition to the SROI ratio (= total output / total input), the SROI provides a starting point to achieve sustainable implementation with all stakeholders.



- Maier, F., Schober, C., Simsa, R., & Millner, R. (2015). SROI as a method for evaluation research: Understanding merits and limitations. *VOLUNTAS: International Journal of Voluntary and Nonprofit Organizations*, 26, 1805-1830.
- Nicholls, J., Lawlor, E., Neitzert, E., & Goodspeed, T. (2012). A guide to social return on investment.

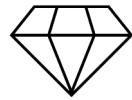
SROI principles



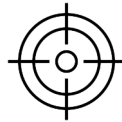
Involve stakeholders



Research and understand what will change



Appreciate what matters



Involve only relevant and significant matters



Don't claim too much



Be transparent



Verify the assumptions and results

SROI process



1. Establish scope and key stakeholders
2. Map outcomes
3. Evidence and value outcomes
4. Establish impact
5. Calculate the SROI
6. Report, use and embed



- **RE-SAMPLE** will work to transform the healthcare journey of patients with COPD, and to set a standard of care for patients suffering from complex chronic conditions
- **RE-SAMPLE** will use real-world data (RWD) to monitor COPD symptoms beyond scheduled medical check-ups.
- The data and analyses will feed into the development of personalised treatment and a **virtual companionship programme**.



Input

- Patient:**
 - Learns about RE-SAMPLE
 - Onboarding to the program and learns how to use it.
 - Self-management training
 - Use of application

- Hospital:**
 - Inform clinical staff about RE-SAMPLE
 - Inform patients with COPD about RE-SAMPLE
 - Overall coordination
 - Use of RE-SAMPLE by clinical staff
 - Purchase wearables
 - RE-SAMPLE licence
 - Maintenance of edge node architecture

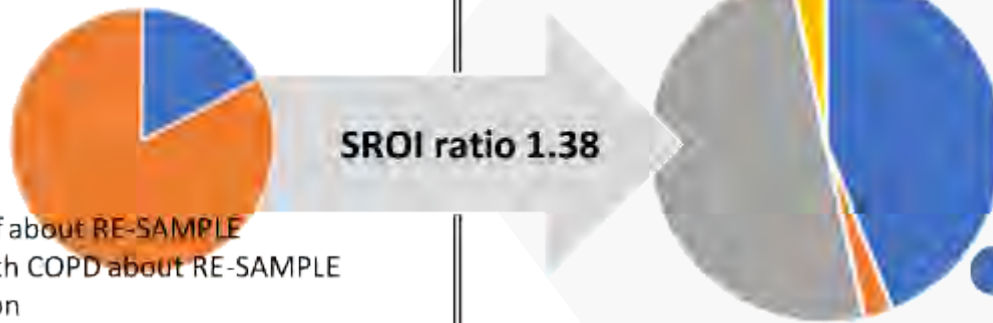
Total input: € 456,591

Output

- Healthcare insurer:**
 - Early treatment of exacerbations
 - Less GP consults
- Employer:**
 - Less sick days at home

- Patient:**
 - Increased quality of life
 - Less GP visits
- Hospital:**
 - Access to research data
 - Better quality of care
 - Increased work-satisfaction clinical staff

Total output: € 629,407



A person is shown in silhouette, holding a globe of the Earth. The background is a vibrant sunset or sunrise over a body of water, with the sun low on the horizon, creating a warm orange and yellow glow. The person's hand is visible on the left side, supporting the globe. The overall mood is contemplative and global.

Go beyond standard
methodologies for evaluation

Include the user and societal
perspective into your evaluations

DANKE!
THANK YOU!
MERCİ!
GRAZIE!
GRACIAS!
DANK JE WEL!

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ROESSINGH
RESEARCH
&
DEVELOPMENT



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