

THESIS FOR THE DEGREE OF LICENTIATE OF SCIENCE

# Understanding inter-organizational learning in healthcare

Breaking of silos and collaborating across boundaries

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# Abstract

*Purpose:* The purpose of this thesis is to contribute with new knowledge on strategies and practices to support inter-organizational learning for the improvement of healthcare. The first research question is about practices of voluntary benchmarks able to support inter-organizational learning in healthcare. The second research question investigates strategies and practices healthcare organizations can apply to overcome the barriers of inter-organizational learning in integrated care.

*Method:* This thesis use qualitative methods based on a participatory action research approach.

*Main results:* The main results relates to three areas: a. stakeholder involvement for inter-organizational learning in complex contexts of healthcare, b. network organizational structures of shared leadership for inter-organizational learning in integrated care, and c. more concrete design recommendations regarding strategies and practices to consider for inter-organizational learning in healthcare.

*Originality:* The first contribution of this thesis is new knowledge regarding how to involve stakeholders in voluntary benchmarks and processes of inter-organizational learning in integrated care. The thesis also contributes on how to build organizational structures of shared leadership for inter-organizational learning in integrated care. In addition, the research offer new knowledge on design recommendations to consider when designing and implementing processes of benchmarking for improvement of healthcare, and inter-organizational learning processer in integrated care.

## List of appended papers

### Paper 1

Promoting Organizational Learning Facing the Complexity of Public Healthcare: How to Design a Voluntary, Learning-Oriented Benchmarking

Rachel M. Lørum, Henrik Eriksson, Frida Smith

Conference paper

The paper was presented orally at the ICKMOL 2023: International Conference on Knowledge Management and Organizational Learning, Rome, Italy, May 4–5, 2023 (Available at [www.waset.org](http://www.waset.org))

Contributions: Lørum was the lead author, collected the data, and conducted most of the analysis. Smith and Eriksson contributed to the study's design, data analysis, and paper writing.

### Paper 2

Breaking silos and crossing borders: A Norwegian case of IOL for improvement of healthcare

Rachel M Lørum, Hilde Skyvulstad, Astrid Eri-Montsma, and Frida Smith

In review

The paper was presented orally at The Norwegian Conference of Patient Safety, Department of Healthcare, Oslo, November 24–25, 2023, and at The Norwegian Conference on Healthcare Research, The Norwegian Network for Healthcare Research, and Stavanger University, November 2–3, 2024.

Contributions: Lørum was the lead author, collected the data, and conducted most of the analysis. Smith contributed to the study's design, data analysis, and paper writing.

Skyvulstad and Eri-Montsma assisted in collecting data, contributed to data analysis, and proofread the paper.

### Paper 3

IOL and innovation in healthcare: strategies and practices supporting improvement of integrated care.

Rachel M Lørum and Frida Smith

Submitted

Contributions: Lørum was the lead author, collected the data, and conducted most of the analysis. Smith and Eriksson contributed to the study's design, data analysis, and paper writing.

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## Terms

Abbreviation	Term	Definitions/comments
OL	Organizational learning	The science of how organizations learn to achieve and sustain excellent performance. (Lyman et al., 2017)
IOL	Inter-organizational learning	The creation of knowledge and competencies created in networks, in between organizations and across silos and borders, and by entities that operate to accomplish shared objectives (Anand et al., 2020; Sienkiewicz-Matyjurek et al., 2018).
-	Network organizational architecture	This thesis investigates network organizational architectures between multiple healthcare organizations forming formal and mandated networks to coordinate activities on complex tasks suited for multi-organizational solutions (see Provan & Laimare, 2012).
LHS	Learning health systems	“A configuration that facilitates flexible interaction among people, places, and things (e.g., patients, clinicians, researchers, organizational entities, and databases)” (Fjeldstad et al., 2019 p 2).
-	Integrated care	“A care plan or a multilateral collaboration, which seeks to meet the goals ..., through the coordination of people, information, and physical resources (i.e., aids or medications)” (Berntsen et al., 2019, p. 3).
RCIH	Regional committee for interaction	The network organizational architecture of Study 2. A formal, mandated network of higher-ranked leaders representing all involved healthcare providers delivering integrated care together.

*“Though most executives recognize the importance of breaking down silos to help people collaborate across boundaries, they struggle to make it happen. That’s understandable: it’s devilishly difficult.”*

Casciaro, Edmondson and Jang  
in *Harvard Business Review*, May 2019

# 1. Introduction

Leading organizations in healthcare improvement and researchers that are working on learning behavior in healthcare are encouraging healthcare organizations to become learning organizations (see, for example, WHO's learning strategy, 2020; National Steering Committee for Patient Safety, 2022; Batalden & Foster, 2022; Engeström & Pyörälä, 2020, or Edmondson & Brandsby, 2023). These actors see building learning cultures as essential for accelerating the translation of research and innovations into practice, developing practices to ensure patient safety, or developing new ways of working to improve patient care and outcomes. Today, patient pathways often involve multiple providers (Fjeldstad et al., 2019). At the same time, executives struggle to help people collaborate and learn across organizational silos and borders (Casciaro et al., 2019).

## 1.1. Problem discussion

Healthcare service organizations are often recognized for their high level of complexity, and caregivers struggle to provide high-quality services (Coles et al., 2020; Lyman et al., 2017; Buckmaster & Mouritsen, 2017). Most patient pathways include several highly specialized services involving human and technological resources that can be integrated in myriad ways (Fjeldstad et al., 2019). Research has also identified the tendency to simplify errors and shortcomings as a reason for why improvement initiatives often fail (Chassin & Loeb, 2013; Buckmaster & Mouritsen, 2017). Improving care requires comprehensive and integrative perspectives (Coles et al., 2020; Lyman et al., 2017; Buckmaster & Mouritsen, 2017). The dynamics that underlie the causes of errors and shortcomings of interventions aimed at healthcare improvement demand a deep knowledge and understanding of organizations and people (Coles et al., 2020). Following this, there has been a call for broad involvement where stakeholders from all parts of the patient pathway collaborate and co-produce to close gaps and bring out the potential of the designed service (e.g., Baird, 2023).

When experts across borders and silos collaborate, this can lead to expansive learning, or learning what is yet not there (Engeström, 2018). Inter-organizational learning (IOL) can potentially reduce risks, uncertainties, and ambiguities by the sharing of knowledge and best practices, capacities, and resources and for innovation and co-creation between collaborating organizations (Rupcic, 2021). Vaughn et al. (2019) found that dysfunctional external relationships are an essential characteristic of healthcare providers that struggle to improve quality. Organizational learning (OL) in healthcare organizations improves organizational resilience, which is the ability to anticipate threats, cope effectively with adverse events, and adapt to changing conditions (Evenseth et al., 2022). Collaboration across medical disciplines and healthcare organizations improves communication, teamwork, professional roles, conceptual underpinning, and care coordination (Simons et al., 2022). Most executives recognize the importance of collaborating across borders and silos, but find it challenging to make this happen in the practical work setting (Casciaro et al., 2019). There seems to be a need to step back and strengthen OL between all actors involved in the same service. In order to achieve such learning, finding ways to break down silos and collaborate across borders seems to be of the utmost importance.

## 1.2.Purpose

The purpose of this thesis is to contribute new knowledge on strategies and practices that support IOL for the improvement of healthcare.

## 1.3.Development of research questions

One way to support IOL in healthcare is by comparing quality indicators from one healthcare provider with those from other organizations delivering the same service in a different geographical area (Buckmaster & Mouritsen, 2017). In healthcare, the use of performance assessments and benchmarking results as a point of reference in improving the services is still in its early stages. Consequently, benchmarking has its fair share of problems and challenges (Buckmaster & Mouritsen, 2017; Storto & Goncharuk, 2017). Clinicians involved in benchmarking often see it as a management tool for control with few opportunities for

learning and improvement. This perception might result from the lack of contextual sensitivity in benchmarking highly complex realities (Buckmaster & Mouritsen, 2017).

Additionally, learning from benchmarks depends on identifying those distinctive characteristics that local professionals value as meaningful for their job situation. High-level comparisons addressing general problems focusing less on the local reality seem to reduce the potential for learning and improvement from benchmarks (Jordan & Messner, 2012; Buckmaster & Mouritsen, 2017; Hruska et al., 2019). According to Buckmaster and Mouritsen (2017), there is a need for more research on how to design intelligent benchmarks that increase the learning rate through designing for the local setting. That statement is the basis for the first research question:

*RQ1: What practices of voluntary benchmarks can support IOL in healthcare?*

In this thesis, practices are seen as actions or ways of doing things.

The second study investigates IOL from another angle: the learning processes across teams, departments, and organizations that deliver the same integrated care service. In integrated care for the elderly and chronically ill, patients often receive healthcare from several different administrative structures (Cresswell et al., 2023). Those structures differ concerning incentives and expectations related to what to do and how to interact, and are seldom designed to support integrated work to meet common goals. Lalani et al. (2020) declared that infrastructure for learning is almost absent when planning and designing integrated care.

Engeström's theoretical framework of expansive learning nurtures a deeper understanding of the complex nature of IOL in integrated care (Engeström & Sannino, 2021). At the same time, his theory has been criticized for its abstract nature and insufficient design recommendations (Wiser et al., 2019; Cong-Lem, 2022). The present thesis defines design recommendations as advice on designing and supporting a process for IOL. As addressed above, Lalani (2020) and Cresswell et al. (2023) identified differences in cultures and priorities between involved administrative structures as hindrances to inter-organizational

collaboration and learning in integrated care. They believe the low awareness of values, needs, and daily routines of all involved professionals while designing and improving the service is a barrier to learning and improvement across silos and borders and that it is essential to understand and account for such characteristics of the involved people and providers. On the other hand, learning health systems and network organizational architectures seems to have the potential to coordinate, facilitate flexible interaction, and support IOL across borders and silos in healthcare (Fjeldstad et al., 2019; Seid et al., 2021). There is a need for a new line of research on integrated care focusing on learning concerning integration, partnership, and culture (Lalani, 2020).

In sum, the integrated care services of today are often associated with challenges regarding quality and patient safety (e.g., Barnea et al., 2021; Sheikh et al., 2021), and barriers to IOL in integrated care have been identified (2021, Lalani, 2020; Cresswell, 2023). Engeström's theory of expansive learning has been criticized for its lack of design recommendations (Wiser et al., 2019; Cong-Lem, 2022), and network organizational structures as learning health systems has been found to enhance the level of IOL in collaborating organizations (Fjeldstad et al., 2019). To my knowledge, little research has been done to combine those perspectives to offer more concrete design recommendations on initiating improvement initiatives of patient pathways involving multiple independent health organizations. Following from this, the second research question is:

*RQ2: What strategies and practices can be applied to overcome the barriers of IOL in integrated care?*

In contrast to practices that are understood as actions or ways of doing things, this thesis treats the term strategy as “a set of guiding principles that, when communicated and adopted in the organization, generates a desired pattern of decision making organization's long-term goals and plans on how to reach them” (Watson, 2007). The two research questions were further developed into three papers, the purposes of which are presented in Figure 1.

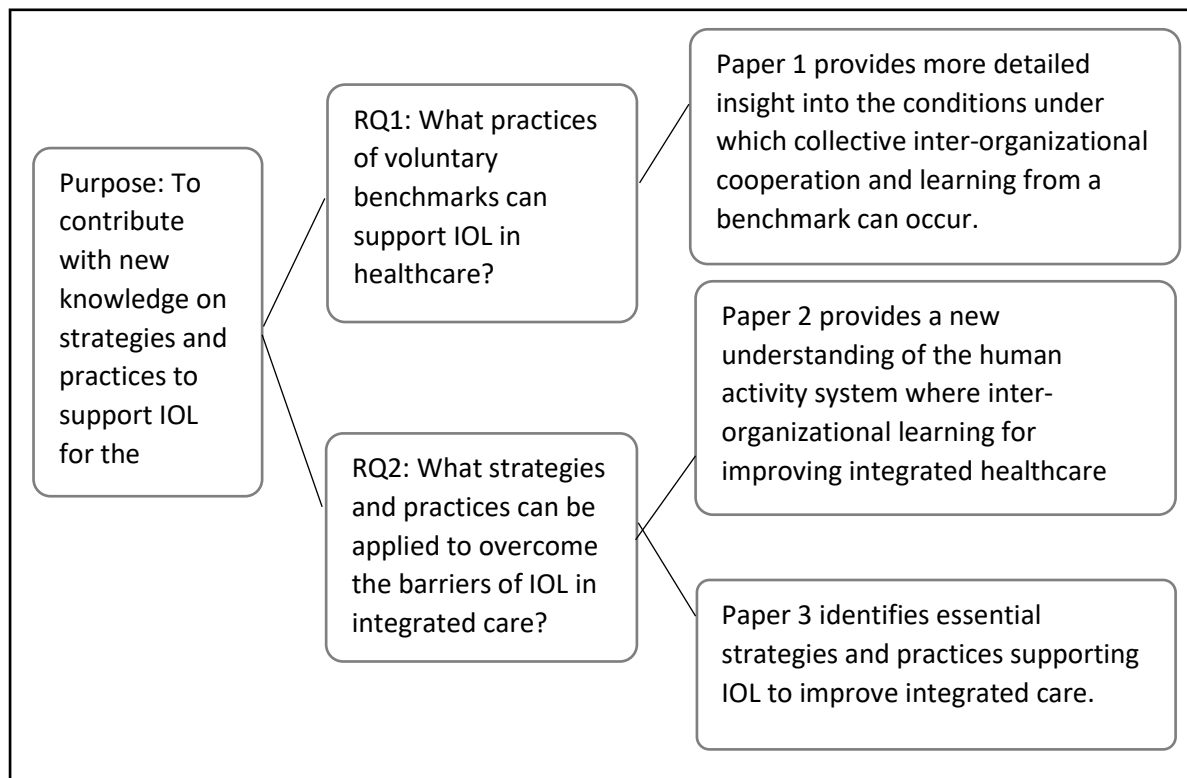


Figure 1: The connection between purpose, research questions, and papers.

#### 1.4.Delimitation

Even though the involvement of patients and next of kin is highly relevant and a significant part of IOL processes for healthcare improvement, this theme is not discussed or investigated as part of this thesis.

