



The future of
**GERIATRIC
REHABILITATION**

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Introduction

Designing a new geriatric rehabilitation care pathway to move care home where possible

Value-based healthcare is currently a big trend in healthcare, causing organizations to focus more on patient-focused care rather than minimizing costs (Porter & Teisberg, 2006). Looking at geriatric rehabilitation from this view shows incentive to implement geriatric rehabilitation at home, rather than at a rehabilitation facility. Besides patients wanting to rehabilitate from home (Vreeburg et al., 2022), there is early evidence that home rehabilitation provides the same or even better quality care than admission based rehabilitation (Berggren et al., 2019; Chumbler et al., 2015; Kumar & Pina, 2020). As healthcare staff shortages arise, home based care could also provide benefits for healthcare workers.

‘Precies the juiste zorg’ (translation: exactly the right care) is a Dutch care initiative aiming to improve geriatric care. It is a collaboration between organizations, municipalities and insurance companies to analyze and tackle the biggest pain points in the elderly care journey. The design challenge for this project falls within one of the focus areas of Precies!: ‘At home where possible’ (Precies!, n.d.). As this project was conducted with Precies! as client, several care organizations involved in Precies! became stakeholders and clients within this project.

Within this context, this project explores the future of geriatric rehabilitation and specifically how we can implement a future care journey around home rehabilitation. This project provides an extensive exploration of this context, and creates a design to support this transition.

Figure 1. Photograph from Valkenhof (n.d.)



Stakeholders



Precies!
De juiste zorg voor mij



Valkenhof
Zorg met 'n zachte g



archipel
zorgwelzijnwonen



vitalis woonzorg groep



oktober
jouw verhaal, onze zorg



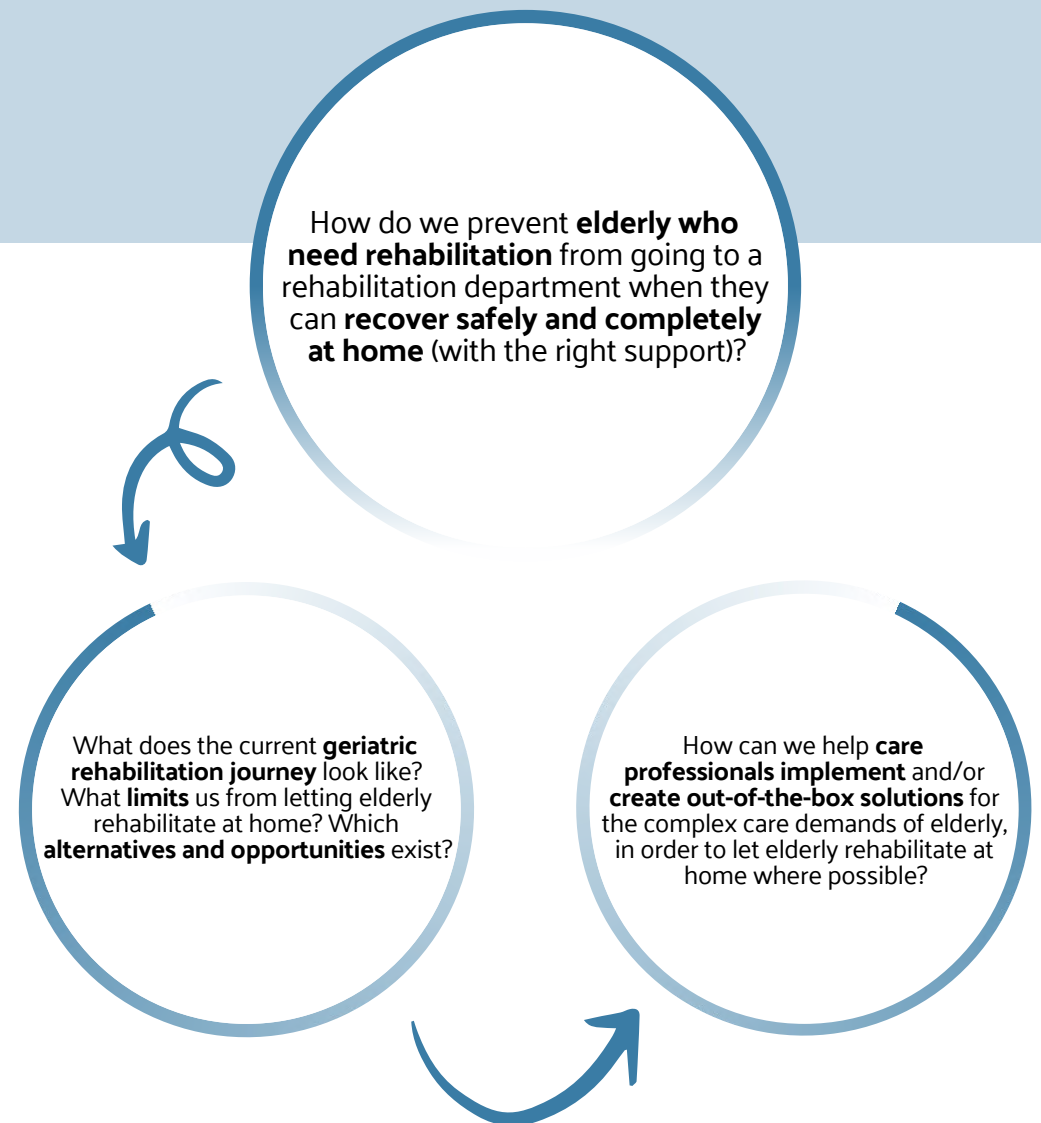
máxima mc

Design **BRIEF**

The main objective of this project is to explore how we can let elderly rehabilitate at home when possible. This main question is then split between two questions.

First, we first need a proper understanding of the current context. Who are these patients? What does the current rehabilitation journey for an elderly patient look like? But it is also necessary to analyze what already exists and what the main reasons are why we haven't implemented home rehabilitation yet. This will include an analysis of the patient groups, the decision-making process and existing initiatives or solutions.

The analyses revealed that there is a lack of support for healthcare professionals to come up with and implement out-of-the-box solutions to let elderly patients recover at home. Therefore, the follow-up question focuses on a design assisting care professionals in out-of-the-box thinking.



Design APPROACH

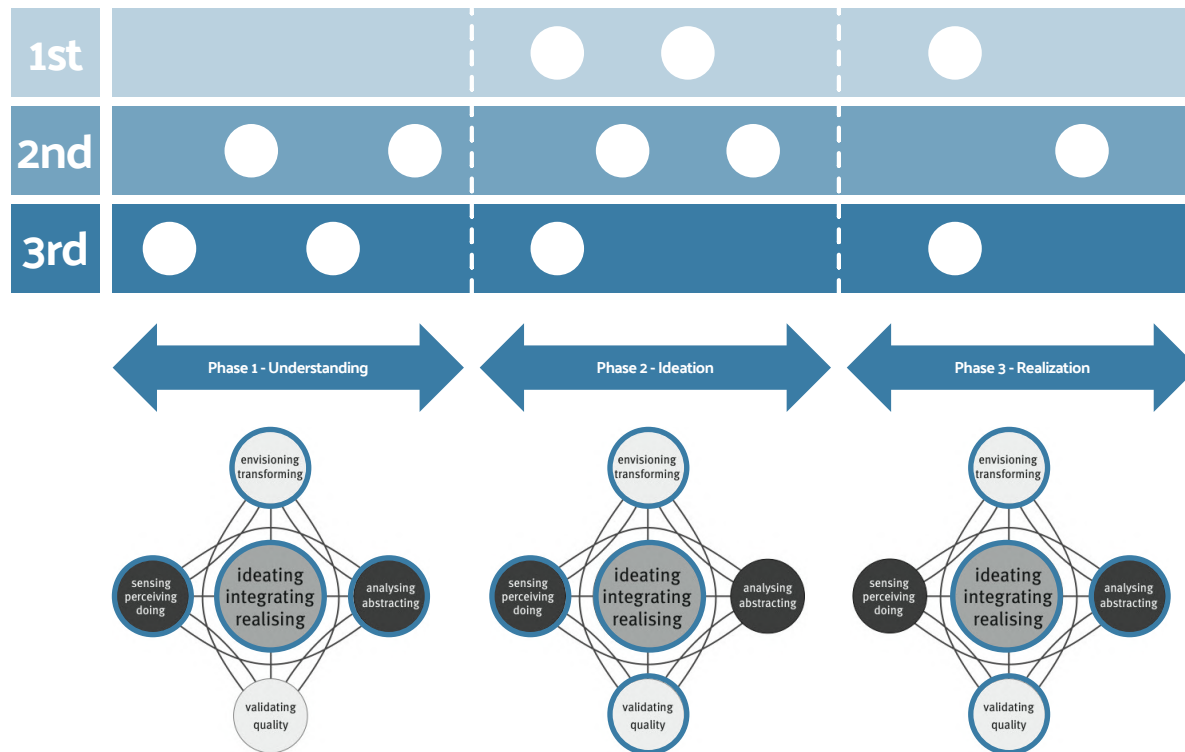


Figure 2. Design process. Using an illustration of the RTDP from (Hummels & Frens, 2009)

Since I did not have any experience yet in geriatric rehabilitation, I decided to use a **Mixed Perspective** approach as described by Smeenk et al. (2016). Using this approach, I was able to learn from analyzing existing literature (third person perspective), as well as including stakeholders and fellow designers (second person perspective) and combine it with my previous design experiences (first person perspective).

Next to this, I used the **Reflective Transformative Design Process** from Hummels and Frens (2009) in order to continuously reflect on what the next step in my process should be. The Reflective Transformative Design Process is suitable for this project, as it is a flexible and open approach, focused on disruptive thinking (Hummels & Frens, 2011), which will be applicable in the context of exploring the future of geriatric rehabilitation. Figure 2 illustrates the design process.

The complexity of this design brief, combined with the large amount of stakeholders requires a **Design Thinking** approach to help clarify and tackle this challenge in a human-centered way (IDEO, n.d.). However, using a traditional Design Thinking approach would not cover all crucial aspects within the healthcare context of this project. As stated by Canales

Design APPROACH

Durón et al. (2019) and Kaplan and Harris-Salamone (2009), healthcare organizations often struggle with the implementation of new solutions. Kaplan and Harris-Salamone (2009) suggest that these struggles are usually not primarily because of technical challenges, but seem to be more related to managerial challenges with integration and alignment of these new solutions with the workplace context. According to Canales Durón et al. (2019), “this points to the need for complementary approaches to innovation with a more systemic take that deals with the complexity of business, technology and people in healthcare” (p. 2). Therefore, I combined Design Thinking with a **Strategic Design** approach, as Strategic Design bridges the gap between business and design, looking beyond a solution towards the system and processes around it (Boyer et al., 2011). Canales Durón et al. (2019) introduce four strategic design abilities that characterize the strategic design approach (see Figure 3). These four abilities were used as guidelines for design activities within the project phases (see Figure 3).

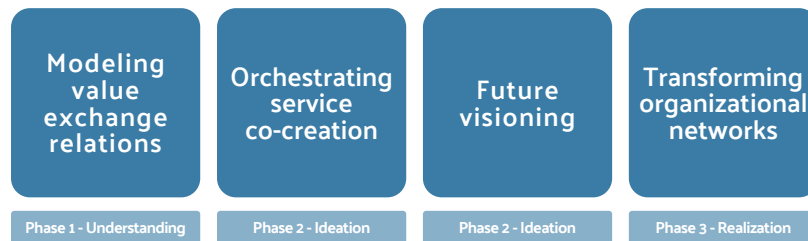


Figure 3. Strategic design abilities. From Canales Durón et al. (2019)

Project & report structure

I divided this project into three main phases: Understanding, Ideation and Realization.

- Understanding

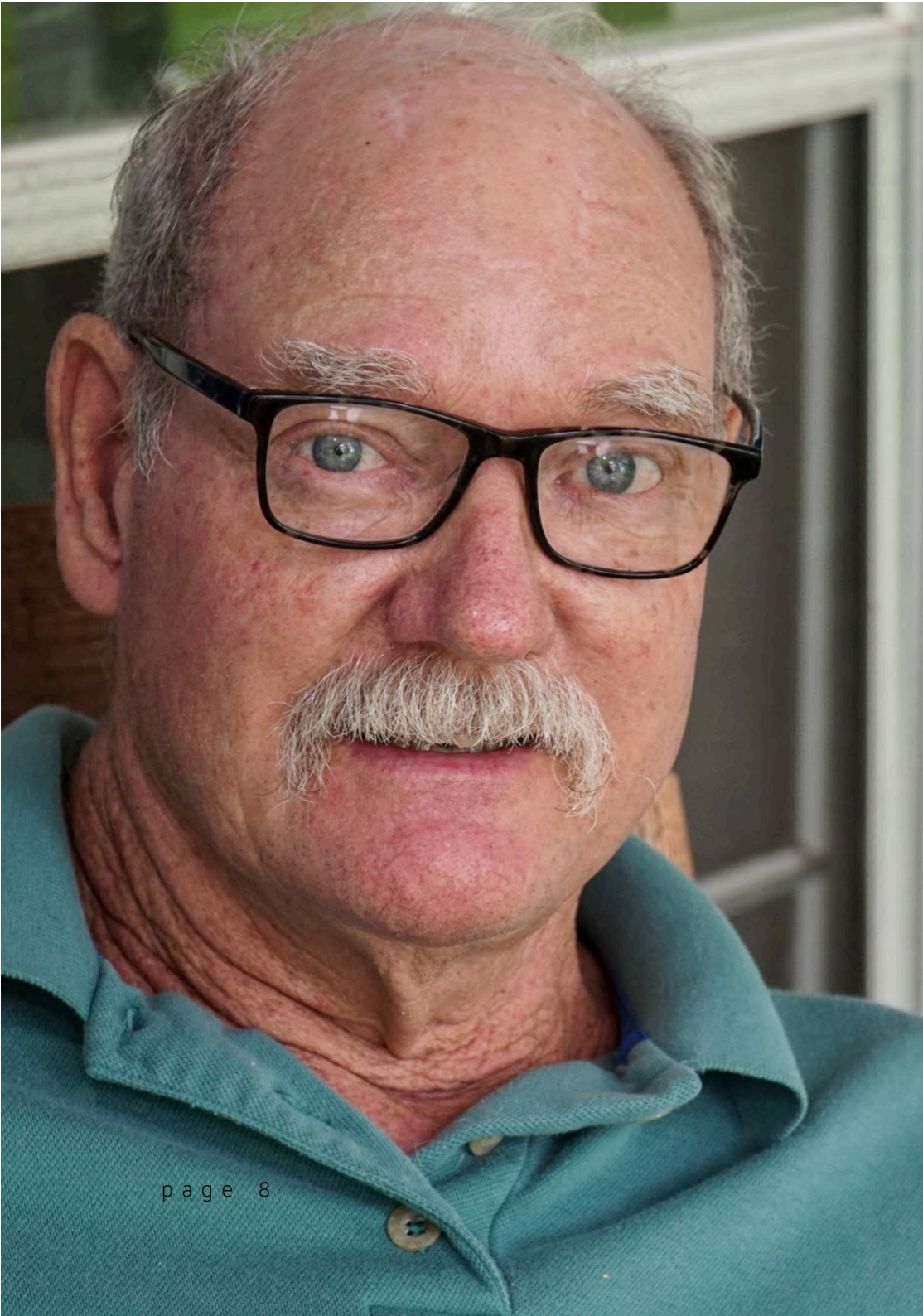
In this first phase, I focus on understanding geriatric rehabilitation care, the stakeholders and decision-making process, and the barriers, opportunities and existing initiatives.

- Ideation

Based on the analyses of the Understanding phase, this phase focuses on the design of a tool to help care professionals brainstorm about the future of geriatric rehabilitation. Through several iterations I developed a tool that was used in three co-creation sessions with care professionals.

- Realization

Using the outcomes of the co-creation sessions, I then wrote a summary of insights with regards to home rehabilitation, as a guideline for the care organizations that were stakeholders in this project. Based on those insights I propose a roadmap for future steps that could be taken.



Phase 1 - Understanding

What does the current geriatric rehabilitation journey look like? What limits us from letting elderly rehabilitate at home? Which alternatives and opportunities exist?

This chapter will focus on understanding the current situation within geriatric rehabilitation. It is divided into three analyses. The first analysis gives understanding of geriatric rehabilitation and the patients. In line with the strategic design abilities (Canales Durón et al., 2019), the second analysis focuses on 'Modeling value exchange relations' through mapping the decision-making process and stakeholders. The last analysis focuses on existing initiatives and barriers why elderly are not yet rehabilitating from home. These findings will shape design opportunities for this project.

Analysis 1

Understanding of the context and the patient groups

Related work

Definitions

Patients

Analysis 2

Understanding of decision-making process & stakeholders

Decision-making

Conflicts

Analysis 3

Existing initiatives & design opportunities

Rehab forms

Developments

Opportunities

Conclusion

Analysis 1 - Understanding of the context and the patient groups

Goal

The first analysis is focused on understanding the context of geriatric rehabilitation, and the patients. This includes scientific background on geriatric rehabilitation, as well as understanding the definitions of different forms of rehabilitation. Lastly this analysis focuses on the different patient groups and their diagnoses.

Method

To gain a basic understanding of geriatric care and especially geriatric rehabilitation, I read books and literature that were written for nursing education. Based on this literature, I gained a basic understanding of geriatric rehabilitation, the patient diagnoses, and the patient journey. In this first analysis, I will focus on the patient types. In the second analysis, I will discuss the patient journey and decision-making knowledge that I gained from these books.

To get better acquainted with the challenges patients face, and involved factors besides their diagnosis, I decided to analyze anonymized patient dossiers that I received from the care organizations that were stakeholders in the project. Patient cases were analyzed from different care institutes that I will not name for privacy reasons. Based on the analysis of these dossiers, six personas were created that will serve as a guideline for the different types of patients that exist within the rehabilitation trajectory.

Results

Related work

Definitions

Patients

Related work

This section will discuss the general related work with regards to value-based healthcare and (home) rehabilitation. In each of the following sections and chapters of this report, additional related work will be discussed with regards to the discussed topics.

Value-based healthcare

Value-based healthcare is one of the biggest trends momentarily within the healthcare sector. Porter and Teisberg (2006) describe value-based care as an emphasis on value and patient outcomes rather than focusing on minimizing costs and discussions about who will pay what. Based on this shift to value based care, care organizations are thus undergoing organizational changes to focus more on patient-centric outcomes (Kokshagina, 2021).

Geriatric rehabilitation

Looking then at geriatric rehabilitation, currently patients in general get admitted to a rehabilitation facility to recover after an incident for a limited period of time, after which they return home. However, when looking at patient values, Vreeburg et al. (2022) describe that there is a group of patients that actually would prefer to return home as soon as possible, rather than staying in a rehabilitation center to recover. Kumar and Pina (2020) also offered both center based and home based cardiac rehabilitation and found that nearly half of the patients already chose to rehabilitate from home. In terms of the quality of rehabilitation care offered at home, it seems to be equal or even better to the admission care quality (Berggren et al., 2019; Chumbler et al., 2015; Kumar & Pina, 2020).

Next to this, research is already showing that there are several disadvantages related to the admission to a hospital and rehabilitation facility which could be

overcome by letting patients rehabilitate from home. Covinsky et al. (2003) show that many patients who get admitted to the hospital, leave the hospital with less independence in their daily activities than their baseline before the incident. This could potentially be related to the finding from Pedersen et al. (2013), that “older acutely hospitalized medical patients with walking ability spent 17 h/d of their in-hospital time in bed” (p. 331).

Research from Van Zuilekom et al. (2019) shows similar findings about independence after stays in a rehabilitation facility. They found a 35% decline in the independence of patients when comparing their independence before the incident and after they got discharged from the rehabilitation facility.

