Expressions of shared interpretations -
Intangible outcomes of continuous quality improvement efforts in health- and elderly care

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Abstract

This thesis is anchored in improvement science, the research field of improvement. Improvement science describes and explores improvement in real-life contexts and “system of profound knowledge” (Deming, 2000) is a cornerstone. Performance measures, including their variation over time, are fundamental in the research and evaluation of outcomes of continuous quality improvement efforts (CQI efforts). However, the strong emphasis on operationalisations and measurements risks overshadowing other kinds of outcomes to which CQI efforts can lead.

Research has shown that it is advantageous that those performing change have some kind of “sharedness”, e.g. shared cognitions, understanding, knowledge, interpretations or frame of reference. Despite the diversity of concepts and scientific studies, “sharedness” is mainly described as a prerequisite for change.

This thesis addresses the call to broaden the scientific approach in improvement science and to take advantage of knowledge developed since Deming’s time. It has a point of departure in the presumption that CQI efforts also lead to intangible outcomes; qualitative effects that are not easily captured with traditional performance measures. The concept “Expressions of shared interpretations” is used to study “sharedness” as intangible outcomes.

The overall aim with this thesis is to explore Expressions of shared interpretations as intangible outcomes of CQI efforts from the perspective of clinical Microsystems and healthcare professionals. The specific aims are to examine and establish how Expressions of shared interpretations develop, influence CQI efforts and change over time.
Using a qualitative approach, this thesis comprises four papers, based on three studies. The empirical context is healthcare and welfare organizations providing care: hospital clinics in county councils/regions and nursing homes in municipalities. The studies include time periods from one to three and a half years, totalling six years. Expressions of shared interpretations inherently mean that the methods for data analysis need to be based on commonalities or patterns in the data. In this thesis, three methods are used: qualitative content analysis, thematic analysis and directed content analysis. To examine time-related changes, year-to-year comparative analyses of themes and categories are done.

To explore Expressions of shared interpretations, different theoretical frameworks are used: team cognitions (Paper 1), sensemaking theory (Paper 2), cognitive shifts (Paper 3) and programme theories (Paper 4).

A directed content analysis is applied in a meta-analysis of the results presented in the four papers. The results indicate that Expressions of shared interpretations develop as intangible outcomes of CQI efforts and a general programme theory of CQI efforts in health- and elderly care is developed, illuminating how Expressions of shared interpretations change and influence CQI efforts. The general programme theory incorporates the PDSA cycle and describes the complex, interconnected and continuous development of Expressions of shared interpretations. It also illuminates how Expressions of shared interpretations provide change performers with momentum to engage in forthcoming PDSA cycles and how sensemaking is a central activity.

CQI efforts in health- and elderly care are characterised by a “just get on with it” attitude, while in this thesis, thoughtfulness is emphasized. Existing improvement tools support collaboration, creativity and analysis of critical aspects of the operations, yet none of the improvement tools help change performers gain understanding of the CQI effort as such. To address this, this thesis suggests that change performers complement the use of improvement tools with an inquiring mind, that they collaborate in thoughtful dialogues and that leaders function as inquirers. To support this posture, the widely used Model for improvement is complemented with a fourth question: What are our assumptions? The question pinpoints the need to be thoughtful in every step of the CQI effort, not just in the analysis of the problem at hand.
Original papers

This thesis comprises four papers, based on three studies. Figure 4 (p. 26) provides an overview of the relationships between studies and papers. The papers have been reprinted with the kind permission of the respective journals.

**Paper 1**

**Paper 2**

**Paper 3**

**Paper 4**
As a young boy my son played handball. He was a rather reclusive boy. However, the organized team sport supported him in cooperating and interacting with the other team members. This helped him to overcome some of his feelings of social unease.

The handball coach never told the team members they needed to develop shared communication skills prior to play. Neither did he claim they needed pre-established and shared goals as they signed up for the team. On the contrary, the handball coach said this kind of sharedness was something team members developed in purposeful interaction. Sharedness was understood by him as an outcome of cooperation, and not a mandatory obligation prior to it. Thus, sharedness was a major gain of playing with the team. This was a good thing. My son would not have accepted spending daylong conferences discussing such theoretical topics with the team members. He wanted to play! And as the team played, the coach made them aware of what they were doing. The team talked about this and their sharedness gradually developed.

In improvement science sharedness hitherto has mainly been understood as a prerequisite, the necessary basis for improvement work to take place. And we actually do spend daylong conferences discussing goals and values prior to work. But what if this sharedness develops as a contextualized outcome of our interactions? If this is the case, we need - just as my son did - coaches making us aware of our doings and the sharedness that emerges.
# Abbreviations*

<table>
<thead>
<tr>
<th>Concept</th>
<th>Abbreviation</th>
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<tr>
<td>Clinical microsystem</td>
<td>CMS</td>
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<td>Continuous quality improvement effort</td>
<td>CQI effort</td>
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<tr>
<td>External change agent</td>
<td>ECA</td>
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<td>National quality register</td>
<td>NQR</td>
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<tr>
<td>Programme theory</td>
<td>PT</td>
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<td>Senior alert</td>
<td>SA</td>
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* For ease of reading, the abbreviations are repeated the first time they are used in each section in this thesis.
Definitions

Clinical microsystem

The smallest replicable value-creating unit in health- and elderly care. The local milieu where healthcare professionals deliver care and are engaged in continuous quality improvement efforts (CQI efforts). Clinical microsystems (CMSs) share the historical roots of continuous quality improvement, but are specifically anchored in health- and elderly care contexts (Nelson, Batalden, & Godfrey, 2007). In this thesis, CMSs (and healthcare professionals) are studied as organizational members performing change.