## 2. Frame of reference

IOL is the creation of knowledge and competencies created in networks, in between organizations and across silos and borders, and by entities that operate to accomplish shared objectives (Anand et al., 2020; Sienkiewicz-Małyjurek et al., 2018). Consequently, the present thesis treats IOL as OL involving two organizations or more. Before elaborating on the preferred theories and terms related to the studies, a brief discussion on how to define OL in general will be presented. Literature on OL offers many definitions (e.g., Lapre & Nembhard, 2011; Argote, 2011). Fiol and Lyles (1985) defined OL as “the process of improving actions through better knowledge and understanding” (p. 803). Argote (2011) proposed the following definition: “A change in the organization’s knowledge that occurs as a function of experience. Knowledge can manifest itself in a variety of ways, including changes in cognitions, routines, and behaviors” (p.440). Argyris (1977) viewed OL as “a process of detecting and correcting error” (p. 116).

On the other hand, Lyman et al. (2017) defined OL as the science of how organizations learn to achieve and sustain excellent performance. According to Lapre and Nembhard (2011), definitions of OL most often have three elements in common: focus on the organization, better knowledge, and improving actions. First, learning must capture the organizational level in order for it to be organizational learning. Learning must happen between individuals and organizational structures, not only at the level of each individual. Second, most organizations’ knowledge about why and how their actions transform into organizational outcomes tends to be weak. Consequently, OL is about increasing the profound knowledge of what the organization does and how the outcomes are produced. Third, organizations use this knowledge about what they do and how they act to reach better organizational performance through improvement actions. In addition, most frameworks implicitly add a fourth element: *ongoing effort*, which is often labeled as continuous improvement (Lapre & Nembhard, 2011).

Related to the purpose of contributing with new knowledge on strategies and practices to support IOL in healthcare, four interrelated areas of literature are of interest: expansive



learning in human activity system, voluntary benchmarks for organizational learning across silos and borders, barriers to IOL in integrated healthcare, and network organizational architecture or learning healthcare networks. First, Popova-Nowak and Cshe's (2015) different OL analysis levels will be presented to introduce this thesis's theoretical perspectives on OL.

## 2.1. Four paradigms of OL

Popova-Nowak and Cshe (2015) analyzed existing theories on OL through the lenses of four different paradigms: the functionalist, the critical, the constructivist, and the post-modern paradigms. According to Popova-Nowak and Cshe, **functionalists** understand organizations as more rational hierarchies where you can identify boundaries and attributes. Organizations aim to achieve specific outcomes, such as new products or improved performance. Behavioral, cognitive, and social action theory belong to this paradigm. The well-known theory of single- and double-loop learning by Chris Argyris represents the functionalist paradigm (Argyris, 1977, Popova-Nowak & Cshe, 2015).

The **critical paradigm** analyzes OL from the perspective of the use of power and investigates the presence of inequality within organizations. In this paradigm, researchers focus on OL in a perspective of contradictions between the interests of organizations and the management's self-interests and how organizational cultures reproduce so-called dominant discourses. Fenwick is a prominent theorist in this relatively small body of research (Fenwick, 2008, Popova-Nowak & Cshe, 2015).

In the present thesis, Engeström's theory of expansive learning is the preferred theoretical framework for organizational and inter-organization learning, a social-constructivist theory with roots from Vygotsky or Luria (Engeström & Sannino, 2021, Skipper et al., 2020; Chong et al., 2023; Popova-Nowak & Cshe, 2015). The **constructivist paradigm** sees reality as a result of micro-practices of social interaction, and thereby, emergent and incomplete (Popova-Nowak & Cshe, 2015). Social constructivists emphasize how social context molds and mediates learning (Chong et al., 2023). Researchers investigate the social construction of realities based on practice and built on the value systems of people who develop those

(Popova-Nowak & Cshe, 2015). Humans learn in the context of emergent routines and structures, often based on improvisation. Learning happens in action networks and activity systems. The environments are seen as inseparable from cognition. To a large degree, learning is based on spontaneous human activities (Skipper et al., 2020; Popova-Nowak & Cshe, 2015).

The fourth and smallest body of research on ***the post-modern paradigm*** includes Deetz (Deetz 1996, Popova-Nowak & Cshe, 2015). The post-modernists do not believe in objective realities and universal truths; diversity, complexity, and difference are essential. This paradigm investigates the tacit forms of knowledge that might be overlooked in other paradigms. Organizations are emergent complex and ambiguous entities, contain micro-practices, and have no meaning disconnected from human activity.

This thesis draws on the constructivist paradigm and applies Engeström's theory of expansive learning when analyzing IOL. Consequently, when aiming to understand the dynamics that arise when learning happens across silos and borders, this thesis examines social interactions in contexts of routines and structures more than specific cognitive mechanisms. Recognizing the emergent and incomplete characteristics of IOL processes has been crucial in the research process, as has the focus on networks and human activity systems.

## 2.2. Expansive learning in human activity systems

Yrvo Engeström defined his ***expansive learning*** concept as “a collective process of creating and acquiring something that is not yet there” (Engeström & Sannino, 2021, p. 9). His primary focus is on learning processes involving a network of individuals and resulting in new patterns of activity or new ways of working. His work is inspired by Vygotsky, Leont'ev, Luria, and Davydov (Engeström & Pyörälä, 2020). Engeström understands OL as an expansive cycle (Figure 2). This cycle proceeds from questioning existing practices to analyzing and understanding the problem, modeling new solutions, examining them, and eventually implementing new ways of working (Skipper et al., 2020).

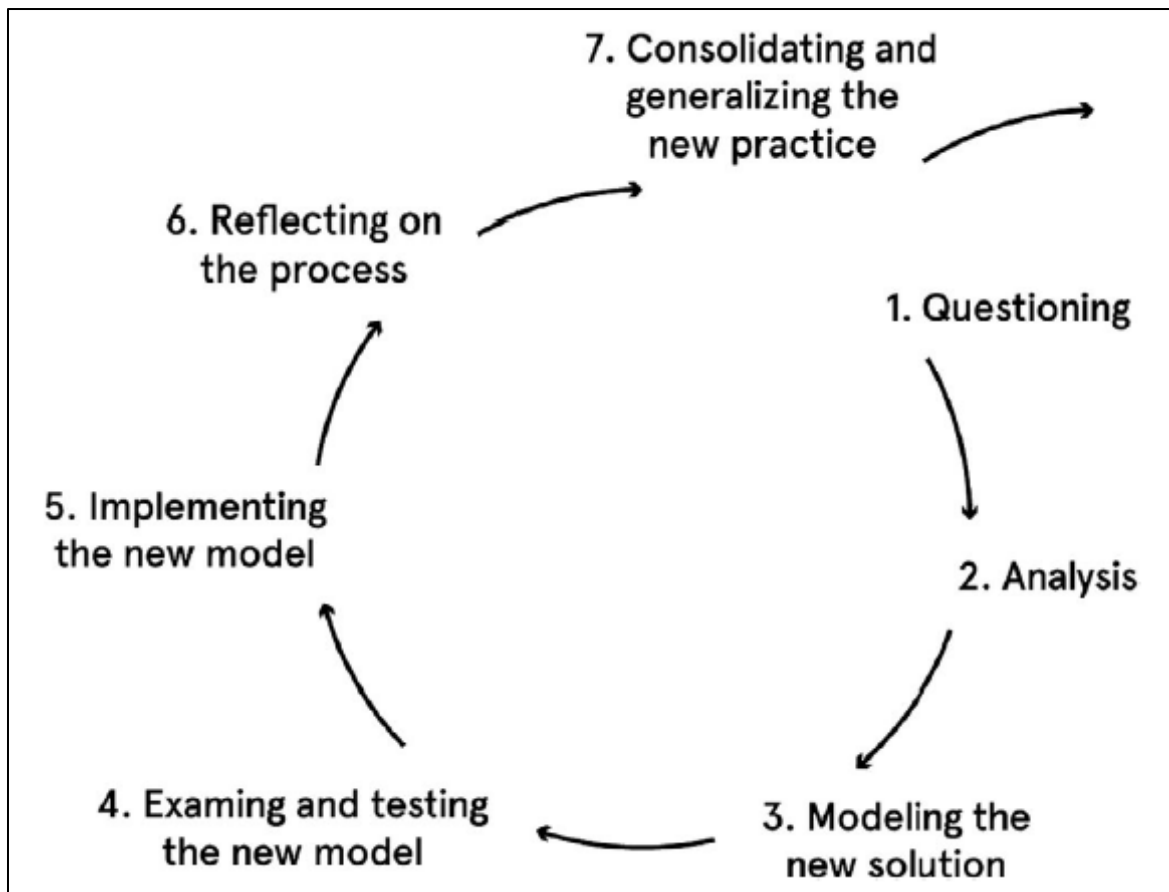


Figure 2: The expansive learning cycle (from Skipper et al., 2020, p. 95)

In this thesis, an IOL process is understood as an expansive learning cycle that starts with the questioning and ends in the generalization of new practices (Skipper et al., 2020), and occurs across organizational silos and borders. Hughes et al. (2020) concluded that embracing the complexity of healthcare reveals a better understanding of integrated healthcare as “multiple, dynamic, emergent, and inseparable from context” (p. 481). In agreement with the constructivist paradigm, Engeström considered learning as not being limited to the acquisition and reorganization of cognitive structures within closed boundaries of specific tasks or problems reducible to conscious, short-term goals. Engeström’s theory of expansive learning is helpful for a deeper understanding of the complex nature of IOL in healthcare generally and in integrated care especially (Engeström & Sannino, 2021). Among other strengths, this theory is highly aware of the complex and dynamic context in which IOL occurs. The awareness of complexities in the context makes the theory interesting for this thesis.

The expansive learning process happens in the **human activity system**, where interaction among individuals and groups creates new objects and practices (Engeström & Sannino, 2021). By investigating how to understand better how to support learning across silos and borders in healthcare services, this thesis focuses on the complex context in which organizational learning happens. Engeström investigated what comprises social practices, how situational factors shape human actions, and the elements that constitute organizational learning (Kamanga & Alexander, 2021). His human activity system (Figure 3) aspires to model the factors in the learners' learning context (Engeström, 2011). An activity is understood as “a collaborative and holistic system that generates actions” (Engeström & Pyörälä, 2020, p. 7). Below, we draw on Engeström's model of the human activity system.

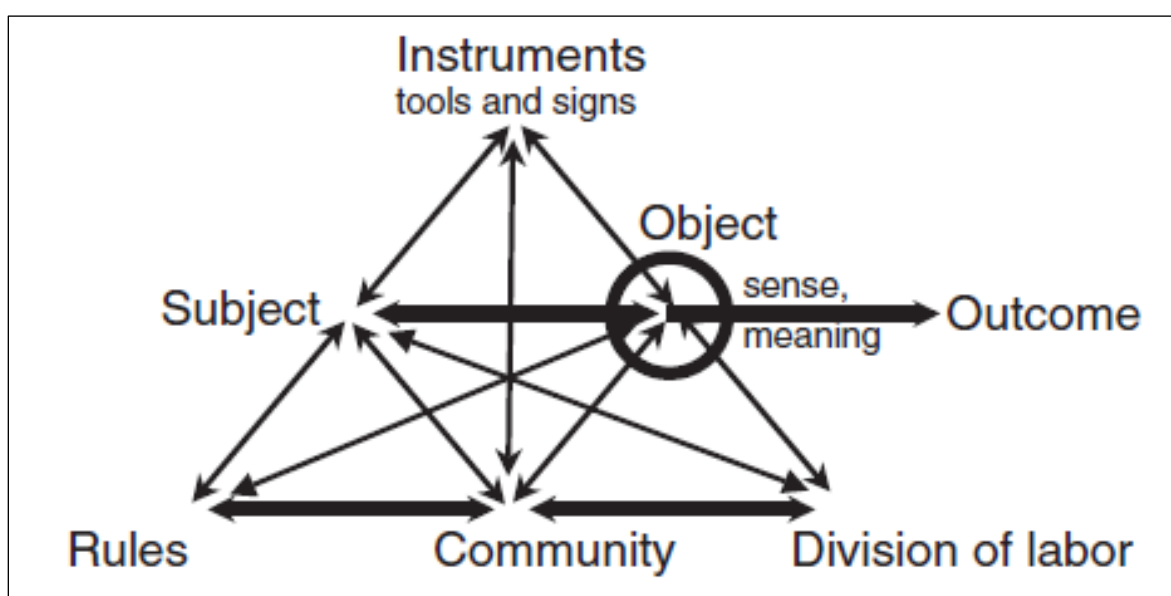


Figure 3: The human activity system (from Engeström, 2011, p. 78)

Table 1 provides an introduction to the seven elements constituting the activity system. Activity systems are multi-voiced, heterogeneous structures that hold multiple perspectives regarding points of view, traditions, or interests. *Contradictions* are the prime source of change and development (Engeström, 2018; Engeström & Sannino, 2021).

**Table 1.** Brief overview of different elements of the activity system

Subject	The subject refers to “the individual or subgroup whose position and point of view are chosen as the perspective of the analysis” (Engeström & Sannino, 2021, p. 8).
Object	The object refers to “the raw material or problem space at which the activity is directed” (Engeström & Sannino, 2021, p. 8).
Instruments	“The object is turned into outcomes with the help of instruments, that is, tools and signs” (Engeström & Sannino, 2021, p. 8).
Outcome	The outcome refers to a new shared object and practice, also explained as “the transformation of the whole activity system ... more driven toward the transformation of the activity system (i.e., the collective professional activity) than psychological outcomes pertaining to individual development” (Cong-Lem, 2022, p. 92).
Rules	“Rules refer to the explicit and implicit regulations, norms, conventions and standards that constrain actions within the activity system” (Engeström & Sannino, 2021, p. 8). Norms and conventions carry multiple layers and strands of history.
Community	“The community comprises the individuals and subgroups who share the same general object” (Engeström & Sannino, 2021, p. 8).
Division of labor	“Division of labor refers to horizontal division of tasks and vertical division of power and status” (Engeström & Sannino, 2021, p. 8).

Engeström belongs to a long tradition of activity theories applied inside and outside healthcare (Cong-Lem, 2022). When analyzing expansive learning in medical work (2018), Engeström argued how collaborative expertise in medical work is based on three pillars: how expertise needs to be understood as a collective activity, how expertise needs to be built on flexible knot working among diverse practitioners, and how expertise needs to be fostered as expansive learning in progress. Researchers have also pointed out different limitations and weaknesses of the theory of expansive learning. As is the case for other socio-constructivist theories, Engeström addressed the context in a general fashion, understanding context as a singular concept and overlooking the need for more detailed knowledge (Chong, 2023). As mentioned earlier, the counterarguments against Engeström’s theory most often relate to the abstract nature of the theory, the insufficient design recommendations, and the absence of information about contexts, such as new technologies or organizational structures (Wiser et al., 2019; Cong-Lem, 2022, Chong et al., 2023).

