

MASTER'S THESIS

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Inter-Organizational Collaboration and Decision-Making in Cancer Rehabilitation and implementation of Digital Support Tools.

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Abstract

Background: Cancer has become the new common disease and more people than before survive. Patients in Norway are experiencing multiple challenges after ended cancer treatment and an increasing need for rehabilitation services. Multiple actors and Stakeholders across the cancer rehabilitation continuum are involved with collaboration and decision-making, but many of them are experiencing various types of barriers that prevents optimal cancer rehabilitation services. Existing resources and new digital technology need to be better utilized, structured, and strategized for in an inter-collaborating to provide right rehabilitation at the right time. **Objective:** The aim of this study was to explore barriers that prevent right cancer rehabilitation at the right time in relation to Stakeholders collaboration practices and clinical decision-making, to further facilitate practical and digital resources. **Methods:** The study applies a qualitative method conducting one focus group interview (n=3) with the Gatekeepers of The Regional Coordination and Assessment Unit and semi structured in-depth interviews with Norwegian Stakeholders (n=5), being a Cancer Coordinator (CCs), General Practitioners (GPs) and Oncologists. The data were analyzed using thematic analyses and discussed in the light of the theory of proximity in inter-organizational collaboration, as well as digital transformation. **Results:** The analysis revealed barriers and facilitators for improving cancer rehabilitation in three main themes: (1) “Stakeholders Collaboration “, (2) “Stakeholders decision-making” and (3) “Cancer Rehabilitation in a digital future”. Existing barriers were found in most dimensions of proximity, some more prominent than others. All Stakeholders expressed facilitators for improving inter-organizational collaboration and decision-making through a suggested new timeline/workflow and digital tool and strategies for future cancer rehabilitation. **Conclusion:** Stakeholders encounter multiple external and internal barriers in relation to most of the proximity dimensions. To ensure right rehabilitation at the right time, awareness of the different aspects of proximity and digital transformation strategies, existing and potential new services. **Implications for practice:** Multiple implications is needed in cancer rehabilitation practices through a change of existing timeline and workflow. This includes clearer roles and responsibilities among the Stakeholders, specific time for collaborating meeting- and checkpoints, increased utilization of multidisciplinary teams and functional assessments, as well as specific strategies for utilization of digital clinical decision-making tool to provide new value for the future cancer patient and cancer survivor.

Interorganisatorisk samarbeid og beslutningstaking i kreftrehabilitering og implementation av digitale støtteverktøy.

Bakgrunn: Kreft er blitt den nye vanlige folkesykdommen og flere pasienter enn før overlever. Pasienter i Norge opplever flere utfordringer etter avsluttet kreftbehandling og det er et økende behov for rehabiliteringstjenester. Flere interessenter på tvers av kreftrehabiliteringskontinuumet er involvert i samarbeid og beslutningstaking, men mange av dem opplever ulike typer samarbeidsbarrierer. Innovative ressurser og ny digital teknologi må utnyttes, struktureres og strategier må legges for et bedre i et samarbeid for å gi pasientene rett rehabilitering til rett tid. **Hensikt:** Målet med denne studien var å utforske barrierer som hindrer riktig kreftrehabilitering til rett tid i forhold til interessenters samarbeidspraksis og kliniske beslutningsprosesser, for ytterligere å legge til rette for praktiske og digitale ressurser og verktøy. **Metode:** Studien anvender en kvalitativ metode med ett fokusgruppeintervju (n=3) med portvokterne ved Regional samhandlings- og vurderingsenhet, samt semistrukturerte dybdeintervjuer med norske interessenter (n=5), kreftkoordinator, allmennlege og onkolog. Dataene ble analysert ved hjelp av tematiske analyser og diskutert i lys av teorien om nærhet i de forskjellige dimensjonene av interorganisatorisk samarbeid, samt rammeverket og domenene innen digital transformasjon. **Resultat:** Analysen avdekket nærhetsbarrierer og behov for tilrettelegging innen kreftrehabilitering på tre hovedområder: (1) Interessenters Samarbeidspraksis, (2) Interessenters beslutningsprosesser og (3) Kreftrehabilitering i en digital framtid. Eksisterende barrierer ble funnet i de fleste dimensjoner av nærhet, noen mer fremtredende enn andre. Alle interessenter uttrykte tilretteleggere for å forbedre interorganisatorisk samarbeid og beslutningstaking gjennom en foreslått ny tidslinje / arbeidsflyt og digitalt verktøy og strategier for fremtidig kreftrehabilitering. **Konklusjon:** Interessenter møter flere eksterne og interne barrierer i forhold til de fleste nærhetsdimensjonene. For å sikre riktig rehabilitering til rett tid, må bevissthet økes innen de ulike aspektene ved nærhet og digitale transformasjonsstrategier må utarbeides for å bedre eksisterende og nye tjenester innen kreftrehabilitering. **Implikasjoner for praksis:** Spesifikke endringer innen kreftrehabiliteringspraksis bør gjennomføres i forhold til eksisterende tidslinje og arbeidsflyt. Dette inkluderer tydeligere roller og ansvar, tydelige samarbeidsmøte og sjekkpunkter, samt økt utnyttelse av tverrfaglige team og funksjonsvurderinger. I tillegg legges spesifikke strategier for bruk av kliniske digitale beslutningsverktøy for å gi ny verdi for fremtidens kreftpasienter og kreftoverlevende.

Preface

This master's thesis is associated with the innovative and collaborating project CaReScreen, which is a clinical decision support system for cancer rehabilitation. The innovative idea of CaReScreen is to create a future eco system for cancer rehabilitation consisting of a clinical support system, new rehabilitation services and new service models. This master`s thesis is the first phase of CaReScreen with a focus on stakeholder mapping, workflow, and potential barriers in current cancer rehabilitation.

My curiosity for the project was initiated by my role, both as a middle manager and clinician at a large regional hospital within public healthcare services. As the author of this master's thesis and a student at the Nord Universities' MBA program with specialization in Innovation and Digitalization, I would like to thank fellow students, teachers and my advisor Lars Hovdan Molden at the Nord University, colleagues at St. Olav's Hospital, and Kari Sand, project partner and leader at SINTEF Digital, department of health, as well as Harald Engan, project manager at Unicare.

To be a part of this innovative, collaborating and team of high knowledge and ambition to change cancer rehabilitation for the better has been a pleasure. I hope to get the chance to be a part of this exciting CaReScreen project through the next phases as well.

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1. Introduction

“Cancer rehabilitation services are underutilized, and the system for cancer rehabilitation is often fragmented and poorly developed” (CaReScreen, 2021)

In the next decade we will see a rapid increase in new cancer diagnoses, as well as cancer survivors worldwide. In Norway, one in three will develop cancer before the age of 75, and 36 998 new cancer cases were registered in 2021. Although mortality is declining, survival is increasing. Studies show that between 40 and 60 % of cancer patients need rehabilitation and continue to have rehabilitation needs (Cancer in Norway 2019). An increasing number of cancer patients experience side effects of the disease and treatment and have a great need for further follow-up and rehabilitation. Rehabilitation after cancer aims to give cancer patients the opportunity to return to everyday life as quickly as possible, as well as help to deal with changes resulting from the disease and undergone treatment (Stout NL, 2021). Many of these patients describe and experience the heavy burden of the disease and complex challenges. It is critical that cancer patients and survivors with rehabilitation needs are referred appropriately to rehabilitation services to ensure the greatest possible outcome for the individual. Appropriate rehabilitation referral is also cost-effective and can reduce future potential financial burden both directly and indirectly.

Despite apparent improvement in cancer rehabilitation services, literature suggests unanswered questions and challenges. These challenges include lack of appropriate referrals, lack of patient awareness of available services, lack of guideline-based referral thresholds, and lack of inconsistent routines for evaluation patient function. These are some of the issues facing current oncology care and practice (Pergolotti M, 2019). National and international literature shows a demand for standardized tools, that can be routinely used for functional assessments and decision-making in cancer patients' care. These tools could be beneficial from the time of diagnosis and across the care continuum, with special focus on Rehabilitation needs (CaReScreen, 2021). New digital tools and standardized processes used in healthcare have increased in the last decades and could further be a contribution in referral processes and collaboration between all involved actors and Stakeholders. Digital technologies are challenging us to think differently about how we understand and create value for our "customers". As described in the digital transformation playbook by Rogers, five key domains need to be considered and strategized for. This being customers, competition, data, innovation, and value (Rogers, 2016).

On the initiative of a private rehabilitation agency, in collaboration with public healthcare, the Norwegian Cancer Society, as well as educational and research institutions, the innovative idea of CaReScreen is being developed. CaReScreen is a digital clinical decision support system for cancer rehabilitation meant to optimize the referral processes. Also, an innovative project that possibly will contribute to creating new rehabilitation services and models (Unicare.no, 2022). As a part of the overall CaReScreen project, my study includes the first phase of creating a knowledge base for the innovation process and will focus on Gatekeepers and Stakeholders mapping, collaboration, decision-making and workflow to further assess specific barriers in today's rehabilitation processes and services.

During my MBA studies, with an emphasis in innovation and digitalization, the theories of proximity and inter-organizational collaboration, as well as a framework for digital strategies for change became very prominent. The concept of various dimensions of proximity will be used to describe inter-organizational collaboration, potential barriers, and future possibilities. The proximity concept has relevance to existing barriers in relation to the various dimensions, while Healthcare services call for innovation and possible digital tool and strategies, to be able to provide right rehabilitation services at the right time. Through this study I want to explore which barriers exist in Stakeholders collaboration and decision-making and what can further optimize resources and needed changes in cancer rehabilitation services through digital support tools.

The study will be empirically driven, based on qualitative methods. I have chosen an inductive step by step method inspired by elements from Phenomenology and Grounded theory to utilize and guide the specific themes for the study, to further collect and generate codes and categories. I have conducted one focus group interview and five in-depth semi-structured interviews of Gatekeepers and various Stakeholders selected based on their role in cancer rehabilitation with special focus on decision-making, functional assessments, and referrals. A Regional Assessment and Coordination Unit, General Practitioners (GPs), Oncologists in a hospital setting, and Cancer Coordinators (CCs) were all Stakeholders included. Patients and the various Rehabilitation Service providers were not included in this study but are of the most importance and will be included in another phase of the overall CaReScreen project.

2. Theoretical framework

2.1. Selected theoretical perspectives

The theoretical contributions that will help me in answering the research question is the theory of Inter-collaboration proximity in various dimensions and the framework of domains in digital transformation. Since the overall CaReScreen project is innovative and based on collaboration between public and private sector, municipalities, research, and professional organizations, as well as developing new digital platforms for rehabilitation services these theoretical perspectives were relevant. I have chosen the theory of Proximity and Inter-Organizational Collaboration because I believe the various perspectives and different dimensions will shed light on the aim of this study and complement each other when barriers and future strategies will be addressed. Rogers' conceptual and practical framework of Digital Transformation will be used to give predictions and tools in various domains for a digital future in cancer rehabilitation.