Staff shortages

In addition to the positive effects for patients, home rehabilitation also seems to provide benefits for the healthcare workforce. Because of population aging, the World Health Organization expects that by 2050, many countries in Europe, Northern America, Eastern Asia and South-Eastern Asia will have potential support ratios below two (United Nations, Department of Economic and Social Affairs, Population Division, 2019). The means that per person over 65 years, there will be less than two people of working age. As there are already staff shortages within the healthcare sector, the expectation is that these shortages might get even bigger.



Related work

Definitions

Patients

Definitions rehabilitation care

In the Netherlands, two main types of rehabilitation stays exist. Both ELV (eerstelijnsverblijf, primary care stay) and GRZ (geriatrische revalidatie zorg, geriatric rehabilitation care) are types of rehabilitation care that are delivered under the supervision of a geriatric care specialist (Landelijke Huisartsen Vereniging & Actiz, 2017; Veenstra, 2020). Both ELV and GRZ are medically necessary stays in a rehabilitation facility when appropriate care after an incident cannot be delivered at home. They are non-permanent stays, focused on the patient returning home. The big difference between ELV and GRZ patients in terms of rehabilitation is the complexity of the case. ELV is specifically for lower complexity cases, with **monodisciplinary** care demands or **multidisciplinary rehabilitation goals that require less than 2 hours of treatment per week**. GRZ then is used for the **complex care demands** that require a **multidisciplinary team with over 2 hours of treatment per week** (Cicero zorggroep et al., 2019). Within the scope of this project, we include both the recovery of ELV patients and rehabilitation of GRZ patients when talking about rehabilitation.

Related work

Definitions

Patients

Patient groups & personas

Patients who are eligible for rehabilitation care can be distinguished in five main diagnosis groups (Van Zuilekom et al., 2019; Veenstra, 2020; Verenso, 2013). Figure 4 shows the distribution of these diagnosis groups (based on Vektis, 2021). Data from Vektis (2021) shows that patients with an amputation or stroke require the most treatment hours (see Figure 5).

To better understand the patients that are admitted to a rehabilitation care facility, I analyzed patient dossiers from care organizations, combined with patient characteristics from Van Zuilekom et al. (2019).

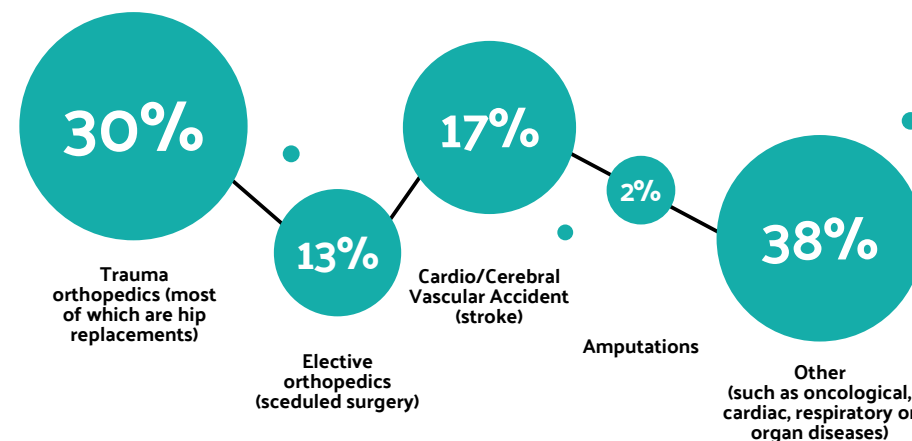


Figure 4. Diagnosis groups and distribution. Based on Vektis (2021).

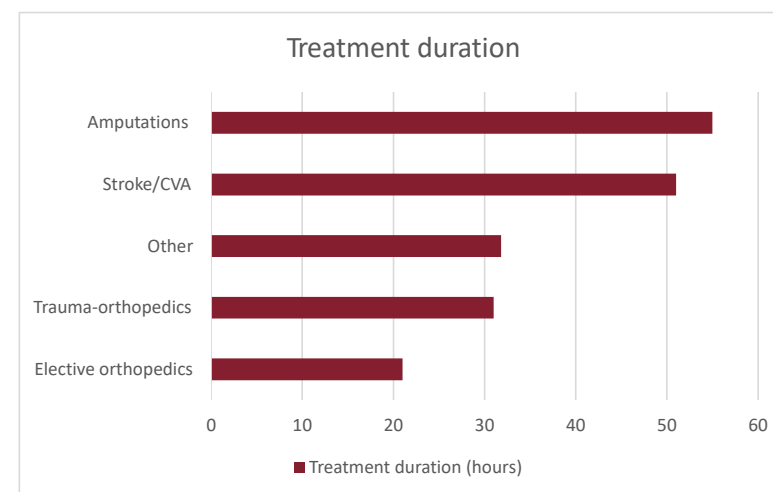


Figure 5. Treatment duration per diagnosis. From Vektis (2021)

Analysis 2 - Understanding of decision-making process & stakeholders

Goal

In line with the strategic design abilities (Canales Durón et al., 2019), this second analysis focuses on 'Modeling value exchange relations'. According to Canales Durón et al. (2019), this means shaping "the value exchange relations of actors co-producing value in a system" (p. 214). This includes modeling the different layers and networks surrounding a challenge in order to reduce complexity and increase clarity. This section thus includes the mapping of relevant stakeholders, decision-making, and processes.

Method

I used the Service Blueprint from Essense (Essense, 2020) to document and map these relations, as their template provides a structure for actors involved in different aspects of a journey map. I used a combination of literature, documentation from the care institutes about their triage criteria, as well as several interviews with healthcare professionals. I also got input and feedback from monthly meetings with all stakeholders of this project.

The interviews I did with healthcare professionals (n=5) entailed questions about the patient journey, involved stakeholders, and the decision-making process and criteria. These interviews were held with two doctors with geriatric specialization, one care consultant who is responsible for triage on admission at a rehabilitation center, a transfer nurse at a hospital, and a head of transmurial care at a hospital.

Lastly, I joined a department meeting from geriatric care, in which the progress of patients was discussed. This gave insights into the tracking of patient progress, discharge criteria and how the different disciplines related to each other.

The factors that were analyzed were the following:

- Patient demographics, activity and living context
- Social anamneses (marital status, children, social network)
- Medical anamneses (medical history, care before incident)
- Cause of incident and diagnosis
- Functioning before and after incident

Based on those findings, I created six personas to resemble patients in rehabilitation care. Of course, every single patient is different, and these six personas cannot be representative for the entire patient population. They will be used as a sample of potential patients to give guidance in the design process. Figure 6 shows one of these personas.

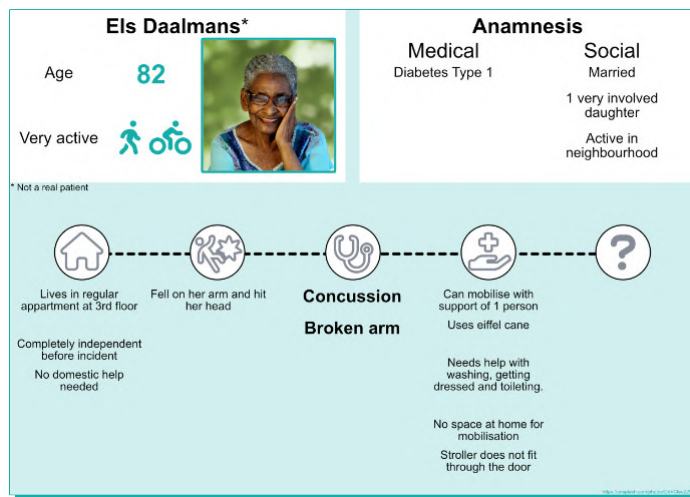


Figure 6. Patient persona
page 12

Results

Decision-making

Conflicts

Decision-making

Figure 7 displays the final Service Blueprint that was created based on all insights (see Appendix B for a bigger version). It displays when and how each of the actors in the patient journey are involved; namely the patient, hospital, rehabilitation team, home care & GP, family, and lastly other influences such as governmental laws and insurance. For each phase in the patient journey, the triage criteria on which decisions are based are displayed in the last row.

The triage criteria are in line with Lette et al. (2003), who describe that the decision-making regarding discharge of rehabilitation patients is based on four constructs: functioning and disability, wants and needs, ability to participate in care, and lastly life context. Next to these patient factors, Lette et al. (2003) also describe factors influencing discharge destination from the healthcare professional's perspective. This includes caregivers experience, healthcare regulations, and opinion sharing. These last factors did not appear from the interviews, meaning they add new insights to this project.

Decision-making

Conflicts

Conflicts

Within the Service Blueprint, I used arrows to indicate where conflicts seemed to arise. For example between the patient and the hospital with regards to the discharge location. Another conflict that was found from the interviews, was the conflict in expectations for responsibilities. A patient and their family might not always know what they are responsible for, and might assume the caregivers will arrange things for them. Conflicts can also arise when supporting processes, such as government websites, display different information from what happens in reality.

Service Blueprint | HomeGRZ

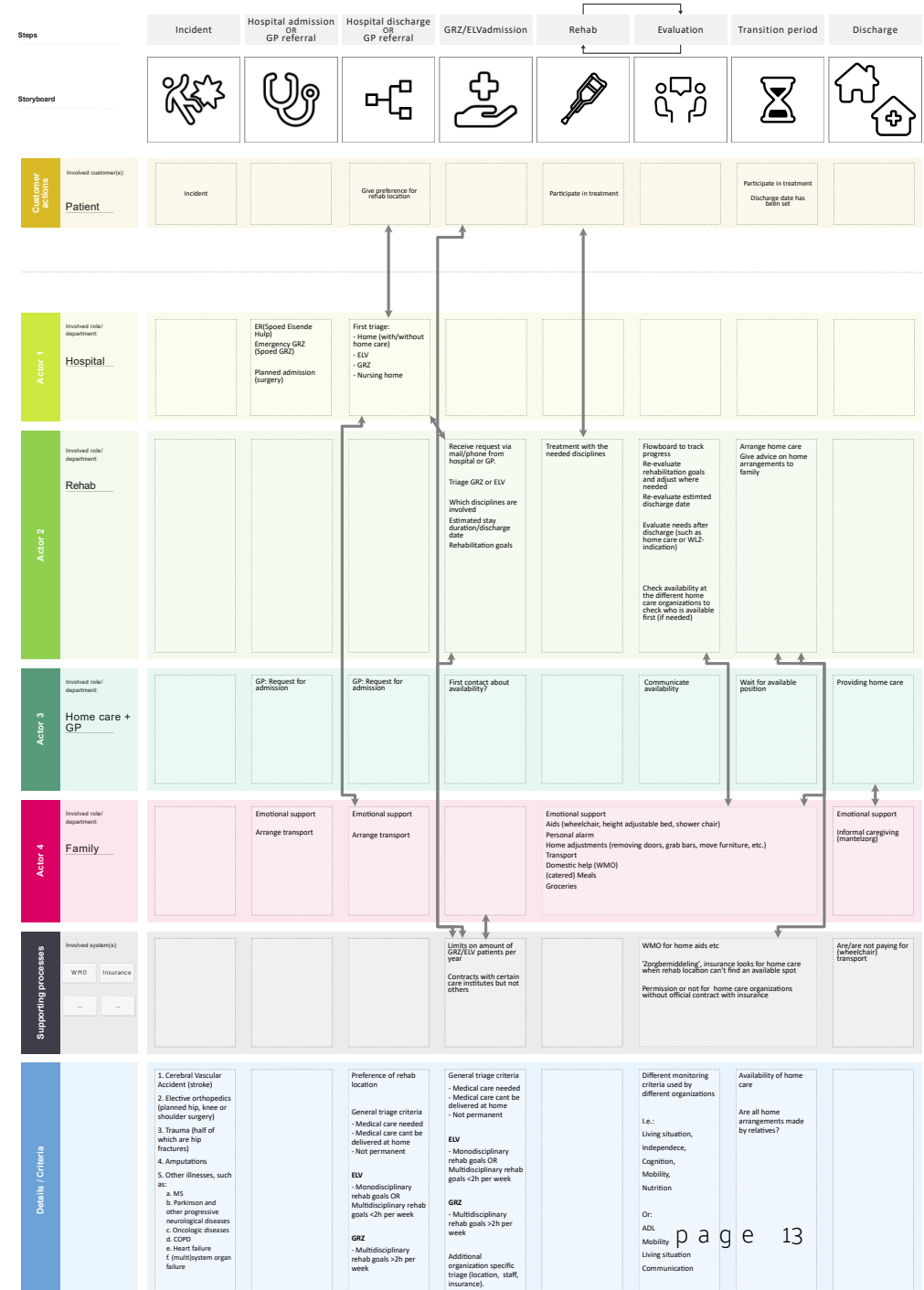


Figure 7. Service Blueprint. Based on a template from Essense (2020)

Analysis 3 - Existing initiatives & out-of-the-box solutions

Goal

The last analysis focuses on existing possibilities for rehabilitation treatment beyond traditional admission to a rehabilitation facility. This includes alternative rehabilitation forms, technological or social developments, and lastly an analysis of currently existing barriers and opportunities.

Method

For the analysis of rehabilitation forms and new developments I started by using literature. As mentioned in the second analysis, I also did interviews with five healthcare workers. In the second half of those interviews, I focused on alternatives for admission treatment and the barriers that prevent us from using those alternative rehabilitation methods, and the future opportunities these professionals saw.

Lastly I gained insights from monthly conversations with the stakeholders of this project (personal communication, September 12, October 10, November 14, December 12, 2022). I used these sessions as reflection time to validate my findings based on the expertise of my stakeholders.

Results

Rehab forms

Developments

Opportunities

Alternative rehabilitation forms

Looking at literature, we see that there are several distinguished forms of rehabilitation beyond admission. Kumar and Pina (2020) analyzed different forms of cardiac rehabilitation and distinguish three main treatment groups: Center based rehabilitation, Home based rehabilitation or Hybrid rehabilitation. Figure 8 shows the different sub-categories of rehabilitation types.

Center based	Hybrid	Home based
Admission	A combination of center-based and home-based rehabilitation	Visits (ambulatory rehabilitation)
Polyclinical rehabilitation (patient comes to center for treatment)		Telerehabilitation (phone or video)
		Digital rehabilitation (app, platforms, games)

Figure 8. Rehabilitation groups. From Kumar & Pina (2020).

Several papers also use the terms eHealth and e-rehabilitation for rehabilitation using a digital platform, where telehealth is a sub-category of eHealth (Antypas & Wangberg, 2012; Kraaijkamp et al., 2021; Reinwand et al., 2013; Wang et al., 2016). However, there are overlaps between the different categories, and there are no clear ways to describe combined forms of rehabilitation.

Using (combinations of) these alternative forms of rehabilitation could provide opportunities for individually tailored programs, integration with regular home routines, reducing travel barriers and reducing waiting times (Thomas et al., 2019).

Rehab forms

Developments

Opportunities

Developments

It is important to be aware of the existing (technological) solutions that already exist. Kraaijkamp et al. (2020) distinguishes seven groups of innovation: Robotics, Exergames, Sensors, VR/AR, (Video) Communication tools, Mobile apps, and combined solutions in which multiple of these are possible. Next to these technological developments they mention, there are also new developments with regards to offering services, or developments with regards to aids. Examples of these developments were part of the final design in the next chapter, and can be found in Appendix D. Figure 9 shows an example of a technical innovation, a service innovation and an aid innovation.



ActivLife

Safely training a sit-stand movement, balance, posture and many other muscle groups without a risk of falling. It uses training programs with gamification.

Figure 9a. Technological innovation. (Alreh Medical, n.d.).



Social home care

Extra home care to reduce burden for informal caregivers and prevent loneliness. Provide service for social connection, doing groceries together, cooking or playing some games.

Figure 9b. Service innovation. (Saar aan Huis, n.d.).



Aid vending machines

Aids can be taken or ordered directly at any time without the need for a staff member. For example for a wheelchair or crutches. Patients are not bound to opening times.

Figure 9c. Aid innovation. (Maastricht UMC+, n.d.).

Rehab forms

Developments

Opportunities

Barriers & opportunities

A thematic analysis of interviews with healthcare staff and insights from the clients of this project revealed several barriers related to different stakeholders in the rehabilitation process. Figure 10 shows the barriers that arose and the stakeholder they related to. I then marked these barriers based on three categories: barriers related to the healthcare system, barriers related to communication or conflicts, and lastly barriers with regards to a certain mindset towards home rehabilitation. I also mapped the opportunities that interviewees mentioned when asked about developments or opportunities they saw added value in (see Figure 10). Appendix C contains a bigger version of these barriers and opportunities.

In the next section I will reflect on the design directions that resulted from these barriers and opportunities, and the results from the other analyses.

Barriers			Opportunities	
Patient	Family	Living situation	Practical developments	Care alternatives
<ul style="list-style-type: none"> - Network - Motivation - Big transition going home - Other skills than trained - Fit level of caregiver - Communication methods - Digital skills - Cognition - Expectations 	<ul style="list-style-type: none"> - Wants patient to rehabilitate home, without perspective on going home - Don't have time/ opportunity for moving patient - Unclear which responsibilities, i.e. arranging aids - Burned out informal caregivers - Expectations 	<ul style="list-style-type: none"> - Influences home care options (already adjusted/countryside) - Can't be adjusted (doors not wide enough, stairs) - Contractor doesn't have time for adjustments yet - Aids not delivered 	<ul style="list-style-type: none"> - Technology - Robotics - Aid vending machine - 'Zelfredzaamheidskoffer' - Tools for informal caregivers - Expectation management at intake - Visual board with rehab journey in patient rooms - More brainstorming and knowledge sharing platforms 	<ul style="list-style-type: none"> - Polyclinical rehabilitation - Ambulatory rehabilitation - SpoeDGRZ - 'Social' home care or social groups - Day clinic - Temporary housing - Care via nursing home or similar in neighbourhood - Hybrid care - 'Ongeschoolden' for basic care (letting family do basic 'medical' procedures like insulin) - Reablement - Rehabilitation as hospital-extended care → other expectations - Unplanned care on non-rehab department - Homecare for telerehabilitation support in non-rush hours
<ul style="list-style-type: none"> - Insurance of wheelchair transport - Uncontracted (home) care - Insurance limits for admission - VVT very price driven - High pressure for certain developments - Difficult to equip facilities to patient & family - Evidence driven before funding 	<ul style="list-style-type: none"> - Positioning of elderly: vulnerable, weak, not an active role in society - Other ways care (social aspect) - Network, sharing knowledge. Within region but also country-wide 	<ul style="list-style-type: none"> - Rehabilitation care - Home care - Hospital/GP 	<ul style="list-style-type: none"> - Faster transition home instead of fully rehabilitating at home - ELV and simpler GRZ. Complex GRZ as hybrid form → starts with admission, then continues home under SO supervision. - Home to rehab (via GP) instead of those who came in through hospital - Use expertise of SO for prevention of incidents in first line, might be easier than ambulant care 	<p>Emphasis on</p>
<ul style="list-style-type: none"> - No rehab needed after going home. Can't go home sooner because of unplanned care - Communication about rehab progress - Work pressure → no time for new developments - Stuck in habits/procedures 	<ul style="list-style-type: none"> - No unplanned care possible - Too expensive for 24/7 care - Availability 	<ul style="list-style-type: none"> - Availability - Waiting time for first-line therapists 	<p>Legend:</p> <ul style="list-style-type: none"> Healthcare system Mindset Communication & conflicts 	

Figure 10. Barriers and opportunities

Conclusion & next steps

Through these analyses, I used second and third person perspectives to get a better understanding of the current situation in geriatric rehabilitation care and answer the following questions:

What does the current geriatric rehabilitation journey look like? What limits us from letting elderly rehabilitate at home? Which alternatives and opportunities exist?