Continuous quality improvement efforts

A structured process for involving organizational members in planning and executing a continuous stream of improvement in order to provide quality healthcare that meets or exceeds customer expectations (McLaughlin & Kaluzny, 2004). Continuous quality improvement efforts are purposive efforts aimed at intended positive changes in health- and elderly care (Portela, Pronovost, Woodcock, Carter, & Dixon-Woods, 2015).

Expressions of shared interpretations

Expressions of shared interpretations is the overarching concept used in this thesis. The concept is used to explore how CMSs and healthcare professionals express shared interpretations as intangible outcomes of CQI efforts. Expressions of shared interpretations are closely related to “psychology” and “theory of knowledge”, two sets of theories within ”system of profound knowledge” (Deming, 2000). Instead of seeing “psychology” and “theory of knowledge” as prerequisites for change, this thesis explores how Expressions of shared interpretations are intangible outcomes of CQI efforts.
Health- and elderly care

The collective term for the empirical context of this thesis. Swedish public healthcare and welfare organizations providing care; hospital clinics in county councils/regions and nursing homes in municipalities.

Intangible outcomes

Intangible outcomes are qualitative effects of CQI efforts that are not explicitly included in the CQI efforts’ objective in advance, but yet can occur. The starting point of this thesis is that CQI efforts can lead to both tangible and intangible outcomes, but that intangible outcomes have received too little scientific attention.

National quality register

A National quality register (NQR) is a structured gathering of information (normally computer-based) about patient groups. The objective is systematic, continuous development and assurance of quality of healthcare. The systematic administration of data is underpinned by the unique civic number every resident in Sweden has. Several caregivers collect data, which allows for comparisons at national or regional level. National quality registers have differing designs for e.g. diagnoses, interventions, patient groups and care processes (Sjöberg, 2016). A plurality of actors use NQRs. Policymakers uses them to control financial remuneration, management teams for benchmarking (Bojestig, 2016), researchers for scientific purposes (Lindahl, 2016) and CMSs in CQI efforts (Thor, Peterson, & Lindahl, 2016). National quality registers are regulated in the Swedish Patient Data Act (SFS 2008:335).
# Contents

## Introduction

## Research background

*Improvement science*  
Expressions of shared interpretations as an overarching concept
- Cognitive aspects of change  
- Shared cognitions are problematic  
- Shared cognitions are changeable and social  
- Notes on shared understanding and organizational culture  
- Cognitive challenges with continuous quality improvement efforts  
- Summing up Expression of shared interpretations

## Theoretical frameworks in the papers

- Team cognitions  
- Sensemaking  
- Cognitive shifts  
- Programme theory

## Rationale, overall and specific aims

## Methods

*Research approach*
- Research process  
- Overall research design combining three studies and four papers

*Empirical context*
- National quality registers

*Settings, inclusion criteria and participants in the studies*
- Study 1  
- Study 2  
- Study 3

*Types of research and data collection methods in the studies*
- Study 1  
- Study 2  
- Study 3
Data analysis
Paper 1 35
Paper 2 36
Paper 3 36
Paper 4 37
Meta-analysis of the results of the papers 37
My prior understanding 38
Ethical considerations 39
Respect for persons 40
Beneficence 40
Justice 41
Overview of the three studies and four papers 41

Results in the papers 43
Paper 1 43
Paper 2 46
Paper 3 49
Paper 4 52

Discussion 57
Discussion of results
Expressions of shared interpretations develop as intangible outcomes of continuous quality improvement efforts 57
Making assumptions regarding Expressions of shared interpretations explicit 59
A general programme theory of continuous quality improvement efforts in health- and elderly care 60
Expressions of shared interpretations are influential for continuous quality improvement efforts 63
Expressions of shared interpretations change over time 65
Expressions of shared interpretations and the “system of profound knowledge” 67

Methodological considerations 68
Methodological considerations regarding this thesis as a whole 68
Methodological considerations regarding the studies 69

Empirical implications
Empirical implications regarding the general programme theory of continuous quality improvement efforts in health-and elderly care 71
Empirical implications regarding results in the papers 74

Theoretical contributions 76
Limitations and future research 78

My concluding remarks 79

Summary in Swedish 80

References 83
Introduction

An introduction to the research area for this thesis with the title “Expressions of shared interpretations - Intangible outcomes of continuous quality improvement efforts in health- and elderly care” is outlined in this section. Some words in the section are in italics. These words correspond to a certain concept in the title and hence, the section provides explanations for how the title is formulated.

The introduction of quality improvement in healthcare has made a large impact (Bevan, Robert, Bate, Maher, & Wells, 2007; Ferlie & Shortell, 2001) and quality programs and methods have become a dominant theme for organizational survival in competitive environments (Prybutok & Ramasesh, 2005). A majority of US hospitals report having adopted basic features of quality improvement and studies illuminate a strong national emphasis on quality improvement in the United States and in Great Britain (Ferlie & Shortell, 2001). Studies of extensive quality improvement work in healthcare have also been reported from Sweden (Andersson, 2013; Andersson Gäre & Neuhauser, 2007; Peterson, 2015).

Quality improvement goes by many names and continuous quality improvement is claimed to be the most frequently used concept for quality improvement efforts in healthcare (McLaughlin & Kaluzny, 2004). This concept also clearly stresses the continuous aspect of improvement and thus, continuous quality improvement efforts (CQI efforts) will be the concept for quality improvement work used in this thesis. Continuous quality improvement efforts are purposive and aim to improve specific areas in health- and elderly care (Portela et al., 2015).