2.2. Seven dimensions of proximity and inter-organizational collaboration

“Inter-Organizational Collaboration (IOC) is an important emerging concept in several fields of science, for example in innovation studies, organizational science and regional science” (Knoben & Oerlemans, 2006, s. 71).

It has been argued that proximity may be a crucial driver to connect and exchange knowledge. On the other side, also argued that too much proximity in one or more dimensions could harm innovative performance and cooperation (Broekel, 2012). Keeping some distance in any of the various proximity dimensions could stimulate new ideas and intensity of knowledge exchange between network partners. Not so much the quantity, but more the intensity and quality of proximity that matters.

In literature multiple articles have been written about the impact of proximity in the main dimension on innovation and knowledge creation. The article of Proximity and Innovation by Boschma raises questions around if geographical proximity still plays an important role in interactive intervention processes and if too much proximity could have a negative effect on innovation. (Boschma, 2005). Nevertheless, the proximity concept in general can provide an important structured overview and pre-condition for knowledge sharing, knowledge transfer and technology acquisition (Gertler, 1995).

The concept distinguishes mainly between geographical, organizational, and technological proximity, but also contains other forms of proximity like institutional, cultural, social, cognitive, and technological as well (Knoben & Oerlemans, 2006). Regarding healthcare and this specific study based on the complexity and multiple levels and Stakeholders involved, all forms of proximity are relevant for understanding how various aspects of collaboration influence each other and what can be done for the improvement of IOC.

In literature **Geographical proximity** is denoted as territorial, spatial, local, or physical proximity. This proximity influences other types of proximity in multiple ways, but it also increases the likelihood of more direct cooperation and knowledge exchange between two or more actors. Boschma argues that geographical proximity must always be assessed and seen in relation to the other dimensions, by strengthening the others to facilitate interactive learning (Boschma, 2005). He also refers to the problem of Lock-in, which can have a negative effect on innovation through too much proximity. This could be seen as a lack of flexibility and openness to change and new ideas. The suggested ways to solve this challenge is to offer openness to the outside, while ensuring flexibility and some control to enable change and new ideas. To facilitate exchange of information and knowledge between organizations, distance is important. Increased evidence shows that too much local linkage could decrease innovative performance and abilities in an organization (Broekel et al., 2010). However, it is important in IOC to acknowledge that small geographical face-to-face interactions, both planned and serendipitous, has a huge benefit for knowledge transfer, as well as innovation (Knoben & Oerlemans, 2006).

In this specific study geographical dimension is used to increase understanding based on all the collaborating actors and parts, levels and all the various physical locations the Stakeholders operate and function. Since CaReScreen is an innovative idea involving so many partners this dimension is important in both Stakeholder mapping and collaboration.

As a broad definition of **Organizational proximity** Torre explains as interactions between actors that share the same sets of beliefs and system of representation facilitated by rules and routines (Torre, 2005). Organizational proximity also focusses on structural equivalence of actors, whether firms belong to the same network (Knoben & Oerlemans, 2006). Distinction can be made between inter-organizational and intra-organizational proximity, whereas the first is similarities internally within the same organization and the

other is more like memberships and network of various similar organizations. This form of proximity is seen as a prerequisite for dyadic and collective learning and in the joint creation of added resources and innovation (Kirat, 1999). This in a twofold way to exchange information and knowledge which could be challenging between profit- and non-profit organizations, as well as between public and private institutions and healthcare providers. Also this Organizational dimension relates to this study based on the need for both inter- and intra-organizational collaboration among the partners and actors.

Further, pattern thoughts, feelings, behaviors that are publicly shared and expected within a group can be described as **Cultural proximity**. It has been argued that when organizational culture is similar the interaction coworkers and collaboration partners and results in projects become better (Knoben & Oerlemans, 2006) . The literature review of proximity in IOC argues that “*when focusing on IOC, cultural proximity at the organizational level is overlapping with the conceptualization of organizational proximity*” (Knoben & Oerlemans, 2006, s. 76). With similar organizational cultures one should think that routines, reflections, and interpretations should call for smoother, easier, and more agreeable interactions between collaborating actors. It is argued that culture determines and sets the standards for an institution, but with a fast and rapid change in healthcare, with increased effectiveness and economic pressure, various backgrounds and cultures become more involved and might challenge this initial belief. Further, rules, procedures and norms set the overall standard for IOC. **Institutional proximity** is strongly interrelated to cultural proximity and influences how knowledge is shared and transferred based on procedures and norms. Institutions have and can experience structural constraints such as political, economic, and formal rules. These norms and routines influence ICO and “*the level of similarity of the norms and routines between organizations determines the level of institutional proximity at the organizational level*” (Knoben & Oerlemans, 2006, s. 76). This is very relevant in public healthcare where set procedures, pathways and regulations are prominent and based on the notion of equal opportunity and principles of fairness and justice in the Norwegian social system.

With a similar frame of reference, communication and the transfer of old and new knowledge is more efficient and definitive more effective. This is referred to as **Cognitive proximity**. “*Commonly defined as the similarities in the way actors perceive, interpret, understand and evaluate the world*” (Knoben & Oerlemans, 2006, s. 77). Also referred to as a relational attribute for groups of colleagues, people that work in the same field, despite

geographical distances. In the healthcare field one might have the notion of healthcare workers with the same attributes, values and norms facilitate optimal interactions and collaboration. Since this relates to knowledge transfer, this is closely related to organizational proximity and the context of this study. At a more micro level of interaction and relation between actors' social dimensions are of the essence. **Social proximity** refers to friendship and kinship as an important role and level of trust for knowledge transfer (Boschma, 2005). This can influence the exchange of knowledge in a good or bad way. Shared history and sense of belonging on one side, "old boys network" and "free rides" on the other (Broekel T. B., 2012).

Finally **Technological Proximity** is relevant and of the essence in this study based on "*Technology can be defined as those tools, devices, and knowledge that mediate between input and outputs and/or create new products or services*" (Knoben & Oerlemans, 2006, s. 77). Proximity on the other side refers to the knowledge each actor possesses about these technologies, and not so much the technologies themselves. Considering collaboration and a dyadic level, technological proximity might depend on the source and comparable knowledge bases. In this study and specialized healthcare different specialized knowledge bases can both utilize effective new knowledge, but also challenge generalized knowledge and prevent innovation.

In this study collaborating actors, agents, units, in this case Stakeholder, needs to have and show some similarities and proximity in their knowledge base to motivate, recognize and initiate opportunities, but also, they need to be different enough to contribute and innovate new knowledge in relation to the IOC. The proximity paradox introduced and argued, is that proximity is the initial force for connection and knowledge exchange between organizational, both profit and non-profit, too much proximity might not be only positive for innovative performance (Boschma & Fenkel, 2010).

As an illustration of the various dimensions of proximity that is relevant for Inter Collaborating Organizations Figure 1 below show relevance in this study as well as provide background for 3 propositions in theory for discussion later.

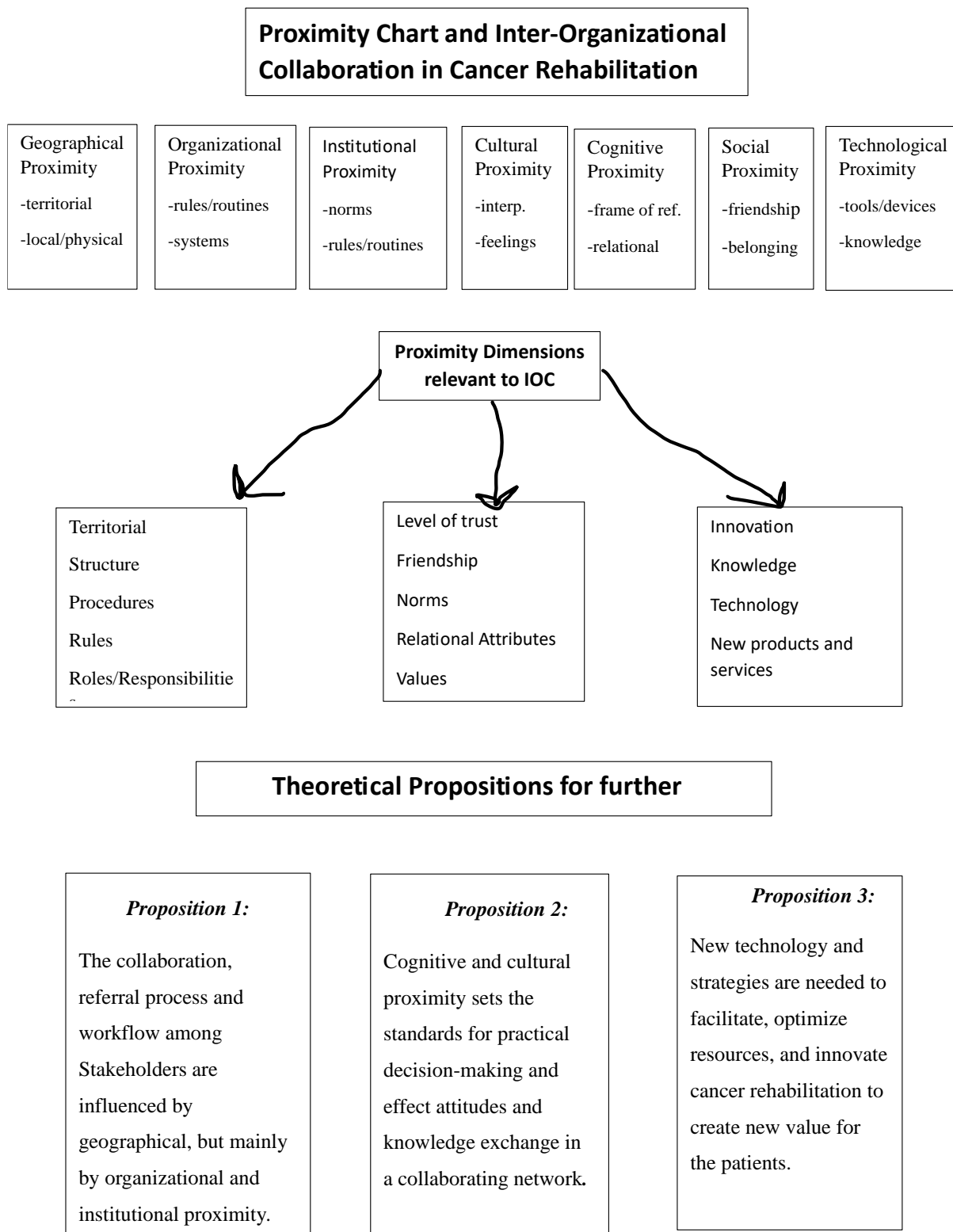


Figure 1 Proximity Dimensions relevant to IOC

Based on the concept of Absorptive Capacity (AC) Cohen and Levinthal refers to this as the ability of a firm to recognize, assimilate and apply value of new knowledge in a commercial way and as a function of the firm's ability to utilize prior knowledge (Cohen & Levinthal, 1990). AC is relevant in relation to technological learning and knowledge transfer in processes when firms acquire and plan for introducing new technologies and underlying managerial and organizational processes might change (Tidd & Bessant 2021). New knowledge, digital changes and innovative technologies are needed to create new values for the cancer patient. Five domains of digital transformation and possible strategic assumptions will be described and discussed further below.