The analyses gave me a clear understanding of the current rehabilitation journey, and showed that there are several barriers towards a future geriatric care pathway around rehabilitation at home. There are already many new developments and alternative treatment methods in theory, although they are not used in practice. This revealed that there is not necessarily a need for new technological developments, but there are other design directions that are more crucial.

Healthcare system

The first design direction relates to many aspects of the current healthcare system. Factors like insurance, waiting lists, staff shortages, and many others play a big role in the rehabilitation care journey as it is right now and prevent it from changing. Because of these big challenges, it is hard to design a rehabilitation care pathway around home rehabilitation, since challenges like a lack of home-care workers, or finance from insurance, cannot be denied.

Conflict management and communication tools

The Service Blueprint revealed that there are still many areas where conflicts may arise due to various reasons. The barriers from the interviews also revealed that there is a big need for better communication that is understandable for the patients and their family. Next to that, there is a need for better communication, knowledge sharing and networking between different care organizations in the region but also throughout the Netherlands. Therefore, the second design direction stresses the need for conflict management and communication tools.

Out-of-the-box thinking

Overall, a general impression from the analyses showed the difficulty of imagining a future way of working that is completely different from the current scenario. These previous design opportunities cannot be tackled without an out-of-the-box mindset to find ways to implement alternative rehabilitation methods. Therefore, in the next chapter we will focus on the following question:

How can we help care professionals implement and/or create out-of-the-box solutions for the complex care demands of elderly, in order to let elderly rehabilitate at home where possible?



Phase 2 - Ideation

How can we help care professionals implement and/or create out-of-the-box solutions for the complex care demands of elderly, in order to let elderly rehabilitate at home where possible?

Starting from this focus on out-of-the-box thinking, I went into the ideation phase. This chapter will describe the different iterations in my design process with regards to the design of a tool to stimulate care professionals to envision the future of geriatric rehabilitation. This is in line with the strategic design abilities “orchestrating service co-creation” and “future visioning” (Canales Durón et al., 2019). I will first describe the final design, after which each of the iterations will be discussed.

In each iteration, I will discuss the goal, method and design, and the results. The outcomes of the iterations and the co-creation sessions with the final design will then be used in Phase 3 - Realization to write a summary of findings and suggest a future roadmap.

Final DESIGN

A tool to help care professionals envision a new geriatric rehabilitation pathway to move care home where possible



Watch the video here



Out-of-the-box thinking

The goal of this brainstorm is to stimulate *out-of-the-box thinking* about rehabilitation from home. The focus is not on what we *can not* do, but what we *can*.

Change management

The tool helps participants think about their *future jobs*, and motivates *open-source change management**.

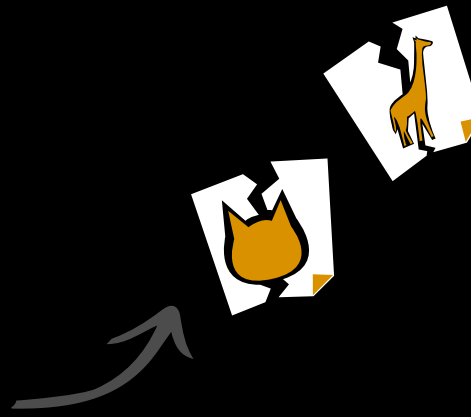
Concretizing

The outcome of the session serves as *direction* towards the *implementation* of rehabilitation from home. The goal is to come up with *concrete steps*.

*Open-source change management is a collaborative approach to change management. Further explained in Phase 3 - Realization.

The setup

First, participants receive an introduction that explains the context, the reasons for rehabilitation from home, and the goal of the session. They will then participate in an **energizer**, to encourage creativity, stimulate an open mindset, and create a different energy during the session than in their regular work. In the first half of the session, participants will **brainstorm about treatment methods** for a patient persona and the **barriers and opportunities** that would arise. An instructional video explains all the steps, after which participants will execute them. After a short break, participants will **reflect** on what they learned and what they still need, through individually writing on the **cards** that you see below. After discussing their insights, we will talk about what would be a **logical next step** after this session.



Tear the paper behind your back into the shape of an animal!
What did you create?



- Introduction (10 minutes)
- Energizer (5 minutes)
- Phase 1 – Brainstorm patient journey (50 minutes)
- Break (10 minutes)
- Phase 2 – Concretizing (45 minutes)



2 hours



Insights

What have you learned?



Needs

What do you need in your discipline?

Els Daalmans*

Age **82**

Very active

Anamnesis

Medical
Diabetes Type 1

Social
Married
1 very involved daughter
Active in neighbourhood

Her situation

- Lives in regular apartment at 3rd floor
- Completely independent before incident
- No domestic help needed
- Fell on her arm and hit her head
- Concussion**
- Broken arm**
- Can mobilise with support of 1 person
- Uses effort care
- Needs help with washing, getting dressed and eating
- No space at home for mobilisation
- Staircase does not fit through the door

Persona's from Analysis 2

Used to discuss this patient's treatment without using an over-complicated real patient dossier

Physiotherapy

Treatment journeys from Analysis 2

For all of the disciplines in the rehabilitation team in order to map potential treatment methods per type of therapy.

Treatment methods from Analysis 3

Different potential ways to deliver treatment. And an empty card for notes about these treatments (such as "For one week")

Technology **Services** **Aids**

ActivLife

Alternatieve locatie

Zelfredzaamheidskoffer

Inspiration cards from Analysis 3

Used as inspiration for solutions to barriers

Clinical **Polyclinical** **Ambulatory** **Videocalling** **Calling** **Digital**

Barriers & Opportunities

Barriers & Opportunities

To map potential barriers for the treatment methods, and come up with solutions for those barriers. For each barrier, both the barrier itself can be written down, as well as who is responsible for solving it.

The tool

The result

Els Daalmans*

Age **82**

Very active

Anamnesis

Medical
Diabetes Type 1

Social
Married
1 very involved daughter
Active in neighbourhood

Not a her patient

Lives in regular apartment at 3rd floor

Fell on her arm and hit her head

Concussion
Broken arm

Completely independent before incident! No domestic help needed

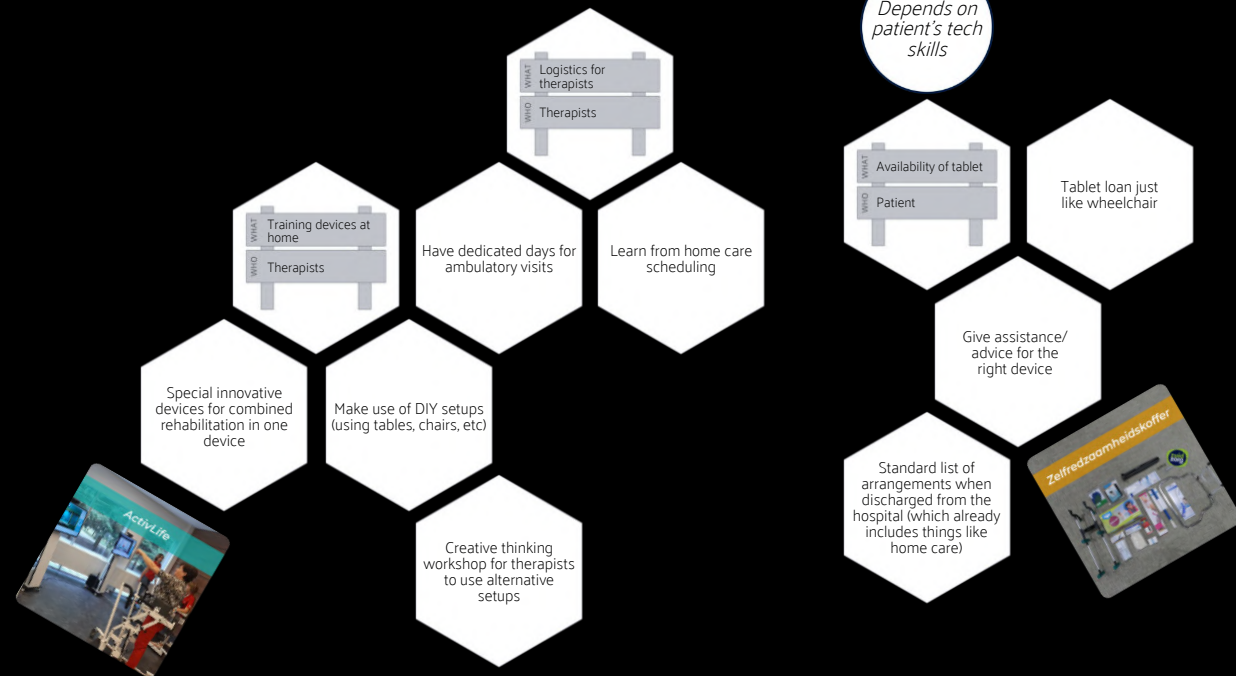
Call mobile with support of 1 person
Uses effer care

Needs help with washing, getting dressed and taking

No space at home for mobilisation
Staircase does not fit through the door



Depends on patient's tech skills



Here you can see an example of how the tool can be used. It shows the mapping of the treatment methods and the accompanying barriers and opportunities for the physiotherapy of a patient named Els Daalmans.

This same process will be used for all of the disciplines involved.

Iteration 1 - FMP Proposal

The first iteration that I did for my FMP proposal was focused on creating a decision tree with regards to home rehabilitation and which patients would be eligible (see Figure 11). However, after the thorough analysis from the previous chapter, I realized that there are no criteria yet that can be used for a decision tree. In the end, a decision tree could be a great guideline, but right now there are many challenges that first need to be overcome before home rehabilitation can be implemented and a defined structure can be created. However, as a decision tree like in my proposal would still be relevant, it will be discussed later when talking about future work after this project.

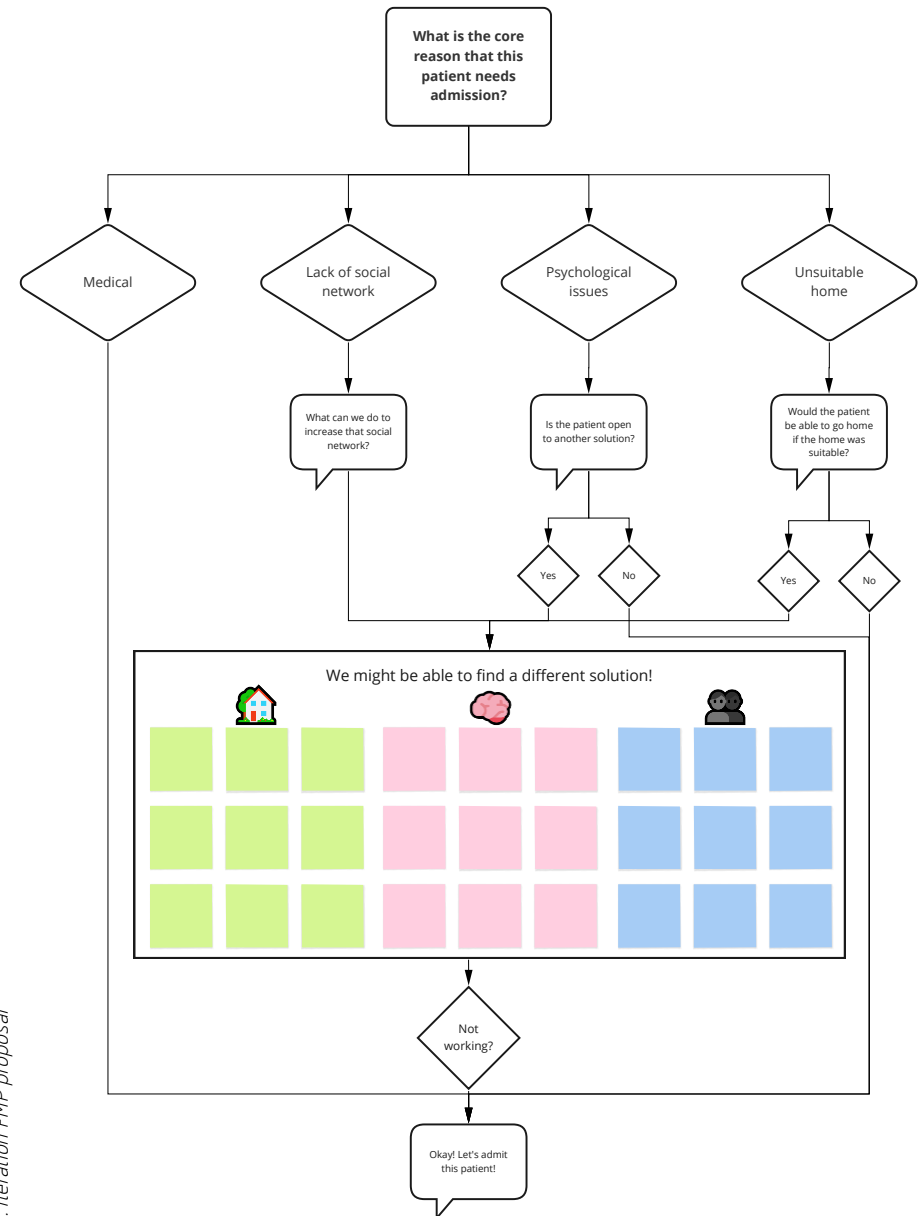


Figure 11. Iteration FMP proposal

Iteration 2 - Sketching, benchmarking & co-creation with designers

Goal

The goal of this first iteration after the FMP proposal was to integrate all the findings from my analysis phase into inspiration for a tool or workshop to help care professionals implement and/or create out-of-the-box solutions for a new geriatric rehabilitation pathway at home.

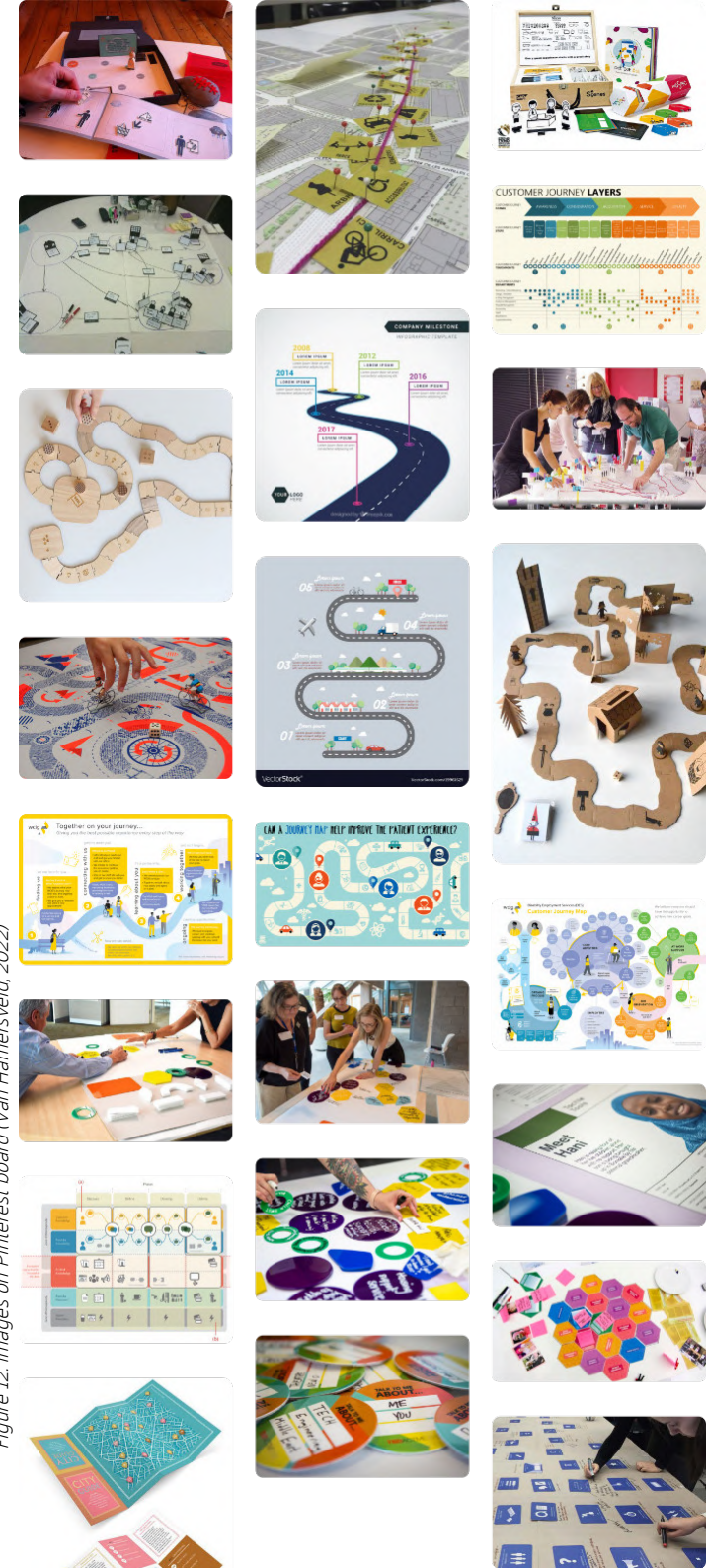
Method & Design

For this iteration, I started from a first-person perspective to develop concepts based on the gathered knowledge from the analysis phase, together with literature as a third-person perspective. I used a Pinterest board (see Figure 12), as well as sketches (see Figure 13). Next, I co-created and evaluated those concepts with fellow designers. During a co-creation session with one of the stakeholders, the concepts were then narrowed down to one single combined concept, which will be described in the next iteration.

The concepts for this iteration were based on theory around representational artifacts, which shows that “representations can overcome the limits to an individual’s cognitive capacity, reducing cognitive load” (Cooney et al., 2018, p. 153). Insight from the analyses showed that it was difficult for care professionals to imagine the future of rehabilitation, and they mainly saw the barriers related to this. Representational artifacts could thus support them in brainstorming ways to overcome barriers, find opportunities and co-create a future rehabilitation care journey.

As the analysis showed that there is not yet a uniform way to communicate about non-admission rehabilitation forms, a key aspect of these designs was also to improve the understanding and communication about rehabilitation methods. Using representational artifacts can also help with this, since they

Figure 12. Images on Pinterest board (Van Hamersveld, 2022)



“support shared understanding of the existing situation and of future design proposals” (Morrison & Dearden, 2013, p. 181).

Figure 12 shows the Pinterest board that I created for inspiration (Van Hamersveld, 2022). Figure 13 displays some of the sketches that I created alone, as well as with fellow designers.

Results

Evaluation with one of the stakeholders (Valkenhof, personal communication, November 1, 2022) showed that the focus of the tool should be on the different forms of rehabilitation and at which stage in the rehabilitation they should be used. Preferably, it should include mapping the conditions for using each of these treatment methods. They suggested using personas to talk about their rehabilitation journey, instead of using a real patient case, as this would prevent discussion among the healthcare professionals about irrelevant patient details. Lastly, participants from as many disciplines as possible should be involved. Involving a physiotherapist or occupational therapist is essential, as those disciplines are almost always involved in a patient’s rehabilitation.

Based on these findings, the next iteration focuses on developing a lo-fi prototype of a combined concept.