“System of profound knowledge” is the culmination of Deming’s work on management. “System of profound knowledge” is a body of knowledge comprising four sets of theories important for CQI efforts (Deming, 2000). To facilitate improvement, leaders need knowledge of the four sets of theories (“knowledge of variation”, “psychology”, “theory of knowledge” and “appreciation of a system”) and how they interact. In “knowledge of
variation”, performance measures are heavily emphasized, specifically outcome data’s variances over time (Koetsier, van der Veer, Jager, Peek, Keizer, 2012). These kinds of data underpin iterative learning of variation and the possibilities to predict and monitor CQI efforts continuously (Deming, 2000; Provost & Murray, 2011). Furthermore, performance measures are central to drive change (Bergman & Klefsjö, 2010; Elg, Palmberg Broryd, & Kollberg, 2013; Kollberg, 2007; Langley et al., 2009; Provost & Murray, 2011). “Psychology” is another set of theories in “system of profound knowledge”. “Psychology” concerns how organizational members get motivated and empowered, and how they take pride in their work. Even if Deming’s main focus concerned motivation and change, he used the general notion “psychology” (Deming, 2000). In this thesis, the term “psychology” refers to psychology in the context of Deming’s management philosophy, and not the entire research field of psychology. “Theory of knowledge” concerns how individuals, based on previous experiences, formulate theories and hypotheses about the future. Deming believed that individuals learned better if they predicted, i.e., tried to envision outcomes and consequences of their actions. The PDSA cycle is a tool supporting the development of a theory of knowledge. “Appreciation of a system” regards the understanding of the system as such. Thereby, it concerns the overall managerial perspective of the organization as a complex system covering the whole production process from suppliers to consumers.

Hitherto “appreciation of a system”, “psychology” and “theory of knowledge” have mainly been studied as prerequisites for CQI efforts. The premise of this thesis is that this is problematic. When explorations of the impact of CQI efforts on clinical microsystems (CMSs) and healthcare professionals are excluded, the understandings of the CQI efforts get incomplete and narrow.

In this thesis it is argued that there is a need to deepen the understanding of how CQI efforts impact CMSs and healthcare professionals. It is also argued that knowledge of how “psychology” and “theory of knowledge” develop is central to determine if CQI efforts are improvements. This kind of knowledge can be described as intangible outcomes of CQI efforts. Also, “appreciation of a system” can be described as intangible outcomes of CQI efforts. However, the level of focus in this thesis is CMSs and
health professionals and not complete organizational systems, and therefore “appreciation of a system” is not topical for this thesis. “Psychology” and “theory of knowledge” (as described in “system of profound knowledge”) are broad areas and in this thesis, a narrower area is circled and a specific concept suggested.

This thesis takes its departure in the idea that it is important that those performing change have some kind of “sharedness” (Johnson et al., 2007). “Sharedness” means that it is advantageous that those performing change have some sort of shared cognitions, understanding, knowledge, interpretations or frame of reference (Bergman, Hellström, Lifvergren, & Gustavsson, 2015; Cannon-Bowers & Salas, 2001; Espinosa, Lerch, & Kraut, 2004; Espinosa, Slaughter, Kraut, & Herbsleb, 2007; Johnson et al., 2007; Langan-Fox, Angling, & Wilson, 2004; Lyles & Schwenk, 1992; Mathieu, Heffner, Goodwin, Salas, & Cannon-Bowers, 2000; Mohammed, Ferzandi, & Hamilton, 2010; Sandberg & Targama, 2007). “Sharedness” is for example suggested to support coordinated actions among organizational members and to diminish the risk of mistakes (Espinosa et al., 2004), which is valuable in CQI efforts. “Sharedness” is also suggested to decrease communication demands and to allow team members to focus on the critical aspects of work (Langan-Fox et al., 2004). Lack of “sharedness” can lead to conflicts and difficulties in collaboration (Bergman et al., 2015). Despite the diversity of concepts and scientific studies, “sharedness” is mainly described as a prerequisite for change. This thesis takes departure in the supposition that if change is continuous, “sharedness” will also develop continuously, as an intangible outcome of CQI efforts.

A special concept for “sharedness” is suggested in this thesis: Expressions of shared interpretations. The rationale is that even though various established concepts exist, they are difficult to use. The concept of shared cognitions highlights this. Cognitions can be described as the acts, or processes, of knowing. It is about how something is known or perceived and concerns the psychological result of the learning. Cognitions are de facto individual and hosted within individuals, which hampers researchers’ possibilities to claim anything about how they are shared. Several scholars have highlighted this difficulty (Balogun & Johnson, 2005; Klimoski & Mohammed, 1994; Langfield-Smith, 1992). Shared knowledge is also a
difficult concept. It can easily be confused with cognitions, but can also lead to the belief that knowledge is finite, true, right or legitimate. In real work life knowledge can be wrong, but still influential (Weick, 1995). Weick points at a fruitful direction out of this dilemma:

> Shared meaning is difficult to attain. The preceding analysis, however, points to glue of a different sort that can be attained. Although people may not share meaning, they do share experience.... So if people share anything, what they share is actions, activities, moments of conversation, and joint tasks, each of which they then can make sense of using categories that are more idiosyncratic... If people want to share meaning, then they need to talk about their shared experience in close proximity to its occurrence and hammer out a common way to encode it and talk about it (Weick, 1995, p. 188).

The suggested direction is towards conversation and action. “Sharedness” is created in moments of shared experiences, as something we do.