### 2.3.Barriers to IOL by benchmarking in healthcare

Benchmark is a performance measurement tool that aims to support clinicians, managers, patients, and funders in achieving organizational learning and improvement of healthcare (Hibbert et al., 2020; Aldiss & Gibson, 2020). The main principle is to apply indicators or standards addressing the quality and efficiency of the service in order to initiate local improvements in the services involved. Clinical teams and managers receive reports on their quality and efficiency achievements relative to comparable teams. The intention is that, by gaining insights into their performance, the clinics will get the opportunity to share successful practices (Aldiss & Gibson, 2020). Bevan et al. (2019) argued that benchmarking can improve outcomes at both regional and national levels. They emphasized processes of “naming and blaming”, competitive learning, and peer learning. Buckmaster and Mouritsen (2017) argued that benchmarking can enable learning and improvement across silos and borders, but this is due to the involved actors ensuring that the process is directed toward improvement.

At the same time, essential barriers to IOL from benchmarking have been identified (Buckmaster & Mouritsen, 2017). Benchmarking in public settings often becomes about measurement more than learning and improvement. Inherent problems in measuring quality in healthcare have received increased attention (Storto & Goncharuk, 2017). Measures addressing high-level and general problems at a certain distance from local realities are associated with reduced potential for organizational learning and improvement (Buckmaster & Mouritsen, 2017; Hruska et al., 2019). Frontline staff often experience benchmarking as a tool of control rather than an approach that leads to valuable takeaways for enhancing their performance. Following this reasoning, it becomes important to embrace complexity as a fundamental property of healthcare services involved in improvement efforts (Coles et al., 2020; Lyman et al., 2017; Buckmaster & Mouritsen, 2017). Buckmaster and Mouritsen (2017) emphasized the importance of understanding the specific characteristics of the job situation seen as meaningful for local professionals when designing indicators for benchmarking. Translating general information into local settings is a challenge to learning from benchmarks (Hruska et al., 2019). There are significant differences in contexts that, in many cases, would explain the differences in the reported performance measurements. If this is

the case, one often focuses more on how the context differs instead of how one could improve quality and safety, or the results might get misinterpreted as differences in performance rather than differences in contexts. It is vital that professionals with profound knowledge of the local context decide the indicators and design the benchmark. New knowledge is needed to design benchmarks for local settings, increasing the potential for learning and improving (Buckmaster & Mouritsen, 2017). The purpose of the first study of this thesis is to identify practices of voluntary benchmarks supporting IOL in healthcare.

## 2.4. Barriers to IOL in integrated care

In 2021, the Commonwealth Fund compared the performance of healthcare services of 11 high-income countries and found that the top-performing country was Norway (Schneider et al., 2021). At the same time, all high-income countries face challenges such as increases in the number of patients with multimorbid illnesses, shortage of staff, rising costs, and increasing financial constraints (World Health Organization, 2022a, World Health Organization, 2022b, and Amos et al., 2022; Mc Nabney, 2022; Engeström & Pyörälä, 2020). In order to meet such challenges, a significant trend in healthcare is to change towards designing the services in structures of inter-organizational collaboration for integrated care (Hughes et al., 2021; Raus et al., 2020). In 2019, Berntsen et al. defined integrated care as “a care plan or a multilateral collaboration, which seeks to meet the goals ..., through the coordination of people, information, and physical resources (i.e., aids or medications)” (p. 3). The level of both structural and organizational complexity rises when the service demands coordination across a higher number of silos and borders (Cresswell et al., 2023, González-Ortiz, 2018, Hughes et al., 2020, McKillop et al., 2017). Even though integrated care seems to be a favored strategy amongst policymakers and healthcare improvement institutions, the results have been disappointing (Hughes et al., 2021). The patients seldom report improved patient experiences, and the service often cannot compensate for the deterioration in patients’ health (Hughes et al., 2021).

Integrated care is closely associated with inter-organizational collaboration (van der Shors et al., 2021). At the same time, professionals involved in integrated care services often have

little knowledge about the work settings of their colleagues in collaborating departments or organizations and report being unfamiliar with inter-organizational collaboration. They report difficulties related to their inter-organizational work environments, as challenging interpersonal chemistry across borders and silos (Bångsbo et al., 2022). Similarly, other cultural and structural barriers to IOL in integrated care have been identified (Lalani, 2020; Cresswell et al., 2023).

Regarding the second research question about IOL in integrated care, the attention is directed towards IOL across teams, departments, and organizations involved in delivering the same integrated care service. The complex nature of integrated healthcare associated with high structural and organizational complexity was discussed in the introduction. Elderly and fragile patients receive healthcare services from multiple administrative structures with various incentives and expectations regarding what to do and how to interact. Such structures are rarely set up for integrated work towards common goals (Cresswell et al., 2023), and healthcare providers report struggling with fragmentation and dysfunctional workflow (Engeström & Pyörälä, 2020). Managers seem to find it challenging to support collaboration across silos and borders in a practical work setting (Casciaro et al., 2019).

Patients receiving integrated care services are generally exposed to increased risks and reduced levels of quality (see, for example, Barnea et al., 2021; Sheikh et al., 2021). Research has identified barriers to collaboration and IOL among front staff in integrated care (Buch et al., 2018; Lalani, 2020; Cresswell et al., 2023). Significant findings relate to the low awareness of taking into account the front-staff personnel's values, needs, and daily routines when designing and improving the patient pathway. Gustavsson and Lundkvist (2023) revealed the lack of a collaboration platform, conflicts of motives within each party, and conflicts of motives between hierarchical levels to challenge IOL. Cresswell et al. (2023) further emphasized how differences in incentives and expectations regarding what to do and how to interact hinder IOL. Lalani (2020) argued that organizational structures for IOL learning among frontline staff, supporting service innovation, and ensuring risk management are often absent when designing integrated care services for elderly and fragile patients. In sum, IOL in integrated care services appears to be hindered by a wide range of cultural differences, priorities, and pressures between those involved in the integrated healthcare service.



## 2.5. Organizational network architecture for IOL in healthcare

Gustavsson and Lundkvist (2023) addressed the importance of platforms for collaboration related to barriers to IOL across silos and borders. Such collaborating platforms might come in network organizational structures involving the parties of integrated care. Britto et al. (2018) defined the term *organizational architecture* as the way organizations arrange themselves to control and coordinate activities and make decisions of how to distribute resources and effort. Research on whole, goal-directed service delivery networks in public sector has focused on networks that are formally established, governed, and goal-directed (Provan & Laimare, 2012). The organizations involved are responsible for complex tasks suited for multi-organizational solutions and involve members of three or more organizations connected in ways that facilitate achievement of a common goal (Provan & Laimare, 2012). The present thesis investigates network organizational architectures involving multiple healthcare organizations forming formal and mandated networks to coordinate activities on complex tasks suited for multi-organizational solutions.

Learning health systems (LHS) are examples of network organizational architectures in healthcare. LHS is defined as “a configuration that facilitates flexible interaction among people, places, and things (e.g., patients, clinicians, researchers, organizational entities, and databases)” (Fjeldstad et al., 2019, p 2). Related to the improvement of integrated care, LHSs have the characteristics of collaborative networks, where the services use a “network organizational form to facilitate the production and sharing of resources so that all stakeholders (patients and families, clinicians, researchers) can collaborate toward solving the coordination problem” (Seid et al., 2021, p. 2). Easterling et al. (2020) discussed five learning health systems’ tasks for the involved healthcare organizations: (a) IOL, innovation, and continuous improvement; (b) Implementing evidence and knowledge into new practices, (c) developing new knowledge on improving healthcare services, (d) learning and improvement through data analysis; and (e) involving clinicians, patients, and other stakeholders in organizational learning. In sum, the growing body of research on collaborative learning health systems could potentially overcome barriers to IOL in integrated care.

## 2.6. Summary of frame of reference

IOL, or improvement due to building new knowledge on an organizational level, can be analyzed from different perspectives. In this thesis, I have chosen to build on Engeström's theory of expansive learning. This theory emphasizes learning processes resulting in the identification and implementation of new ways of working and how learning happens in networks of expertise (Engeström & Sannino, 2021; Engeström & Pyörälä, 2020; and Engeström, 2018). The theory aims to explain how the elements in the human activity system – the system where the learners learn – interact in the process of learning. Engeström's theory belongs to the constructivist paradigm and sees organizational learning as social interactions in contexts of routines and structures more than specific cognitive mechanisms (Popova-Nowak and Cshe, 2015).

This thesis investigates IOL manifested in two types of collaborations: units delivering the same healthcare service in different geographical areas and units involved in the same integrated healthcare service. The first research question addresses the method of benchmarking based on the literature on voluntary benchmarks for learning and improvement. The second research question focuses on the knowledge related to barriers to IOL in integrated care, network organizational architecture, and learning health systems. The theoretical framework is visualized in Figure 4.

The purpose of this thesis is to contribute new knowledge on strategies and practices to support IOL for the improvement of healthcare. Healthcare services are recognized for their high levels of complexity, in addition to difficulties related to the providing of high-quality services (Coles et al., 2020; Lyman et al., 2017 and Buckmaster and Mouritsen, 2017). The frame of reference is a natural consequence of the connection between the problem discussion, the purpose, and the research questions. Even though leading healthcare organization fronting improvement of care and researchers working on learning behavior encourages healthcare providers to become learning organizations (see, e.g., WHO's learning strategy, 2020; National steering

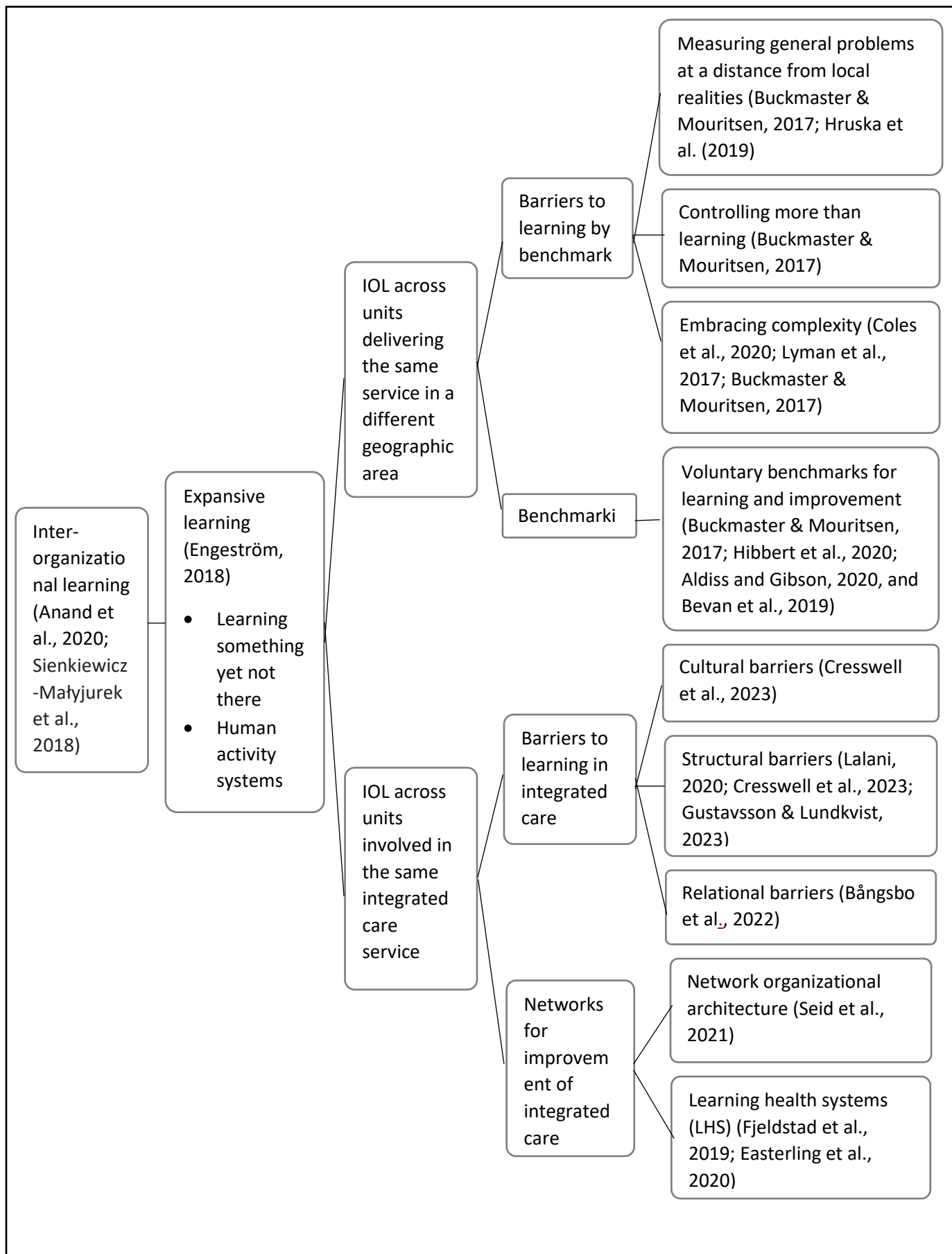


Figure 4: Theoretical frame of reference

Committee for patient safety, 2022; Batalden & Foster, 2022; Engeström, 2020; or Edmondson & Brandsby, 2023), organizations seems to have difficulties when it comes to the collaboration across silos and borders in order to learn and improve (Casciaro et al., 2019). Engeström's socio-constructivist theory of expansive learning addresses the complex context of expansive learning in healthcare: human activity systems of heterogeneous structures holding multiple perspectives, points of view, traditions, and interests (Engeström & Sannino, 2021; Engeström, 2018; Popova-Nowak & Cshe, 2015, and Chong et al., 2023). The present thesis focuses on two types of IOL in healthcare: IOL across units delivering the same service to different populations and IOL across units involved in the same integrated care. The literature review revealed specific barriers to learning from each other through benchmarking and learning together in IOL in integrated care. Through voluntary benchmarks, network organizational architecture, and learning health systems, potentially supportive methods and structures for overcoming the barriers were presented. To my knowledge, little research has been done to combine the different lines of research chosen in the frame of reference: barriers to IOL in benchmarking and integrated care, understanding local contexts by applying the model of the human activity system and the nature of learning in networks of expertise, and characteristics of organizational structures supporting IOL. This frame of reference supports the creation of new knowledge and a deeper understanding of IOL for improving healthcare.