2.3. Five domains of digital transformation

The conceptual and practical framework of Digital Transformation Rogers gives a theoretical understanding of the concept and shows how traditional organizations and operations must think differently and strategize for change. For any organization to alter potential barriers, plan for and experience innovative change, new technologies and other innovative ideas need to be addressed. As Roger expresses «*Digital technologies are also transforming the way that businesses innovate*» (Rogers, 2016, s. 5).

New technologies and service models force all businesses, both public and private healthcare services, to think differently about providing and creating real value for customers, which in this case is patients. Digital technologies forces change in aspects of an operation and business processes. These changes reshape five key domains being customers, competitors, data, innovation, and values, to further challenge the strategic assumptions in each of these domains. The concept has significance for the overall CaReScreen project and this study to be successful. A better understanding of digital processes and implementation is essential for further developing and strategizing for actions in the digital playing field. Management, organizational structures, and workflows will be affected, and new challenges and barriers might arise. Therefore it remains to be seen how new digital tools and technological systems are challenging and changing these domains. Digital technologies can create new value for our patients, as well as change how we connect with them. This conceptual and practical framework mainly refers to economics and profits in business but is still important and relevant to consider in the context of healthcare services.

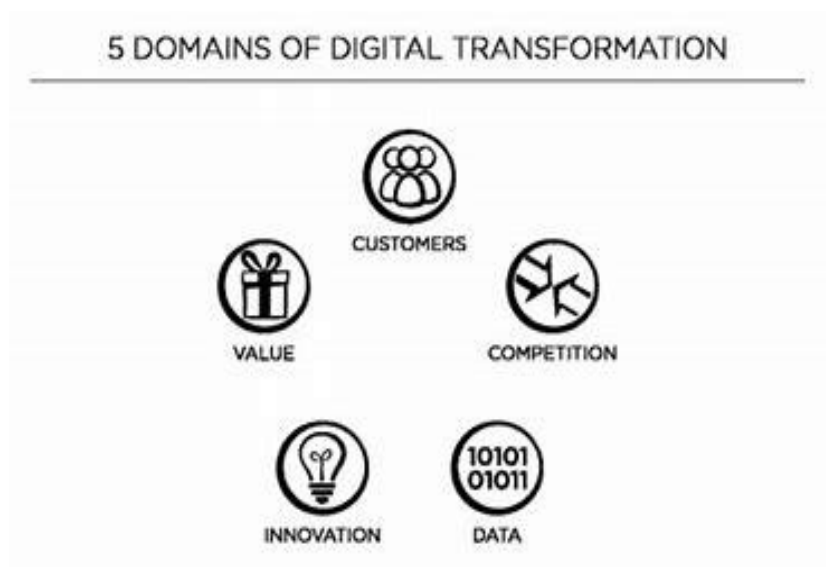


Figure 2 Five Domains of digital Transformation

In this study **Customers** will be referred to as patients. Patients are the dynamic participant that become a critical driver of success. Although I have decided to not include the patient perspective in this study, it is important and crucial to always recognize the patient as the main customer and end user of value. According to Rogers, the customer traditionally is seen as the main actor of marketing. Mass marketing and production are based on all people being connected, continually influenced, and shaping business reputation and brands. (Rogers, 2016). Customers are now more dynamically connected, and the interaction changes their relationship to a more network-based relation. *“There use of digital tools is changing how they discover, evaluate, purchase, and use products and how they share, interact, and stay connected with brands”* (Rogers, 2016, s. 6). Customer networks can be described as focus groups, as well as an innovation partner. Based on this, a business should rethink and change their traditional paths of services, including both public and private healthcare and various cancer associations.

In the healthcare field, **Competition** will be referred to as collaborating actors, partners, stakeholders, and network. They all will define how businesses compete and cooperate with each other. Competition and cooperation can be seen closely related and an asset in relation to increased cooperation with chain partners. One can argue that there is some competition between public and private healthcare providers in the field. The distinction between rivals and partners could be confusing and less defined, but it is definitive a

competition aspect between various private service providers that “fights” for the same national or regional bid. In the overall CaReScreen projects actors from all fields come together and try to cooperate inter and intra organizational to provide new services and a new value proposition for the cancer patient. Rogers refers to a world of fluid industry boundaries, and that the biggest challenge may be the asymmetric competitors, on the outside of the main industry. He also refers to the value of customer being similar between “rivals”, digital technologies can be used to power common platform business models.

In digital Technologies the **Data**, referred to as “*how businesses produce, manage, and utilize information*” (Rogers, 2016, s. 8), is of great value. Traditionally the data has been used for forecasting, evaluating and decision -making. “Big data” can unlock new sources of value. “*Data is a vital part of how every business operate, differentiates itself in the market, and generate new value*” (Rogers, 2016, s. 9). Data is generated constantly whether we like it or not. Unstructured data can become valuable information that can be a key asset to again create value and optimize processes. Rapid testing of ideas and concepts is becoming easier, and results are being provided faster. Problems can be solved cheaper and continually along the cancer continuum. A challenge could be when testing and implementation of new ideas happens faster than ever, are we in an innovative perspective solving the right problem?

Rogers goes on to define **Innovation** as: “*the process by which new ideas are developed, tested, and brought to the market by businesses*” (Rogers, 2016, s. 9). Digital technology today can make this faster and easier than traditionally because new ideas, new products as well as new services can be developed through a growth process. This saves both cost and time, improves organizational knowledge and learning, as well as possibly the value proposition. The book *Managing Innovation* refers to fundamental factors that characterize successful enterprises and entrepreneurship as “a potent mixture of vision, passion, energy, enthusiasm, insight, judgement and plain hard work, which enables good ideas to become reality” (Tidd & Bessant, 2021, s. 9). Healthcare workers and services had not traditionally been the most innovative field, but multiple changes in the field and an increased population of cancer survivors’ public hospitals and rehabilitation service providers is being “forced” to become more innovative and look for other sources of value.

The value a business delivers to its customer is referred to as the **Value Proposition**. The value proposition is traditionally believed to be, in some degree, clear and constant, but in the digital age “relying on an unchanging value proposition is inviting challenge and eventual

disruption to new competitors” (Rogers, 2016, s. 10). Patients need changes in treatment and rehabilitation and then new opportunities for value will be uncovered. The purpose and reason for innovating is mostly to create some kind of value, for themselves or other, preferably both. According to history multiple companies innovated successfully at a technical level but failed in delivering true value for their customers (Tidd & Bassent, 2021). Therefore, it is of the essence to carefully look at all the aspects and domains to strategize for change. Adaptation to a shift in the business environment as well as staying ahead, before a business must change and adapt, is extremely important. When a business relies on an unchanging value proposition it could mean life or death for that business. Changes in Strategic Assumptions refers to a core strategic theme for each domain described earlier. This is emphasized by Roger’s illustration of “Shift in Strategic Assumptions” illustrated below.



Figure 3 Shifts in strategic assumptions

Harnessing customer network, building platforms, turning data into assets, innovate by rapid experimentation, as well as adapting the value proposition are all key elements and needs to be strategizes for to be able to move from an analog to a more digital organization or network of collaborating Stakeholders.

3. Method

3.1. The research design and chosen methods

I have chosen a qualitative explorative method for this study, that brings out nuances and details, but the major overarching lines are concreted and defined. Because of possible nuances in healthcare and with informants with varies roles and perspective, the data collection was done early in the project period, so theory and specific perspectives could be adjusted based on the specific points of interest in the empirical data and analysis.

Initially, a notification was submitted to Norwegian Centre for Research Data (NSD) for a privacy protection review. A literature search was done to investigate and acquire an overview of existing articles, research, and theoretical framework, based on the aim and research questions where done. This, both empirical and theoretical research literature.

The search for appropriate national and international literature was done mainly in PubMed and Oria with search words like cancer rehabilitation, decision-making, multidisciplinary assessment, stakeholder, cancer coordinators, oncology, proximity, proximity in healthcare and digitalization in cancer rehabilitation. Multiple articles were found in relation to proximity, but none in relation the healthcare. Also, articles about cancer rehabilitation and both national and international guidelines and pathways were found, but c. In addition, literature previously used in my MBA degree in subjects like Innovation, Change Management and Digitalization were utilized.

The method for this study is based on Phenomenology and Tjora's Stepwise-deductive inductive method (SDI). Phenomenology is a philosophy and method that focuses mainly on the starting point and objects of the study where the main consciousness is on the phenomena at hand. This is relevant in the field of sociology and how members of society make sense of relational interactions in the world which we collaborate (Tjora, 2021). In the use of a qualitative method based on Phenomena, in depth interviews are prominent because researchers wish to get the interview subject to describe his or her experiences in from a specific field, how things are the way they are and why. Further, Tjora's step-by-step approach provides method of taking these described experiences from raw data to concepts, and potential theory development. The upward process can be described as inductive, where the researcher handles the data, and toward a theory. This method also works downward and links back in a deductive way to check and provide insight from theory back to the empirical

perspective. The method and model use 6 checkpoints and tests in the deductive backlinks process. These being tests of theory, concept, groupings, codes data and selection. Furthermore, the connection between recipe-related and reflected part processes is important in the empirical data, in relation to the problem in relation to the theoretical framework. The fact that the model is "step by step avoids premature conclusions" (Tjora, 2021, p. 217). Intrigue and credibility as a researcher in a field where I am very involved on several levels and may possibly be affected during the process in different ways.

This method is relevant to me because of the systematic and specific progress that it provides, as well as the sensitivity of qualitative research and my own tight connection to the field of study. This method also provides quality assurance as well as a clear dissemination av qualitative presentation. An important part of the analysis itself is the potential of this model. It reduces complexity and increases structure and understanding.

The actual data processing and analysis through transcription and coding is illustrated below (Tjora, 2021, p. 21).