Another difficulty the different concepts of “sharedness” have in common is that they are internal; they reside within individuals. This hampers researchers’ possibilities to study them. What researchers have to settle for is how individuals express “sharedness” and this is the rationale for why expressions is included in the suggested concept. In this thesis, the concept Expressions of shared interpretations is suggested to study “sharedness” as intangible outcomes of CQI efforts among CMSs and healthcare professionals. This concept offers a complementary alternative to other concepts of “sharedness” and underlines that it concerns how CMSs and healthcare professionals express “sharedness”. At the same time, the concept enables the use of different theories emphasizing that “sharedness” is developed in interpretations and interactions. In this thesis Expressions of shared interpretations is the “common way to encode it and talk about it” (Weick, 1995, p. 188).
This thesis is anchored in the research subject Health and Care Sciences (Jönköping University, 2017). It is an interdisciplinary research subject problematizing healthcare from an individual, organizational and societal perspective. The collective term for the empirical context in this thesis is health- and elderly care; public healthcare and welfare organizations providing care at hospital clinics in county councils/regions and nursing homes in municipalities.

By adding the previously italicized words the title of this thesis come together; *Expressions of shared interpretations – intangible outcomes of continuous quality improvement efforts in health- and elderly care.*
Research background

The study of change has a long scientific tradition and parts of the extensive and influential research on change, with relevance for this thesis, are highlighted in this section. Expressions of shared interpretations are described in closer detail and the aspects of improvement science on which this thesis focuses are clarified. Different theoretical frameworks were used to explore Expressions of shared interpretations in the papers of this thesis, and they are described at the end of the section.

Improvement science

There is an ongoing scientific discussion about the research field of improvement. The discussion concerns its historical origin, what it should be called, what it includes and how it should expand (Bergman et al., 2015; The Health Foundation, 2011; Marshall, Pronovost, & Dixon-Woods, 2013; Parry, Mate, Perla, & Provost, 2013). One concept that gains momentum, especially in healthcare, is improvement science.

Improvement science is interdisciplinary in character. Interdisciplinary research addresses current complex conditions that cannot be addressed within a single scientific discipline (Calhoun & Marrett, 2008). Interdisciplinary research links or integrates theoretical frameworks from two or more disciplines and uses designs and methodologies that are not limited to any one field (Aboelela et al., 2007). For example, Deming advocated a holistic perspective on organisations, and “system of profound knowledge” integrates theories from several scientific disciplines.

Researchers of improvement science seek to optimize learning about improvement, unlike change agents who have the main objective to realize and optimize outcomes of improvement in organizations (The Health Foundation, 2011). Improvement science is pragmatic and purposeful; it describes and explores improvement in real-life contexts and seeks answers to why and how change comes about in real contexts. Facilitation of improvement is a major aspect of improvement science (Perla, Provost, & Parry, 2013; Portela et al., 2015; The Health Foundation, 2011).
To build more rigorous knowledge of “what works best to improve quality” (The Health Foundation, 2011, p.10), several researchers emphasize a broadened scientific approach (Bate, Mendel, & Robert, 2008; Bergman et al., 2015; Marshall et al., 2013). This broader approach is suggested to include a close collaboration between researchers from different scientific disciplines, but also between scientists and practitioners. A stronger scientific interest for contexts of improvement has also been suggested, along with a more extensive use of theoretical frameworks (The Health Foundation, 2011).

Bate et al. have highlighted the need to study the “sociology of improvement” (2008, p. 8) and Bergman et al. (2015) have called for a broadened version of “system of profound knowledge”. The rationale is that scientists need to take advantage of knowledge developed since Deming’s time. Sociological and psychological aspects of organizations need to be emphasized and theories of sensemaking, reflection and learning can offer new possibilities to “system of profound knowledge”.

The suggested broadened approach to the study of improvement is in line with the approach in this thesis. However, “psychology” and “theory of knowledge” (as described in “system of profound knowledge”) are more than prerequisites or predispositions for continuous quality improvement efforts (CQI efforts). In this thesis is argued, that there is a need to deepen the understanding of how CQI efforts impact clinical Microsystems (CMSs) and healthcare professionals over time. It is also argued that development of “psychology” and “theory of knowledge” are important intangible outcomes of CQI efforts.

The scientific interest in intangible outcomes of CQI efforts in health- and elderly care has been limited. A search in PubMed and Business Source Primer (Quality Improvement* AND* outcome* and health care*) in the period 2010 to 2016 identified a total of 2133 articles with the search words in the text. These titles were reviewed to identify articles that conceivably could include intangible outcomes of any kind. Even if the concept was not explicitly used, the review pinpointed 137 articles that could touch on intangible outcomes of CQI efforts, and ultimately, after reading their abstracts, seven articles remained.
Enhanced team functioning as an intangible outcome of CQI efforts received the largest interest. Teams in learning collaboratives improved their interdisciplinary team functioning (Kotecha et al., 2015), and their readiness for change increased (Harris et al., 2015). Teams in a CQI effort in the Netherlands perceived that their cooperation improved and it was stated that “…working with indicators seems to be helpful in becoming a real team and in strengthening team relations” (Gort, Broekhuis, & Regts, 2013, p. 75). A periodic CQI effort aiming to promote clinical guidelines improved the adherence to the guideline. However, the communication pattern also changed and the multidisciplinary teams communicated more proactively and were more safety oriented (Rangachari, Rissing, & Rethemeyer, 2013). Irvine, Leatt, Evans and Baker (2000) studied the introduction of CQI teams at hospitals and examined the effects of two variables (perceived success and team identification) on empowerment, organizational commitment, organizational citizen behaviour, and job behaviours related to CQI. Even if the effects were small, organizational commitment, organizational citizen behaviour and job behaviours related to improved CQI behaviours when teams perceived their CQI work to be successful and when individuals identified with the team. Weir, Brunker, Butler and Supiano (2016) showed how physicians’ self-efficacy (perceived expertise) improved as an outcome of an educational CQI effort. Of all scholars, only Rivas et al. (2012) recognized the scientific lack of interest for intangible outcomes of CQI efforts. In their thematic analysis, Rivas et al. analysed outcomes of CQI efforts and sorted them into three qualities: technical quality, systemic quality and generic quality. Generic quality included increased exchange of ideas and reflections, changed attitudes, improved motivation and engagement, enhanced coordination and cooperation, improved relationships and patient involvement. Participants in the study had difficulties recognizing generic change, which Rivas et al. outlined as problematic: “…clinical teams involved in change processes might not perceive the benefit of interventions and so risk lack of engagement and demotivation” (Rivas et al., 2012, p. 102).