### 3. Research Methodology

The purpose of this thesis is to contribute new knowledge on strategies and practices to support IOL for the improvement of healthcare, focusing on voluntary benchmarking IOL in integrated care. Researchers have drawn our attention to the high level of complexity in healthcare (Coles et al., 2020; Lyman et al., 2017; Buckmaster & Mouritsen, 2017) and how a service often includes several highly specialized services involving resources that can be integrated in nearly infinite ways (Fjeldstad et al., 2019). It has been said that improving care requires comprehensive and integrative perspectives (Coles et al., 2020; Lyman et al., 2017; Buckmaster & Mouritsen, 2017), and broad involvement where stakeholders from all parts of the healthcare system act collaboratively to co-produce in order to close gaps and improve the services (e.g., Baird, 2023). This thesis addresses knowledge gaps to discover strategies and practices for IOL, applying Engeström's socio-constructivist theory of expansive learning in real-world settings. Qualitative research is of specific relevance to explorative studies of social relations (Flick, 2014). We made this choice to support in-depth insights and exploration of contextual factors and processes of IOL in the complex realities of healthcare, which are considered among the strengths of qualitative methods (Flick, 2014).

#### 3.1. Action research approach

One of the research approaches to involve stakeholders and capture complexity of people and organization is action research (Dick, 2007, Dick 2015). Action research has been defined in multiple ways and holds plural methodologies united primarily by values, intentions, and processes. Having analyzed a high number of contemporary action research studies, Dick (2015) concluded the most important features of action research are the aim of improving together with involved stakeholders and the description of processes of change and learning from a scientific point of view. Action research was found to be almost always participatory, action-oriented, based on critical reflection, and involving cycles of action and reflection.

In participatory observation, the researcher is an active member of the field of observation (Flick, 2014), and the stakeholders' understanding, experience, knowledge, and actions are

applied in the research process (Smith et al., 2017; Bradbury, 2015; and Steen, 2013). These notions of participatory design integrate intuitively with Engeström's view on the position of medical expertise in expansive learning in healthcare (see Engeström, 2018). Engeström understands medical expertise as built on fluid collaboration between professionals from multiple backgrounds who are able to tackle emerging problems and changes. In the studied improvement initiatives, healthcare professionals were important sources of knowledge about the services and new ideas for improvement.

Participatory research can use varying degrees of stakeholder involvement (Balasz & Morello-Frosh, 2013), as visualized in Figure 5.

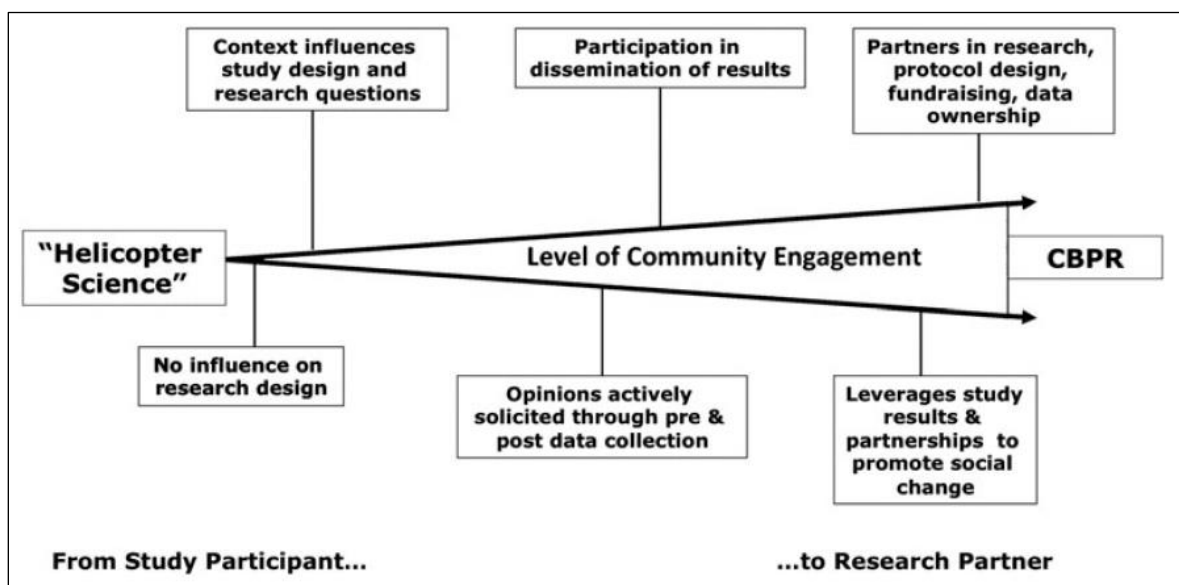


Figure 5: Levels of stakeholder engagement in participatory research (from Balasz and Morello-Frosh, 2013, p. 10)

As visualized in Figure 5, the level of engagement increases according to the degree of transformation of professionals from study participants to research participants. The first author of this thesis is a senior advisor facilitating change and improvement in the hospital setting of study. The second and third authors of the second paper are trained physicians who hold positions as managers in hospital and primary care and were directly involved in the improvement initiative of the study.

In participatory action research, the stakeholders actively participate in a cyclic process for critical reflection and change (Coghlan & Brannick, 2014). In this thesis, stakeholders representing all involved health care organizations were involved in the iterative processes of repeated reflection cycles where they constructed and re-constructed the status and goals of the improvement initiative, planned new actions, took action, and evaluated actions taken (see Coghlan and Brannick, 2014).

We studied healthcare improvement initiatives and describe processes of IOL from a scientific point of view. The investigations are participatory, action-oriented, based on critical reflection, and involve cycles of action and reflection. The methodology of choice is action research.

### 3.2. Research quality

#### 3.2.1. Quality criteria

Using rigor as a quality criterion for qualitative research strengthens the methodological design, method, and explicit conclusions concerning being replicable, open to critique, and bias-free (Johnson et al., 2020). Meeting such criteria requires thoughtful planning, reflexivity, and openness. Table 2 shows the results of an analysis of the rigor and trustworthiness of this thesis. The analysis combines the step-wise approach for rigor in qualitative research by Johnsen et al. (2020) with Stahl and King's (2020) four factors of trustworthiness in qualitative research design.

**Table 2.** Steps taken to ensure rigor and trustworthiness

	Identifying research topic <i>Develop a conceptual framework with solid connections between purpose and RQs.</i>	Qualitative study design <i>Develop a robust conceptual framework to minimize bias</i>	Data analysis <i>Choose standards of rigor to ensure trustworthiness and integrity</i>	Drawing valid conclusions <i>Integrate study results and analysis with the original conceptual framework.</i>
Credibility <i>How congruent are the findings with reality?</i>	The formulation of the purpose and RQs was stimulated by real-life observations, experiences, and events in the local setting of the researcher: the use of benchmarks for learning and improvement and IOL in integrated care. The purpose and RQs were developed further into clear and adequate meanings during the emergent process of understanding relevant concepts, principles, theories, and models.	The choice of a robust conceptual framework (Engeström's theory of expansive learning), seen as a part of a constructivist paradigm, called for the study design with strengths related to investigating social phenomenon in complex contexts. Choosing best practice methods supported the rigor and trustworthiness of the research.	Data were collected in systematic ways. Data were rich and collected from a wide range of different sources. Rigorous data analysis methods were applied, such as coding, categorizing, and triangulation. The choice of analysis model did relate to purpose, RQs, and data for each study and each paper. Results related to purpose and RQs were generated.	The results of the data analysis were compared to existing theory. More concrete design recommendations were proposed regarding voluntary benchmarking for learning, improvement, and IOL in integrated care. A new and improved model of the human activity system for IOL in integrated care was developed.
Transferability <i>How applicable are the results for other similar situations?</i>	Purpose, RQs, and conceptual framework focused on specific barriers delimited to particular healthcare domains (learning and improvement from benchmarking/IOL in integrated care). Barriers and domains were explained in detail	The papers present thick descriptions of the empirical settings aiming to provide rich enough portrayals of circumstance so that the reader can decide if it applies to others' situations.	The papers provide enough information about the standards of rigor to allow readers to understand how the data were analyzed.	Discussion and results are presented in a way that allows the reader to understand the relation between data and conclusions, in addition to existing knowledge and findings. This will support the reader in understanding strengths and



	to allow readers to determine whether the findings were relevant to their situations.			limitations regarding transferring the knowledge to other similar contexts and situations.
Dependability <i>How did the researcher apply practices that produce trust during the research process?</i>	Purposes, RQs, and theoretical frames were discussed with peers, co-authors, supervisors, and reviewers.	The study design was discussed with supervisors.	Analysis was discussed with supervisors.	Conclusions were drawn in dialogue with participants, co-authors, and supervisors.  Reflection circles with stakeholders were applied during the learning processes.
Confirmability <i>How close does the objective reality get to the research?</i>	The researchers reflected on how the choice of purpose and RQs could be affected by personal biases or potential consequences for participants' lives or positions. They strived to understand these dynamics and avoid their choices being based on personal biases.  One of the researchers was an outsider and brought in other perspectives in defining purpose, RQs, and theoretical frameworks.	Through reflexivity and involvement of participants and researchers, the researcher strived to minimize personal bias and ensure a robust conceptual framework minimizing bias.	In analyzing the data, the researchers strictly followed the method of choice and actively tried to avoid their preconceptions and potential biases. In addition, they actively searched for unexpected patterns and categories.  One of the researchers was an outsider and challenged the insiders on their data classification.	Through reflexivity and involvement of participants and supervisors, the researchers strived to minimize personal biases and ensure that the findings were based on data more than the researchers' preconceptions, values, and attitudes.  One of the researchers was an outsider and challenged the insiders to draw valid conclusions.

Another framework for quality criteria developed for participating research in participatory research is the Balasz and Morello-Frosh's (2013) three Rs, as visualized in Figure 6.

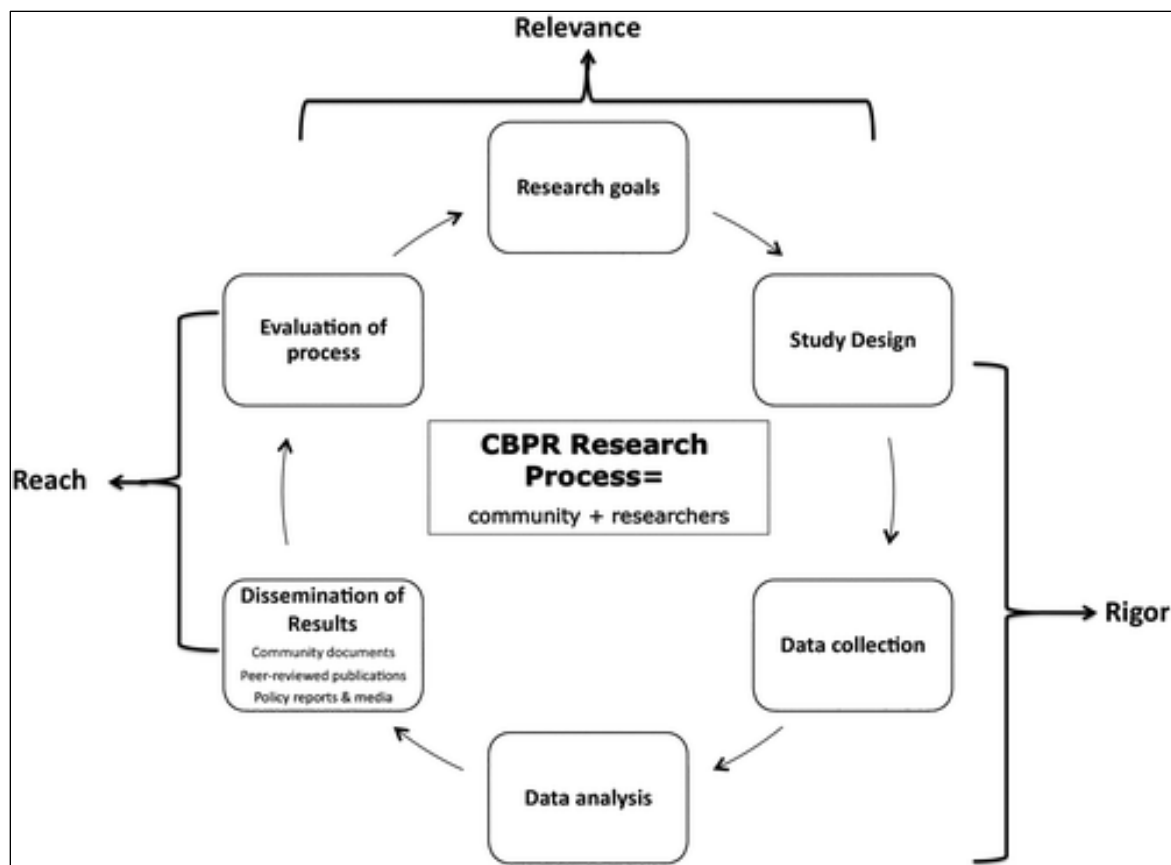


Figure 6: The three Rs of participatory research (from Balasz and Morello-Frosch, 2013, p. 10)

The three Rs stand for the *relevance* of the research goals; the *rigor* of design, data collection and data analysis; and the *reach* of results and evaluation of the research process leading back to further developed research goals. The researcher's insider position in this thesis includes easy access to critical stakeholders and their deep understanding of the context, their needs, the present situation in the healthcare business, and the future challenges. At the same time, the researcher received valuable support from the Collaborative Platform for Healthcare Improvement (CHI) at Chalmers University. The research goals were discussed and developed in dialogue with stakeholders and supervisors. The relevance of the research goals is confirmed by the feedback from the reviewers in journals currently reviewing the second paper and from the three conferences where the work has been presented. The rigor of design, data collection, and analysis has been discussed previously. Finally, the results have so far only been presented orally at one international and two national conferences. Two papers have been sent to journals for publication; the first is in the final stages of review. Managers and change facilitators have expressed interest in the topic and the research results. I will continue working on the

results to reach out for application in improvement initiatives and be an inspiration for future research.

In sum, several strategies have been applied to counter the limitations of the methods chosen for this thesis. Those steps have aimed to strengthen the trustworthiness of the results, the relevance of the research goals, the rigor of design, and the reach of the results. It was essential to carefully build logical connections between research goals, frame of reference, and methods. Also, some of the many essential practices supporting the research quality of this thesis are approaches like triangulation of data, reflexivity in front of potential biases, and giving thick descriptions of the setting, methods, and findings.