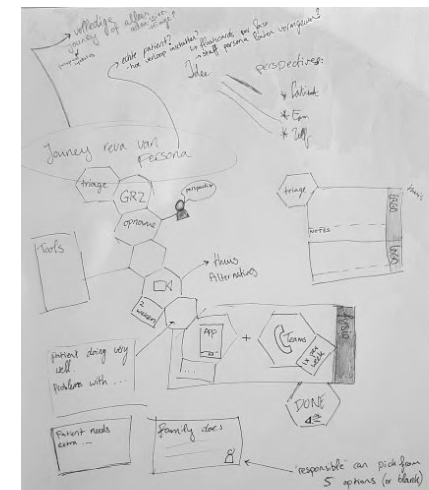
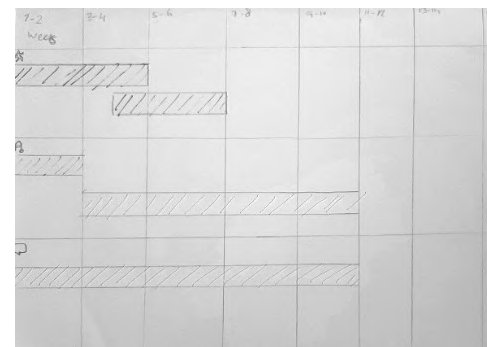
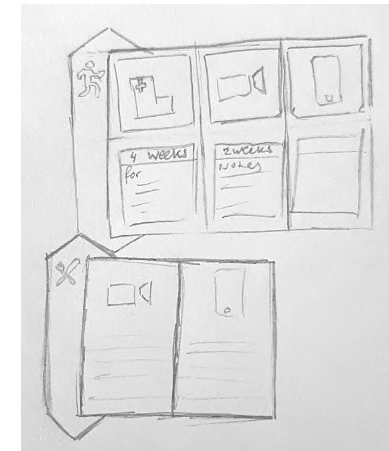
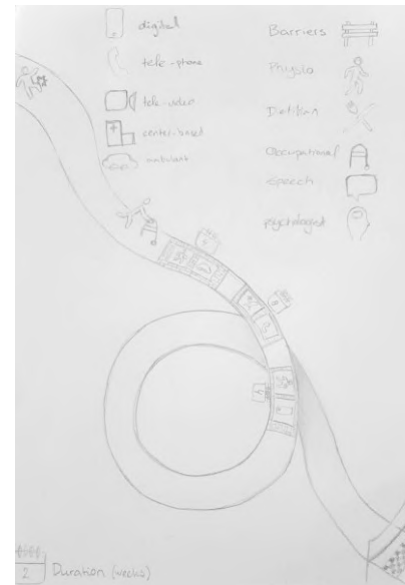


Figure 13. Concept sketches

Iteration 3 - Concept selection & lo-fi prototyping

Goal

Based on the feedback from the previous iteration, this iteration focused in particular on a concept involving discussion about a rehabilitation journey and the different possibilities for different treatment methods. This resulted in a paper prototype of a method & barrier mapping tool.

Method & Design

For this concept I combined several concepts of the previous iteration, based on the feedback points. I then created a paper prototype to stimulate discussion on a patient's rehabilitation journey, using treatment methods from Analysis 3, personas from Analysis 1, and separate cards for barrier and opportunity mapping. Besides this I started on a structure for the setup of the co-creation sessions. The first part would include using the tool, whereas the second part should focus on reflection and concretizing.

Using the paper prototype, I did an individual evaluation for first person perspective insights. I used the paper prototype to evaluate the ease-of-use and user experience. I also gathered feedback by presenting the concept to the stakeholders and evaluating with one stakeholder in more detail.

Results

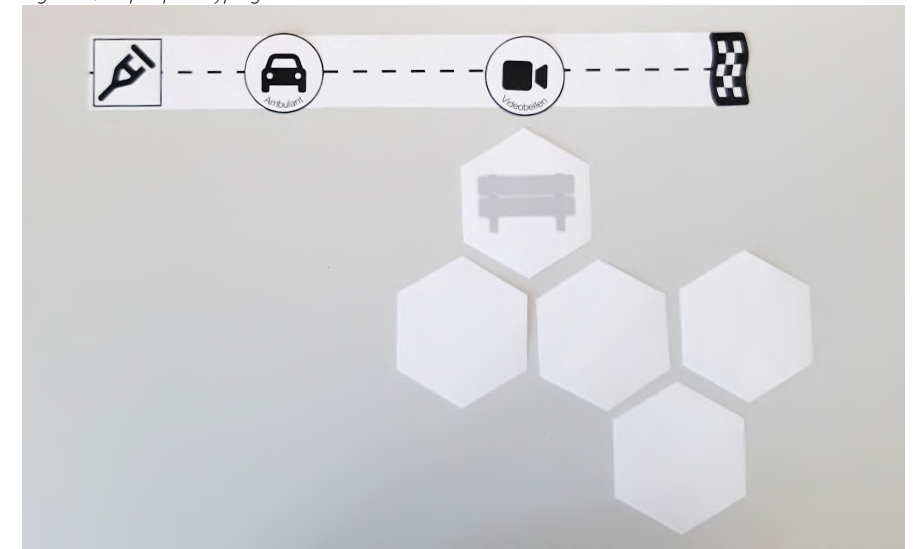
Individually trying out the paper prototype (Figure 14) helped gain insights into the ease-of-use. First of all, this showed that some elements of the tool need to be written on, whereas for other elements (like the rehabilitation journey and the treatment methods) this is not necessary. However, these elements should be made a bit more sturdy, so they can be passed around and reused. I also noticed that it would be nice to have extra inspiration cards to know whether there is already an existing solution for a barrier or get inspired for a new one.

Lastly, an extra manual or introduction PowerPoint would be good to explain the tool and expected outcome rather than just showing the separate elements.

A feedback meeting with all of the Precies stakeholders also gave insights for improvement (Precies!, personal communication, November 14, 2022). The stakeholders mentioned wanting specific criteria out of the session for eligible target groups. Next, they gave the suggestion to make participants start from a home-scenario when thinking about treatment, and only use clinical rehabilitation as a last resort. This could help boost their creativity.

The in-depth evaluation with one of the stakeholders (Valkenhof, personal communication, November 15, 2022) again suggested that both clinical and polyclinical treatment should only be used when no other options are available. This thus suggests that certain 'rules' are needed to guide the co-creation session. Other suggestions included stimulating participants to think about a scenario where the patient themselves want to go home, as well as making the reflection part in the second half of the co-creation personal by letting participants reflect on their needs in their own discipline, in order to come up with concrete and actionable steps.

Figure 14. Paper prototyping



Iteration 4 - Co-creation session 1 & expert feedback

Goal

The goal of this fourth iteration was to develop a higher fidelity tool that could be used during the first co-creation session. This tool should combine the feedback from the previous iteration and the first-person perspective insights, such as having inspiration cards, and personalized reflection moments. Next to further developing the tool itself, I developed the setup of the co-creation session and hosted the first co-creation session.

Method & Design

For this next iteration, I added a PowerPoint presentation including context and an explanation of the tool (see Figure 15). I added several elements to the tool, such as inspiration cards and personal reflection cards for participants to take notes.

I created the personas for Analysis 1 based on combined insights from medical dossiers, where several patient conditions were mixed in order to ensure anonymity. Using the feedback of a nursing expert (personal communication, November 12, 2022), the personas from Analysis 1 were further improved. This included checking medical anamneses, diagnoses and patient functioning on whether they are medically correct and could stimulate discussion properly.

The first co-creation session was held with eight participants from Valkenhof. The participants had the following backgrounds: care consultants, nurse, home care/district nurse, doctor with geriatric specialization, physiotherapist, psychologist and a speech therapist. The themes from the use of the tool will be discussed on the next page, and the design insights will be discussed in the result section.

After this first co-creation session, the tool and setup were also discussed with two staff members of the innovation team of Vitalis. They were hosting brainstorm meetings about “100% geen zorg” (100% no care) with Vitalis staff. I was interested to hear about the way they hosted their sessions, and how their expertise and experience could help improve my co-creation sessions.

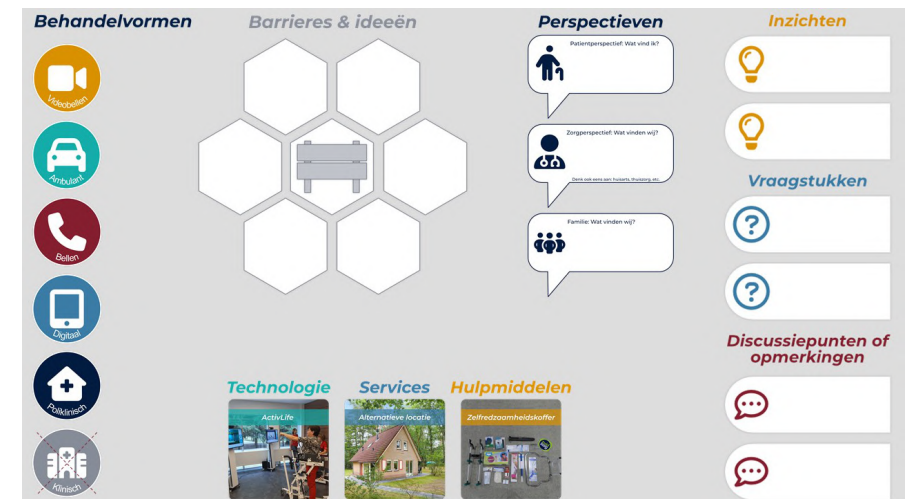


Figure 15. Tool elements explanation

Results

The first co-creation session revealed some flaws in the user experience of the toolkit. Participants talked a lot, rather than mapping barriers and opportunities by writing on the cards of the toolkit. This might be related to the setup of the room, as there was a projector in the center of the table for the PowerPoint presentation, and the toolkit was presented on the side of the table. This might have given the impression that it was a presentation meeting, like the participants would normally have in their jobs, rather than an interactive brainstorm session. Next to that, the participants asked many questions about the context (why do we need home rehabilitation), and one participant mentioned not directly seeing the relevance right now, as they had enough available beds. This all showed that the tool and the goal of the session should be explained better, as well as the context of home rehabilitation, and that the setup should be changed for the next iteration.

The conversation with the innovation team of Vitalis also provided good suggestions for the next iteration (Vitalis, personal communication, November 24, 2022). They stressed the importance of clearly stating the need based on literature, as well as focusing on early adopters to start a movement, rather than trying to convince everyone at once. They also mentioned how Vitalis is implementing a patient-centered care model, where the patient is first and foremost responsible for their own care, together with their own network and aids and technology. This perspective could also help during the discussions in the co-creation sessions, to discuss where the distinction is between the responsibilities of the patient and those of the healthcare staff.



Figure 16. Co-creation session 1

Stefanus Hendrikus*

Leeftijd: 89
 Nauwelijks actief
 Patsie voor muziek

Anamnese

Medisch
 Trombose (DVT)
 Postnaal-osteoporose
 COPD

Sociaal
 Partner is niet in staat te ondersteunen
 Wegens eigen gezondheid
 4 kinderen, sommigen met linkerven dan anderen

Overlevingsplan

1. **Wolven in een aangevoerd appartement**
 Heeft moeite met verplaatsing. Oudste in relatie af wandeltocht. Diensten. Oudste met sociale/medische hulp.

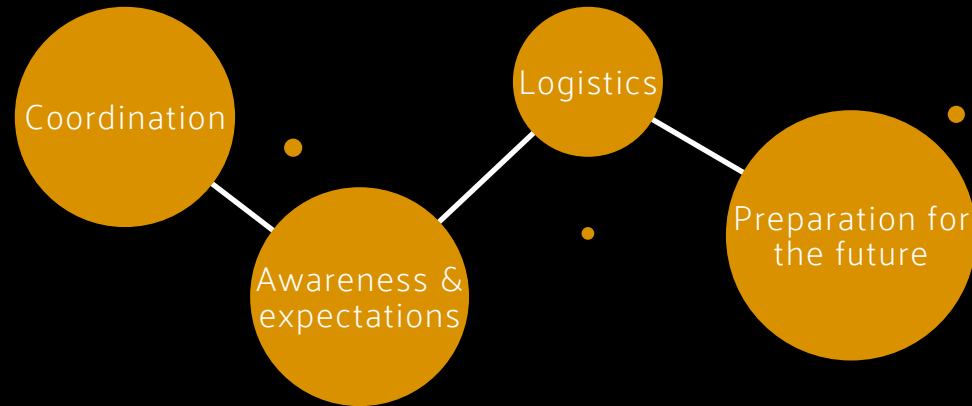
2. **Linkzijdig CVA, vooral in de rechter arm**

3. **CVA**

4. **Heeft hulp nodig met ADL**
 Veel ondersteuning nodig in mobiliteit
 Cognitief geen problemen
 Alleen met wettelijk voegde problemen en taakgevoelensproblemen

Co-creation Session 1

THEMES



Fysiotherapie

Poliklinisch

Er is een verandering in de verzorgingsvorm

Poliklinisch

Dagbehandeling

Wie kan welk? Hoe vaak? Hoe vaak? Hoe vaak? Hoe vaak?



Leeftijd: 93
 Nauwelijks actief
 Veel bezig met taken en dingen

Medisch
 Trombose
 Hypertensie
 tachycardie

Sociaal
 Klein netwerk wegen, afhankelijk van kinderen
 Geen kinderen
 Geruimd

Overlevingsplan

1. **Gebruikt een externe toilet**
 Gebruikt een externe toilet. Gebruikt een externe toilet. Gebruikt een externe toilet.

2. **Chirurgie**
 Chirurgie. Chirurgie. Chirurgie.

3. **Algemene malaise**
 Algemene malaise. Algemene malaise. Algemene malaise.

4. **Veel ondersteuning**
 Veel ondersteuning. Veel ondersteuning. Veel ondersteuning.

Fysiotherapie

Ambulant

Video bellen

Bellen

Digitaal

Telerevalidatie.nl

Sociale thuiszorg

kan een tablet

Huiscoaches/vrijwilligers

DSC thuis op 10 km

direct + 1000 uit magu. 1000 uit magu. 1000 uit magu.

*See Appendix E for the full results.

Coordination

The main topic that came up in the discussion was the coordination of care with all the different options and combinations. The participants suggested having an external party assess the possibilities, for example availability of Wi-Fi and technology. An external digi-coach could be responsible for arranging the needed materials and teaching skills.

Awareness & expectations

The second topic is awareness of patients and their informal caregivers on where they can get care. Especially with a diverse set of treatment options, not everyone will get the exact same care, potentially causing differing expectations.

Logistics

Especially in polyclinical care, logistics can be difficult. The transport, combined with the treatment, causes patients to require time and space to rest during the day. Polyclinical care thus seemed relatively demanding for the patient.

Preparation for the future

Lastly, our society needs to be more prepared for the future. People should feel more responsible for how they want to grow old. An idea came up to host a SIRE campaign to promote awareness for increased responsibilities for the patient and their informal caregivers, but also for younger citizens to be more prepared for their old age.

Iteration 5 - Co-creation session 2 & designer feedback

Goal

As several of the challenges from the previous iteration seemed related to the user experience and setup of the session, rather than the tool itself, this iteration focused in particular on improving the setup and clarity of the co-creation session. After these improvements a second co-creation session was held.

Method & Design

For this next iteration, I started with a complete re-design of the introduction, as this seemed to already cause confusion at the start. This included sending an introductory e-mail to participants beforehand. Within the PowerPoint for the co-creation session, I added an extra section explaining home rehabilitation and the advantages. I added visuals of the desired mapping with the tool rather than just showing the different elements (see Figure 17). In order to promote a more open-minded and creative energy during the session, I decided to add a creative energizer at the start of the session (see Figure 18). Lastly I decided to move around the setup in the room, so that the participants all had elements of the tool in front of them, and did not need to walk to get a tool card to write on (see Figure 19).

The second co-creation session was also held at Valkenhof with five participants. They had the following expertise: care coordinator/nurse, care consultant, physiotherapist, occupational therapist and a psychologist. During the previous co-creation session, I wrote down notes throughout the session and did not make audio recordings, as I expected participants to write down most of their insights on the cards of the tool. However, this gave me less time for actual facilitation of the session and guiding the discussion. For this second co-creation session, I decided to make audio recordings as well as making some minor notes during the session, to give myself more space and time for facilitation. I used the transcripts for analyzing outcome themes.

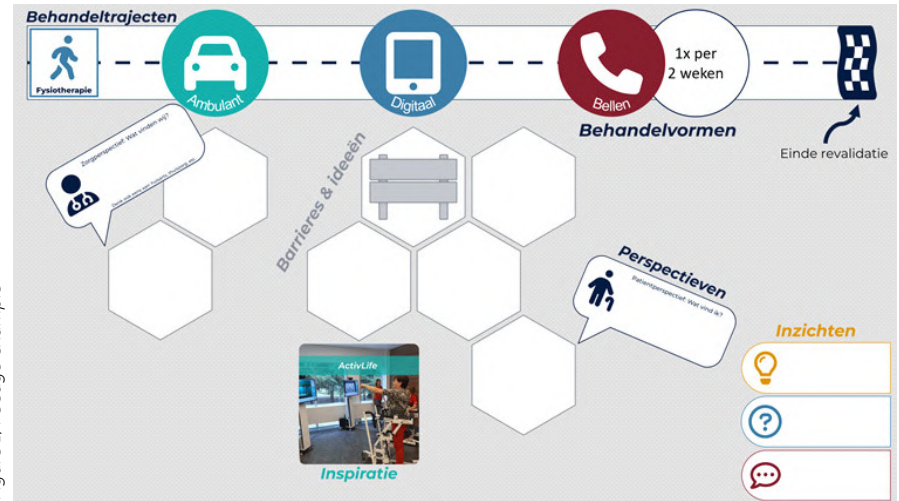


Figure 17. Usage example



Figure 18. Energizer



Figure 19. Table setup

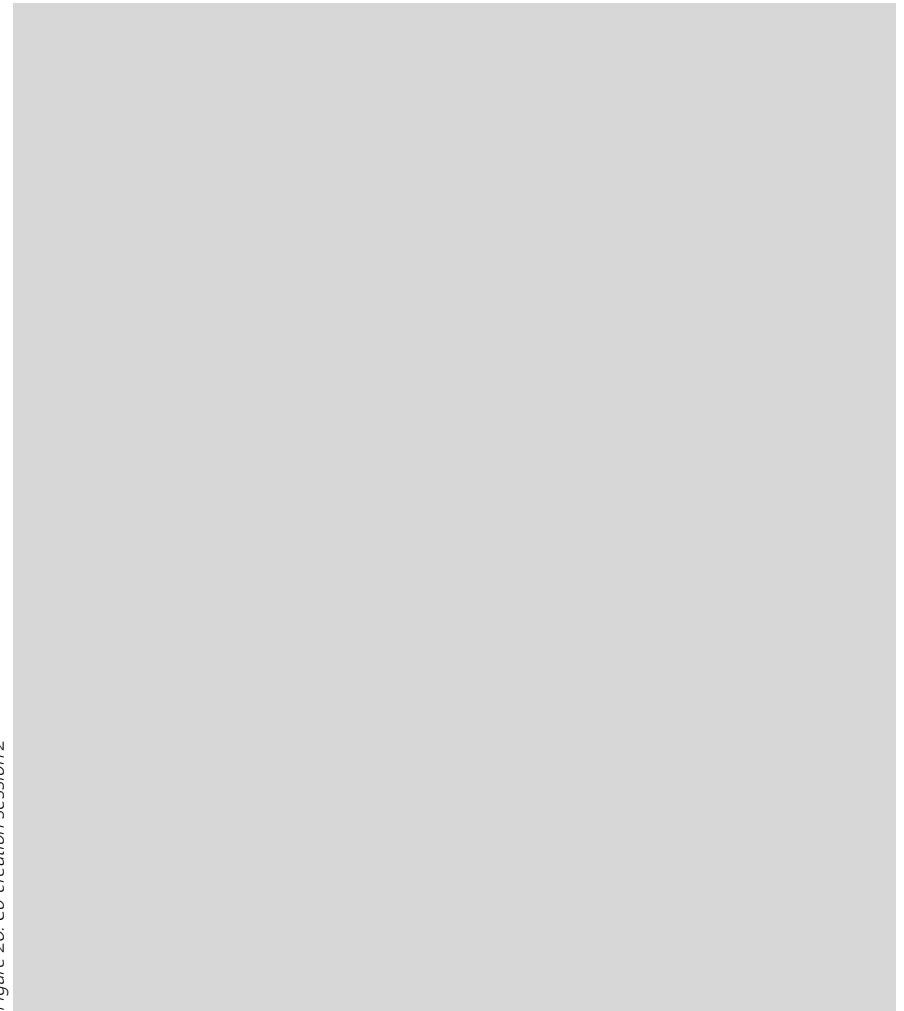
After the second co-creation session, the tool and co-creation setup were evaluated with a social design expert. The goal of this was to improve on some of the challenges during the second co-creation session that were not completely resolved yet with the design improvements that were made.