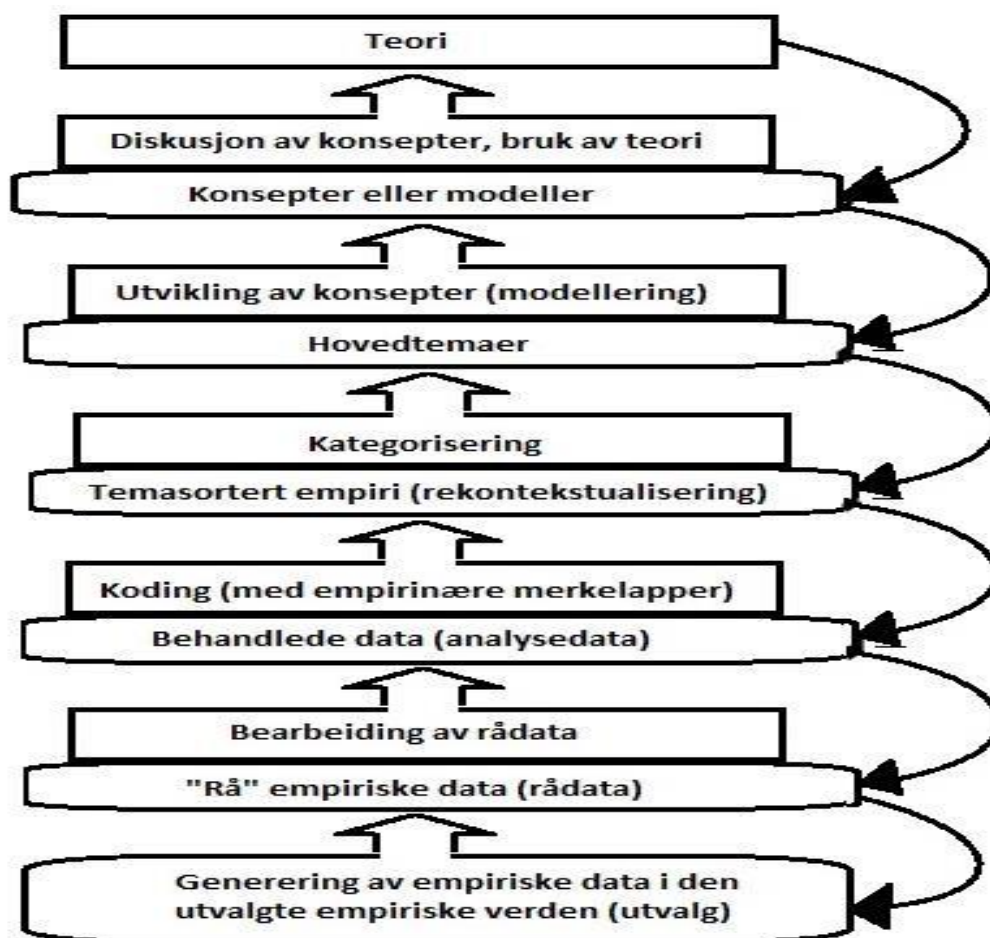


Figure 4 Stepwise-deductive inductive method (SDI)

The data selection based on this method was divided into two parts. First, I conducted a targeted focus group interview with an important Gatekeeper and agency in cancer rehabilitation, then I did five individual semi-structured interviews with a selected group of Actors and Stakeholder. To further concretize the interview guide, it is important and useful to know the Gatekeeper agency is commissioned by the National Health Directory, and they have an overview of, and provide information about, public and private d rehabilitation services in the Central Norwegian Health Region.

Also, they assess all referrals from GPs and Oncologists to private rehabilitation institutions that have an agreement with the regional health authority. This agency could also elucidate and concretize the further process in relation to relevant interview subjects, as well as contribute to the selection, breadth, and scope of relevant informants, which they did.

The actual interview guide consists of 6 open, reflective questions. Questions about the informant's role and responsibilities in cancer rehabilitation, referral practice, decision-making, patient needs, and assessment were asked. The interview also addresses current barriers and suggestions where digitalization and needs for change is concerned. An outline of the Interview guide is presented in Appendix 1. My role as the interviewer varied somewhat depending on the type of interview, the role of the subject, as well as their initial knowledge base. The first focus group interviews, my role was more of a facilitator regarding the somewhat open-ended questions. I also had the opportunity to discuss and explore current feedback and responses in more depth.

3.2. The aim and defining research objectives

Based on the background and special interest for the field and theoretical perspectives the aim of this study is: *Which barriers prevent right cancer rehabilitation at the right time in Stakeholders Collaboration and clinical decision-making, and what can further facilitate practical and digital resources?*

To answer this question, following research questions and propositions will be addressed in this study:

- What influences Collaboration and potential barriers among Stakeholders in cancer rehabilitation?
- What are the Gatekeepers and Stakeholders attitudes, knowledge, and ideas towards using a digital screening tool for referrals and decision-making.
- What new technologies and strategies are needed to optimize innovative resources in cancer rehabilitation to create new value for the patients?

To be able to answer these research questions, the following must be defined:

Concepts	Definitions
Stakeholder	"A stakeholder is a person or organization that may influence or be influenced by a cause for concern" (Wikipedia, 2022). In this study the focus is on Stakeholder and Gatekeepers, which in this case are primary doctors, specialist/oncologists mainly, but will also add perspectives from Cancer Coordinator and the agency/team responsible for approving private rehabilitation. Patients, their families nor specific rehabilitation service providers will not be included in this study.
Gatekeepers	"A gatekeeper is a person who controls access to something, for example via a city gate or bouncer, or more abstractly, controls who is granted access to a category or status" (Wikipedia, 2022).
Referrer	"Formal request for another health professional body to investigate or treat the patient's health problem" (Back, 2022).
Referral	Not able to find a definition, but a referrer is a noun and relates to the person that writes and sends the referral.
Workload	"Sequence of work operations" (eStudie, 2022). Quinn describes the goal and the best, most optimal workflow, as the "subjective experience each individual feels like they're performing at their best" (Quinn, 2005:1).
Collaboration	"The situation of two or more people working together to create or achieve the same thing" (www. dictionary. cambridge.org, 2023).

Figure 5 Concepts and Definitions

3.3. Data and informant selection

My selection of informants was mainly based on the complexity and variety of multiple partners and actors in the overall CaReScreen study. After Stakeholder mapping, specific informants were chosen most relevant to my field and aim, which was collaboration, practical workflow, and decision-making among the so-called Gatekeepers of the Stakeholders.

Based on the literature for selection methods, a strategic sample based on saturation and breadth according to the diverse types of Stakeholders was chosen. Initially a group focus interview with the main Gatekeeper agency was done. Further, I used a so called “snowball” effect after initially selecting informants based on their involvement in the rehabilitation referral process directly or indirectly. These informants being General Practitioners (GP), Oncologists and cancer coordinators (CCs). Recruiting interview subjects was somewhat challenging based on their heavy workload, pressure, and time constraints, but the informants that participated were very motivated and wanted to contribute.

Selection of interview subjects and stakeholders:

- 1 focus group interview (3 pcs) gatekeeper, incl. follow-up questions by e-mail and making documents like guidelines, statistics, checklists etc. available.
- 4 in-depth interviews with 2 General Practitioners (GPs) and 2 Oncologists/specialist with responsibility for referrals to cancer rehabilitation. Selected from two different hospitals, one large regional and one smaller local hospital. GPs are selected based upon their length of experience. One GP had extra ordinary responsibility as an expert, selected for developing a new inter-organizational digital documentation platform for both the hospitals, GP as well as the various municipalities in the region.
- 1 In-depth interview with Cancer Coordinator (CC) from a large municipality in the country.

These informants will further be referred to as CCs, GPs, and Oncologists in the chapter of findings for practical and anonymization purposes. In the elimination process, I have chosen to not include other important mapped Stakeholders. These being the agency that sets the standards and oversees the bids and process of funding private providers, the private rehabilitation service providers themselves, as well as the patients and their relatives/families. All these Stakeholders are important in the overall CaReScreen project and will be assessed and studied by other og myself later.

3.4. Coding and categorization

The goal of the coding process according to Tjora has three parts. First to extract the essence of the empirical material, second to reduce the volume of the material, and lastly to facilitate idea generation on the basis of the empirical details (Tjora, 2021). “By cultivating inductive empirical coding, it is possible to reaffirm the influence of expectations and theories that any researcher will more or less explicitly bring into the analysis” (Tjora, 2021, s. 218).

Based on *Figure 4 Stepwise-deductive inductive method (SDI)* I initially started to sort through empirical raw data transcriptions and searched for various codes and markers, which could be words, phrases, sentences, or paragraphs visualized in *Figure 6 Overview of Codes and Categories* in the section Findings and results. According to the first step I started with Processing of raw data, the first interview, then the second and so forth searching for same and additional codes. This way I analyses each individual interview and generated a running list of codes. By the last interview a list of codes was generated inductively based on the analyzed raw data.

Second, these codes were assessed and based on their characteristics and consequence for grouping purposes. These codes became a potential source to generate future ideas rooted in the empiric data and based on theory, hypothesis nor research questions or through the interview guide. “*A set of codes that could only have been generated from within the empire and not in advance, and which accurately reproduces a detail from empirical data, is good coding within the SDI framework*” (Tjora, 2021, s. 225).

Thirdly, the connection between the codes and the data analyzed is called the Code structured empire and formed the starting point for the next step, which was grouping the codes. Nearly 50 codes were selected and grouped together into five categories and themes. Based on the aim of this study 3 main themes were selected, while other two, also very important, will not be addressed further in this study. As a part of the overall CaReScreen project the other two will be addressed later. *Figure 6 Overview of Codes and Categories* will show an overview of the different codes and categories found and selected.

3.5. The quality of the study

In qualitative research it is important and should be an underline goal that the transfer value is high, and that generalization always is considered. Also, in qualitative research, Tjora states that the quality criteria can be described as credibility, verifiability, and transferability, but on the basis that general research uses the concepts' reliability, validity, and generalizability (Tjora, 2021).

Based on this study, potential findings can be **generalized** in relation to those actual Stakeholders interview, as well as their knowledge based on the cancer rehabilitation process as well as the patient needs as a group. The SDI model contributes and has precisely the relevance beyond what is investigated as a goal, so I hope that the two extra quality steps that Tjora describes as transparency and reflexivity are a strength to this study (Tjora, 2021) . These terms underline the generalizability of the study as the findings valid for more than the specific Stakeholders interviewed. This relates to my study since a goal was to explore each Stakeholders' experiences of specific barriers in a deeper way, but also since many of the Stakeholder are experiencing the same challenges and barriers. One can differentiate between on one side a moderate generalization or a conceptual generalization. Tjora defines moderate generalization as the researcher description of a situations and contexts, while conceptual on the other side where the concepts or theories has relevance for other cases than those specifically studied. Even though I could only examine a small sample of Stakeholders, I believe that any findings are both reliable and can be generalization. Generalization between other mapped Stakeholders as moderate since it describes situations in each context that the different Stakeholder operate in, while conceptual generalization relates more to the Cancer rehabilitation process compared to other diagnosis and processes. The transfer value to other parts of the country, other Stakeholders and actors along the cancer rehabilitation continuum is unknown since they might experience different challenges in collaboration and decision-making in cancer rehabilitation based on proximity in the various dimensions.

The validity and reliability were prominent in all parts of this study based on the specific requirements of the SDI-model as well as how the coding is generated through the empirical data, for later making relevance of the theoretical in the abductive stage of the study. Direct and indirect questions about the quality should be raised against the research question and not against the findings on an ongoing basis. Validity deals with the relationship between the research and the context and is tied to whether the research findings in my study answer the questions asked. The SDI-model assists in this through the sets of requirements for

data generations as well as criteria for coding and analysis of the empiric findings (Tjora, 2021).