### 3.3. Empirical settings

There are different perspectives to investigate when aspiring to develop new knowledge on IOL. This thesis focuses on (a) learning through comparing one healthcare organization with other healthcare organizations delivering the same service in a different geographic area (benchmarking) and (b) learning across teams, departments, and organizations involved in delivering the same integrated care service. The studies were conducted in Norwegian healthcare, a top-performing healthcare service in the Commonwealth Funds comparison of 11 high-income countries in 2021 (Schneider et al., 2021). Norwegian healthcare systems build on the principles of universal health coverage, and the patients are, in most cases, free to choose healthcare providers among services from different delivers. Healthcare is largely financed through taxation, except for small contributions by payroll from employers and employees. Regarding the Healthcare Personnel Commission of 2023, Norwegian healthcare is struggling with the same challenges as most healthcare services in the Western world: aging populations, increasing numbers of elderly and fragile patients, increasing staff shortages, and rising expectations of treatment and care by politics and population (Helsepersonellkommisjonen, 2023). In the national plans, the Minister of Health has, over several years, asked for organizations to tackle the challenges through quality improvement and innovation (e.g., Norwegian Ministry of Health and Care Services, 2015).

Norwegian Healthcare holds Regional Committees for Interaction in Healthcare (RCIH) (Norwegian Ministry of Health and Care Services, 2020). The committees unite municipalities and health trusts in a community that is responsible for cooperating as equal partners in planning and developing services suitable for local needs and requirements.

### 3.3.1. Study 1

The first study relates to the first research question and resulted in this thesis's first out of three papers. In this study, all emergency rooms (ERs) serving a population larger than 80,000 inhabitants were invited to participate in a voluntary benchmark for learning and improving ERs nationwide. Thirteen ERs joined in and collaborated to design a uniform measurement template (Table 3) and report their results on the indicators. Regrettably, but also very understandably, the planned national conference for all ERs that had taken part in the benchmark was not implemented due to priority changes in the pandemic's first phases.

**Table 3.** Uniform template for measurement of ERs

Subject	Indicators
ER structure	Number of treatment spaces Number of ER-controlled beds for observation Does the ER receive orthopedic patients for daycare? Does the ER receive gynecological patients? Does the ER receive patients in need of surgery? Does the ER receive pediatric patients? Does the ER receive mentally ill patients? Does the ER practice fast-track patient pathways? Does the ER control the logistics of patients from other hospitals? Does the ER organize the staff in teams receiving specified groups of patients?
Hospital and healthcare system	Population Number of beds (somatic)
Clinical care hours staff	Nurses Senior physicians Intern physicians, first year

	Senior intern physicians Nurse assistants Bioengineer Secretary Other healthcare professionals Other staff Are there senior physicians present in the ER 24/7? Does the ER control the physicians?
ER outcomes	Proportion of patients not admitted to inpatient treatment Re-attendance within 72 hours, resulting in admission
ER population	Number of visits Name of triage system Proportion of patients “highest priority” Proportion of patients “urgent priority” Proportion of patients “urgent priority” Proportion of patients “lowest priority” Proportion of patients “not prioritized” The proportion of patients “not been triaged.” Proportion of patients 0–5 Proportion of patients >75
ER process times	Time to treatment, stroke Time to triage Time to triage, medicine Time to triage, surgery Time to triage, neurology Length of stay Length of stay, inpatient treatment total <ul style="list-style-type: none"> <li>- Medicine</li> <li>- Surgery</li> <li>- Neurology</li> </ul> Length of stay, daycare total <ul style="list-style-type: none"> <li>- Medicine</li> <li>- Surgery</li> <li>- Neurology</li> </ul> Time from clarified for inpatient treatment to patient admitted at inpatient dept.

\*All indicators are followed by a definition, an instruction on “reported as”, and a measurement period.

In this thesis, it is relevant to make a distinction between the outcome of an IOL process and the IOL process itself. The outcome in Engeström's theory of expansive learning is described as a new practice or an object reflecting the changing activities in the human activity system (Cong-Lem, 2022). The IOL process, on the other hand, includes (1) questioning, (2) analysis, (3) modeling the new solution, (4) examining and testing the new model, (5) implementing the new model, (6) reflecting on the process, and (7) consolidating and generalizing the new practice (Engeström, 2011) (see Figure 2). The research question from Study 1 is about how to support voluntary benchmarks for IOL in healthcare. Following this, the thesis focuses more on supporting the IOL process in the complex context of healthcare than on the outcome of the process studied: the uniform template or the results of the benchmarking in the case of the study.

### 3.3.2. Study 2

The second study was designed to investigate the second research question, resulting in Papers 2 and 3 in this thesis. The empirical setting was an integrated healthcare service involving collaborating healthcare organizations from specialized (one hospital) and primary care (13 municipalities) in a region of 300,000 inhabitants. Their IOL process aimed to improve the patient pathway for elderly and fragile patients receiving integrated care and was initiated by the Regional Committee of Interaction in Healthcare (the RCIH). The following activities were studied: the designing of the learning voyage, coordination of all involved parties, developing a prototype, testing on paper, real-life testing, and evaluation (see Figure 7). The prototype is about reinforced discharge supported by more dialogue through modern technologies (see Table 4). Today, the involved organizations are developing new technologies that support the new and improved way of working.

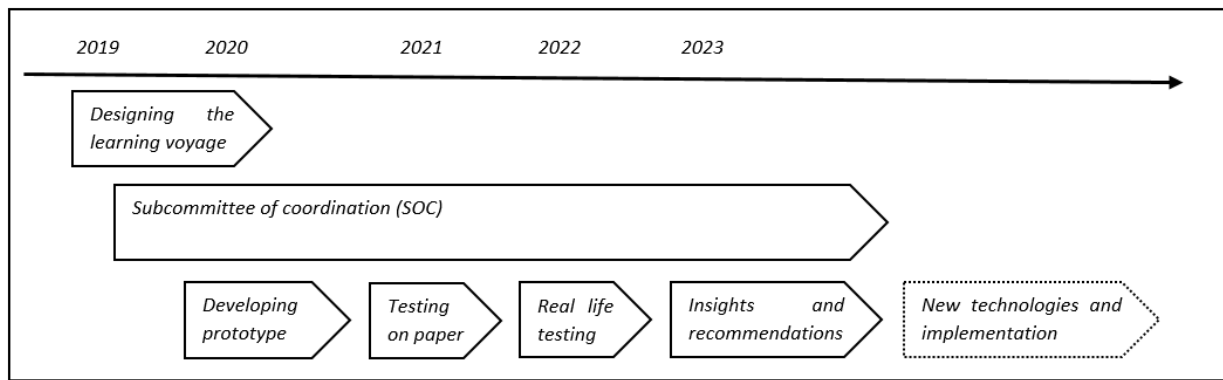


Figure 7: Timeline for essential activities throughout the improvement initiative

**Table 4.** Step-by-step guide, new and improved way of working

Stepp	Activity
1	When discharging the patient from the hospital, the physician will give recommendations on (a) what parameters to monitor, (b) limit values for when to intervene, and (c) a set of interventions to consider when a potential negative course of disease is observed.
2	The recommendation is communicated through a digital application for home care.
3	Primary care monitors parameters and intervenes if a potential negative course of disease is observed.
4	The patient, the physician at the hospital, and receiving personnel in primary care meet in a digital meeting for dialogue, learning, and support.
5	Primary care personnel can contact hospital personnel for guidance and support when in need.

### 3.4.Data collection

A rich set of data was needed to reveal new knowledge on strategies and practices for IOL from the two studies in this thesis. Data triangulation, the use of different data sources, is a method for strengthening the trustworthiness of qualitative research and is especially suited when studying social phenomena (Flick, 2014). To reach insights into the IOL process, it was essential to cover the multiple perspectives and experiences of stakeholders of different professions and positions across the providers involved in the two studies. Consequently, multiple sources of data were utilized. Data were derived from:

- Written documents such as e-mails, reports, and protocols
- Participant observations of meetings and phone calls

- Semi-structured interviews
- Reflection circles (involved stakeholders constructed and re-constructed the status and goals of the improvement initiative, planned new actions, took action, and evaluated actions taken as described by Coghlan and Brannick, 2014)
- Rapid circles of co-creation (stakeholders from several providers participated in an iterative process of multiple and short meetings for evaluation and improvement of the new model during the phase of testing and examining)
- Reflection notes taken by the researcher. Participant observations were noted by the researcher participating in meetings and phone calls and taking notes. Interviews, reflection circles, and rapid circles of co-creation were videotaped and transcribed.

Using triangulation increases the depth, scope, and consistency of the methodological proceedings and has the potential to put the findings on a more solid foundation (Flick, 2014). Sampling purposively means that the researcher deliberately selected specific pieces of data (Sharma, 2017). This was the case in the present thesis: the researcher selected documents, individuals, and situations of interactions in order to cover essential learning situations, perspectives, and experiences of individuals representing different professions, positions, and healthcare deliveries involved in the two studies. This sampling technique is prone to researcher bias, and I did my best to minimize this risk by selecting multiple sources involving a substantial number of people of different professions, positions, and organizations.

#### 3.4.1. Study 1

Data were collected from different sources over 1.5 years and consisted of documents, observational notes, protocols, and reflection notes (see Table 5).



**Table 5.** Data collection study 1

Source	Source	Year	Authors/participants
Documents	204 e-mails	2018–2019	Managers and professionals from all involved ERs
Observational notes	Observational notes after one meeting with stakeholders	2019	Researcher/higher-level managers and physicians from one hospital
Protocols	Two protocols from online meetings	2019	Researcher/the expert group
Telephone conversations	Observational notes after eight telephone conversations	2019	Researcher/managers and professionals from some involved ERs
Reflections of researcher	Reflection notes throughout the study	2018–2019	Researcher

### 3.4.2. Study 2

Data were collected from documents, protocols, reflection circles, interviews, so-called rapid circles of co-creation, and reports collected between 2019 and 2023 (Table 6).

**Table 6.** Data collection, Study 2

Method	Source	Year	Authors/participants
Documents (1)	Documents from the tender competition: a) Letter of competitive basis (5 pages) b) Three letters describing offers of services (63, 75, and 24 pages) c) Final agreement signed by the hospital and the preferred provider of service design (20 pages)	2019	Adviser, specialized care Suppliers of service design services  Advisor, specialized care

Protocols (2)	Fourteen protocols from meetings in the group of coordination (12 to 15 pages per protocol)	2020–2022	Coordinator, specialized care  Participants in the meetings: Key personnel interaction in healthcare, specialized and primary care (3) Quality advisers, primary care (2) Senior adviser, regional center of development, primary care Advisor improvement of healthcare/coordinator, specialized care
Reflection circles (3)	Two semi-structured dialogues aimed to reflect upon, learn from, and adjust the ongoing process. The reflection circles included eight professionals and four researchers.	2020–2021	Medical doctor, specialized care, and primary care(3) Manager, specialized care, and primary care (4) Quality advisor, primary care (2) Key personnel interaction in healthcare, specialized and primary care (1) Nurse, primary care (1) Researchers (2)
Interviews (4)	Six qualitative interviews of managers and professionals.	2022	Medical doctor, specialized and primary care (2) Key personnel interaction in healthcare, specialized care (1) Managers, specialized and primary care (2) Service designer, external (1)
Rapid circles of co-creation across borders and silos (5)	Twelve meetings of 35 minutes for rapid circles of IOL and co-creation during the testing of the new and improved way of working	2023	Test coordinators, specialized care (6) Test coordinators, primary care (18)

Report Insights and recommendations from the evaluation of the practical test of “Inside or outside?” (6)	The summary of the results from one survey, one focus group, and two interviews (19 pages)	2023	Survey (n=26) Focus group (15 people representing all involved actors) Interviews (2 physicians from primary care)
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### 3.5.Data analysis

In the qualitative data analysis, the researchers interpret and classify linguistic or visual material to state explicit and implicit dimensions and structures of meaning-making represented in the material, aiming to compare several cases (individuals or groups), identify and explain differences and conditions, and develop the theory of the phenomenon under study (Flick, 2014). The present thesis used different qualitative data analysis methods to organize, analyze, and interpret the collected data in a way that was suitable for research questions for the three papers. The qualitative analyses combined an initial and rough analysis of the material with more detailed procedures for refining themes and categories. The qualitative data analyses were constant comparative analysis (Boeije, 2002) (Paper 1), concept-driven content analysis (Graneheim et al., 2004) (Paper 2), and thematic analysis (Braun & Clarke, 2022) (Paper 3). In the following, I will briefly present and discuss the three types of analysis and how they were applied in the papers.

#### 3.5.1. Study 1

Constant comparative analysis (Boeije, 2002) was used to identify patterns of activities related to the involved actors during the process of IOL that emerged when designing and performing measurements in the voluntary benchmark for learning and improvement. The focus was on identifying and analyzing the work procedure and important IOL occurring during the process. This was done in five steps. First, data were read and re-read better to understand the work process and the IOL in action. The data were then re-read, typologies produced, and the work procedure was visualized following Spinuzzi’s three-step

participatory design method (Spinuzzi, 2005). The first version of Figure 7 was developed. In this step, patterns like what actions could belong to the different phases did occur. For example, one could understand that the discovery phase included some creative design through feedback on the first version of the Uniform template for measurements of ERs. Later, the data were re-read and compared with the visualized model, re-read again to understand the iterations among the actors, and ultimately, all the analysis steps were compared to revise (a) the work procedure and (b) how and when IOL happened (Figure 7). The constant comparative analysis has now led to a picture of what actions were executed throughout the different phases and steps of the IOL process and how professionals, managers, and different ERs were involved in the different phases and steps.

The constant comparative analysis helped reach a meaningful understanding of actors, activities, and learning during the IOL process. Visualizing the model was an essential tool during the analysis of data. The process was time-consuming, complex, and prone to subjectivity and bias. To minimize the negative risks, the analysis was conducted with high awareness of the need for objectivity when identifying patterns related to the involved stakeholders.

### 3.5.2. Study 2

In Study 2, a lot of data were collected from different domains. This study ended up in two papers: Papers 2 and 3. In Paper 2, deductive qualitative content analysis was chosen to test existing and explanatory models against qualitative data (Graneheim et al., 2017). I started by understanding the model and the categories of Engeström's theory of the human activity system to investigate whether this model could offer a deeper understanding of the context of the improvement initiative in the integrated care of study. The next step was to read and re-read the data while labeling material corresponding to Engeström's model, comparing the data from different sources, and visualizing the correspondence between the model and the data that seemed easily matched to the original model. The next step was to identify and code the data not identified in the first part of the analysis: the so-called left-over data. I then compared the corresponding data with the left-over data before I redrew the model by including the left-over data.