Results

The co-creation session seemed to reveal that the improvements from previous iterations had a positive effect. Participants were creative and participated actively. The next page shows the outcomes of the session. Even though there were already big improvements with regards to the use of the toolkit, participants still seemed to struggle using the tool for mapping the barriers and opportunities rather than discussing verbally.

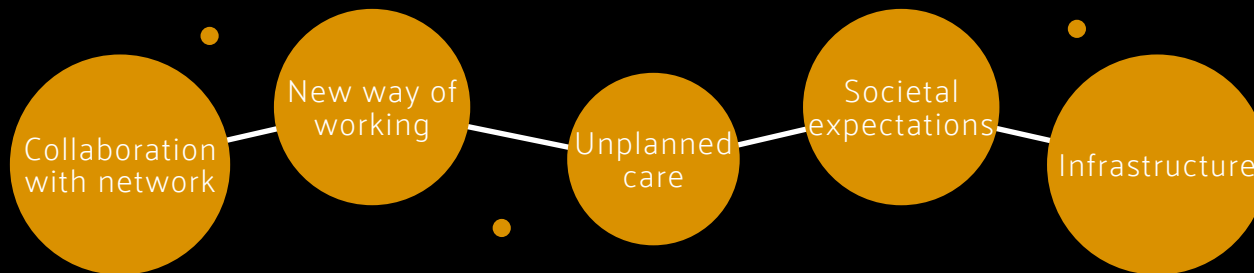
Feedback from the expert on social design explained how this could still be improved (personal communication, December 2, 2022). A potential cause for participants struggling with the use of the toolkit, is the information distribution throughout the session, especially visually. Displaying the entire tool at once might create a visual overload for the participants, which could easily be overcome by introducing a step-by-step approach and adding smaller individual exercises. The social design expert also stressed the importance of facilitating and writing on the tool myself as well. A last feedback point was to stimulate personal motivation, emphasizing that participants are thinking about the future of their own work, rather than just participating my project. This personal drive might also positively impact participation.

Figure 20. Co-creation session 2



Co-creation Session 2

THEMES



Collaboration with network

A big opportunity that came forward from the session was the collaboration with the entire healthcare network. The hospital, home care organizations, insurance and everyone else involved needs to be aligned in order to change. As an example participants mentioned that the rehabilitation facility might want to ask different intake questions in the hospital to assess the possibilities for home care.

New way of working

Getting used to or preparing for a new way of working can still be a challenge. Participants were open to try and change, but noted that it might take a while to transition and get used to different work. A psychologist already mentioned: "Half of the questions that we have here are about acceptance and not being able to go home. I think a lot of that will disappear. We could get a different role, maybe focus more on giving advice to other disciplines about how a patient should be approached in treatment".

Unplanned care

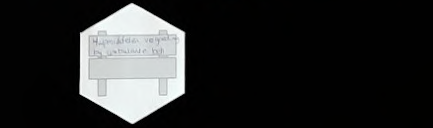
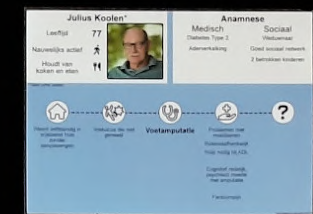
A big barrier that came up was the unplanned care, and toilet use in particular. Participants mentioned that delivering treatment at home is not the biggest challenge, delivering basic care is. This thus poses a big challenge.

Societal expectations

Participants mentioned the influence of factors like family in positive or negative motivation. They noted that the government and municipalities should stimulate citizens to think about preparing their homes for when they get older.

Infrastructure

This relates to improving technological infrastructure, such as proper WiFi within Valkenhof, but also availability and complexity of devices. Financial infrastructure also plays a role, as insurance is relatively fixed right now. Even when a patient really wants to go home this is not yet always possible.



Iteration 6 - Co-creation session 3

Goal

The goal of this last iteration is to improve based on the insights from the second co-creation session, as well as the received feedback from the social design expert. The changes in this iteration focus on personal motivation, using a step-by-step approach and improving in my role as facilitator. This iteration concludes with a last co-creation session.

Method & Design

For this last iteration I focused on minimizing the content in general by removing a few elements of the toolkit design. Next to that, I introduced a step-by-step approach during the session (see Figure 21), as well as individual exercises. I created an explanatory video with an explanation of the steps, that participants also received before the session. Lastly, I changed the introduction to stimulate personal motivation of participants, highlighting that they are brainstorming about the future of their own work.

The previous two co-creation sessions were held at Valkenhof. Doing this last co-creation at a different organization might give new insights for the realization phase in the next chapter. Therefore, the last co-creation session was held at Oktober with seven participants from the following expertise: two occupational therapists, two physiotherapists, geriatric care specialist, nurse, and a nurse with a lot of experience in home care.

I decided to completely stop writing down notes during the session, made an audio recording instead and focused on facilitating the whole time. If there were major insights that participants did not write down, I would write them on the tool cards myself. This gave me more time to facilitate the discussion, and stimulate use of the tool cards. For the analysis, I used the method from Halcomb and Davidson (2006), which describes the use of reflective journaling

and audio recordings for direct content analysis, rather than using verbatim transcription.

Results

During this last co-creation session, participants seemed to be understanding the tool and the setup, indicating that the step-by-step approach might work better. They even corrected each other to stimulate out-of-the-box thinking by saying: “No, we are not thinking about what we can’t do, only about what we can do”. Participants showed enthusiasm about being able to think about the future of their own work and what they would want that to look like. This suggests that the design improvement to highlight personal motivation might have contributed to enthusiasm and creativity. Still, some future improvements could be made, for example with regards to the exact steps and the facilitation role. I will reflect on these aspects in the discussion section.



Figure 21. Step-by-step approach

Co-creation Session 3

THEMES



*See Appendix E for the full results.

Intake during hospital stay

When a patient goes home immediately after a hospital stay, the rehabilitation team would like to do an intake and home assessment before hospital discharge. The team will be prepared for the rehabilitation, and the patient can already meet their therapists. This does require hospitals to clearly communicate about patients who will likely need rehabilitation after their hospital recovery.

center and home care. The participants suggested having a complete rehabilitation team, including a home care team for the home rehabilitation period. These home care nurses will then also have a 'rehabilitation' mindset, which might help a patient recover even faster. After rehabilitation, a patient will be handed back to a regular home care service and GP.

Single patient record

Currently, the hospital, rehabilitation team and home care team all have their own patient records (EPDs, elektronisch patiëntendossier). The rehabilitation team wishes to have one single record that follows the patient from start to finish and is accessible to all parties involved. This way, there are less challenges with handovers between care organizations.

Therapy extension

Participants saw the use of methods like digital rehabilitation as an extension of regular therapy, so that a patient would be stimulated to do more exercises besides their main therapy contact moments.

Age friendly homes

Participants noted the importance of prevention through stimulating age friendly home adjustments early on. Governments could potentially stimulate home adaptations, but it could also be a change in product design, such as only producing wide enough, level access showers. A societal culture shift is needed to be open for these changes and actively prepare for your own care needs.

Rehabilitation team

Currently, there are big gaps between different care organizations, such as the hospital, the rehabilitation



Conclusion & next steps

This ideation phase focused specifically on “orchestrating service co-creation” and “future visioning” (Canales Durón et al., 2019). The question that I tried to answer was the following:

How can we help care professionals implement and/or create out-of-the-box solutions for the complex care demands of elderly, in order to let elderly rehabilitate at home where possible?

Through several iterations, I designed a tool to help care professionals envision a new geriatric rehabilitation pathway to move care home where possible. Using this tool, three co-creation sessions were held with two different care organizations. These co-creation sessions revealed several design learnings, as well as project findings related to home rehabilitation. The design learnings will be discussed in the Discussion section. Within the next chapter, Phase 3 – Realization, I will summarize the project findings related to home rehabilitation. I will describe the themes resulting from the co-creation sessions in more detail. Next to that, I will provide a proposal for a roadmap that the stakeholder care organizations can use as guideline for future steps within the process of realizing home rehabilitation.

Figure 23. Co-creation session 2

Phase 3 - Realization

How do we prevent elderly who need rehabilitation from going to a rehabilitation department when they can recover safely and completely at home (with the right support)?

Using the outcomes of the different co-creation sessions, I wrote a summary of insights with regards to home rehabilitation, as a guideline for the care organizations. This is based on the strategic design ability “transforming organizational networks” (Canales Durón et al., 2019) and focuses specifically on the managerial and transformational steps. This chapter first describes the findings from the co-creation sessions, after which I will propose a roadmap or strategy for future steps. This roadmap will be based on first- and third-person perspective insights, using my own experience combined with literature validation.



Session 1 - Themes

Coordination
Awareness & expectations
Logistics
Preparation for future



Session 2 - Themes

Collaboration with network
New way of working
Unplanned care
Societal expectations
Infrastructure



Session 3 - Themes

Intake during hospital stay
Single patient record
Rehabilitation team
Therapy extension
Age friendly homes

Findings

Organizational culture change

An important finding from the co-creation sessions, was the organizational culture change that is needed within healthcare organizations. The goal of using the tool was already to promote a different, more out-of-the-box mindset for care professionals to imagine future scenario's and get concrete what needs to happen. However, use of the tool within these groups of care professionals showed that there might be conflicting ideas about the future of geriatric rehabilitation between different levels within the organization. Comments like "You won't convince my manager in any way, they are very money-driven", or "We must take matters into our own hands. If we have to wait until they say 'we are going to do it this way', then that will not work in our favor again" show a imbalance between management and the care professionals. Therefore, a bigger, organization-wide culture change is needed for out-of-the-box thinking, but also with regards to the change culture. It displayed the need for a change culture where everyone is actively involved in organizational changes, such as when shifting to home rehabilitation.

Societal change

A theme that came up in all sessions was the need for a societal change. Right now, people in the Netherlands in general do not want to be old, and do not really see themselves as old. Because of this, people do not adjust their homes yet or prepare for when the need care. It is difficult to offer home rehabilitation when someone lives in an apartment without an elevator or has an inaccessible shower. Participants in the co-creation sessions thus noted the need for stimulating age friendly homes or home adjustments early on, to prevent incidents from happening and to be able to offer home rehabilitation properly.

Next to this practical preparation for home rehabilitation, there is also a need for patients and their family to take responsibility for their own care and care

wishes and be aware of their responsibilities. An example of a new vision on care is presented in the care circle created by Vitalis (personal communication, December 5, 2022), see Figure 24). This care circle displays how the patient is at the center and is the main responsible for their own care. This is in line with the country wide shift from welfare state to participation society, where people take responsibility of their own lives (Ministerie van Algemene Zaken, 2013).

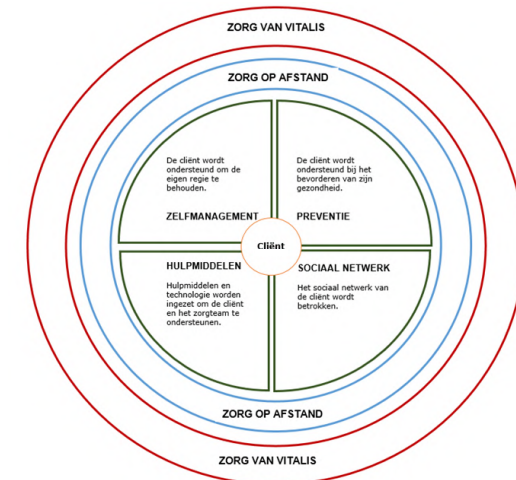


Figure 24. Care circle (Vitalis, personal communication, December 5, 2022)

As can be seen from the care circle, the patient is supported through self-management, prevention, aids and their social network. Only after investing in all those aspects, Vitalis can offer remote care, and if those things combined are not sufficient, Vitalis can deliver in-person care. However, switching to this patient-centered responsibility model should be carried throughout society and not just within a care organization. This still seems a challenge as patients are not aware of the care they can receive, or the responsibilities they have.

Communication & expectation management

Another main finding from the co-creation sessions relates to the communication towards patient and family, and managing their expectations for rehabilitation care. Especially when offering a diverse set of treatment options, every patient might receive different combinations of rehabilitation methods. This could cause confusion or different expectations, as patients might have heard from others about their rehabilitation, and wonder why they are not receiving the same kind of therapy. This thus means that it is important to clearly communicate to patients how their care journey is put together, or have them involved in the decision-making about which treatment methods would be most suitable for them.

Next to that it is important to always communicate the same things at different contact points. Right now, participants noted that governmental websites can create confusion, as they state that rehabilitation can last up to six months, even though in practice it usually lasts only two to three months. Thus, all governmental websites, hospital communication, and any other form of communication where patients and their family get informed about rehabilitation care should offer the same information. This also relates to the next finding, indicating the need for a closer collaboration within the health network.

Network & collaboration

Closely related to the communication towards the patient, is the communication between care organizations and their network. Participants noted the need for sharing initiatives and knowledge with other care organizations in the region and in the Netherlands to learn from each other. Next to that, participants noted the need for better collaboration with the different care organizations involved in a patient journey. As an example, participants indicated that they would like to have the rehabilitation intake before a patient gets discharged from the hospital, so a patient could instantly go home with the right care after discharge from the hospital. This would require a more close collaboration with the hospital. Another theme from one of the sessions was the wish to have one single patient record that is used by the hospital, the rehabilitation center, the home care and GP to reduce challenges with handovers.

Practical developments

Several other themes from the sessions can be summarized under practical developments. This relates to technological infrastructure (WiFi availability), as well as logistics, unplanned care (toileting), and care coordination.

A big factor is also the financing from insurance companies to the rehabilitation facility. Participants noted that right now, it is not really possible for patients to rehabilitate at home, because therapy at home is not properly covered by insurance.

This is in line with findings from Vreeburg et al. (2022), who show a finance calculation for an potential ambulant care trajectory (see Figure 25). They show that even though it is cheaper to offer a combination of admission and ambulant care compared to only offering admission care, it is not beneficial for a care organization. The insurance does not completely cover all the costs for an ambulant care journey, such as travel times, meaning that a care organization will lose money for each patient they provide with ambulant care. Next to that, it is not possible right now to fully let a patient rehabilitate from home, as insurance requires admission care first in order to cover ambulant care.

These findings thus show that the current financing models are not flexible enough to offer non-admission rehabilitation care. Especially when offering personalized combinations of rehabilitation treatment, insurance should be open to this flexibility of care.

Treatment	Financing insurance	Estimated real costs
Admission 35 days with 30 treatment hours	€ 13.961,24	€ 12.275
Admission 28 days plus 14 days ambulant treatment; total of 30 treatment hours (excl. travel times)	€ 8357,62	€ 10.420

Figure 25. Example calculation. (translated from Vreeburg et al. (2022))

Roadmap

Based on the findings described previously, we can propose a roadmap for care organizations towards implementing rehabilitation from home.

Open-source change management

Using an Open-source change management strategy rather than top-down or bottom-up change could make sure all stakeholders are actively involved in the organizational changes (Gartner, 2022; Rogers, 2021; Messenböck et al., 2019). Messenböck et al. (2019) describe open-source change management as “a democratizing process whereby communication content, dialogue, insights, and even decisions related to a change effort can come from anywhere in the organization—constantly, and in real time”. Figure 26 from Gartner (2022) shows the main differences between top-down change and open-source change.

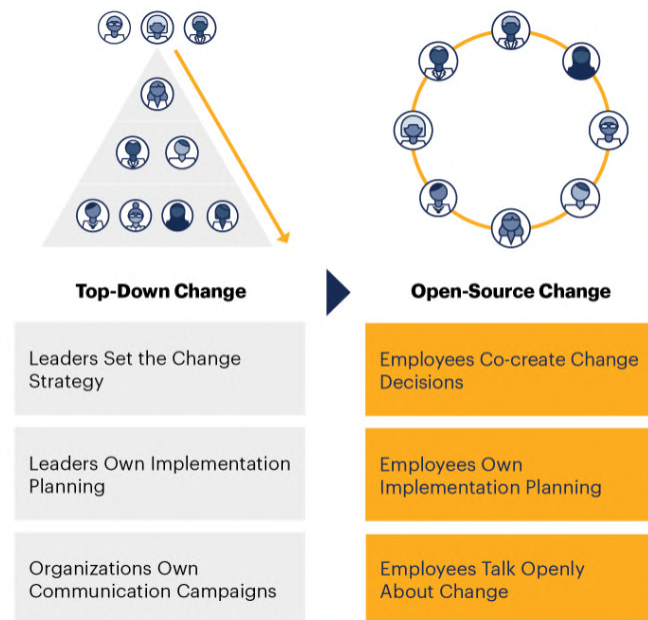


Figure 26. Open-source change management. From Gartner (2022)

This co-creative approach is similar to the design thinking approach to change management, as proposed by Voltage Control (2022). They also describe the added value of other design thinking practices to change management, such as ideation, prototyping and running experiments. As changing to a home rehabilitation care journey requires many new innovations, taking an iterative design thinking approach to change management could also support developing initiatives that are best for all stakeholders involved, including the patient.

To stimulate this, organizations could set up taskforces including people from managerial backgrounds, doctors, therapists, nurses, patients and any other expertise involved. Within these taskforces, it is important to also include other stakeholders of the health network, such as hospital staff, home care staff and GPs. Collaboratively they can then co-create future home rehabilitation scenarios. This combines both the “Organizational culture change”, as well as the ‘Network & Collaboration’ findings.

Making plans

Follow up steps for such a taskforce would be to make concrete plans. A plan should be made on how we will get to the implementation of home rehabilitation, as well as a plan on what that home rehabilitation should look like. This includes also the practical developments that need to be arranged first, such as a stable WiFi connection in the rehabilitation center to let therapists offer remote treatment. In this stage, showing accountability is essential. Showing that money and time are invested, and that action is taken, could stimulate involvement and energy from the people involved, since they will realize and experience that their opinions are valued and heard and that barriers can be solved.

Starting a pilot

After taking care of these practical arrangements, and having a concrete plan for action, this can then lead to the start of a small-scale pilot. It is important to start small and with relatively simple patient cases, which can help prove that there is viability, and can help overcome unseen pitfalls. Even if an initial pilot is not yet successful, it could still provide useful insights that can be used to run another pilot iteration. Once the pilot phase is a success, more people can be involved, and bigger scale plans can be made.

Motivating societal change

With regards to the finding on societal change, there are already several governmental or municipal initiatives coming up with regards to preparation for aging, such as the recommendation of the Dutch 'Raad van Ouderen' (council of elderly; Raad van Ouderen, 2019).

Potentially, geriatric care organizations could also play a role in this societal change. Instead of focusing on patients and elderly, they could potentially target a younger generation in their promotion, activities or communication. An example could be to have information sessions aimed at children or relatives of patients, rather than the patients themselves. This way, geriatric care organizations could invest in their future target group. Again, co-creation and involvement should play an important role, so healthy seniors could help indicate what kind of information or prevention they would need. The Raad van Ouderen (2019) suggests always using a positive approach focused on opportunities and responsibility, tailored to people's stage in life. They also provide a few examples for these initiatives focused on preparation for aging, which could be used for inspiration.