Findings are in a logical context and have a relevance outside the specific arena and location studied. I base this on the fact that the two hospitals, regional and local, studied represent similar organizations and context other places in the country. The study also reflects Stakeholder surroundings and context as in a referrer role which is relevant for the entire CaReScreen project.

Regarding reliability, which looks at the connection between the empirical data itself, the theory, and the analysis of the findings, the use of the SDI model contributes to increased reliability. This relates to the connections internally in the processes due to the structured and clear requirements of the model. This step-based model contributes to quality assurance based on the empiric formation, to the analytical and theoretical steps. In addition, transparency in the whole process through each step is of the essence and has been provided.

A weakness of this study and the qualitative research in general is the vulnerability to select and present findings and quotations. Therefore, I have used multiple quotations from the various informants. One challenge could be that the interviews were conducted in Norwegian, and the presentations of the quotes and findings are in English. Some translational adaptations have been made to increase understanding and adaptability in the translation process. Another weakness that could affect reliability could be the fact that I already knew two of the informants before I conducted the interviews. I had a professional relationship as colleagues with each of these informants. This could influence the outcome, but also had a positive effect in relation that the trust already was present and more in-depth answers became present.

3.6. Ethical research guidelines

An informed consent and Request for participation in the research project was made and presented to all the interview subjects, which they read and signed according to Appendix 2.

My own role as a researcher has been exciting, motivating, and at the same time challenging. The challenge was due to being a part of a larger overall project in which all parts were of interest, so containing and specifying my own aim for this part of the study was sometime difficult. Also, in view of my close connection to the field as a therapist, that assess patients and recommend rehabilitation services on behalf of my profession. In addition, I have a genuine desire to contribute to improving cancer rehabilitation services, which includes improving organizational structures, change processes and shed light on the basis for decision-making. The choices we all make on behalf of the patients are of immense importance, which we should not take lightly. Furthermore, my experience and knowledge in relation to the topics discussed could have some influence on the process and data collection in various ways. This can both be a strength and a weakness. The fact that I am very aware of my role, hopefully, will not affect the outcome. Rather looking at my experiences as strengths for better understanding, reflecting, and connecting, as well as building trust with the informants. This is to get a more comprehensive and exact picture of the relevant research questions. The possibility that I unwillingly acquire my own experiences or ideas may be present, but awareness of this becomes crucial, and that the methodology and data analysis described earlier helps to elucidate the variations structured coding etc.

The existing weakness of my chosen design and method, may be that by using in-depth interviews, I can get subjective, personal and specific answers based on their specific motivation and focus at the time, and not their overall reflection on the specific question at hand. At the same time, it was important for me to get those unique nuances, personal and unproven answers, and reflections.

4. Findings and results

4.1. Introduction

Selected categories of the various barriers will further be addressed in these three Themes: **Stakeholders collaboration, stakeholders decision-making and cancer rehabilitation in digital future.**

One of the main Gatekeeper and Stakeholder, has the mandated role of approving private in-patient rehabilitation, in agreements with the National Directorate. This agency is responsible for accepting or rejecting an application and request for private cancer Rehabilitation from the General Practitioners (GPs) or the Oncologist on behalf of the patient. The agency itself states through the focus group interview *“Our responsibilities is based on what is expected from us and the National Guidelines, our decisions are grounded in Prioritizing of Referrals, as well as good discussions and evaluations in the interdisciplinary team, before we decide regarding if the patient has the right to private rehabilitation or not”*. As one of the Stakeholders and interview subject, the agency will both be referred to as a unit, and as individual participants.

The reasons for me choosing these themes were based on grouping of the various codes as well as the research questions and propositions in proximity theory. Each one of these three parts will include keywords and groupings relevant for each theme, as well as multiple citations and quotes from GPs, Oncologists and CCs. My reflections and gathering of important, general, and specific information will be done parallel.

Figure 6 Overview of Codes and Categories, presented below, illustrates the various codes and keywords and how they have been categorized into five Themes. Only three of these will be addressed further in this study but will be a part of other various studies in the overall CaReScen project.

Overview of codes and categories

Keywords /Codes	Categories	Stakeholders Collaboration	Stakeholders Decision-Making	Cancer Rehabilitation in a digital future.	Patients need	Mandate and rights
Position, Responsibilities Role Mandate Assessment team Statistics Norms		Responsibilities Roles	Statistics Assessment-team			Mandate
Referral Referrer The process. Assessment Note/summary Template/checklist		Referral Referrer The process	Note/ summary Template Checklist			
Right to health care In-vs out-patient Prioritization referrals Acceptance Refusal Letter of Rights Decisions Decision support Mission Benefits/trust		Accepted Rejected	Decisions and Decision - support Trust	Rights and benefits. In-patient vs outpatient	Benefits Trust	Right to healthcare Mission Letter og rights
Rehabilitation. Offer/Services Timing Timeline Workflow		Timing Timeline Workflow	Timing	Rehabilitation services New vs old Timing		
Mapping Interdisciplinarity Consultations Complexity Evaluation/assessment Knowledge		Mapping	Inter- disciplinary Knowledge Consultation Complexity Evaluation			
Patient Need Discharge summary			Discharge Summary		Patient Need	
Interaction Specialist health service GPs vs. Oncologists Cooperation Silo thinking Network National network		Interaction GPs vs Oncologist Cooperation/ Collaboration Network	GPs vs Oncologist	Specialized healthcare		
Checkpoints Meeting Timeline workflow			Checkpoints Meetings			
Digital Tools /technology Timing Services Package-Home process Rights Innovation			Digital Tools	Digital Tools Services Knowledge Innovation		Package-home. Rights

Figure 6 Overview of Codes and Categories

4.2. Stakeholder collaboration

4.2.1. Roles and responsibilities

Across the care continuum, especially with the focus on rehabilitation, the Stakeholders are experiencing somewhat unclear roles and responsibilities regarding rehabilitation, referrals, and functional assessments. Everyone expresses defined roles in the cancer treatment process, but their network collaboration and responsibilities in relation to rehabilitation varies.

The Cancer Coordinator (CC) represents the public and municipalities healthcare system and operates on multiple levels. The CCs have an important role on an individual patient level, a process level, as well as a system level. The system level includes being involved with developing policies and procedures. Also *“One of my tasks as CC is to run a resource network for cancer nurses in the municipality within Palliative care, which is a collaboration between the hospital and the municipality”*. The CC is experiencing a very demanding job, and what it is hard get everything done. *“What saves me as the cancer coordinator alone in a municipality of over 250 000 inhabitants, is having The Cancer Society, The Carin center and The Respite”*.

This relates to having an important role and responsibility in both inter organizational collaboration, as well as specific cancer rehabilitation in many ways and levels. The CCs motivate, advice and coordinates rehabilitation for the patients and multiple actors along the cancer care continuum.

One of the Oncologists at the regional hospital expresses, *“As an Oncologist and Senior MD we have the referral responsibility, but based on the initiative, if you understand me correctly.... there is none that says that I must refer to rehabilitation”*. *“The social mission is also to get the young cancer survivors back to life. Not only cure and treat, but back, as a resource in society”*. The oncologists are also experiencing that they easily could *“leave rehabilitation alone”* and focus just on treatment and give the patient *“fear for relapse”* all the attention. One of the Oncologists defines the responsibilities between the GP and Oncologist based on acute challenges. If the cancer symptoms are acute, it is the hospitals responsibility, while if the symptoms have developed into a chronic condition, it is the GPs responsibility to apply for rehabilitation services. He also verifies that their patients have easy access to the local hospital and the oncologists know their patients’ needs very well. They

have no challenges with sending a direct referral to the rehabilitation institution. *“My feeling is that the patients adjust and adapt their role to what they think is our focus, so it is up to us to set the standard and agenda for each consultation”*.

Common for all the interview subjects is that the organizational cancer pathway and workflow in general does not define when rehabilitation should be considered. It is unclear who is responsible for initiating, motivating, and referral to rehabilitation. Each institution, public or specialized healthcare are experiencing lacking norms and routines as well as challenges with information transfer between Stakeholders. These are all barriers that potentially could prevent patients from being referred to the right rehabilitation services.

4.2.2. Referrer and referrals

The ones responsible for writing and sending referrals for in-patient cancer rehabilitation to the Gatekeeper are mainly doctors, in this case both General Practitioners (GP) and Oncologists working in specialized healthcare at various hospitals. These referrers all express somewhat different experiences with the referral process in general. They express differences in workflow and collaboration on an organizational basis. Regarding whom has the main responsible for referring patients to rehabilitation, GPs, and Oncologist both expresses different views and understandings. The CCs do not write referrals, but they have an active role in informing both patients and healthcare providers about options and many times initiating rehabilitation through face-to-face conversation and counselling, as well as informing and recommending available rehabilitation services. The CCs impression is that *“The main group that refers patients to rehabilitation is the GPs, but quite a few of specialist also refers to cancer rehabilitation, larger share in relation to specific diagnosis.”*

One Oncologist states that they seldom experience patients taking initiative or requesting rehabilitation when they come for a consultation at the hospital. Initiating and addressing rehabilitation in the hospital consultations tends to be accidental and somewhat not routine. Further, it is up to the doctor’s ability to identify patient needs and motivate the patient for rehabilitation.

One of the GPs expresses *“Both parties have an important role in referring to cancer rehabilitation, both the specialist and the GP are important, but the specialist may have a little more narrowed focus, on the specific cancer diagnosis, or pain issue, while I have more the whole situation, the picture, the function, which the diagnosis says nothing about»*. The GPs also are experiencing that they *“refer patient to cancer rehabilitation, but not on a very*

large scale. Primary, it is experienced that the referral is mainly sent from the hospital, but some patients “fall between two stools” and no one really initiates rehabilitation. Another GP expresses that there might have been a shift in the last few years, where they feel like the expectations are that “It must be the GP that does the referrals”. He expresses this with good intention and for that to happen, there would be a need for a Self-Reporting form for the patient to fill out before being referred to rehabilitation. He also states that the GP naturally must be more involved in the rehabilitation process and do their own evaluation or functional assessment. Furthermore, he shows concern for becoming a “trash can and a mailbox” with a lot of unnecessary information from the patient or the collaborating parts. He feels that the GPs cannot be fully responsible for the referral process and assessments but can coordinate and make decisions. Not responsible for gathering all the necessary information but selecting and delegating. The GPs do some of that already, but he is concerned that this might be a “thief of time and information overload”. On the other hand, another GP expresses that it can be challenging to get and obtain all the information needed to be able to write a good referral. The discharge summary from the hospital could be used, but since the quality of those tends to vary, a description based on the patient’s own description is best, either orally, written in advance on paper or better yet digitally. According to own experience one of the GPs suggests a form of patient self-report of physical and mental function in relation to daily activity as well as a description of challenges and goals for these daily activities is essential.