This procedure helped me understand how the elements of the original model of the human activity system, like norms or division of labor, could explain the process of IOL in the case study. At the same time, the identification of the data that did not naturally merge into the original elements – data related to shared leadership of the involved healthcare providers – helped me to explore possibilities of further development of the model due to the context of an improvement initiative in the integrated care studied. On the other hand, applying the deductive content analysis on such rich data material was complex and sometimes difficult. For example, one had to ask whether the division of labor also included actions and organizational structures for shared leadership. In the paper, I presented this dilemma briefly and argued that the respondent's perspectives and the frame of reference did support my understanding of shared leadership as a new and separate element. This exemplifies how the content analysis is also prone to bias and shows the importance of the researcher being aware of the need to strive for objectivity when applying qualitative analysis.

In order to identify strategies and practices supporting IOL in Paper 3, I applied an inductive thematic analysis. As the name of the analysis says, and contrary to the deductive analysis from Paper 2, the analysis starts with observations and data more than models and theories. Following Braun and Clarke (2006), this analysis was used to identify and analyze patterns in data for developing new knowledge on strategies and practices supporting IOL in integrated care. I found that this method helped me organize and describe themes and patterns in rich and detailed material. The analysis was done by the following procedure: the data was read and re-read to identify initial ideas of themes and codes that were written down. Data features were coded systematically for the clustering of data to potential themes, and the material was re-read to separate themes, categories, and sub-categories. Themes and categories were reviewed with the entire data set, and the themes and categories were further analyzed until clear definitions for each theme, category, and sub-category were established.

As in the previous two papers, the analysis was time-consuming, complex, and prone to researcher bias. The process of categorizing came with several subjective choices regarding

decisions like what data to cluster into the same categories, the subordination of categories, and naming the categories. It was essential to be aware of my presumptions and interpretations and try my best to be open to new perspectives and explanations when identifying and analyzing the patterns inherent in the data. The procedure of re-reading the data repeatedly with the aim of systematically and step-wise revealing strategies and practices was helpful for maintaining focus on the content of the data and challenging my own presumptions regarding the process where I had taken part as an insider.

### 3.6. Ethical considerations

Following Flick's (2014) checklist for taking ethical issues of qualitative research into account, ethical dilemmas related to avoiding harm and ensuring the rights of participants were discussed with the Department of Research in the hospital where the IOL processes were initiated. No statements from any ethical committee were considered necessary, all respondents gave their written consent regarding participation in the studies and data processing, and personal information was gathered and saved following relevant laws and regulations. Although it was not required by regulations, information about the research project was given verbally in meetings and personal dialogues between researchers and stakeholders from the different healthcare providers throughout the improvement initiatives. The research projects were also presented for and discussed with the selection of patients and next of kin.

### 3.7. Limitations

The research methodology of choice comes with a fair amount of challenges. Executing voluntary benchmarks among multiple healthcare providers and IOL in integrated care in a dynamic real-life healthcare setting includes little control over variables, differences in contexts, and conflicts of priorities. Even though numerous steps were taken to ensure rigor and trustworthiness, several factors challenged the research quality in the two studies. The first is the more general limitations of qualitative research, such as the generalization and validity of findings or the difficulties regarding revealing knowledge on frequencies or

distribution of the elements studied (Flick, 2014). Next, the participatory design has an inherent risk like preunderstandings or role duality of the researchers affecting the results (Coghlan & Berrick, 2014). In addition, the participants in the particular study have not always had time to involve themselves as profoundly as intended in all parts of the research process. Consequently, there is a risk that their full potential of sharing knowledge, experiences, and assessments is not fulfilled. This might have negatively affected the quality of the learning process, the data, and the results. At the same time, the data sources might not be strong enough to capture the full complexity of the context or causality of variables. One example is how the pandemic's presence affected the two studies. In the first improvement initiative, the voluntary benchmark was not followed up by the planned national conference for learning and improvement of ERs. In the second study, the participants in the IOL process came under restrictions that hindered physical meetings and dialogue for learning and improvement across borders and silos. Due to the dynamic context of healthcare, certain difficulties will remain in replicating the study to check for the reliability of the research. Furthermore, it is hardly impossible for insiders not to act upon the preunderstanding of people and organizations or special interests in certain phenomena or explanations (Coghlan & Brannick, 2014).

Such risks cannot be entirely avoided. Findings need to be reproduced in other settings and by other methods. The following section will address the different steps taken to minimize the adverse effects of the methodological limitations of this thesis.

### 3.8. Reflection on the research process

My professional background is in clinical psychology, specializing in work- and organizational psychology. Understanding how organizations learn and adapt is a central theme in my education. I have done my research in combination with my daily work as a senior facilitator of change and improvement in a hospital setting. This has been both challenging and rewarding.

It has been hard to prioritize between daily tasks to handle supporting managers and professionals striving to deliver high-quality healthcare and my research. Furthermore, as discussed on several occasions above, being an insider has challenged the objectivity and trustworthiness of the results. It has been essential to reflect upon my role, actions, and subjectivity. I have continuously consulted my surroundings concerning ethical and methodological dilemmas in my research. I have received support from my supervisors, the Department of Research in my hospital, my fellow authors, and other colleagues.

Nevertheless, as an insider, investigating perspectives close to practitioners also gave me easy access to important stakeholders and their deep understanding of the context, their needs, the present situation in the healthcare business, future challenges, and studies and data. Combined with support from skilled supervisors and high-quality PhD seminars and courses, I am confident my research addresses questions that are highly relevant to the sector today and in the future. This is confirmed by the feedback from the three conferences that invited me to share my research and the journal reviewers reviewing Paper 2. I am grateful for the opportunity to develop knowledge and skills for research in general and research on IOL in healthcare in particular.



## 4. Summary of appended papers

More details about the connection between the purpose, research questions, and papers in this thesis are presented above, as are the empirical settings, the samples, and the theoretical analysis of studies and papers (see Figure 1 for the connection between purpose, research questions, and papers). In order to summarize the appended papers, this section provides a brief point-by-point presentation of each paper, including a comment on how the paper contributes to the thesis as a whole. For limitations, see Chapter 3: Research Methodology.

### 4.1. Paper 1

*Title:* Promoting organizational Learning facing the complexity of public healthcare: How to design a voluntary, learning-oriented benchmarking

*Purpose:* Provide a more detailed insight into conditions supporting collective IOL from a benchmark.

*Empirical setting:* An IOL process involving an expert group, all involved ERs, all involved managers, and the researcher resulted in a uniform measuring template defining indicators to give meaningful information about similarities and differences in performance and context. The ERs also conducted the process of measuring and comparing the results.

*Sample:* Documents, observational notes, protocols, telephone conversations, and reflection notes (see Table 4, Data Collection Study 1).

*Analysis:* Constant comparative analysis

*Main results:* The data analysis revealed four main results: (1) IOL occurred while developing the template and measuring performance; (2) the participation of stakeholders was crucial for capturing the complex context and increasing the learning potential from the benchmark; (3) the continuous dialogue between the involved actors did create IOL during the process; and (4) the facilitator had an essential role regarding progress, coordination, and dialogue.

*Contribution to the thesis:* The main contribution to developing new knowledge on strategies and practices supporting IOL from this thesis was the more detailed insights into the conditions under which collective inter-organizational cooperation and learning from a benchmark can happen. A visualization of the work process provides insights into how the facilitator ensured the participation of stakeholders and the continuous dialogue among the involved actors through certain phases, steps, and actions of implementing a voluntary benchmark for healthcare improvement.

#### 4.2. Paper 2

*Title:* Breaking silos and crossing borders: A Norwegian case of IOL for improvement of healthcare

*Purpose:* To gain a deeper understanding of how to support IOL and improvement in integrated care.

*Empirical setting:* One hospital and 13 municipalities got together to improve the patient pathway for elderly and chronically ill patients across specialized and primary care.

*Sample:* Documents, protocols, reflection circles, and interviews (see Table 5, Data Collection Study 2).

*Analysis:* Deductive qualitative content analysis

*Main results:* The findings did support the usefulness of Engeström's model of the human activity system in understanding essential characteristics regarding the local context where the learners learned (see Figure 3, The human activity system, and Table 1, Brief overview of different elements of the activity system). In addition to the original elements in Engeström's model, the analysis revealed a new element for improving integrated care: shared leadership in the form of a network organizational architecture binding the involved parties together.

*Contribution to the thesis:* The main contribution to developing new knowledge on strategies and practices supporting IOL from this thesis was the proposal of a new understanding of the human activity system where IOL for the improvement of integrated care happens. The paper argues that research on network organizational architecture and healthcare learning

systems supports the importance of building shared inter-organizational management structures for IOL in integrated care.

#### 4.3. Paper 3

*Title:* Inter-organizational learning and innovation in healthcare: Strategies and practices supporting improvement of integrated care.

*Purpose:* To identify strategies and practices supporting IOL in integrated care.

*Empirical setting:* One hospital and 13 municipalities got together to improve the patient pathway for elderly and chronically ill patients across specialized and primary care.

*Sample:* Documents, protocols, reflection circles, rapid circles of co-creation, a report, and interviews (see Table 5, Data Collection Study 2).

*Analysis:* Inductive thematic analysis

*Main results:* The analysis identified essential characteristics and strategies of the organizational network architectures supporting IOL: Equality of the involved parties, shared goals, recognition of expertise, ability to coordinate, and ability to design IOL processes and make joint decisions. The practices supporting the process of IOL were labeled as (1) collecting insight into complex realities, (2) actively using contradictions to nurture learning, (3) iterate, (4) motivating, and (5) prototyping. This paper argues for the importance of building network organizational architectures with specific characteristics that can apply certain practices if aiming for IOL to improve integrated care.

*Contribution to the thesis:* The main contribution to the development of new knowledge on strategies and practices supporting IOL from this thesis was the identification of strategies when building network organizational structures for shared leadership and practices to apply for supporting IOL in integrated care.

## 5. Results and discussion

All three papers in this thesis show how ***stakeholder involvement*** has been essential for achieving a deep understanding of the complex and dynamic contexts and raising the level of IOL in the cases of study. Papers 2 and 3 focus on building a durable ***network organizational architecture*** for shared leadership in the case of IOL for improvement of integrated care, and Papers 1 and 3 offer more concrete ***design recommendations*** for supporting IOL when initiating voluntary benchmarks or IOL in integrated care. In the following, I will discuss the results in relation to the two research questions. For clarity, the main takeaways will be marked in bold italics when discussed in the following paragraphs.

*RQ1: How can voluntary benchmarks become sources of IOL in the complex context of public healthcare?*

Underestimation of the complexity of the service, measuring of general problems on distance from the local realities, and controlling more than learning are regarded as barriers to OL or barriers from benchmarking in healthcare (Coles et al., 2020; Lyman et al., 2017; Buckmaster and Mouritsen, 2017; Hruska et al., 2019). In Study 1, the most crucial success factor regarding embracing complexity seemed to be the continuous dialogue between stakeholders from all involved organizations (***stakeholder involvement***). Oh and Kuchinke (2017) and Greenhalgh and Papotsi (2018) focused on how complex systems are dynamic and interact with other systems. The ERs of the study turned out to have significant differences important for understanding performance based on indicators measured in the benchmark. Due to the co-evolution of the services with other hospital and primary care departments, the ERs held differences regarding patients, structure, and staff. Important IOL related to the differences, how to understand them, and how to measure them occurred during the dialogue among the involved actors. For decades, literature has discussed how to meet complexity with open dialogue, increased levels of interaction, and flexible responses to emerging patterns (e.g., Plsek & Greenhalgh (2001) and Snowden & Bone (2007)). In the case of the study, the need to increase the number of indicators for measuring and comparing ER performance became evident during the dialogue between the stakeholders. In addition to having indicators measuring quality and efficiency, there was a need for a broad set of indicators to explain the differences in patients, structures, and staff between

the ERs. These findings support literature emphasizing the need for a deep understanding of complex realities and adaptation to unexpected changes as preconditions for successful processes of learning and improvement from benchmarking in healthcare (Greenhalgh & Papotsi, 2018; Coles et al., 2020; Buckmeister & Mouritsen, 2017; Jordan & Messner, 2012; Wouters & Wilderom, 2012).

The first study resulted in a visualized work procedure (Figure 8) that has the potential to serve as a more concrete **design recommendation** when initiating voluntary benchmarks for the improvement of healthcare services. This procedure shows the phases, steps, involved actors, activities, and outcome of the IOL process under study. This work procedure did support IOL between the involved actors. Paper 1 also points out the importance of having a facilitator actively involving frontline staff and other stakeholders. She supported the emergent learning process by involving the participants in listening, sharing, questioning, and learning. In this way, the facilitator's role was found to be necessary, or even crucial, for the indicators to better represent the local operation condition. In this way, appointing a facilitator competent in supporting IOL is highly recommended when initiating voluntary benchmarks for learning and improving healthcare.

*RQ2: What strategies and practices can be applied to overcome the barriers of IOL in the complex context of integrated care?*

Papers 2 and 3 address strategies and practices to apply for overcoming the barriers of IOL in the complex context of integrated care. In complementary ways, the two papers reveal new knowledge related to the three main takeaways of this thesis: stakeholders' involvement, the importance of shared leadership for IOL in integrated care, and design recommendations for managers and facilitators of improvement and change.