Indisputably, performance measures are important for improvement in health- and elderly care, but the traditional emphasis on operationalizations and measurements risks overshadowing the intangible outcomes of CQI efforts, which the literature search above mirrors. Consequently, starting
from the conceptual pair of tangible and intangible outcomes, the thesis concerns the latter.

To further clarify the specific aspects of improvement science in this thesis, the conceptual pair of intended and unintended outcomes of CQI efforts can complement the concepts of tangible and intangible outcomes. One famous example of unintended outcomes of change is described in the Hawthorn experiments. These experiments refer to a number of interrelated studies carried out at the Western Electric Company in the US between 1927 and 1937 (Roethlisberger & Dickson, 2003). The first study aimed to determine the relationship between lighting and worker productivity. In order to evaluate this, the researchers increased the light, which led to improved productivity. It was notable that productivity also increased when the lighting was reduced, and the conclusion was that the unintended outcome of the experiment was *sentiments*. The workers experienced that they and their achievements were noticed and hence, the changed productivity was not interrelated with the lighting, but with the workers’ experience of being central to production and the increased productivity was the intended and tangible outcome. Norman and Fritzén (2012) have reported an example of intangible and unintended outcomes of CQI efforts. They described how financial incentives, aiming to create encouragement for change, actually undermined healthcare professionals’ sense of responsibility for the work. In this thesis Expressions of shared interpretations are studied as unintended aspects of CQI efforts and thus, the latter concept in the conceptual pair of intended and unintended outcomes is emphasized in the thesis.

Putting the two conceptual pairs of tangible/intangible and intended/unintended outcomes together a figure can be developed (Fig. 1, next page). By plotting the research area of this thesis in the figure, its specific aspects of improvement science are clarified.
Figure 1. Specific aspects of improvement science in this thesis.

The research area is plotted in the lower left corner, meaning that it concerns unintended and intangible outcomes of CQI efforts. The research area is plotted closer to intangible outcomes of CQI efforts than to unintended outcomes of CQI efforts. The rationale for this is to underline the stronger focus on intangibility than intentionality. A close study of intentionality would require another research design, e.g. the study of fulfilment of decided change objectives.

**Expressions of shared interpretations as an overarching concept**

*The previous sections described the specific aspects of improvement science this thesis focuses on. To study this, the concept of Expressions of shared interpretations is suggested. The theoretical background and the arguments for Expressions of shared interpretations are developed in forthcoming subsections.*

**Cognitive aspects of change**

Organizational change can be described at a surface level as changed behaviours within organizations. The starting point for the change is the old way of working and the outcome is changed ways of working.
However, to understand change at a deeper level we need to take into account that organizations consist of individuals, and that their point of departure for change is their existing ways of thinking. Based on this, several researchers have emphasized cognitive aspects of change. An illustrative example is given by Gioia and Chittipeddi (1991, p. 433), who claimed that “Change involves an attempt to alter the current way of thinking and acting by the organization’s membership”. This means that our interpretive schemes (fundamental assumptions of why things happen and how we shall act in these situations) are challenged in change. However, the relationships between change, altered beliefs or interpretive schemes and actions are complex.

The change process described by Prochaska, DiClemente and Norcross (1992) highlights this. They pinpointed four stages individuals undergo as they are exposed to change: pre-contemplation, contemplation, action and maintenance. The difference between pre-contemplation and contemplation is that in the former stage individuals are not aware of the need for change, which they are in the latter. The first step is to pass pre-contemplation. After this, individuals grasp insights (contemplation) that change is necessary and act (third stage). Unfortunately, many individuals tend to relapse into old behaviours after some time. However, the resolution of the relapse is contemplation and not pre-contemplation. At this point individuals know that change is necessary and have personal experience of the desired behaviour, which implies that they are closer to action another time. This stepwise, yet circular, change process exemplifies that development in “psychology” and “theory of knowledge” (as described in “system of profound knowledge”) can be seen as intangible outcomes of CQI efforts, and not only as a prerequisite.

**Shared cognitions are problematic**

In recent decades, several scholars have studied cognitive aspects of change, and in particular, eventual collective cognitive structures. There is an abundance of concepts in the literature: cognitive maps (Langfield-Smith, 1992), organizations as interpretive systems (Daft & Weick, 1984), organisational knowledge structures (Lyles & Schwenk, 1992), scripts (Gioia & Poole, 1984), shared interpretive schemes (Bartunek, 1984), shared mental models (Levesque, Wilson, & Wholey, 2001), supra-
individual knowledge structures (Walsh, 1995), team mental models
(Klimoski & Mohammed, 1994), etc. All these models are based on the
idea that there is an equivalent to individual cognitions on a collective level
and much effort has been done to describe them, to measure the extent to
which they are shared and to evaluate their interrelated congruence. These
studies have yielded a deeper understanding of the cognitive aspects of
organizational change, but despite this, shared cognitions have been
questioned (Balogun & Johnson, 2005; Langfield-Smith, 1992).