DISCUSSION



The results of this project show that there is a clear potential for geriatric rehabilitation at home, although there are still several developments that need to be made before home rehabilitation can be implemented. In this section I will look back on the process and design and suggest opportunities for future work.

Within this project, the designed tool was used to stimulate discussion on rehabilitation treatment, based on a patient persona. For the context of this project, the deliberate choice was made to focus on organizational change and thus the co-creation sessions were held specifically with care professionals. Future co-creation sessions involving patients and their relatives could help provide a more extensive view on their needs and wishes. Further iterations with regards to the brainstorm sessions could explore the influence of adding gamification or

playful interactions, as Peters et al. (2021) suggests that this could stimulate creative thinking and could stimulate discussion about difficult topics. In the future the tool could also provide useful for mapping the treatment possibilities for real patients. Future iterations could be done to focus on this concrete use case scenario.

Results from the co-creation sessions showed the need for more organization wide culture change, which does not only involve the care professionals but also the management levels. As during this project only care professionals were present during the co-creation sessions, this could give a different view on the future of geriatric rehabilitation. Using toolkit with other users, organization wide, but maybe also across organization, could provide even more insights. Future research should also look into the impact of power relations between the participants. Having people

from a management level around the table could potentially impact the atmosphere and input given during the session. As suggested by Brouwer et al. (2013), it is important to recognize power imbalances before and during the co-creation and the influence of these imbalances on the process.

Even though the healthcare sector is not a very fast-changing environment, technology and society do change more rapidly. In the future, the environment around geriatric rehabilitation and home rehabilitation could change because of many influences, such as governmental decisions, or technological developments such as data. Because of this, it is important to stay flexible and keep innovating and iterating as a care organization. A new geriatric rehabilitation care pathway should thus also be mindful of and prepared for these changes.

CONCLUSION

How do we prevent elderly who need rehabilitation from going to a rehabilitation department when they can recover safely and completely at home (with the right support)?

Within this project, we focused on supporting care professionals to implement and/or create out-of-the-box solutions for the complex care demands of elderly, in order to explore how we can let elderly rehabilitate at home where possible.

The project was divided into three phases: Analysis, Ideation and Realization. The analysis phase focused on understanding geriatric rehabilitation care, the patients and the opportunities for home rehabilitation. It revealed three main design directions: focusing on a redesign of the healthcare system, conflict management and communication, and lastly out-of-the-box thinking. The Ideation phase then focused on the design direction of out-of-the-box thinking, where a tool was designed to help care professionals envision a new geriatric rehabilitation pathway to move care home where possible. This tool was then used in three co-creation sessions with care professionals. Findings from these sessions were summarized in the Realization phase, after which a roadmap of future steps was proposed. Findings included a need for organizational culture change, societal change with regards to aging, communication and expectation management towards a patient and their family, network and collaboration between care organizations, and lastly practical improvements such as insurance coverage.

This project provides an extensive overview of the current barriers and opportunities around geriatric home rehabilitation and suggests a roadmap for future development. It provides a tool that can be used for co-creation sessions about the future of rehabilitation care.





Project

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APPENDIX

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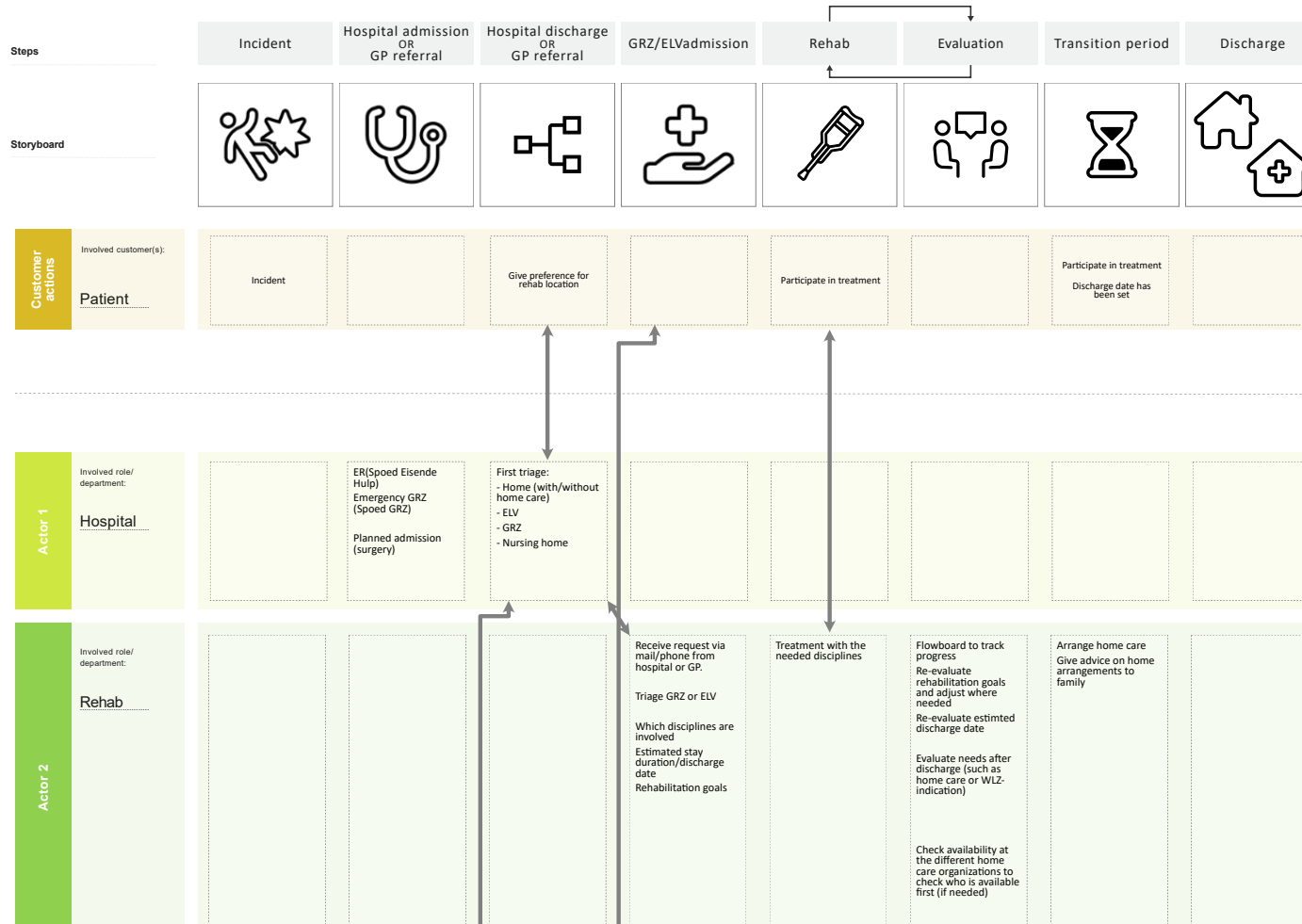
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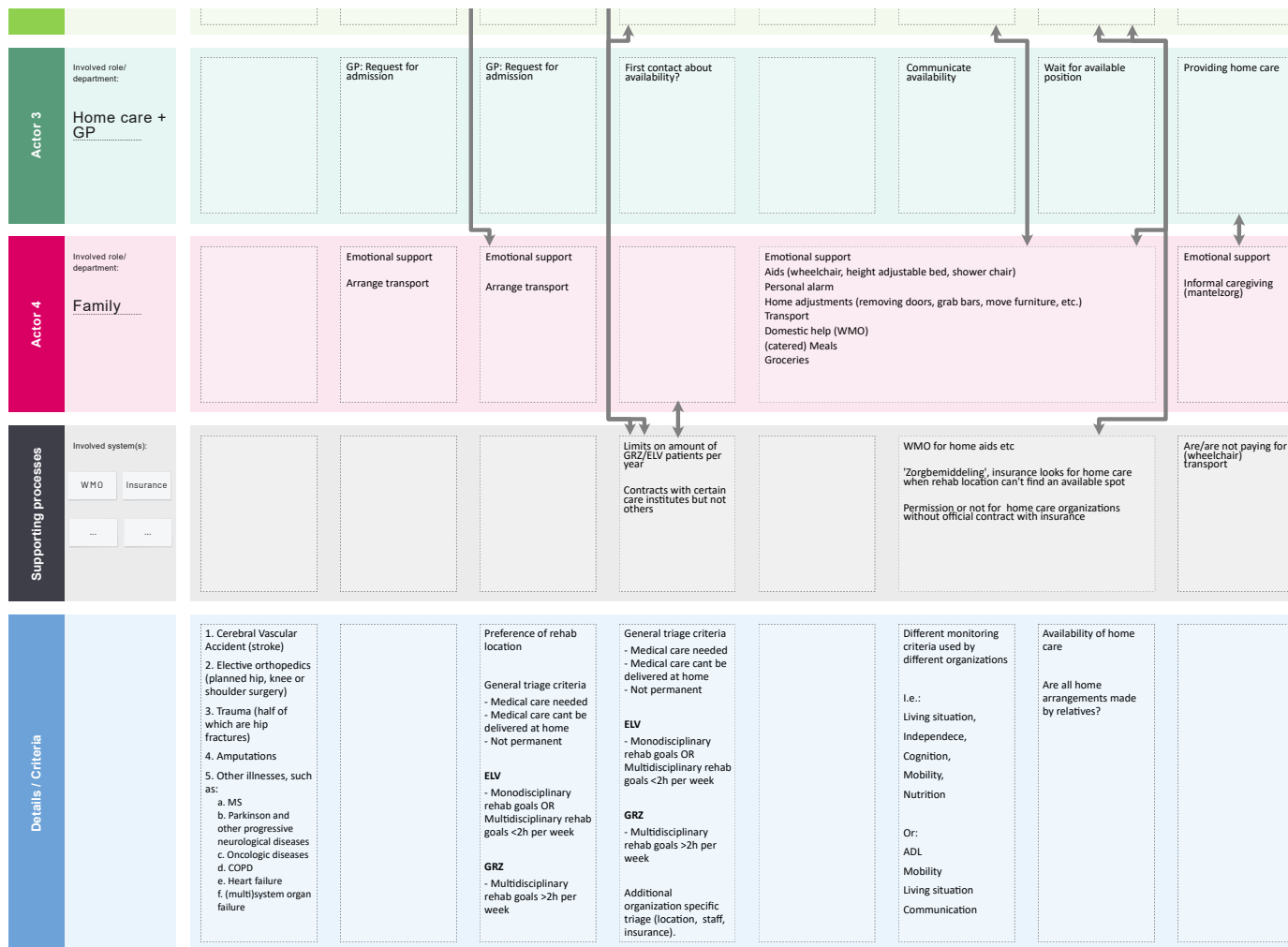
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APPENDIX A - REFLECTION

APPENDIX B - SERVICE BLUEPRINT

Service Blueprint | HomeGRZ





↔ Conflicting / communication problems

APPENDIX C - INTERVIEW RESULTS


Barriers		
Patient <ul style="list-style-type: none"> - Network - Motivation - Big transition going home <ul style="list-style-type: none"> • Other skills than trained - In need of simpler communication methods - Digital skills - Cognition - Expectations 	Family <ul style="list-style-type: none"> - Wants patient to rehabilitate more, without perspective on going home - Don't have time/ opportunity for moving patient - Unclear which responsibilities <ul style="list-style-type: none"> • I.e. arranging aids - Burned out informal caregivers - Expectations 	Living situation <ul style="list-style-type: none"> - Influences home care options (already adjusted/countryside) - Can't be adjusted (doors not wide enough, stairs) - Contractor doesn't have time for adjustments yet - Aids not delivered
Economic <ul style="list-style-type: none"> - Insurance of wheelchair transport - Uncontracted (home) care - Insurance limits for admission - VVT very price driven - High pressure for certain developments - Difficult to explain limitations to patient & family - Evidence driven before funding 		Societal <ul style="list-style-type: none"> - Positioning of elderly: vulnerable, weak, not an active role in society - Other ways care (social aspect) - Network, sharing knowledge. Within regions but also country-wide
Rehabilitation care <ul style="list-style-type: none"> - New way of working in home rehab: <ul style="list-style-type: none"> • Different location • Different activities • Different communication - Family wants to help, caregivers don't let them - High pressure, not enough time to arrange home rehab - Different needs from different disciplines: 'can't do physical therapy digitally' - No rehab needed after going home. Can't go home sooner because of unplanned care - Communication about rehab progress - Work pressure → no time for new developments - Stuck in habits/procedures 	Home care <ul style="list-style-type: none"> - No unplanned care possible - Too expensive for 24/7 care - Availability 	Hospital/GP <ul style="list-style-type: none"> - Availability - Waiting time for first-line therapists - Transfer
<ul style="list-style-type: none"> ■ = Healthcare system ■ = Mindset ■ = Communication & conflicts 		


Opportunities	
Practical developments <ul style="list-style-type: none"> - Technology - Robotics - Aid vending machine - 'Zelfredzaamheidskoffer' - Tools for informal caregivers - Expectation management at intake - Visual board with rehab journey in patient rooms - More brainstorms and knowledge sharing platforms 	Care alternatives <ul style="list-style-type: none"> - Polyclinical rehabilitation - Ambulatory rehabilitation - SpoedGRZ - 'Social' home care or social groups - Day clinic - Temporary housing - Care via nursing home or similar in neighbourhood - Hybrid care - 'Ongeschoolden' for basic care (letting family do basic 'medical' procedures like insulin) - Reablement - Rehabilitation as hospital-extended care → other expectations - Unplanned care on non-rehab department - Homecare for telerehabilitation support in non-rush hours
Emphasis on <ul style="list-style-type: none"> - Faster transition home instead of fully rehabilitating at home - ELV and simpler GRZ. Complex GRZ as hybrid form → starts with admission, then continues home under SO supervision. - Home to rehab (via GP) instead of those who came in through hospital - Use expertise of SO for prevention of incidents in first line, might be easier than ambulant care 	

APPENDIX D - FINAL DESIGN

Els Daalmans*

Leeftijd **82**



Erg actief 

Anamnese

Medisch
Diabetes Type 1

Sociaal
Getrouwd
1 erg betrokken dochter
Actief in omgeving


Hersenschudding
Gebroken arm


Kan mobiliseren onder begeleiding van 1 persoon
Gebruikt een vierpoot
Hulp nodig bij wassen en aankleden
Hulp nodig bij toiletgang
Weinig ruimte thuis voor mobilisatie, rollator past niet door de deur

Woonst in regulier appartement op de 3e verdieping
Gevallen op haar arm waarbij ze haar hoofd heeft gestoten
Volledig zelfstandig voor incident
Geen huishoudelijke hulp nodig

Lotte Reynders*

Leeftijd **66**



Gemiddeld actief 

Anamnese

Medisch
Diverticulitis


Sociaal
Graag actief, gaat wandelen en fietsen
Getrouwd
Goed sociaal netwerk
Familie erg betrokken



Opgenomen wegens ernstig gewichtsverlies

Woonst in rijeshuis
Traplift aanwezig
Darmoperatie wegens darmkanker
Permanente stoma
Gebrek aan eetlust, drinkvoeding gewenst

Stefanus Hendrikus*

Leeftijd **89**



Nauwelijks actief 
Passie voor muziek 

Anamnese

Medisch
Trombose (DVT)
Prostaat operatie
COPD


Sociaal
Partner is niet in staat te ondersteunen wegens eigen gezondheid
4 kinderen, sommigen meer betrokken dan anderen



CVA

Woonst in een aangepast appartement
Heeft moeite met verplaatsing. Gebruikt rollator of wandelstok binnen.
Gebruikt een scootmobiel buiten huis.
Linkszijdig CVA terwijl hij op visite was
Heeft hulp nodig met ADL
Veel ondersteuning nodig bij mobilisatie
Cognitief geen problemen
Afasie met woordvindings problemen en taalbegripsproblemen

Julius Koolen*

Leeftijd **77**



Nauwelijks actief 
Houdt van koken en eten 

Anamnese

Medisch
Diabetes Type 2
Aderverkalking

Sociaal
Weduwnaar
Goed sociaal netwerk
2 betrokken kinderen


Voetamputatie



Problemen met mobiliseren
Rolstoelafhankelijk
Hulp nodig bij ADL
Cognitief redelijk, psychisch moeite met amputatie
Fantoompijn

Woonst zelfstandig in vrijstaand huis zonder aanpassingen
Voetulcus die niet geneest
Buiten gevallen tijdens uilaten van zijn hond

Eef Snijder*

Leeftijd **93**



Nauwelijks actief 
Veel bezig met haken en breien 

Anamnese

Medisch
Heupfractuur
Hypertensie
Tachycardie


Sociaal
Klein netwerk wegens gebeurtenissen in verleden
Geen kinderen
Getrouwd



Algehele malaise

Geijkvloers appartement op 1e verdieping.
Bereikbaar met lift
Seniorentoilet, douchestoel, wandbeugels in badkamer en toilet
Ontving al thuiszorg voor ondersteuning ADL
Koores
Cholestase
Vermoedelijke cholangitis
Pijn na vorige heupfractuur
Pijn management team en orthopedie betrokken voor pijn management

Albert de Wit*

Leeftijd **84**



Gemiddeld actief 
Liefde voor dieren en natuur 

Anamnese

Medisch
Arthritis
Voet operatie
Hypertensie

Sociaal
Weduwnaar
Geen kinderen
Vrienden op leeftijd, dus beperkte ondersteuning

Heupfractuur
Gammanail operatie

Zelfstandig appartement in aanleunwoning
Huishoudelijke hulp 1 keer per week
Thuiszorg 3 keer per week
Loopt zelfstandig met hulpmiddel (rollator of wandelstok)


Psychologie


Logopedie

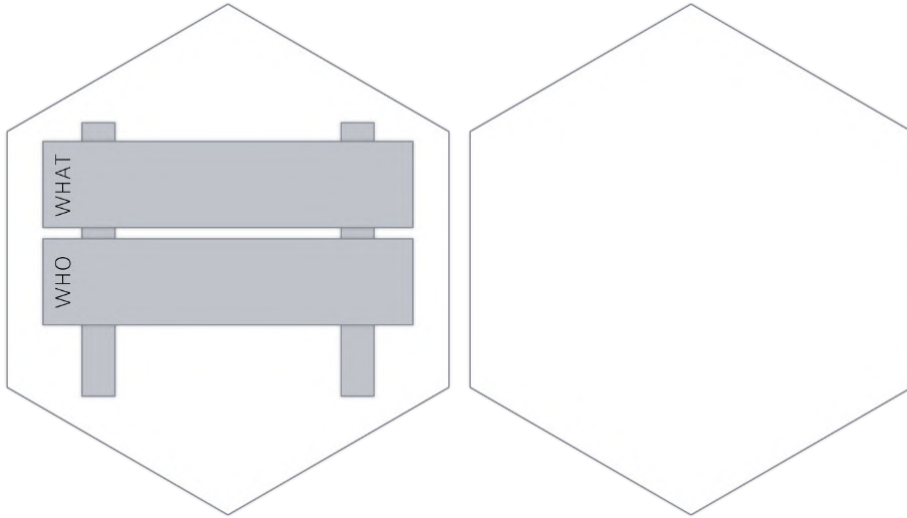

Fysiotherapie


Ergotherapie


Diëtetiek


.....