Supporting research such as Gustavsson and Halvarsson (2023), Lalani (2020), Fjeldstad et al. (2019), or Cresswell et al. (2023), the papers demonstrate how the **involvement of stakeholders** as frontline personnel and managers in different phases of the learning process was important for the IOL that occurred during the improvement initiative of study. In the case under study, this was important at many levels. The Regional Committee for Interaction

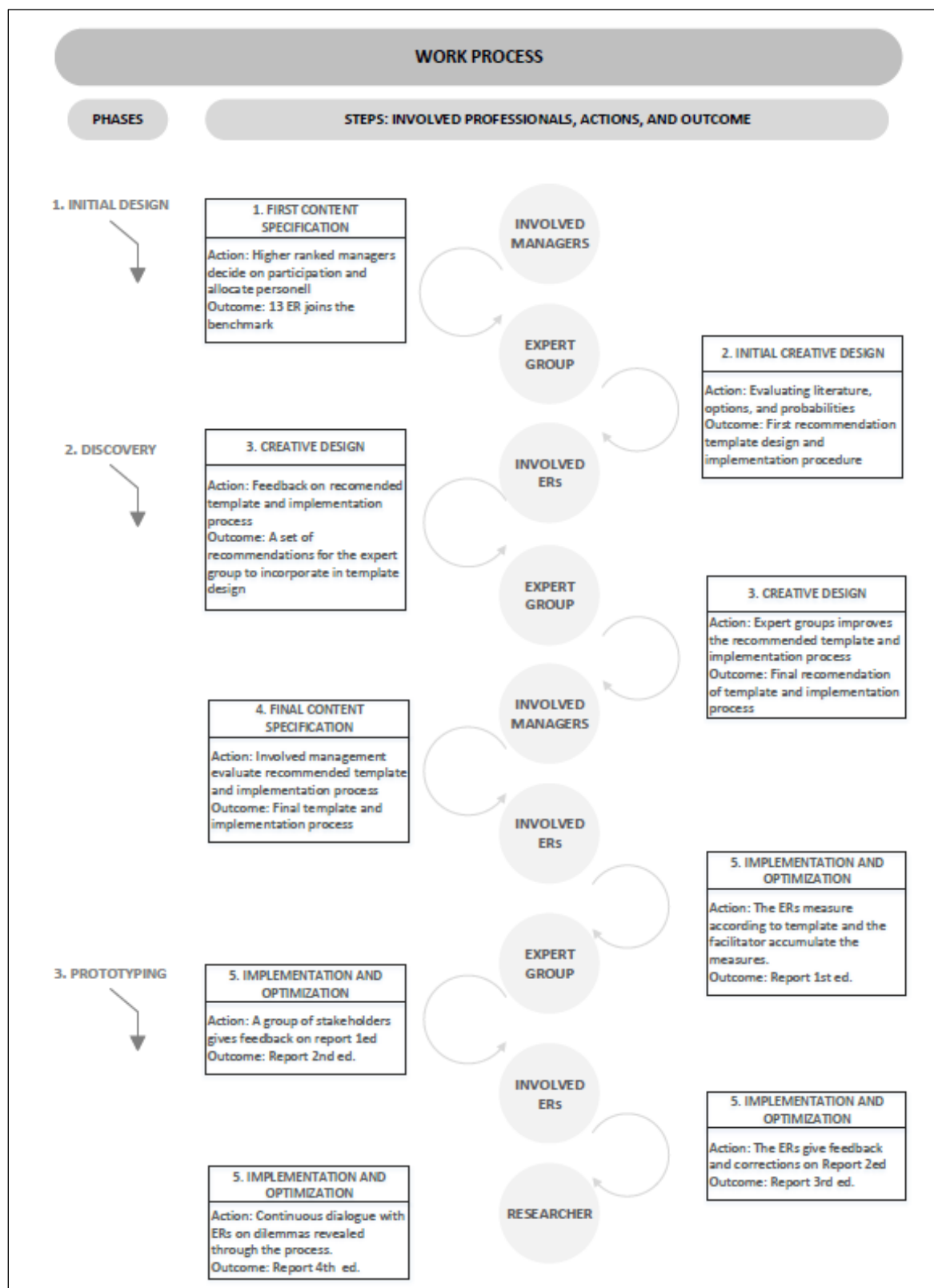


Figure 8: The three phases/seven steps work procedure for voluntary benchmarks for learning and improvement.

in Healthcare (RCHI) was the network organizational architecture of higher-ranked leaders representing all involved healthcare providers delivering integrated care together (Figure 9). During the IOL process, the RCHI established a second network organizational structure, the Subcommittee of Coordination, with members representing delivers and ensuring that front personnel was actively involved in every phase of the process (see Figure 7 for the timeline for essential activities throughout the improvement initiative).

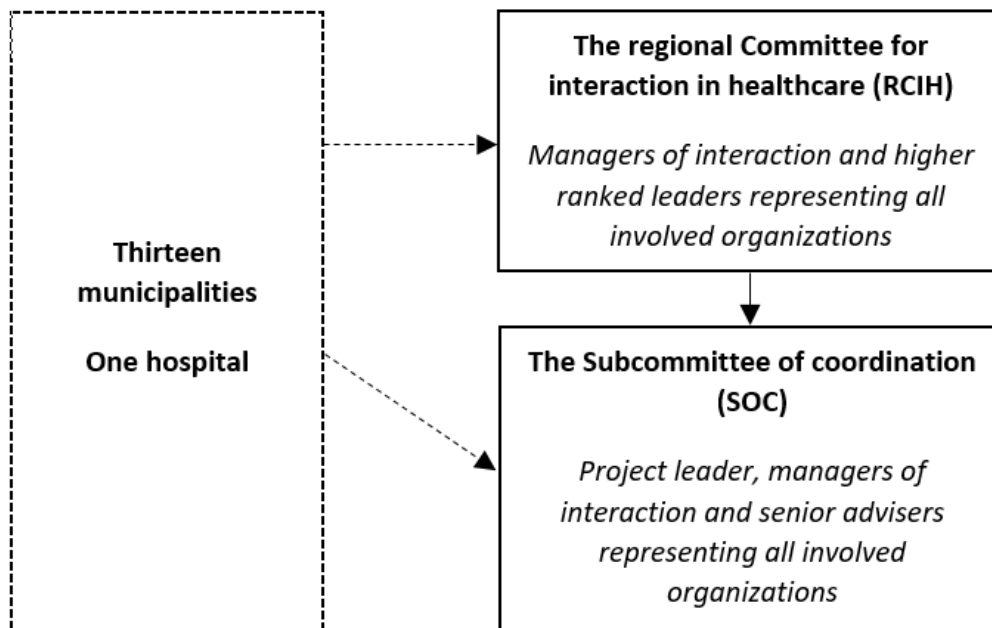


Figure 9: Stakeholders participation in the network organizational structure RCHI

The stakeholder participation resulted in essential contributions to insights into the complex realities, moving beyond contradictions, supporting ideations, modeling, and prototyping new ways of working. Figure 10 provides a more detailed visualization of the human activity system under study and can offer an impression of the complex context where stakeholder involvement was regarded as important for the IOL process.

In the human activity system, contradictions are the prime source of change (Engeström, 2018; Engeström & Sannino, 2021; Gustavsson & Lundkvist, 2023). When involved in workshops and dialogues among frontline personnel, stakeholders were confronted with, discussed, and learned from contradictions. This thesis supports Engeström and other researchers' findings (e.g., Engeström, 2018; Engeström & Sannino, 2021; Gustavsson & Lundkvist, 2023).

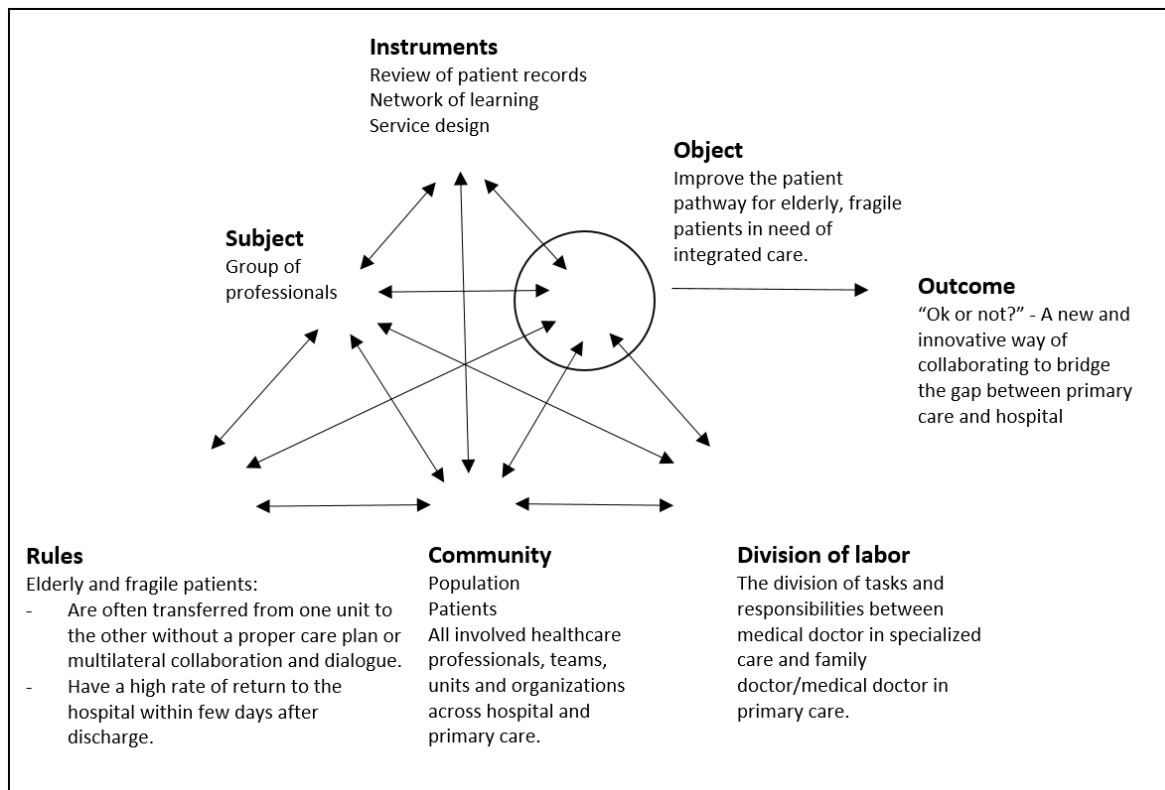


Figure 10: The human activity system under study, visualized

Lalani (2020) called for a new line of research on infrastructures for IOL in integrated care. Fjeldstad et al. (2019) argued that *network organizational architecture* supports mobilization for and integration of actors involved in delivering and improving integrated healthcare. Our findings support research demonstrating how network organizational structures enhance collaboration across silos and borders in integrated care (Britto et al., 2018; Vincenzo, 2018; Masica et al., 2022, or Fjeldstad et al., 2019). At the same time, our analysis reveals a formal network structure binding all the involved parties together in the planning and execution of the improvement initiative, understood here as a structure that is able to conduct shared leadership. Focusing on shared leadership from network structures, this thesis differs from the more typical focus on the application of improvement methods and data for IOL in learning health systems (see, for example, Britto et al., 2018; Easterling et al., 2021, or Fjeldstad et al., 2019). In the case under study, the network organizational structure of shared leadership was a stable, formalized network structure that was responsible for interaction between primary and specialized care. This network initiated, planned, and coordinated the IOL process under study. As far as I know, structures for



shared leadership taking on the responsibility of initiating IOL processes have received less attention in research on network organizational architectures for healthcare improvement.

Following the already-known effect of network organizational architecture on collaboration across silos and borders in integrated care (e.g., Fjeldstad et al., 2019) and the results of Study 2, there is reason to consider further development of the model of the human activity system related to IOL in integrated care. The element of shared leadership is not explicit in Engeström's model of the human activity system when analyzing IOL I integrated care. Presupposing the obvious need for more research before accepting a new model, this thesis suggests a new and improved version of the human activity system model based on our study's results (Figure 11).

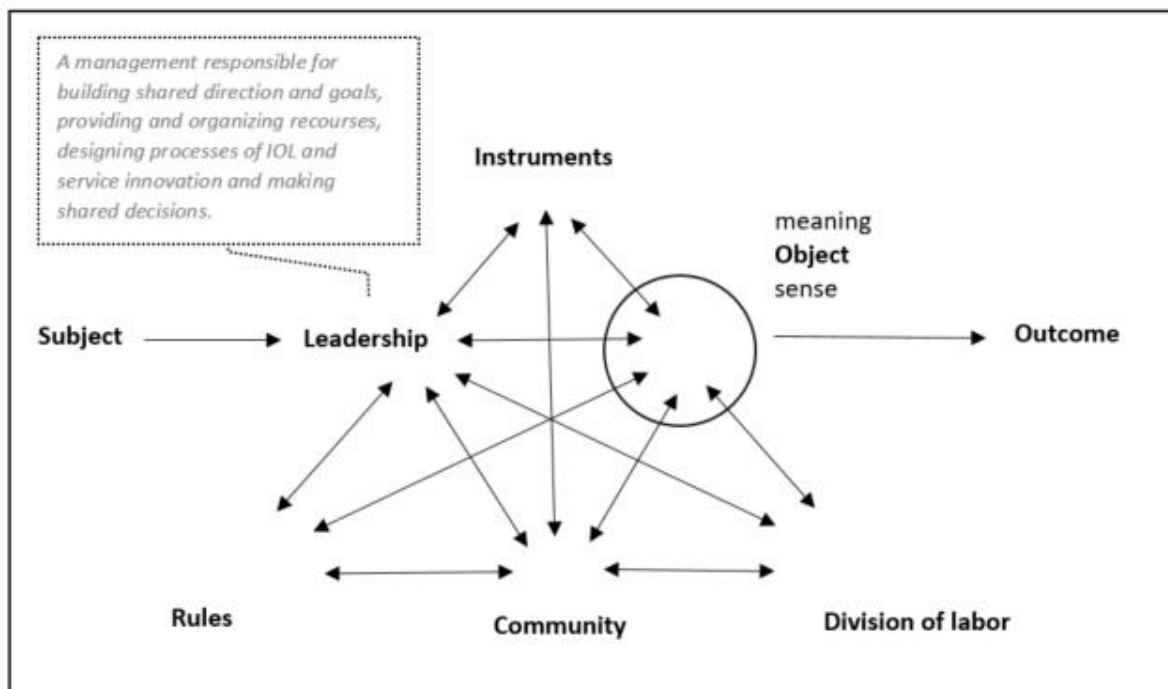


Figure 11: The suggested model for the human activity system for the improvement of integrated care

In the case under study, the existing networked structure of shared leadership planned and coordinated an IOL process based on subjects, a group of physicians, questioning the practice related to the patient pathway of elderly and chronically ill patients of the region. This indicates that shared leadership could be placed in the continuum of subject-leadership-

object-outcome (see Table 1 for a brief overview of different elements of the activity system). The analysis revealed that the leadership element was influenced by and did influence other elements in the human activity system. An example would be how the RCHI planned for and coordinated using instruments like methods and tools for IOL during the process. Alternatively, patients and next of kin as part of the community did give valuable feedback while prototyping the new way of working. More research is needed to understand the role and dynamics of shared leadership in a human activity system improving integrated care.

There has been a call for more precise ***design recommendations*** regarding Engeström's theory of expansive learning (Wiser et al., 2019; Cong-Lem, 2022). Design recommendations would address possible strategies and practices to consider when planning and coordinating an IOL process in integrated care. Our analysis reveals that the network organizational structure for shared leadership in the case under study profoundly influenced the IOL process. Paper 3 shows how initiatives taken by the RCHI were important for tackling some of the barriers identified in the literature: collaboration and IOL among front staff, low awareness of front staff's needs and daily routines when designing and improving integrated care, and the lack of collaborative platforms for IOL (Buch et al., 2018; Lalani, 2020; Cresswell et al., 2023; Gustavsson & Lindkvist, 2023). The data analysis revealed different characteristics of the structure for shared leadership. For example, the RCHI involved stakeholders, applied participatory design when designing and coordinating the IOL process, and engaged in inter-organizational dialogues to make joint decisions when vital for the process. These joint decisions also included recruiting front personnel and giving them time to join the IOL process or to raise funding for examining and testing the new way of working in a real-life setting, an essential phase of IOL processes. Table 7 provides a more detailed presentation of the characteristics of the RCHI.