The main argument against shared cognitions is that cognitions are
individual phenomenon, they are mental processes of an individual and
there is no “body” or “head” of organizations where shared cognitions can
reside. Nonetheless, organizational members performing change need some
kind of “sharedness” (Bergman et al., 2015; Cannon-Bowers & Salas,
2001; Espinosa et al., 2004; Espinosa et al., 2007; Johnson et al., 2007;
Langan-Fox et al., 2004; Lyles & Schwenk, 1992; Mathieu et al., 2000;
Mohammed et al., 2010; Sandberg & Targama, 2007). Weick (1995)
borrowed the terms intra-subjectivity, inter-subjectivity and generic
subjectivity coined by Wiley (1988). Intra-subjectivity concerns personal
thoughts and feelings that can be shared, but are still personal. Inter-
subjectivity develops as feelings and thoughts are merged into an
experience of “we”, but still reside within individuals. Generic subjectivity
goes a step further and refers to a level of social structures. This is the level
of taken-for-granted reality that in times of stability can take form as
scripts, shared understanding and routines. However, in times of change,
individual expectations are divergent from earlier experiences and the
generic subjectivity is challenged. This causes organizational members to
enter a conscious sensemaking mode (Weick, 1995).

**Shared cognitions are changeable and social**

To understand the tension between individual and shared cognitions it is
informative to take a closer look at how shared cognitions develop and
how much collectiveness they need in order to be called shared. A study by
Langfield-Smith (1992) gives insights into how shared cognitions develop.
The purpose of the study was to create a map of enduring shared cognitions
in organizations, but the conclusion was that shared cognitions were
fluctuating. Instead, collective encounters (social situations in which the
organizational members shared knowledge and experiences) played a key role in the development of shared cognitions. Langfield-Smith (1992) found that organizational members brought their personal sets of cognitions to the collective encounters and that some beliefs overlapped and were held in common. This set of common beliefs developed over time and functioned as a foundation for the development of transitory collective cognitions. Transitory collective cognitions underline that shared cognitions are the result of ongoing interactions and negotiations, and therefore are continuously changing. Weick’s (1995) reasoning about conscious sensemaking coheres with the concepts of collective encounters and the transitory character of shared cognitions. When expectations and experiences diverge, sensemaking occurs at an intersubjective level, which presupposes that organizational members involved in sensemaking have opportunities to meet.

It is also important to examine the concepts of shared, because it can be interpreted in several ways. Klimoski and Mohammed (1994) pinpointed the ambiguity of the concept of shared. They identified three kinds of shared: identical, distributed and overlapping. Cannon-Bowers and Salas (2001) described four categories of shared: shared as overlapping, shared as identical, shared in terms of compatible or complementary and lastly, shared in the meaning of distributed. The first category of shared refers to a situation when organizational members share some aspects of their cognitions. The second category refers to when organizational members have the same cognitions and the third to when organizational members have congruent cognitions. The fourth category refers to when cognitions are distributed and spread in a group of organizational members. However, these various categorizations of the concept give no indication to what extent they are, or need to be, shared.

The dual view of organization offers some explanations to the tension between individual and shared cognitions. Based on previous research, Donnellon, Gray and Bougon (1986) in an early work distinguished between two different views on organizations: organizations based on systems of shared meanings and organizations based on exchanges. With the first view, it is presupposed that organizational members act in coordinated manners as a result of shared cognitions, and it is easy to imagine that higher degrees of shared cognitions lead to higher degrees of
coordinated behaviours. With the second view, it is assumed that organizations are based on exchange. This means that organizational members only need a minimum set of shared cognitions to act. Instead, the interactions lead to shared interpretations.

**Notes on shared understanding and organizational culture**

The concepts of organizational culture and shared understanding need to be considered in relation to this thesis. To grasp the character of an organizational culture, manifestations such as observable artefacts, shared values, norms, rituals, routines, symbols and behaviours need to be studied (Schein, 2010). This means that organizational culture is a broader concept than Expressions of shared interpretations. The research design and methodologies of this thesis are focused on what CMSs and healthcare professionals do and say, and the research design does not include the study of e.g. rituals and symbols.

The understanding of something (e.g. a phenomenon or a text) corresponds to the meaning we ascribe this particular something. Understanding is developed in a circular process, with a starting point in an individual’s prior understanding that is only partly articulated (Heidegger, 1992). With interpretations, this understanding can grow and get more articulated. The concept of shared understanding shares the difficulties with the previously mentioned concept of shared cognitions. Because there is no “body” or “head” where shared understanding can reside, it is difficult to estimate how shared the understanding is and researchers have to settle for how organizational members express their understanding.

**Cognitive challenges with continuous quality improvement efforts**

Weick and Quinn (1999) distinguished between two groups of organizational changes: episodic change and continuous change. Episodic change is a collective term for organizational changes that are intentional, unusual, and often more dramatic. The perspective is global and the change logic linear. Continuous change is a collective term for organizational changes that tend to be local, improvisational, processional and cumulative. Both episodic change and continuous change challenge
existing ways of thinking. In episodic change previous ways of thinking should be replaced whilst in continuous change the alteration is better described as adjusted ways of thinking. The roles of change agents differ in the two groups of change. In episodic change the role is to be a prime mover that creates change, whereas the role of change agents in continuous change is to be a sensemaker who redirects change (Weick & Quinn, 1999). Change agents in episodic change build coordination and commitment, whilst change agents in continuous change support small-scale tests with the aim of unblocking translation and learning.

The cognitive challenge of change is influenced by the kind of change the organizational members are exposed to. Continuous quality improvement efforts may create a particularly puzzling cognitive challenge. Managers may treat the CQI efforts as episodic in terms that they are decided on a single occasion and then rolled out. However, CQI efforts comprise routines and methods for perpetual improvement and appear continuous for organizational members. These different viewpoints could underlie some of the difficulties with dissemination of change. The CQI efforts can lead to situations where managers focus on strategies for commitment and coordination, whilst organizational members actually need support to continuously make sense of the changes (Barrett, Thomas, & Hocevar, 1995; Bartunek, Rousseau, Rudolph, & DePalma, 2006; Orlikowski & Hofman, 1997).