Televalidatie.nl



ActivLife



Hoe werkt het?
 Veilig trainen van zit-sta beweging, balans, postuur en vele andere spiertraining met ondersteuning, zonder kans om te vallen
 Mogelijkheid tot spier- en breintraining door middel van trainingsprogrammas (in spelvorm) op een beeldscherm

Voordelen
 Veilig trainen zonder menselijke ondersteuning
 Combinatie van spier- en breintraining
 Spelvorm (boxen, blikgoeien, sturen) om therapietrouw te verhogen



Afbeeldingen van:
<https://alreh.pl/en/activlife-homepage>


Hoe werkt het?
 Zet standaard of persoonlijke inhoud klaar voor patiënten zoals bijvoorbeeld:

Behandelingen

- Arbeid
- CVA
- Chronische vermoeidheid
- Chronische pijn
- Hand
- Heup
- Rugklachten
- Long
- Oncologie

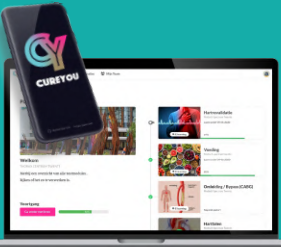
Algemene informatie

- Conditie
- Coördinatie
- Kracht
- Mobiliteit
- Ontspanning
- Rekoefeningen
- Transfers
- Valpreventie



Afbeeldingen van:
<https://www.telerevalidatie.nl/>

Cure-You




Hipper



Hoe werkt het?
 Revalidant bevestigt dagelijks het meetapparaatje op de broek/rok.
 Bewegingscores kunnen bekeken worden met therapeut

Voordelen
 Duidelijke bewegingsgegevens
 Beter coaching
 Meer betrokkenheid revalidant



Afbeeldingen van:
<https://www.hippertx.nl/>


Hoe werkt het?
 Professional stelt in welke leefstijlmodules (hart)patient op online platform kan bekijken.
 De modules bestaan uit fysieke oefeningen, informatieve videos en tips.
 Beeldbelfunctie voor thuisrevalidatie met eventueel meerdere patiënten tegelijk.

Voordelen
 Personalisatie van benodigde modules
 Direct inzicht in voortgang van patient
 Toevoeging op traditionele behandeling




Afbeeldingen van:
<https://www.cureyou.nl/>

Hololens



Hulpmiddelenautomaat



Hoe werkt het?
 Hulpmiddelen kunnen zonder tussenkomst van een medewerker direct meegenomen worden of bezorgd.
 Bijvoorbeeld: rolstoel, krukken, bedverhooger en rugsteun.

Voordelen
 Niet gebonden aan openings- en sluitingstijden
 Sneller en veilig ontslag



Afbeeldingen van:
<https://www.rnmrc.nl/patient-bezoeker/praktisch/voorzieningen/hulpmiddelenmaatje>
<https://medicura.nl/hulpmiddelenautomaat>

Hoe werkt het?
 3D hologrammen in de echte wereld, die zorgen voor interactie tussen de digitale en fysieke wereld.
 Directe (bel)verbinding met collega op afstand, om mee te kijken in de omgeving van de HoloLens drager.

Voordelen
 Voorkomen van of voorbereiden op bezoek van arts-assistent/SO
 Beter begeleiding van verzorgende door verpleegkundige op afstand
 Meer consulten, minder reistijd/kosten voor de SO/arts assistent
 Opleiden, supervisie en begeleiding op afstand door SO

Afbeeldingen van:
<https://www.tergooi.nl/zorg-dichterbij-hololens/>
<https://www.wivium.nl/innovatie-en-wetenschappelijk-onderzoek>



Zelfredzaamheidskoffer



Alternatieve locatie



Zorg op afstand



Dagbehandeling



Sociale thuiszorg



SpoedGRZ

Hoe werkt het?
 Persoonlijk behandelprogramma tijdens een dagbehandeling.
 Één of meerdere dagen per week
 Momenten zonder behandeling kunnen gevuld worden met dagbestedings activiteiten met anderen.

Voordelen
 Alle behandeling op één plek
 Meer sociale connecties

Afbeeldingen van:
https://www.landvanhorne.nl/behandeling-en-revalidatie/zorg/dagbehandeling-lichamelijke-klachten-somatiek?care_service_id=19

Hoe werkt het?
 Aanvullende mantelzorg voor kleine huishoudelijke klusjes, gezelschap, of bijvoorbeeld boodschappen doen. Ook beschikbaar om samen te wandelen, koken of een spelletje te doen.

Voordelen
 Ondersteuning overbelaste mantelzorgers
 Sociaal contact en dus minder eenzaam

Afbeeldingen van:
<https://saaraanhuis.nl/>

Hoe werkt het?
 Cliënt wordt naar SEH gebracht door ambulance (door huisarts ingestuurd). SEH arts belt revalidatie, kort geriatrisch assesment via de telefoon.
 OF
 Huisarts belt revalidatie direct zonder SEH tussenkomst

Client kan direct naar revalidatie locatie, zonder korte opname in het ziekenhuis. Bij de eerstvolgende mogelijkheid volgt er een officiële intake.

Voordelen
 Client ligt meteen in juiste bed.
 Minder wachttijd rondom de transfer.

Afbeeldingen van:
<https://www.mmc.nl/spoed/spoedeisende-hulp-start/>

Hoe werkt het?
 Koffer vol hulpmiddelen (zoals een druppelbril, knopenhaak of washulp) en innovatieve oplossingen (zoals een medicijndispenser) om mensen met een zorgvraag te helpen bij hun dagelijkse verrichtingen. Thuiszorg kan deze koffer meenemen om ouderen te ondersteunen.

Voordelen
 Meer onafhankelijkheid
 Langer zelfstandig thuis
 Minder (thuis)zorg momenten nodig

Afbeeldingen van:
<https://www.zuidzorg.nl/nieuwsthuiszorg-op-pad-met-zelfredzaamheid-koffer/>

Hoe werkt het?
 Opname in bijvoorbeeld een **zorghotel** of kort verblijf op een **vakantiepark met aangepaste woning**, wanneer de thuissituatie nog niet geschikt is.

Voordelen
 Voorkomen van langere opname vanwege ongeschikte woning.
 Alternatieve vorm naast GRZ/ELV voor wanneer ongeplande zorg een barriere vormt voor het naar huis gaan

Afbeeldingen van:
<https://www.mindervalide-bungalows.nl/>

Hoe werkt het?
 Rechtstreekse beeld-geluidverbinding met de zorgcentrale
 Dag en nacht beschikbaar, ook via halszender

Contact met zorgcentrale als sociaal contact, of ter herinnering aan medicijnen of afspraken

Bijvoorbeeld contact met zorgcentrale voor en na het douchen, ter controle of alles goed gaat.

Voordelen
 Sociaal contact en sociale controle
 Extra ondersteuning
 Zekerheid dat iemand het merkt als er iets misgaat

Afbeeldingen van:
<https://www.zuidzorg.nl/thuiszorg/zorg-op-afstand/>



1

Introductie

- Wie ben ik?
 - Industrial Design
 - Opdracht Precies de juiste zorg
- Hoe voorkomen we dat 65+ers die revalidatie nodig hebben, naar een revalidatiekliniek gaan terwijl zij veilig en volledig thuis kunnen revalideren (met de juiste sociale/technische ondersteuning)?*

2

Waarom revalidatie thuis?

- Patient (vooral met partner) gaat graag zsm naar huis
- Zelfde kwaliteit therapie of zelfs beter wegens actuele context
- ADL kan afnemen door opname (los van diagnose)
 - Bijvoorbeeld: conditie, wassen, aankleden, koffie zetten
- Personeelstekorten
 - 2 werkenden per 65+er in 2050

3

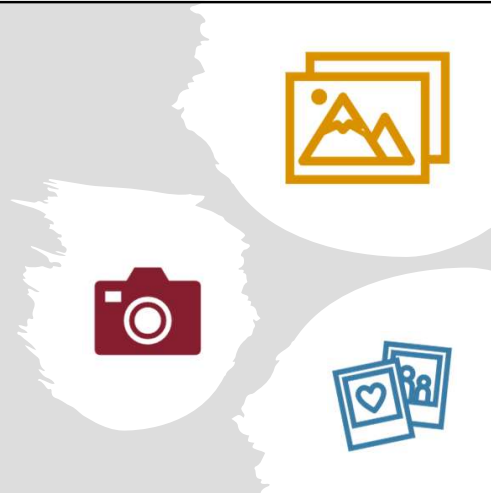
Doel van vandaag

- Out-of-the-box brainstorm over revalidatie thuis
 - Minder focus op wat kan NIET, maar wat kan WEL
- Nieuwe manier om over uitdagingen na te denken
- Uitkomst als voor toekomstige stappen/ontwikkelingen & evt opstarten pilots

Hoe ziet de toekomst van jouw baan eruit?

4

Toestemming



5

Structuur

- Introductie – 10 min
- Energizer – 5 min
- Fase 1: Brainstorm patiëntreis – 50 min
- ☹️ Pauze – 10 min
- Fase 2: Concretisering – 45 min

6

Energizer

Scheur het papier achter je rug in de vorm van een dier!

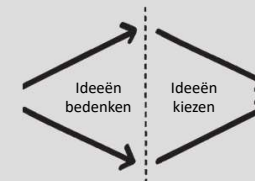


Tijd is om!

7

“Regels”

- Focus op creativiteit (fase 1), later meer logica (fase 2)



8

“Regels”

- Uitgangspunt is thuis
- Opname is optioneel, alleen als het echt niet anders kan

9

Fase 1 – Uitleg tool

10

The future of **GERIATRIC REHABILITATION**

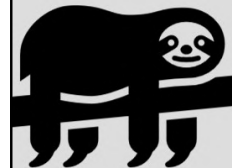
A project by Yvonne van Hamersveld

Designing a new geriatric
rehabilitation care pathway to
move care home where possible



11

Pauze!



12

Fase 2 – Concretisering

- Samenvatting

13

Fase 2 – Concretisering

- Schrijf eens voor jezelf op:
 - Welke inzichten heb je gekregen door deze sessie?



- Wat heb ji nu nodig (binnen jouw discipline) om hier mee verder te kunnen?

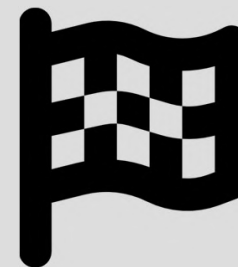


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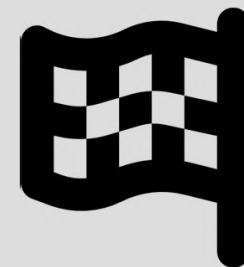
Fase 2 – Concretisering

- Bespreken van notities/ideeën
- Wat is nu een logische vervolgstap?

15



Bedankt!



16

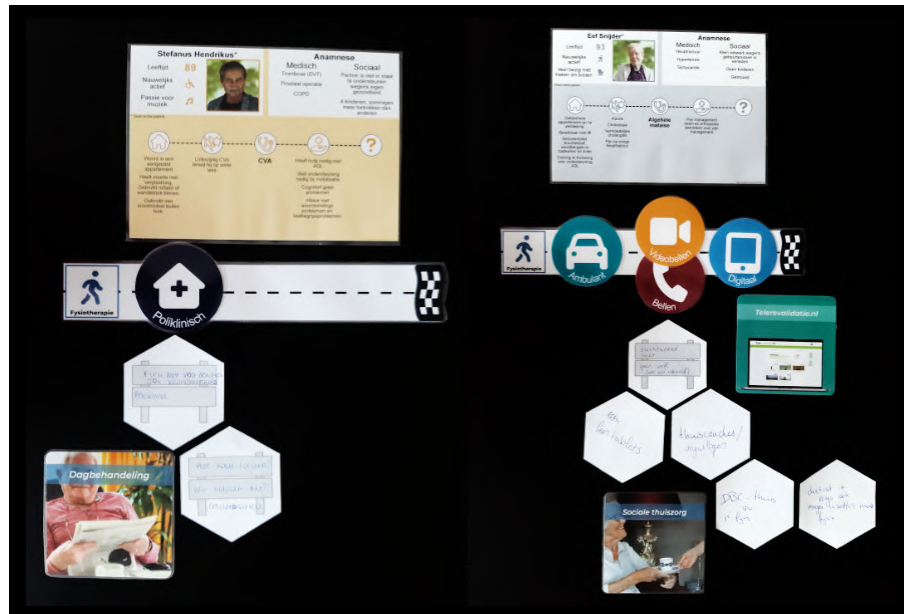
APPENDIX E - RESULTS CO-CREATION SESSIONS

Co-creation session 1

Practical information

Participants	8
Disciplines	Care consultant (2), nurse (1), home care/district nurse (1), geriatric care specialist (1), physiotherapist (1), psychologist (1), speech therapist (1)
Organization	Valkenhof
Date	November 21, 2022
Time	17.00-19.30

Outcome



Themes

- Specialist geriatric care that collaborates with GP
 - Prevention for vulnerable elderly. Right now a geriatric specialist can notify GP when needed, but follow-up is minimal (depending on GP)
- Insurance
 - Ambulant compensation too little right now
- Coordination per patient who is responsible
 - Getting aids at people's homes
 - Digicoach as responsible for getting digital stuff
 - Home/digicoaches
 - Maybe external party can assess what the possibilities are (does a patient have a tablet, etc)
 - Zorgmakelaars
 - Triage nurse from the hospital cannot do this since they do not see the patient themselves
 - Patient can't decide themselves since they don't have the knowledge of the possibilities
- Preparation for the future
 - SIRE campaign, awareness for informal caregivers
 - Participatiemaatschappij
 - How do I want to grow old?
 - Responsible for your own home and how you want to grow old
- Awareness and expectations
 - Where can we get care (patient and mantelzorg)
 - False ideas from hospital
 - Oh I will get physio every day for 3 months even during the weekend
 - Hospital is a big player, should be included

- Better rehab = Prevention of future falls
- Mindset:
 - “als het kon namen we iedereen op”.
 - Right now we have plenty of beds.
 - During covid we could also do it, so it might also be our own mindset. Yes but was lower quality.
- Non-verbal signs are difficult via digital means
- Logistics

Quotes/notes

Speech therapist: “I think we can already do a lot at home such as giving material, apps etc”

Occupational therapy already wants to visit at home. Although waiting times for aids are too long and many houses are not adjusted.

Hulpmiddelenautomaat might help with familiarity in the neighbourhood, knowing what to arrange.

Co-creation session 2

Practical information

Participants	5
Disciplines	Care coordinator/nurse (1), care consultant (1), physiotherapist (1), occupational therapist (1), psychologist (1)
Organization	Valkenhof
Date	November 29, 2022
Time	17.00-19.30

Outcome



Themes

- Patient criteria → intake questions
 - Hearing ability
 - Availability of devices
 - Tech skills
 - Give course for tablet use
 - Safety
- Non-verbal
 - Videocalling for psychology
 - Assessing cognitive problems digitally very difficult
- Who arranges aids?
 - GRZ or WMO
- Synchronous or asynchronous treatment
 - Videocalling, calling is synchronous
 - Digital/app is asynchronous → not depending on time → easier to schedule
- Infrastructure
 - WiFi
 - At valkenhof not sufficient WiFi coverage, even when patients are capable of videocalling
 - Complexity of devices → Do you need a phone with everything, or just a loan device with 1 (locked) app
- Logistics (of therapists)
 - Inspiration from home care
 - Can be more efficient without marktwerking
 - How long ambulant in order for videocalling to be time efficient
 - Polyclinical = transportation issues
 - Lack of staff/taxi drivers

- Preparing/practicing videocalling or app use while admitted (hospital or GRZ)
- Do patients want to go home? Are afraid to go home now (because of different skills)
- Toilet use/unplanned care
 - Nurses in the neighbourhood that can get a toilet 'alarm' via an app (since less nurses are needed at the admission)
- Finance
 - Right now not possible because of fixed structure, even when patient really wants to go home
- Big transition for patient
- Mindset/new way of working
 - Barrier for yourself to even start this
 - Getting used to new way of working
 - Psychology: Think it is difficult but can be done. Open to try
 - Building connection with patient
 - Social aspect (also contact with other patients). Especially without social network at home
 - GRZ shift to cognitive issues. Are we prepared for this?
 - Quickly switch to a standardized routine treatment
 - Maybe not needed to do this in person
 - Difference per discipline what the needs are
- Short stay at GRZ (1 week) then home
- Collaboration with entire network needed
 - Hospital, home care, insurance, etc
 - Collaboration with other care organizations --> sharing insights
 - Bad communication from hospital
 - Worse patient than communicated
- Collaboration with hospital
 - Different intake questions
 - Together assess patient for treatment possibilities (sample wise)
- Connection to home care
 - Calling home care to see what patient needs
- Awareness of available devices/solutions/initiatives
 - Lack of good examples
 - Start with easy target group, set good example. Gives confidence
 - Easy to focus maybe on first-line patients that get geriatric doctor rather than rehabilitation patients
- Societal expectation management
 - Awareness also of patient's social network
 - Family can sometimes work de-stimulating
 - Government, municipality
 - Preparation for being old

Quotes/notes

“Dan lopen ze in de oefenzaal en ze lopen naar die gangen mooi alles gelijkvloers, lekker en gladde vloer, heerlijk en thuis liggen al die matjes. Dan denk ik ga dat nou eens gewoon thuis oefenen. Dus er valt wel heel veel voor te zeggen om het thuis te doen.”

Had an initiative during COVID, in which they got money to purchase tablets for remote care. Barely used it and didn't work because it was pushed/forced from the top without any preparation.

Occupational therapy already wants to see the home

Psychology: “Voor mijn discipline, psychologie, de helft van de vragen die hier zijn, gaan over acceptatie van hoe het nu is en moeite met dat ze niet naar huis kunnen, dus. Ja, wat heb ik nodig, denk ik dat er heel veel wegvalt. een andere rol van adviezen aan andere disciplines van hoe ga je met de cliënt om of zo van? Wat heeft deze cliënt nodig in de benadering? Maar dan ben. Je niet perse, dan hoef ik niet naar perse naar de cliënt toe.”

“When I talk to my colleagues about this, 9 times out of 10 the answer is ‘that won’t work because ...’ But this will happen in the future, so we have to start somewhere”

- Question: hospital decides discharge 1 day before, so not possible to come over 3 days before discharge
 - Maybe don't have to do it themselves but need way better communication
 - Fysio in hospital now needs a lot of time to transfer knowledge
 - Access to EPD
 - More extensive EPD
 - Everyone has 1 dossier of all care, client following patient record
 - Hospital gives notice: this patient just came in. Day 1 give estimation of what patient needs
- Why clinical admission as a start
 - Just convenience for us
 - Does that make a patient happy? I don't think so
 - Polyclinical might add value, can sometimes do more here
 - Future: only admission for patients with cognitive issues
- Toilet use
- MDO before discharge with the disciplines, is everyone ready, what do you need. Treatment disciplines and home care
- Home care
 - Maybe even have rehab specialized home care --> complete team
 - After rehab, patient is transferred to regular home care
 - Less competition, quick connection. No organizational problems or interests
 - Rehabilitation mindset for home care workers. Big difference
 - Super short connections, same dossier
- Marktwerving
 - Everyone competes about the same thing
 - All have different ways of communicating
- After intake
 - What does patient need. Mobility history
 - Depending on discipline what you can offer
- Ideally: When patient needs help, have a camera or device to watch them, give advice
 - Zorg op afstand inspiration card
- Personal trainer
 - Cheap worker
 - Via videocalling supervised by physiotherapist
- Homework exercises through video
- Elderly more digitally capable in the future, so that is not a problem
- More independent exercises
 - Ways to ensure safety (which is why we don't dare to do it now)
 - Might need to let go forced because of a lack of staff
- Extension of therapy
 - 3x per week contactmoments (first ambulatory, later maybe polyclinical)
 - Rehab van that picks up patients and brings them to facility
 - Taxi is always a problem
 - Or rehab truck including aids and training devices
 - Pulley, loopbrug
 - Hometrainer for loan
 - Next to that, every day digital home exercises
 - Instruct partner to help
 - Unsuitable home
 - Rent shower units
 - Neighbours/family
 - Alternative location: holiday home
 - That is not the goal, you want them to recover at home

- Nobody will pay for that
- More prevention
 - Adjust home
 - Prepare for aging
 - People are already getting more aware
 - Government campaign, age friendly homes
 - Lots of resistance
 - Has to be societal culture change -> if you need care, your home needs to be adjusted. We will take care of you but then you need to arrange these things
 - People buying a home now should already make it age friendly
 - The parents of those people were not able to do that, so we help them anyway
 - Bathroom sellers: no small showers offered
 - People never think they are old
- We could take a business approach and say, we don't take this patient because we cannot offer proper care. We are too kind right now (for example with obese patients as well, some organizations do not offer them care)
- Make a plan of who and what you need
 - 1 Plan to get to implementation of home rehabilitation
 - 1 Plan what that home rehabilitation would look like
 - Finance part

Quotes/notes

“De vraag is of we dan nog een thuiszorgmedewerker hebben maargoed.” “Ja maar het ging niet over wat niet kan maar wat wel kan!”