These described challenges relate to norms, rules, and responsibilities as well as how organizations are structured according to workflow and timing for cancer rehabilitation and who makes the initiative. The fact that CCs, GPs and Oncologist’s are located at various physical locations and do not have the time or the opportunities for collaboration and communication is described as a challenge.

4.2.3. Accepted and rejected

After the GP or the Oncologist has motivated the patient and seen his/her rehabilitation potential, one of them refers the patient to specialized cancer rehabilitation if relevant. A specific referral is written and sent by paper in the regular mail system to the Gatekeeper agency for assessment. This referral can be accepted or rejected by the agency or later by the private rehabilitation institution themselves. The agency states that the statistics show per 2. tertial 2022 to have assessed 288 referrals to cancer rehabilitation whereas 80,6% got accepted and 19.4 % rejected, which is quite a bit lower than the total rejection rate of

34,2 % for all diagnoses. Referrals rejected are based on various conclusions and guidelines according to the Gatekeeper agency. The main barrier expressed by all the MDs participating in this study is getting rejected by private rehabilitation services and that becomes a huge frustration both for themselves and their patients. Even though they all understand the need for *“some form of control or advisement, it gets very demotivating when patients get rejected multiple times based upon a variety of reasons that sometimes the referring MD does not agree with”* according to one of the Oncologists. Another Oncologist says that *“yes, we have gotten rejected rehabilitation directly from the institution based on the patient being too sick, has to short life expectancy or that the services that they provide are not adequate”*. He or she also verifies that *“We get very few refusals, and I believe that is because we are Oncologists, specialists, we know the patient very well and we have a good reason to refer and apply for rehabilitation”*. On the other hand, another Oncologist has a different experience: *“When one gets refusal and denied private rehabilitation for our patients one and two times, it does something to our motivation.”* Motivation for both the referred and for the patient is affected by rejections.

GPs feel like the referrals more often get accepted from the Oncologist at the hospital than if it is sent directly from the GP. *“Maybe it must be like that since they have the patient in active treatment. They cannot transfer the rehabilitation job to the GP, and they cannot say, go to the GP and get a referral to cancer rehabilitation, especially if they are in an active cancer pathway.”* GPs also underline that if the patient has ended active treatment and after 6 months or so realizes the need for rehabilitation, then it is more natural GP task to apply and send a referral to private rehabilitation.

The observed differences between a local and a regional hospital is knowledge and routine contact between the patient and the same doctor or oncologist. The Oncologist at the smaller local hospital reports to know each of his or her patient's needs, therefore expresses a much easier process with writing a referral. He or she also very seldom experiences getting rejected rehabilitation. One Oncologist expresses having direct access to private rehabilitation clinics without having to go through the Gatekeepers. This shows variations in the workflow and cancer pathways, as well as some degree of flexibility and individual differences and preferences. This practice could be based on personal friendship and social connections as well as networking.

Even though both the GPs and Oncologists feel like the Gatekeepers have become stricter and respond with more refusals than they used to, the agency themselves express *“Cancer is a diagnostic group that we rarely reject on an initial referral”*. Also, they admit *“It might be a little tabu, but I sometime feel like, with a serious cancer diagnosis, we are a little more flexible and lenient with an incomplete referral in regard to guidelines and checklist according to other diagnosis and referrals”*. This could be culturally based, but also related to cognitive perspectives of how individual people perceive, interpret, and evaluate situations and overall context.

4.2.4. Timing and workflow

The timing, both when the rehabilitation needs are present, as well as when services are provided, seems to vary widely. All interview subjects express these two aspects as a challenge and barrier. The CC expresses *“My experience is that many receive rehabilitation services too early, or that it is a need for repetition again later on the cancer care continuum”*. She or he has gotten multiple feedback on the fact that the services provided at the time were too much and that the patient was not ready.

According to the Gatekeeper agency *“There are some patients who unfortunately have a shorter lifespan and expectancy less than 6 months, which is a deadline according to our guidelines”*. Other challenges expressed are reasons for rejections based on guidelines; *“The patient is still under active treatment, and it is too soon. The patient has been to in-patient rehabilitation earlier and had minimal effect or that they have a complex situation and cancer rehabilitation might not be what they really need”*.

All Interview subjects express that the specific cancer pathway based on the diagnosis, has an impact and is important for rehabilitation. Especially for cancer pathways that are well known and established, like for example Cancer Mamma. One Oncologist expresses that *“This group goes through a very tough treatment and has a huge need for rehabilitation. We refer most of these patients to inpatient private rehabilitation.”* Also, the Oncologist expresses those patients with less known diagnosis, like Colon cancer, which also goes through just as a tough treatment, are not referred to rehabilitation as often *“It's actually not very common for us to send these to rehab, don't really know why.”*

The GPs experiences often that *“the timing for rehabilitation is off”*. This specifically concerns various pain conditions, psychiatric disorders, as well as the level of functioning and

motivation. All have experienced patients receiving rehabilitation too early or too late, as well as needing rehabilitation multiple times at different stages.

In sum, specific organizational barriers for cancer rehabilitation regarding timing, workflow, and referral process can be problematic and challenging, as expressed by most of the Stakeholders. Multiple specific cancer diagnosis pathways exist, with the overall aim to ensure equal and timely treatment, but rehabilitation is not specifically included in these. Stakeholders refer to funding, bids, inter-communication, and collaboration between public and private as challenging. Stakeholders also identify other barriers as belonging a variety of health care organizations that are located far from each other, and experiencing variations in structure, procedures, roles, and responsibilities as well as timing for rehabilitation.

Like one of the interview subjects expresses: *“Really missing the main collaboration, it is not included. The Healthcare system is a bit like silo thinking”*.

4.3. Stakeholder decision-making

4.3.1. Decision-making

Tied with some overlap from Stakeholders collaboration, are specific decision-making on behalf of the patient. Multiple barriers are expressed by the interview subjects, this is both GPs and Oncologists. They are experiencing that decision making for rehabilitation can be somewhat accidental and based on a variety of conclusions. The GPs and the Oncologists each describe various ways of motivating and deciding on behalf of the patient. Also, doing a functional assessment for further to write a referral for rehabilitation could be challenging. They all express the challenge regarding writing the referral itself. Based on the guidelines and procedures, multiple barriers were described in relation to the functional assessment, description of needs, as well as writing an overall description of the patient.

4.3.2. Function and goals

One of the main barriers described by most of the GPs and Oncologist were both having enough time and knowledge to assess the patient needs and function. This is in relation to the existing requirements and guidelines. The specific information needed for the referral to be adequate and to prevent further rejections for private rehabilitation services. One of the Oncologists expresses, *“When the decision of making a referral is made, the challenge is to agree with the patient about goals and if specializes rehabilitation is the way to go”*. Also, the

same Oncologist is experiencing, *“It is difficult in a short period of time to describe the patient’s function and needs with the minimal information that I have at the time given”*.

On the other side, another oncologist expresses: *“All of the doctors at our outpatient hospital clinic communicate and apply to cancer rehabilitation the same way. My impression is that it is very simple and creates no problems. We just send the referral, dictate the journal note, write an assessment regarding the patient wishes and goals, and then sends it straight to the private institution or to our own rehabilitation unit.”* Based on this it could seem like the culture, cognitive knowledge, as well as institutional differences exists.

The GPs say that they are the ones that sit on that important information, the whole picture and have an overview of the patient’s needs. The challenge is the complexity of functional assessments done timely. Functional assessment done by others than the GP and Oncologist was suggested. Nurses or the multidisciplinary team could be more involved and assist in the assessment process and goal setting.

4.3.3. Multidisciplinary teams and meeting points

All subjects express *“the possible need for a multidisciplinary specialized rehabilitation team at the hospitals. This with at continuous follow-up in the municipality, under the care of the specialist.”* Suggestions were made by both GPs and Oncologist that *“Also, possibly a short consultation one or another place during the process, to decide what is the real need of the patient to check the complexity, so more patients could get a better adapted rehabilitation service.”*

The Gatekeeper agency expresses the need that *“We should have some form of mapping, assessment, according to unclear objectives, this either before or after the time of referral”*. The team reflected together if the new “late effect “outpatient clinic at the regional hospital could have the responsibility for this mapping and multidisciplinary assessment function. All agree that there is a need for routine, physical or digital meetings points. This is for various reasons, but one of the GPs is experiencing *“It is important that the GPs and Oncologist communicate, because we work very differently and have different perspectives of that the patient needs are”*. Another GP says, *“the optimal would be a multidisciplinary meeting as part of the specific pathway for that cancer diagnosis. This to ensure and clarify responsibilities and roles, as well as I, as a GP, could share the long-term perspective, personality traits to ensure the right decision-making”*.

On the other side one of the Oncologists expresses a concern: *“Terrified of the type of multidisciplinary meetings, because it's a time thief.”* Periodically meeting points with a clear agenda, structure where knowledge transfer is the main goal is suggested. Knowledge on how to improve collaboration in multidisciplinary teams to increase assistance in functional assessments and clinical decision making.

4.3.4. Functional assessment and a clinical support tool

All interview subjects expressed some responsibility, not only for introducing the possibility for rehabilitation, but also for motivating and making the “right” decision on behalf of their patients. Also, they all express that it is challenging and difficult to make a good functional assessment and a referral based on the specific guidelines and checklist required. Especially when they have a hectic day and maximum 20 min per consultation. Practical clinical tools for decision making would benefit the referrer and the patient in the long run. The interview subject expresses some concerns, but newer the less, some of them had various suggestions in relation to a potential digital decision-making tool should be. The Oncologist at the Regional hospital has a wish for various “tools” robust enough to sort challenges in all areas of life. A tool *“That can assess the big picture, the great span”*.

With an underlying wish to contribute based on their set of values, feelings of not being able to assist and do what is best for the patient, they all saw the need for a clinical decision support tool. With the use of their relational attributes and attitudes towards improving the exchange of information with their colleagues and network.

4.4. Cancer Rehabilitation and strategic ideas for a digital future

4.4.1. Cancer rehabilitation services

There are multiple rehabilitation services available for the cancer patient and according to the CCs *“It have been optimal if everyone who wants it, could get rehabilitation”*, but by the same token *“I have talked to so many patients and seen how their life has become after cancer treatment and thought that the rehabilitation services available are not optimal”*. One barrier all the Stakeholders expressed was that the total overview of all the rehabilitation services, both public and private, specialized and in the municipality is lacking. All Oncologists admit that they do not have an overview of all the cancer rehabilitation services that exist. They know about the one specific private inpatient rehabilitation institution where patients go and stay for multiple weeks, but that one has a very long wait. One response where *“I’m experiencing very coincidental and randomly, hearing a little here and there. This especially*

in relation to the local municipal services." One Oncologist express "I'm trying my best, based on specific criteria, but I have to say I've made some good judgements. It feels like a big commitment to motivate patients for specialized rehabilitation. You also must know if the patients' needs are being met in the different rehabilitation programs". Also "This specific challenge was discussed, which patients should go to outpatient, and which ones should go to inpatient rehabilitation." Another Oncologist states:" I could have had the pleasure of knowing which local public services exist. Is there something that my patients can utilize and is there an uncovered need for a type of service that jet do not exists?"