**Summing up Expression of shared interpretations**

So far it has been highlighted that organizational change requires a cognitive reorientation. It has also been pointed out that the cognitive reorientation depends on the nature of the change and that CQI efforts can be particularly puzzling. Moreover, it has been pointed out that “sharedness” is advantageous for change. There are various established concepts for this “sharedness”, but they all have weaknesses.

With departure in the awareness that the study of sharing and social encounters is a way to avoid the difficulties illustrated in the subsections above, a special concept is suggested: Expressions of shared interpretations. Interpretations constitute a central part of the concept. Interpretations concern the *transformational mode of understanding*. “An interpretation is the way an understanding gets worked out” (Kaelin, 1988
Individuals can share their interpretations in conversations and the sharing supports the increased articulation. Thus, interpretations correspond well to this thesis’s focus on the development of “sharedness”. Expressions of shared interpretations underline that they concern how CMSs and healthcare professionals talk about their shared interactions and interpretations. It develops in moments of shared experiences as something CMSs and healthcare professionals do, and talk about. It is their “common way to encode it and talk about it” (Weick, 1995, p. 188). “Psychology” and “theory of knowledge” are two sets of theories (in the context of “system of profound knowledge”) with many implications. In this thesis the concept Expressions of shared interpretations is used to study a specific aspect of these sets of theories; how “sharedness” develops as intangible outcomes of CQI efforts.

Researchers cannot know with certainty whether CMSs and healthcare professionals in an ongoing discussion actually load an interpretation with the same meaning, but Expressions of shared interpretations indicate something more similar than non-shared expressions do. Researchers have to settle with how CMSs and healthcare professionals express their interpretations and for this reason the word expressions is added to the concept.

Expressions of shared interpretations is used as an overarching concept in this thesis, which enables the usage of different theoretical frameworks emphasizing that Expressions of shared interpretations develop in processes of sharing. The chosen theoretical frameworks address the recent call to examine sociological and psychological aspects of change in order to learn more about “system of profound knowledge” (Bergman et al., 2015). It is not argued that the chosen theories are exclusively applicable frameworks, only that they are based on the premise that they enable examinations of Expressions of shared interpretations. The theories are introduced in the following subsections. The overall research design is further elaborated in the subsection Overall research design combining three studies and four papers, and in Table 5 (p. 42), the study designs of the three studies are outlined.
Theoretical frameworks in the papers

Team cognitions

The theoretical framework in Paper 1 was theories of modified cognitions (Kirkman & Rosen, 1999). Conger and Kanungo (1988) have argued that empowerment needs to be examined as a motivational construct among organizational members and several subsequent researchers have studied empowerment as a cognitive phenomenon, on an intrapersonal level. Drawing upon the work of Conger and Kanungo (1988) and Thomas and Velthouse (1990), Kirkman and Rosen (1999) developed the concept of team empowerment, as a collective cognitive phenomenon. However, team cognitions are hard to capture in empirical work and scholars have emphasized the need to include the study of context and interactive patterns to gain understanding. In this way knowledge about team cognitions can be developed by the study of how they are created in interactions among organizational members, which is in line with the concept of Expressions of shared interpretations.

Paper 1 explored how interactions led to levels of team empowerment in CMSs engaged in CQI efforts in healthcare.

Sensemaking

The theoretical framework in Paper 2 was theories of sensemaking (Weick, 1995). By sensemaking, organizational members make sense of events that have occurred and then use these shared experiences as a framework to interpret new events they are exposed to. Thus, by relating present experiences to existing frameworks, explanatory possibilities emerge. Sensemaking is an active social process (Weick, 1995; Weick, Sutcliffe, & Obstfeld, 2005). The outcome of sensemaking must not be “true”. Sensemaking is pragmatic and takes a relative approach to truth. Instead of establishing veracity, the goal is to develop some kind of stability and predictability. There is a convergent effect of sensemaking, meaning that the interpreted sense within a group becomes more similar over time (Weick, 1995).

Sensemaking can be initiated by several factors, e.g. organizational changes (Balogun & Johnson, 2005; Sonenshein, 2010), crises and
ambiguities (Weick, 1995) or because someone tries to deliberately influence – give sense to – others. Individuals taking this role can be called sensegivers (Maitlis & Lawrence, 2007). Conversations and the sharing of interpretations are central to sensemaking, which is why this body of theory is a good fit for the study of Expressions of shared interpretations.

In Paper 2 healthcare professionals were studied as sensegivers and it explored how they made sense of a CQI effort; their dissemination work of a national quality register (NQR).

**Cognitive shifts**

The theoretical framework in Paper 3 was cognitive shifts (Foldy, Goldman, & Ospina, 2008).

Shared frameworks play a key role in the study of sensemaking and Weick has described them as “past moments of socialization” (1995, p. 111). Cognitive shift is a concept that closely relates to shared frameworks, since it refers to *changes* in current shared frameworks (Foldy et al., 2008). The concept of cognitive shifts is also adequate in the study on Expressions of shared interpretations. Cognitive shifts capture how change recipients alter their interpretations in important aspects. Knowledge of the cognitive shifts provides insights into how change recipients make sense, and how their sensemaking changes in a certain direction. In this way, cognitive shifts illuminate the sensemaking before and after a change. There are different strategies to support specific cognitive shifts (Foldy et al., 2008). It has been pointed out that leaders e.g. deliberately try to influence how change recipients frame the problem or the solution (issue-related cognitive shifts) or how they perceive themselves and how they are perceived by others (constituency-related cognitive shifts). Cognitive shifts concern changes in shared frameworks used for interpretations, which is why this body of theory fits well for the study of Expressions of shared interpretations.