“We moeten het heft in eigen handen nemen. Als we nou moeten afwachten tot hun zeggen we gaan het zo doen, dan gaat dat weer niet in ons voordeel werken.”

We are the experts on the rehabilitation, not the first line physio or the hospital.

“Ik denk dat we over 10 jaar een hele andere werkdag hebben dan dat we vandaag de dag hebben. Daar ben ik van overtuigd. Dus als je dan toch zelf mag bedenken hoe die eruit gaat zien.”

Zeker op het gebied van ergo: Bij sommige dingen Heb je Voor je gevoel zoiets van ik wil er fysiek bij zijn, maar je kunt natuurlijk ook gewoon heel veel digitaal oppakken.

Leuk om eens te kijken naar het ideale plaatje, dat is misschien niet altijd realistisch natuurlijk, maar wat zouden we nou echt willen, dat is wel leuk om dat een keer te bedenken.

Maar wel heel leuk om eens zo buiten de gebaande paden na te denken. Dat is toch wel leuk om dat een keer te bedenken.

APPENDIX F - APPROVED ERB FORM



Ethical Review Form Education (Version 17.07.2020)

This Ethical Review Form should be completed for every research study that involves human participants or personally identifiable data. The form should be submitted and approved by your supervisor before potential participants are approached to take part in the research study.

Part 1: General Study Information		
1	Student name and email	Yvonne van Hamersveld, y.m.v.hamersveld@student.tue.nl
2	Supervisor name and email	Lu Yuan, Y.Lu@tue.nl
3	Degree Program	Industrial Design
4	Bachelor/master	Master
5	Bachelor/master end project?	Yes
6	Course name and code	DEM220 Final Master Project
7	Project title	Geriatric Rehabilitation: Designing a new geriatric care pathway to move care home where possible
8	Research location	Online, in person
9	Research period (start/end date)	19/09/2022 – 12/01/2023
10	[If Applicable] Proposal already approved by (external) Ethical Review Board: Add name, date of approval, and contact details of the ERB	N.A.
11	Research question	How do we prevent 65+ers who just had surgery from going to a revalidation department when they can recover safely and completely at home (with the right social/technical support)?
12	Description of the research method	<p>Interview questions about:</p> <ul style="list-style-type: none"> - Patient journey in rehabilitation care and the involved stakeholders. - Decision-making process and in/exclusion criteria for home care vs admission. - Biggest opportunities for more home care - Barriers and issues involved with transferring rehab care to the home situation. <p>Ideas/inspiration/co-creation about home care (individual or in focus groups)</p> <p>Giving feedback on prototypes (concept & experience) by experiencing and trying out prototypes from different levels of fidelity.</p> <p>Observation during prototype testing.</p> <p>Questionnaire/survey (such as System Usability Scale)</p>

1



Ethical Review Form

13	Description of the research population, in- and exclusion criteria	<ol style="list-style-type: none"> 1. Geriatrics hospital staff (MMC, maybe Catharina hospital) 2. GRZ staff (Vitalis, Valkenhof, Oktober) 3. Home care staff (exact organization still t.b.d.) 4. Municipality staff (WMO)
14	Number of participants	5 - 15
15	Explain why the research is socially important.	<p>Over the last years, it has become more prominent that population aging is becoming a big challenge. The United Nations wrote in a report in 2019 on world population prospects that "the proportion of older persons in the world is projected to reach nearly 12 per cent in 2030, 16 per cent in 2050 and it could reach nearly 23 per cent by 2100" (United Nations, Department of Economic and Social Affairs, Population Division, 2019, pp. 18). The problem however, is that an aging population effects the potential support ratio, which the UN defines as the number of working age people (25-64 years) per person over 65 years. The expectation is that by 2050, "48 countries, mostly in Europe, Northern America, Eastern Asia or South-Eastern Asia, are expected to have potential support ratios below two." (United Nations, Department of Economic and Social Affairs, Population Division, 2019, pp. 20) Because of this, combined with the already existing lack of staff within healthcare, the pressure on healthcare workers is expected to keep increasing over the next years.</p> <p>Next to reducing workload for healthcare workers, there are also clear benefits in home recovery for elderly, when compared to admission in a care home, as admission to a care facility can lead to a significant decline in capability to perform basic Activities of Daily Living (ADL; Covinsky et al., 2003; Hirsch et al., 1990).</p>
16	Describe the way participants will be recruited	Through the different stakeholders within the Precies organization
17	Provide a brief statement of the risks you expect for the participants or others involved in the research and explain. Take into consideration any personal data you may gather and privacy issues.	<p>This study involves minimal risk for the participants. Participants can stop at any point if they do not feel comfortable. Participants will be asked for consent before the start of the study and can choose whether they give consent for audio recording or taking pictures/video recordings for reporting purposes. The audio recordings will be deleted after transcription, and the pictures/video recordings will be anonymized if preferred by the participants.</p> <p>The collected data will be stored on TU/e servers and no other people can access except the researcher involved in the research. All collected data from the research will be saved separately from the participant information in a file which cannot be traced back to the interviewed individuals. In the final report, only the data related to the study will be discussed but not any personal info that can traced back to the participants.</p>

2

Ethical Review Form

Part 2: Checklist for Minimal Risk		
	Yes	No
<p>1 Does the study have a medical scientific research question or claim (see definition below)</p> <p><i>Medical/scientific research is research which is carried out with the aim of finding answers to a question in the field of illness and health (etiology, pathogenesis, signs/symptoms, diagnosis, prevention, outcome or treatment of illness), by systematically collecting and analysing data. The research is carried out with the intention of contributing to medical knowledge which can also be applied to populations outside of the direct research population.</i></p>	<input type="checkbox"/> If yes or maybe: Your supervisor should submit the study to the ERB. You cannot get automatic ethical approval	<input checked="" type="checkbox"/> If no: Continue with question 2
<p>2 Does the study involve human material (such as surgery waste material derived from non-commercial organizations such as hospitals)?</p>	<input type="checkbox"/> If yes or maybe: This is only allowed if your supervisor has consulted with the medical coordinator. Continue with question 3	<input checked="" type="checkbox"/> If no: Continue with question 3
<p>3 Will the participants give their explicit consent – on a voluntary basis – either digitally or on paper? Or have they given consent in the past for the purpose of education or for re-use in line with the current research question?</p>	<input checked="" type="checkbox"/> If yes: Continue with question 4	<input type="checkbox"/> If no: Your supervisor should submit the study to the ERB. You cannot get automatic ethical approval
<p>4 Will the study involve discussion or collection of personal data? (e.g. name, address, phone number, email address, IP address, BSN number, location data) or will the study collect and store videos, pictures, or other identifiable data of human subjects?</p>	<input checked="" type="checkbox"/> If yes: The handling, storing and de-identification of the personal data should be discussed with your supervisor. Continue with question 5 if you met all requirements for handling personal data (see ...)	<input type="checkbox"/> If no: Continue with question 5

Ethical Review Form

		Yes	No
5	Does the study involve participants who are particularly vulnerable or unable to give informed consent? (e.g. children, people with learning difficulties, patients, people receiving counselling, people living in care or nursing homes, people recruited through self-help groups)?	<input type="checkbox"/> If yes: Your supervisor should submit the study to the ERB. You cannot get automatic ethical approval	<input checked="" type="checkbox"/> If no: Continue with question 6
6	May the research procedure cause harm or discomfort to the participant in any way? (e.g. causing pain or more than mild discomfort, stress, or anxiety)	<input type="checkbox"/> If yes: Your supervisor should submit the study to the ERB. You cannot get automatic ethical approval	<input checked="" type="checkbox"/> If no: Continue with question 7
7	Will the participants receive any compensation for their participation? Such as a coupon or a chance to win a prize?	<input type="checkbox"/> If yes: Your supervisor should submit the study to the ERB. You cannot get automatic ethical approval	<input checked="" type="checkbox"/> If no: Continue with question 8 or 10, depending on the type of study (see red text below)
<p>The following questions 8-9 are for <i>observational</i> research (e.g. (semi-)structured interviews; focus groups; (participatory) observations). If your research is <i>experimental</i>, then skip questions 8-9 and continue with question 10</p>			
8	Will it be necessary for participants to take part in the study without their knowledge and consent at the time? (e.g. covert observation of people)?	<input type="checkbox"/> If yes: This is only allowed when observing behavior in public space. If so, continue with question 9. If you observe people in non-public space without their consent, your supervisor should submit the study to the ERB. You cannot get automatic ethical approval	<input checked="" type="checkbox"/> If no: Continue with question 9
9	Will participants be asked to discuss or report sexual experiences, religion, alcohol or drug use, or suicidal thoughts, or other topics that are highly personal or intimate?	<input type="checkbox"/> If yes: Your supervisor should submit the study to the ERB. You cannot get automatic ethical approval	<input checked="" type="checkbox"/> If no: Continue with part 3

Ethical Review Form

The following questions 10-13 are for <i>experimental</i> research (e.g. measurements on yourself or another person; testing a prototype/device; influencing behavior through manipulation (e.g. light or temperature)). If your research is <i>observational</i> , then skip questions 10-13 and continue with part 3		
	Yes	No
10	<input type="checkbox"/> If yes: Your supervisor should submit the study to the ERB. You cannot get automatic ethical approval	<input checked="" type="checkbox"/> If no: Continue with question 11
11	<input type="checkbox"/> If yes or maybe: Your supervisor should submit the study to the ERB. You cannot get automatic ethical approval	<input checked="" type="checkbox"/> If no: Continue with question 12
12	<input type="checkbox"/> If yes: This is only allowed if they are completely harmless. They should have a harmless voltage of <5V and hazardous waste (fumes/gas/substances) should not be released. You should discuss with your supervisor whether you need to have the device tested for safety	<input checked="" type="checkbox"/> If no: Continue with question 13
13	<input type="checkbox"/> If yes: This is only allowed if they are completely harmless. They should have a harmless voltage of <5V and hazardous waste (fumes/gas/substances) should not be released. You should discuss with your supervisor whether you need to have the device tested for safety	<input checked="" type="checkbox"/> If no: Continue with part 3

Ethical Review Form Education

(Version 17.07.2020)

This Ethical Review Form should be completed for every research study that involves human participants or personally identifiable data. The form should be submitted and approved by your supervisor before potential participants are approached to take part in the research study.

Part 1: General Study Information		
1	Student name and email	Yvonne van Hamersveld, y.m.v.hamersveld@student.tue.nl
2	Supervisor name and email	Lu Yuan, Y.Lu@tue.nl
3	Degree Program	Industrial Design
4	Bachelor/master	Master
5	Bachelor/master end project?	Yes
6	Course name and code	DEM220 Final Master Project
7	Project title	Geriatric Rehabilitation: Designing a new geriatric care pathway to move care home where possible
8	Research location	Online, in person
9	Research period (start/end date)	19/09/2022 – 12/01/2023
10	[If Applicable] Proposal already approved by (external) Ethical Review Board: Add name, date of approval, and contact details of the ERB	N.A.
11	Research question	How do we prevent 65+ers who just had surgery from going to a revalidation department when they can recover safely and completely at home (with the right social/technical support)?
12	Description of the research method	Interview questions about: <ul style="list-style-type: none"> - X Patient journey in rehabilitation care and the involved stakeholders. - Decision-making process and in/exclusion criteria for home care vs admission. - Biggest opportunities for more home care - Barriers and issues involved with transferring rehab care to the home situation. X Ideas/inspiration/co-creation about home care (individual or in focus groups) Giving feedback on prototypes (concept & experience) by experiencing and trying out prototypes from different levels of fidelity. Observation during prototype testing. Questionnaire/survey (such as System Usability Scale)

Ethical Review Form Education
(Version 17.07.2020)

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APPENDIX G - CONSENT FORM TEMPLATES



Informed consent form

This document gives you information about the interview, which is a part of a design project carried out within the Inclusive Design & Thoughtful Technology squad at Department of Industrial Design of the Eindhoven University of Technology. The student conducting this research is Yvonne van Hamersveld. Before we begin, it is important that you learn about the procedure followed throughout the interview and that you give your informed consent for voluntary participation. Please read this document carefully.

The main research question of this design project is: How do we prevent 65+ers who just had surgery from going to a revalidation department when they can recover safely and completely at home (with the right social/technical support)?

The goal of this interview is to gather insights on the current patient journey of GRZ patients, the decision-making process and the involved stakeholders. This will serve as inspiration for my design project focused on helping care professionals implement and/or create out-of-the-box solutions in order to let elderly rehabilitate at home where possible.

During the interview, I will ask questions about the current GRZ/ELV patient journey, as well as the decision-making process and the different stakeholders around the patient. I will also ask you to reflect on this process to see where the biggest possibility for transferring from GRZ admission to home care is, what the potential barriers for this are and how these challenges could potentially be tackled.

Your participation is completely voluntary. You can refuse to participate without giving any reasons and you can stop your participation at any time during the interview. Such decisions will have no negative consequences whatsoever.

The interview does not involve any risks or detrimental side effects.
The study will last approximately 30-60 minutes.

Confidentiality

We will not be sharing personal information about you to anyone outside of the research team. The information that we will disseminate from this interview will be used as inspiration for my design project focused on helping care professionals implement and/or create out-of-the-box solutions in order to let elderly rehabilitate at home where possible. It will be completely anonymous, and it cannot be traced back to you. Only the researcher will know your identity.

To be able to perform thorough analyses in order to convey most of the information from the interview, the interview session can be audio recorded if you consent to this. If you do, the recording will be transcribed after the interview and the audio recording will be deleted immediately after transcribing.

If you are dissatisfied with how data privacy is handled, you can submit a complaint to the Chief Information & Security Officer, the Privacy & Security Officer and/or the Data Protection Officer of the Eindhoven University of Technology via privacy@tue.nl or contact the Dutch Data Protection Authority.

More information

If you want more information about the squad that this study is conducted for, you can contact my supervisor Lu Yuan (Y.Lui@tue.nl)

Certificate of Consent

I **do** give permission for my data to be used for the purpose of this research. I understand that this data will be processed anonymously.

I **do / do not** give permission to make audio recordings of the interview that will be deleted immediately after transcription.

I, (NAME)..... have read and understood this consent form and have been given the opportunity to ask questions. I agree to voluntarily participate in this research study carried out by the student conducting a design project carried out within the Inclusive Design & Thoughtful Technology squad at Department of Industrial Design of the Eindhoven University of Technology.

Participant's Signature

Date

Toestemmingsformulier

Dit document geeft u informatie over de brainstormsessie van vandaag, die onderdeel is van een ontwerpproject binnen de Inclusive Design & Thoughtful Technology werkgroep van de master Industrial Design aan de Technische Universiteit Eindhoven. De student die dit onderzoek uitvoert is Yvonne van Hamersveld. Voordat we beginnen is het belangrijk dat u informatie krijgt over de procedure tijdens de brainstormsessie, en dat u toestemming geeft voor vrijwillige deelname. Leest u dit document alstublieft goed door.

De belangrijkste onderzoeksvraag van dit ontwerpproject is: Hoe voorkomen we dat 65+ers die revalidatie nodig hebben, naar een revalidatiekliniek gaan terwijl zij veilig en volledig thuis kunnen revalideren (met de juiste sociale/technische ondersteuning)?

Het doel van deze brainstormsessie is om inzicht te krijgen in de mogelijkheden rondom GRZ thuis. Dit zal als inspiratie dienen voor mijn project, dat focust op hoe we ouderen meer thuis kunnen laten revalideren waar mogelijk, en wat we nog moeten doen om dit mogelijk te maken.

Tijdens de sessie zullen we ingaan op het revalidatietraject van een aantal patiënt persona's. We zullen het hebben over hoe we thuisrevalidatie kunnen faciliteren, en wat we daar nog voor nodig hebben. Ook zal het gaan over of en hoe onze manier van werken daardoor zal veranderen.

Uw deelname is volledig vrijwillig. U kunt deelname weigeren zonder opgaaft van redenen en u kunt uw deelname op elk moment tijdens de sessie stopzetten. Dergelijke beslissingen zullen geen enkele negatieve gevolgen hebben.

De brainstorm sessie brengt geen risico's of nadelige bijwerkingen met zich mee. Het onderzoek duurt ongeveer 2.5 uur (waarvan 0.5 uur pauze).

Vertrouwelijkheid

We zullen geen persoonlijke informatie over u delen met iemand buiten het onderzoeksteam. De informatie die we uit de sessie zullen halen, zal worden gebruikt als inspiratie voor mijn ontwerpproject gericht op het helpen van zorgprofessionals bij het implementeren en/of creëren van oplossingen om ouderen waar mogelijk thuis te laten revalideren. Het onderzoek zal volledig anoniem zijn en niet naar u te herleiden zijn. Alleen de onderzoeker kent uw identiteit.

Om grondige analyses te kunnen uitvoeren en om de meeste informatie uit de brainstorm over te brengen, wordt de audio tijdens de brainstorm opgenomen. De opname wordt na de sessie getranscribeerd (ulgetypt), geanonimiseerd en de audio-opname wordt onmiddellijk na het transcriberen verwijderd.

Om dit onderzoek te kunnen rapporteren, presenteren en promoten, worden er foto's en video's gemaakt die u kunnen identificeren. Onderaan dit formulier kunt u er voor kiezen om hier wel of geen toestemming voor te geven, of alleen wanneer deze foto's zoveel mogelijk geanonimiseerd worden door vervaging van het gezicht om het onherkenbaar te maken.

Indien u niet tevreden bent over de omgang met gegevensprivacy, kunt u een klacht indienen bij de Chief Information & Security Officer, de Privacy & Security Officer en/of de Data Protection Officer van de Technische Universiteit Eindhoven via privacy@tue.nl of contact opnemen met de Autoriteit Persoonsgegevens.

Meer informatie

Mocht u meer informatie willen over de onderzoeksgroep waar dit onderzoek onder valt, kunt u contact opnemen met mijn supervisor Lu Yuan (Y.Lu@tue.nl)

Certificaat van toestemming

Ik geef toestemming om mijn data te gebruiken voor het doel van dit onderzoek. Ik begrijp dat deze data anoniem verwerkt zal worden.

Ik geef ook toestemming om audio opnames te maken van de sessie, die onmiddellijk na geanonimiseerde transcriptie (uittypen) verwijderd zullen worden.

Geef je toestemming om **video** en **foto opnames** waarop jij te zien bent te maken tijdens de brainstorm, die voor promotie en verslaggeving van het project gebruikt zullen worden?

Ja Nee Alleen geanonimiseerd (geblurd)

Ik, (NAAM) heb dit toestemmingsformulier gelezen en begrepen en ben in de gelegenheid geweest om vragen te stellen. Ik stem ermee in vrijwillig deel te nemen aan dit onderzoek dat is uitgevoerd door de student die een ontwerpproject uitvoert binnen het team Inclusive Design & Thoughtful Technology van de master Industrial Design van de Technische Universiteit Eindhoven.

Handtekening participant

Datum

Contact me

 www.yvonnevanhamersveld.nl

 y.v.hamersveld@gmail.com