One of the GPs explains that he often goes to specific websites to see what is available in the private sector. He also must search and assess the web for what is available in the public sector. Both can change periodically and reports; *"That's a bit confusing is figuring out, is what services are available at any given time. It changes, with bids and such"*. At other times, he must depend on the gatekeeper agency to give recommendations on what is available and suitable at the time.

The agency themselves responds, *"When we wonder if the specific institutions have the services requested, we can call to discuss with the admissions team what they offer. That is a bit of collaboration"*. They also report *"We have talked a little about it. Are there any services in the municipalities for these cancer patients, or is the services more general in what is offered?"* The CCs seem to be the ones that have the best overview of existing services, and they express the need for new services more adapted to the patient's specific needs. This is based on new and existing knowledge, as well as the development of new products and services in an innovative perspective.

4.4.2. Digital future

The CC, GPs and most of the Oncologist expressed positivity towards possible digital assessment tools. One says, *“I think this is the future, this is coming more and more. What can be negative in relation to this?”*. While another says, *“I am for digitalization. I think that any of papers and forms that you must send here, there, and everywhere takes too long and are at a higher risk for getting lost”*. One of the Oncologists specifies that *“A digital tool will have to identify high risk patients and flag their needs for a specific rehabilitation service. I service that we might even not have today”*. On the other side one of the Oncologist at the small local hospital expresses *“We do not need any special tool or digital assessment. Everything works fine for us”*. Further he says *“We do not refer or send patient we do not know. It is not like someone tumbles into my office and wants rehabilitation. This may happen at the GPs, where there is less continuity”*. This shows a diversity in experienced barriers and needs.

Some of the suggestions from the GPs, is a multidimensional tool, where the patient writes and fills out a standardized assessment, and the doctor does his or her part of the assessment. The GPs suggest that a link could be sent to the patient when they book an appointment, but not before as others have suggested. The tools could possibly be accessible through the National Health web site, but the GP must give access to each individual patient as needed, for not to create information overload. The CC expresses that a digital tool must include various disciplines *“If you make such a tool, it must be very multidisciplinary. Yes, you must look at the totalities because that's what these patients need”*.

In sum, alle Stakeholders are experiencing barriers in relation to the existing cancer rehabilitation services. First and foremost, they do not have a complete overview of that exists, and they are experiencing a gap of services missing. Digital assessment and decision-making tools could improve knowledge transfer and new technologies could provide multidisciplinary assessments and different values in the future. Implementing innovative technical solutions and digital tools requires strategic changes in all domains. How we network and marked services to patients, cooperate with our partners, generate valuable data and information, solve and validate problems, as well as change the value proposition based on changing patient's needs.

5. Discussion

Proposition 1: The collaboration, referral process and workflow among Stakeholders are influenced by geographical, but mainly by organizational and institutional proximity.

Multiple barriers were found in this study among most Stakeholders related to Geographical Proximity. This is based on a wide variety of locations where Stakeholders work and operate, no set formal and informal meeting points for collaboration, nor points for decision-making on the rehabilitation timeline and workflow process. Theory argues that constant and continual geographical proximity might not be needed, but rather temporal or only in certain phases, could be just as efficient, especially in innovative collaboration processes. Findings show that geographical proximity initially could be a driver for knowledge network, but through a new timeline and workflow temporal geographical proximity is sufficient. Collaboration barriers seem to be rooted mostly in too little Organizational and Institutional proximity. This is based on Stakeholder mutual understanding, values, and a common belief system as a base, but mostly collaboration barriers between GPs and Oncologist, in relation to roles, responsibilities, and routines. The overall workflow shows the need for increased organizational proximity in network collaboration. Stakeholders showed the same sets of standards through following a specific set rules and procedures, so this study calls for high institutional proximity, that influences common procedures, workflow, and decision-making. These external barriers described in relation to geographical, organizational, and institutional proximity can be improved by facilitating and implementing an altered timeline and workflow specified for cancer rehabilitation.

Proposition 2: Cognitive and cultural proximity is the basis for practical decision-making and affects attitudes and knowledge exchange in a collaborating network.

All the dimensions of cognitive, social, and cultural proximity affect the expressed barriers of the Stakeholders. Laws, norms, and standards guide, but also constrain, each Stakeholders` decision-making. Cognitive proximity based on shared routines, culture, norms, and values, has been shown to facilitate interaction between Stakeholders, but also keeping some cognitive distance, willing or unwillingly, seems also important. Too cognitively similar could weaken the collaborating and competitive advantages in relation to network partners as seen in the small local hospital as well as the same GPs office. Although these dimensions

show overlapping and interrelated elements with both organizational and institutional proximity, they are setting the standards for how Stakeholders reflect and interpretate knowledge for decision-making.

In an innovative perspective, this study of Stakeholders in a network of actors with somewhat the same set of beliefs and values, create and add collective resources as well as a collaboration baseline. Each Stakeholders expressed thoughts, feelings and behaviors influence how each one formally interacts, and with the same frame of reference and knowledge base they all give new value to the patient. They also must consider and respond to the same formal laws and norms, which in a way forces them to collaborate as a network for the best of the patient.

Based on the contexts, frame of reference and field of healthcare, the findings show how the various dimensions of proximity affect each other and have an influence on the inter-organizational collaboration (IOC). Some proximity seemed to be required for knowledge networks to connect and have a positive effect on innovative performance. The level of trust and friendship with a high social proximity could be convenient and helpful to get processes started and get favors, but also harmful for innovative ideas or performance and lead to “old boys network” and “free rides” as seen in the small local hospital.

In sum, all the various Stakeholders and Gatekeepers must cooperate internally within their respective unit, as well as externally with their collaborating partners and network regarding timelines, workflow, guidelines, and checkpoints for rehabilitation. With so many involved parts, barriers get prominent and influence each Stakeholder's daily work and outcome of the collaboration. This again influences the patient in a positive or negative way. New knowledge and new technology are of the essence. The possible knowledge gap, expressed by the collaborating Stakeholders needs to be bridged. The study shows that collaboration, network, and various Stakeholders practice can both harm and facilitate innovative processes.

Proposition 3: New technology and strategies are needed to facilitate, optimize resources, and innovate cancer rehabilitation to create new value for patients.

When Technological Proximity is concerned, a shared technological experience is very relevant in this study. Almost all the Stakeholders realize the importance and see the potential for new technology to improve cancer rehabilitation. The knowledge base and practical implementation are a concern and potential barrier, but the Stakeholders and collaborating network is related technologically and prior knowledge is not essential initially, rather sheared beliefs and values. The findings show that the Stakeholders have the same values and beliefs for future cancer rehabilitation, as a need for change and innovative ideas. All but one of the Stakeholders in this study were very positive toward creating and introducing a new digital assessment tool as a part of the timeline and workflow for cancer rehabilitation.

Based on a possible new timeline and workflow, checkpoints for addressing rehabilitation, as well as utilizing digital multidisciplinary decision-making tools could solve some of the barriers and challenges experienced in today's Cancer rehabilitation. The digital assessment tool can be used both in primary and specialist health services, as well as integrated with patient records. The tool could be used to identify specific rehabilitation needs early in the pathway, as well as throughout the treatment and follow-up process. The study also shows that a multidisciplinary approach is essential to this innovative idea to work, as well as being essential for the patient to ensure a continual functional assessment to further predict right rehabilitation at the right time. An inter-collaborating and multidisciplinary digital assessment tool as part of the new workflow is an improvement that would define needed proximity and might drive network formation and facilitate innovative changes in cancer rehabilitation.

To experience innovative change and alter potential barriers, new technologies and other innovative ideas need to be addressed. This study shows that most interview subjects are positive, innovative and have an understanding for change and digitalization in future healthcare services. Then again, they all understand that management will be affected, and new challenges and barriers might arise. For this to be successful, better understanding and developing new strategies for actions will be needed in the digital playing field.

This brings us back to the digital transformation framework and shift in strategic digital assumption, and how it relates to the healthcare field. Harnessing patient network, building platforms and collaborating network, turning digital data into assets, innovating by rapid experimentation, as well as adapting the value proposition for the patient I cancer rehabilitation. With the ever-changing needs and context of the surviving cancer patient the value proposition needs to be adapted to today's rehabilitation situation, which includes new digital decision-making tools, new leveled services, and increased involvement of multidisciplinary team, all implemented in a possible new timeline and workflow for cancer rehabilitation.

6. Conclusion

Existing barriers in collaboration practices and decision-making have been described and discussed in this study through dimensions of proximity and various digital domains. The study has shown that some proximity is required, but specifically needed for knowledge networks to connect and develop. This study showed in healthcare services that geographical proximity initially could be an important driver, but not the main one for these knowledge networks to be optimal. Institutional and organizational proximity gives structure and creates standards and a system to relate to, while cultural and cognitive proximity is value based and a main driver for new technological, innovation and facilitate change in the digital future.

A standard timeline and workflow for cancer rehabilitation would assist the various Stakeholders in roles, responsibilities as well as decision-making to further facilitate and optimize resources in a digital perspective, strategies in alle the various domains are needed. Especially regarding adapting the value proposition with the patient at focus, to provide the right rehabilitation services at the right time.

In sum, a continual adaptation to the curve of change and looking at every technology to improve the services and value proposition is evident in the future. This is especially relevant in healthcare services, both public and private, based on an increased focus on efficiency, collaboration between public and private, as well as economic and political requirements and governance.

Limitations in this study could be my closeness to the topic's studied and familiarity of the interview objects. The semi- structured interviews could lead the interview subject and the interviewer to veer off the main aim for the study and effect the outcome. Also, a

weakness could be that the not all Stakeholders were included. The patient's perspective and experience were not included, which could alter the findings and outcome.

In my opinion the photo below illustrates the conclusions in a very nice matter: the bridge represents collaboration between the different stakeholders. The bridge cables are like stakeholders that must support and coordinate their efforts in order for the bridge to be functional and give practical value for the users and the surroundings, in this context cancer patients and the rehabilitation process.



Figure 7 Photo of Skarsundbrua by Lise Tanja Stenkløv Dretvik

In the next section I will address both practical and managerial implications for practices, as well as suggestions for further research.

6.1. Practical implications for practices

This study is part of the first stage of the overall CaReScreen project, it has helped lay the foundation for further development and implementation of the digital CaReScreen project. This specific study has provided answers and reflections regarding some Stakeholders experiences as well as specific barriers within existing rehabilitation processes and workflow in a collaborative perspective.

Suggestions for changes in the timeline and workflow to ensure increased efficiency, predictability in the processes, and equal opportunities have been made because of this study. This is to try to adapt the value proposition and provide "Right rehabilitation services at the right time" for the individual cancer patient.