**Table 7.** Characteristics of the organizational network architecture supporting IOL in Paper 3

Theme	Categories	Sub-categories
Shared leadership	Equality	The gradually emerging: <ul style="list-style-type: none"> <li>• Recognition of inter-dependence</li> <li>• Establishment of equal partnership</li> </ul>
	Shared goals	The gradually emerging: <ul style="list-style-type: none"> <li>• Understanding of the involved parties' sharing of the same future challenges</li> <li>• Recognition of the need for improvement of the integrated care service</li> <li>• Belief in co-creation and participation of stakeholders as essential preconditions for successful improvement processes</li> </ul>
	Recognition of expertise	<ul style="list-style-type: none"> <li>• Involvement of stakeholders</li> <li>• Involvement of outside professionals</li> </ul>
	The ability to coordinate	The distribution of: <ul style="list-style-type: none"> <li>• Roles and responsibility</li> <li>• Representability</li> </ul> Planning for a dynamic process
	The ability to design the IOL process	<ul style="list-style-type: none"> <li>• The use of participatory design</li> <li>• The planning of the IOL voyage</li> <li>• The use of facilitators</li> </ul>
	The ability to make joint decisions	The involved parties engaged in the following: <ul style="list-style-type: none"> <li>• Inter-organizational dialogue</li> <li>• Formal, inter-organizational decisions</li> </ul>

Built on the results-related characteristics of the network structure for shared leadership and the IOL process in itself, Paper 3 presents a set of strategies to consider when building an organizational network architecture to improve integrated care (Figure 12) and design recommendations when planning an IOL process supporting improvement in the complex context of integrated care (Figure 13).

I argue that the strategies and practices identified in Figures 12 and 13 relate to the identified barriers to learning across silos and borders, such as collaboration and IOL among front staff, low awareness of front staff's needs and daily routines when designing and improving integrated care, and the lack of collaborative platforms for IOL (Buch et al., 2018; Lalani, 2020; Cresswell et al., 2023; Gustavsson & Lindkvist, 2023). In addition, Engeström's understanding of medical expertise as flexible knot-working among diverse practitioners and the need for expertise to be fostered as expansive learning in progress (2018) underpins the

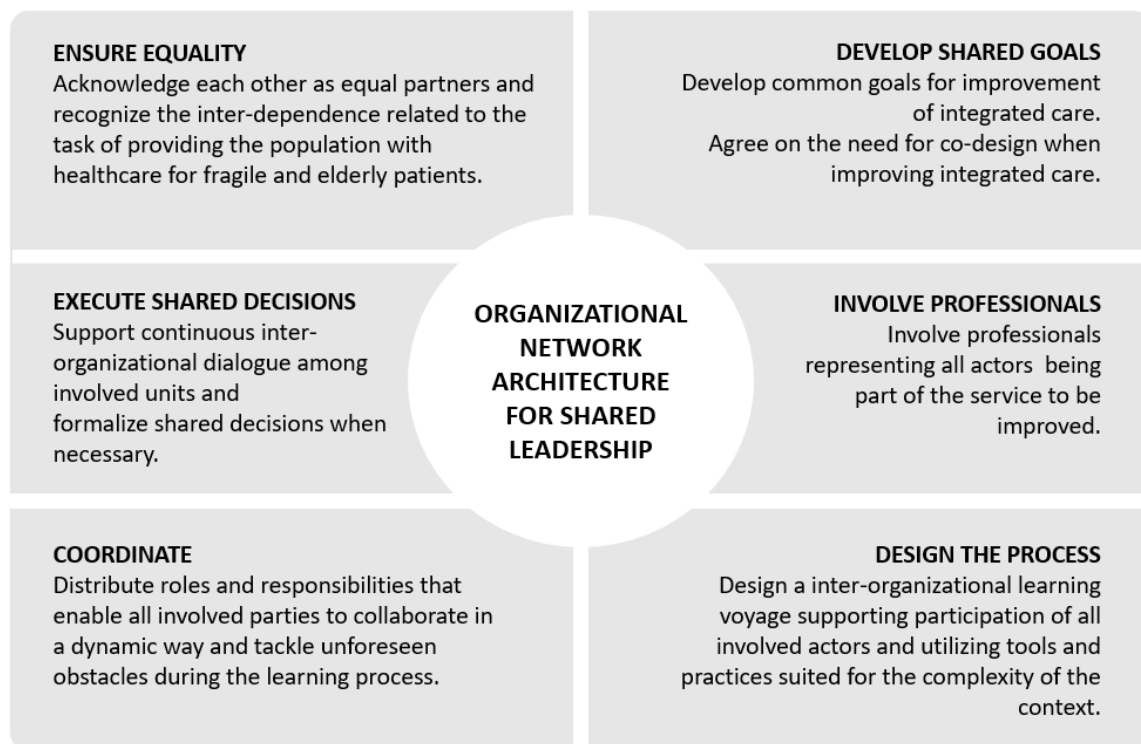


Figure 12: Proposed design recommendations to consider when planning an IOL process supporting improvement in the complex context of integrated care

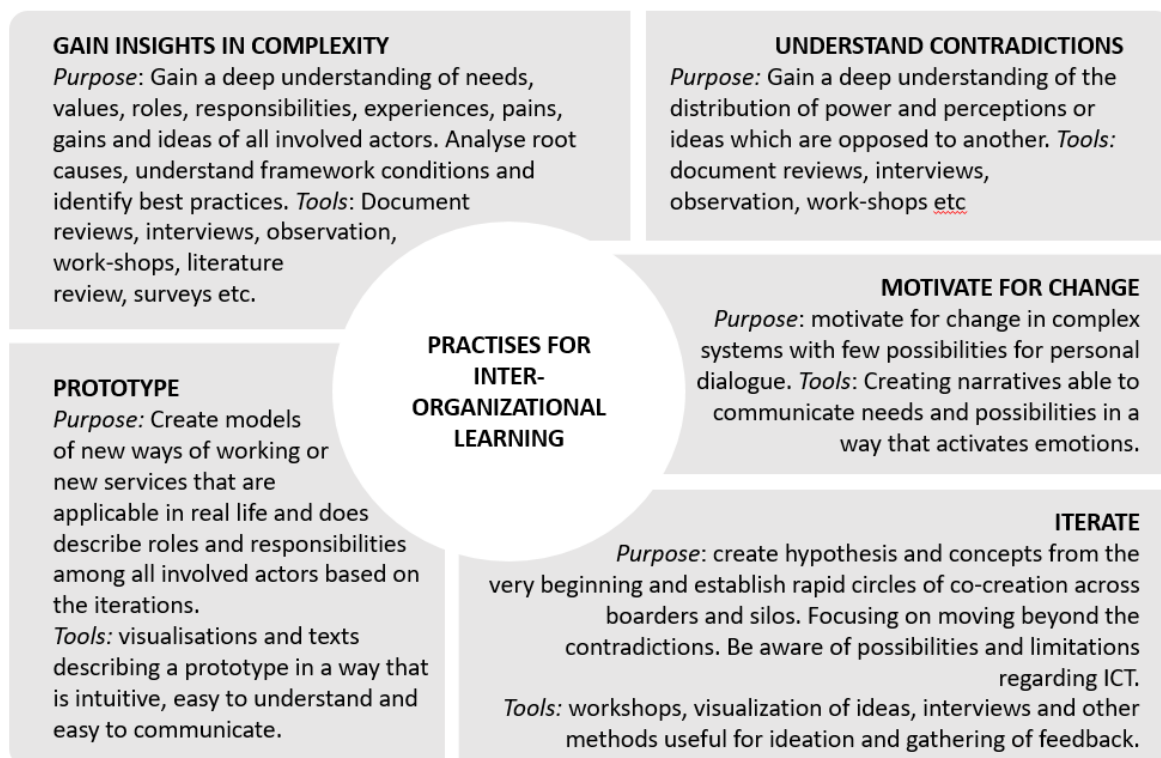


Figure 13: Proposed practices for IOL in integrated care

relevance of recommendations related to the involvement of professionals, insights into complexities, understanding of contradictions or development and iterative testing of prototypes applicable in real life.

In general, those recommendations are in line with research fronting stakeholder involvement and participatory design (Smith et al., 2017; Bradbury, 2015; and Steen, 2013), the building of network (Vincenzo, 2018; Masica et al., 2022, or Fjeldstad et al., 2019; Gustavsson & Lindkvist, 2023), the phases of the expansive learning cycle (see Engeström, 2018, and Skipper et al., 2020), and the importance of understanding complexity when improving healthcare (Chassin & Loeb, 2013; Buckmaster & Mouritsen, 2017). The more novel focus of the proposed design recommendations is the building of networks for shared leadership to improve integrated healthcare for the same reasons as discussed above.

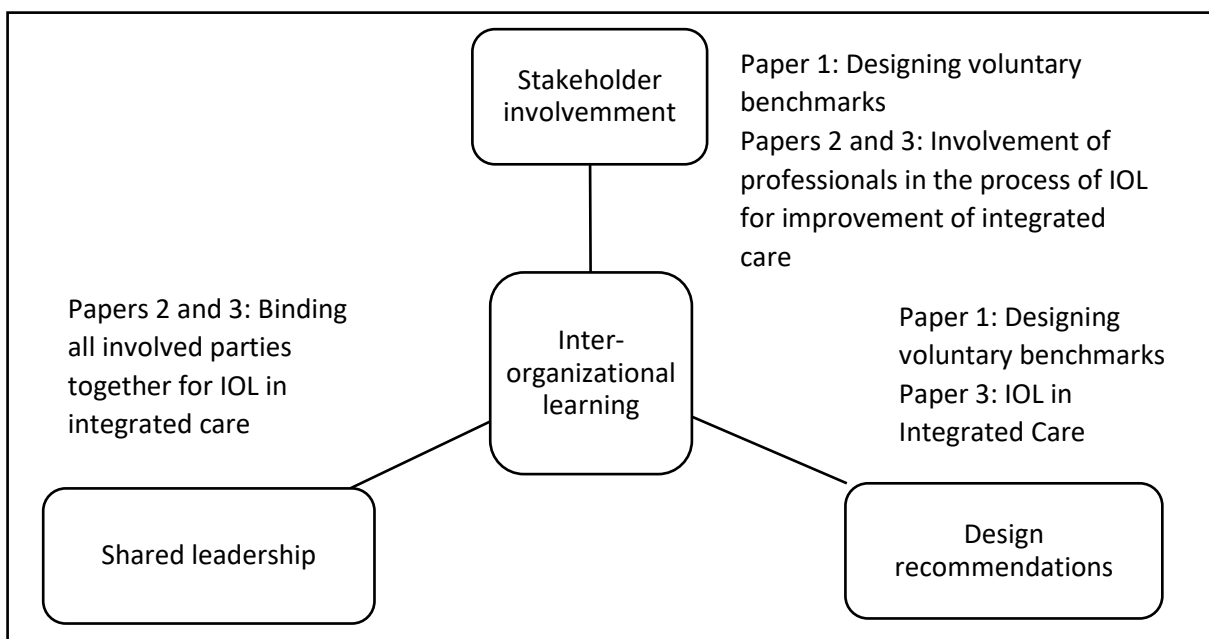


Figure 14: Takeaways across the three papers.

This thesis is about contributing new knowledge on strategies and practices to support IOL for improving healthcare. The appended papers demonstrate different perspectives when investigating IOL in healthcare, from the angle of learning from other organizations delivering the same services to different patients and shared learning among organizations that are part of the same integrated healthcare. Connecting the three papers, three

elements re-occur in data and results: stakeholder involvement, shared leadership, and design recommendations (Figure 14).

## 6. Conclusion

The purpose of this thesis was to contribute new knowledge on strategies and practices to support IOL for the improvement of healthcare. The two research questions focused on practices of voluntary benchmarks that can support IOL in healthcare and strategies and practices to apply to overcome barriers to IOL in integrated care.

Paper 1 provided a more detailed insight into the conditions under which IOL from a voluntary benchmark can occur. A detailed work procedure was developed (Figure 8). The procedure visualizes how the facilitator ensured the involvement of and learning among stakeholders through certain phases, steps, and activities.

Papers 2 and 3 focus on IOL in integrated care. A new and improved model integrating shared leadership as a separate element of the human activity system for IOL in integrated care was suggested (Figure 11). At the same time, multiple strategies and practices to consider for overcoming barriers of IOL in integrated care were identified. Network organizational structures for shared leadership should ensure equality of the involved parties, develop shared goals, design IOL processes, involve stakeholders in IOL processes, coordinate IOL processes, and make joint decisions when considered necessary (Figure 12). Practices to consider when designing and executing IOL processes were related to gathering insight into complex realities, understanding contradictions, iterating, motivating change, and developing prototypes for new and improved ways of doing things (Figure 13).

In sum, this thesis has contributed to research on IOL in three different areas: the importance of stakeholder involvement, the importance of network organizational architectures for shared leadership on IOL in integrated care, and more concrete design recommendations for (a) voluntary benchmarks in healthcare in general, and (b) for IOL in integrated care in particular. This thesis has identified strategies and practices that stakeholders can consider to find ways to collaborate across silos and borders for IOL and improvement.

Front-line personnel might use the new knowledge to better understand the dynamics and potential of IOL in healthcare concerning benchmarking and integrated care. Hopefully, the results can inspire them to actively involve themselves in IOL processes to improve the healthcare services in which they are involved. Managers and facilitators of change can use this knowledge to understand the dynamics of IOL in healthcare better. The results can motivate them to emphasize the importance of stakeholder involvement for understanding the local context before benchmarking or designing processes for IOL in integrated care. In addition, managers and facilitators of change can be more aware of the importance of developing infrastructures for learning and improving integrated care. Hopefully, the results can inspire policymakers to be more aware of stakeholder involvement and the potential of structures for shared leadership and other network organizational architecture for IOL in integrated care.

### 6.1.Future research

There is a need for a deeper understanding of shared leadership, stakeholder involvement and design recommendations for IOL in healthcare. Recently, researchers have called for research on organizational structures strengthening IOL to improve integrated care (Lalani, 2020). The present thesis has discussed the role of network organizational architectures for shared leadership involving all parties to initiate and coordinate IOL to improve integrated healthcare. Due to methodological limitations of this thesis, further investigation of multiple local contexts is required in order to strengthen the generalizability of the results and further develop the knowledge in the field. There is a need for more research on how to break down silos and collaborate across borders for IOL in healthcare services involving multiple providers.



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