Based on the specific barriers found and addressed in this study, I have shown through a New Model of Timeline and Workflow, attached in *Appendix 3 New Timeline/Workflow in Cancer Rehabilitation* for better visualization and details.

6.2. Management implications for practices

A common space of representation is necessary for collective learning and free knowledge transfer among all involved Stakeholders. This also on the management level through assessing the future role and functioning of the Gatekeeper mandate, both regional and national. More specialized cancer rehabilitation at the public hospitals and new services provided at different times and different levels of care. Also, the public sector, that can be characterized as segmented and divers in relation to differences of opinion and a wide variety of actors, guided by demands and hierarchy, needs to be challenged and adapt to changes (Aasen, 2020). St. meld. nr. 7 that emphasize and states this "*The Government wants a sustainable and efficient public sector characterized by quality and accessibility, and capable of changing in line with changing needs*" (Aasen, 2020, s. 112)

All of this has implications for practices of management and leadership on different levels. Leading change is a continual process, and businesses, especially healthcare providers and services must constantly adapt to a changing environment and technological advancements. Kotter`s model of change and 8 steps to transform organizations, could be very important in the implementation phase of the overall CaReScreen project (Kotter, 2022).

6.3. Suggestions for further research

Other relevant agencies and Stakeholders, already mapped but not included in this study, need to be a part of future studies and research. These being the patients, their families, nurses, and multidisciplinary teams. Also effect studies on how digital tools and services influence the patient's life and function, and effectiveness and economics in future cancer rehabilitation and healthcare. Also as mentioned previously the effect and implication for management and organizational change on the leadership level is a suggested field of future research.

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Appendix 1 Intervjuguide

Gatekeepers and Stakeholders MOPP

Aktør- og behovskartlegging i CaReScreen

Spørsmålene vil variere avhengig av hvilken rolle informanten har i henvisningsforløpet, og vil også kunne endres underveis i datainnsamlingsprosessen.

Kan du fortelle om dine arbeidsoppgaver og ansvar knyttet til henvisning av kreftpasienter til rehabilitering?

Hva kjennetegner behovene til de kreftpasientene som blir henvist til rehabilitering?

Hvordan blir henvisninger sendt/mottatt/behandlet?

Hvem gjør hva i henvisningsprosessen?

Hva er pasientens rolle i henvisningsprosessen?

Hvem beskriver pasientens behov for rehabilitering?

Hvordan beskrives behovene (funksjonsnivå, utfordringer, behov for hvilken type hjelp, behov for spesifikk tjeneste)?

Hvor i forløpet er pasienten når hen blir henvist?

Innhentes det noe ytterligere informasjon om pasienten underveis i henvisningsprosessen for å komme fram til en beslutning?

Er det lett eller vanskelig å komme fram til en beslutning om hvilke rehabiliteringstjenester pasienten kan få tilbud om? Hvem tar beslutningen?

Hva er det eventuelt som gjør det lett eller vanskelig å ta en beslutning? Hvordan kommer du/dere fram til en beslutning? Hvilke prosedyrer følger du/dere?

Basert på dine egne erfaringer, hvordan vurderer du dagenes henvisningspraksis med tanke på om alle pasienter får det tilbudet de trenger, det som vil være best for dem på det aktuelle tidspunktet?

Er det behov for noen endringer som kunne gjort henvisningspraksisen bedre? I så fall hva? Vil det være mulig å gjennomføre de endringene du/dere skisserer her? Er det noen utfordringer med slike endringer?

(Intervjueren presenterer hvordan digitale verktøy kan brukes) Hva tenker du om å bruke et digitalt beslutningsstøtteverktøy som grunnlag for å henvise kreftpasienter til rehabilitering? Hvilke forutsetninger må være til stede for at et digitalt verktøy kan brukes i klinisk praksis? Hvilke endringer måtte ha skjedd på arbeidsplassen din (i organisasjonen) dersom dere hadde tatt i bruk et digitale verktøy til hjelp i henvisningspraksisen?

Appendix 2 Informed Consent and Request for participation in the research project

Vil du delta i forskningsprosjektet

CaReScreen: Utvikling av et klinisk beslutningsstøtteverktøy for kreftrehabilitering?

Dette er et spørsmål til deg om å delta i et forsknings- og utviklingsprosjekt hvor formålet er å sikre at pasienter mottar målrettet og kunnskapsbasert rehabilitering til rett tid gjennom å utvikle et digitalt screening- og beslutningsstøtteverktøy. Dette informasjonsskrivet beskriver en innledende del av prosjektet som handler om henviseres beslutningsgrunnlag for rehabilitering og eventuelle forbedringer av henvisningspraksis. Denne delen vil også være en masteroppgave i administrasjon og ledelse ved Nord universitet.

Formål

I CaReScreen skal flere partnere samarbeide om å utvikle et digitalt screening- og beslutningsstøtteverktøy som skal bidra til at pasienter mottar målrettet og kunnskapsbasert rehabilitering til rett tid. Verktøyet skal kunne brukes i både primær- og spesialisthelsetjenesten. Det skal avdekke spesifikke rehabiliteringsbehov tidlig og i tillegg kunne brukes ved behov eller på definerte tidspunkt i hele behandlings- og oppfølingsforløpet til pasienten. Verktøyet skal gi beslutningsstøtte basert på registerdata, pasientrapporterte data og data fra helsepersonell. Klinikerne vil vha. verktøyet få informasjon om den spesifikke pasientens risikofaktorer og rehabiliteringsbehov samt kliniske råd. Denne forespørselen gjelder første del av CaReScreen der vi gjennom bl.a. aktør- og behovskartlegging skal etablere et kunnskapsgrunnlag og utvikle konseptforslag for utvikling av selve verktøyet.

Hvem er ansvarlig for forskningsprosjektet?

Prosjektet gjennomføres av Unicare, St. Olavs hospital, NTNU, SINTEF, Fafo, Helseinnovasjonssenteret, CheckWare, OUS og Kreftforeningen. Unicare Norge er prosjektleder for hele prosjektet, mens det er SINTEF som er ansvarlig for å utføre den delen av arbeidet som beskrives her, samt ansvarlig for behandling av personopplysninger i denne delen av prosjektet. Det overordna prosjektet er finansiert av Norges Forskningsråd.

Hvorfor får du spørsmål om å delta?

Du får spørsmål om å delta fordi du gjennom jobben din har erfaring med henvisninger til kreftrehabilitering, enten i form av at du skriver henvisninger selv, eller at du mottar og behandler henvisninger.

Hva innebærer det for deg å delta?

Dersom du ønsker å delta i prosjektet, vil det innebære å delta i et individuelt intervju eller et gruppeintervju sammen med noen av dine kolleger. Intervjuene vil bli gjennomført av en masterstudent – i noen tilfeller i samarbeid med en ansatt i SINTEF. Det vi ønsker å snakke

om i intervjuene er 1) dine arbeidsoppgaver og ansvar knyttet til henvisning; 2) hvordan dagens henvisningspraksis ser ut, inkludert hvem som blir henvist til hvilke tjenester og hvordan arbeidsflyt samhandling mellom ulike aktører foregår; 3) hvordan beslutninger om henvisning blir tatt; og 4) hvordan henvisningspraksis kan forbedres dersom det anses å være behov for det.

Intervjuets varighet vil være 45-60 minutter, avhengig av hva som passer for deg.

Vi ønsker å gjøre lydopptak av intervjuet. Opptakene vil bli transkribert, og da fjerner vi navnet ditt og andre personidentifiserende opplysninger.

Det er frivillig å delta

Det er frivillig å delta i prosjektet. Hvis du velger å delta, kan du når som helst trekke samtykket tilbake uten å oppgi noen grunn. Alle dine personopplysninger vil da bli slettet. Det vil ikke ha noen negative konsekvenser for deg hvis du ikke vil delta eller senere velger å trekke deg.

Ditt personvern – hvordan vi oppbevarer og bruker dine opplysninger

Vi vil bare bruke opplysningene om deg til formålene vi har fortalt om i dette skrivet. Vi behandler opplysningene konfidensielt og i samsvar med personvernregelverket.

Det er bare masterstudenten og medarbeidere i prosjektgruppen i CaReScreen som har tilgang til opplysninger om deg. Når vi behandler data fra intervju, har vi fjernet navnet ditt og andre personidentifiserende opplysninger. Din kontaktinformasjon blir oppbevart adskilt fra øvrig data, lagret på en server som bare forskerne i prosjektet har tilgang til.

Når vi presenterer resultater fra prosjektet – skriftlig eller muntlig – vil det ikke gå an å gjenkjenne deltakerne.

Hva skjer med opplysningene dine når vi avslutter forskningsprosjektet?

Opplysningene anonymiseres når hele prosjektet avsluttes, noe som etter planen er 30.04.2026 (masterprosjektet avsluttes i mai 2023). Etter dette vil personopplysninger og lydopptak der det går an å kjenne deg igjen, slettet.

Hva gir oss rett til å behandle personopplysninger om deg?

Vi behandler opplysninger om deg basert på ditt samtykke.

På oppdrag fra SINTEF har Sikt Personverntjenester vurdert at behandlingen av personopplysninger i dette prosjektet er i samsvar med personvernregelverket.

Dine rettigheter

Så lenge du kan identifiseres i datamaterialet, har du rett til:

- innsyn i hvilke opplysninger vi behandler om deg, og å få utlevert en kopi av opplysningene
- å få rettet opplysninger om deg som er feil eller misvisende
- å få slettet personopplysninger om deg
- å sende klage til Datatilsynet om behandlingen av dine personopplysninger

Hvis du har spørsmål til studien, eller ønsker å vite mer om eller benytte deg av dine rettigheter, ta kontakt med:

- Masterstudent Linda Fossen Wolfe, e-post linda.fossen.wolfe@stolav.no, tlf. 90811480
- SINTEF ved prosjektleder Kari Sand, e-post kari.sand@sintef.no, / tlf. 41231132
- SINTEFs personvernombud i Sikt Personverntjenester, Lasse Andre Raa, Lasse.Raa@sikt.no/ tlf. 55 58 20 59.

Hvis du har spørsmål knyttet til Sikt personverntjenester sin vurdering av prosjektet, kan du ta kontakt med:

- Sikt personverntjenester på epost personverntjenester@sikt.no eller på telefon: 53 21 15 00.

Med vennlig hilsen

Kari Sand
Ansvarlig for forskningsaktivitetene i CaReScreen

Linda Fossen Wolfe
Masterstudent ved Nord
Universitet, MBA,
spesialitet innovasjon og
digitalisering

Samtykkeerklæring

Jeg har mottatt og forstått informasjon om prosjektet CaReScreen, og har fått anledning til å stille spørsmål. Jeg samtykker til å delta i intervju, til at det blir gjort lydopptak av intervjuet og til at mine opplysninger behandles frem til prosjektet er avsluttet

(Signert av prosjektdeltaker, dato)

Appendix 3 New Timeline/Workflow in Cancer Rehabilitation