In Paper 3 healthcare professionals were studied as sensegivers and it explored how they made sense of a CQI effort; their dissemination work of an NQR. By the use of the theory of cognitive shifts, the paper examined and established how the sensemaking changed.
**Programme theory**

The theoretical framework in Paper 4 was programme theory (PT). Programme theory concerns the underlying shared assumptions of why a CQI effort is designed the way it is, and how and why it works (Davidoff, Dixon-Woods, Leviton, & Michie, 2015; Dixon-Woods, Bosk, Aveling, Goeschel, & Provonost, 2011). Programme theory implies that shared interpretations are influential for CQI efforts, which is well in line with the study on Expressions of shared interpretation in this thesis.

To improve dissemination of CQI efforts, knowledge of PTs is important, but so far this has attracted limited scientific interest (Portela et al., 2015). Dixon-Woods et al. (2011) reported on PTs in a successful implementation project in Michigan, with a focus on change agents. Other studies have demonstrated that change recipients and change agents can have different interpretations of an ongoing change and that these differences lead to unpredictable and unintended results (Bartunek et al., 2006; Orlikowski & Hofman, 1997). Therefore, to better understand and support CQI efforts, knowledge of PTs among both change recipients and change agents is important.

Paper 4 explored CMSs’ PTs of an NQR. By comparing their PTs with an established PT, the paper examined and established how CMSs’ PTs changed.
Rationale, overall and specific aims

Continuous quality improvement efforts (CQI efforts) are important for organizational survival in competitive environments (Prybutok & Ramasesh, 2005) and the number of CQI efforts is rapidly increasing in health- and elderly care. However, CQI efforts do not perform change; individuals do (Eldh et al., 2014). Individuals act based on their interpretations and CQI efforts have potential to influence their interpretations (Sandberg & Targama, 2007).

Performance measures are fundamental to evaluate CQI efforts (Bergman & Klefsjö, 2010; Langley et al., 2009), but the strong emphasis on operationalisations and measurements creates a risk that intangible outcomes of CQI efforts will be overshadowed. This is applicable for Expressions of shared interpretations, which is problematic since scholars from different perspectives have pinpointed that those performing change need some kind of “sharedness” (Bergman et al., 2015; Cannon-Bowers & Salas, 2001; Espinosa et al., 2004; Espinosa et al., 2007; Johnson et al., 2007; Langan-Fox et al., 2004; Lyles & Schwenk, 1992; Mathieu et al., 2000; Mohammed et al., 2010; Sandberg & Targama, 2007). Thus, in order to learn about the impact of CQI efforts it becomes important to scientifically explore Expressions of shared interpretations as intangible outcomes in health- and elderly care.

It is a core task for leaders to initiate, support and lead change (Battilana, Gilmartin, Sengul, Pache, & Alexander, 2010; Ferlie & Shortell, 2001; LeBrasseur, Whissell, & Ojha, 2002) and leaders have a large impact on outcomes of CQI efforts (Laohavichien, Fredendall, & Cantrell, 2009). The understanding of how organizational members interpret central aspects of work, such as CQI efforts, is an important prerequisite for leadership (Rivas et al., 2012; Sandberg & Targama, 2007). Leaders need to focus on improvement, raise questions, facilitate and empower organizational members to participate (Lucas & Buckley, 2009). In this way, leaders can help organizational members develop and transform their understanding of work (Iveroth & Hallencreutz, 2016; Sandberg & Targama, 2007). Hence,
knowledge and understanding of Expressions of shared interpretations is important for leaders in health- and elderly care. To support change effectively, leaders of organizations, clinical microsystems (CMSs), healthcare professionals and CQI efforts need to understand outcomes of CQI efforts, including Expressions of shared interpretations. Leaders need to discover Expressions of shared interpretations as intangible outcomes of CQI efforts and gain knowledge of how they are influential for the CQI efforts they lead (Rivas et al., 2012). To grasp this on a deeper level, knowledge of Expressions of shared interpretations, how they develop, change and influence CQI efforts is important. In this way leaders can evaluate CQI efforts in comprehensive and equitable ways and henceforth use this knowledge in their argumentation and support of CQI efforts.

The overall aim with this thesis was to explore Expressions of shared interpretations as intangible outcomes of CQI efforts from the perspective of CMSs and healthcare professionals. The specific aims were to examine and establish how Expressions of shared interpretations develop, influence CQI efforts and change. The research questions were:

- How do Expressions of shared interpretations develop?
- How are Expressions of shared interpretations influential for CQI efforts?
- How do Expressions of shared interpretations change over time?
Methods

In this section, descriptions of the overall research design, the empirical context and the three studies are provided. The relationships between the studies and the papers are clarified and the setting for each study is highlighted. The section is completed with a table overviewing details of the three studies and four papers of this thesis.

Research approach

A qualitative approach was used in this thesis. Qualitative research is applicable to develop understanding about complex interactions (Stake, 1995). Portela el al. (2015) have also highlighted that a qualitative research approach supports descriptions and considerations of different aspects of continuous quality improvement efforts (CQI efforts), how they are implemented and the mechanisms involved. In this thesis, the qualitative approach enabled an in-depth exploration of how Expressions of shared interpretations were expressed by the participants. Hence, the research took an emic perspective; it explored Expressions of shared interpretations from the perspective of the participants. This thesis rested on the presumption that participants can have different interpretations and that multiple universes of meaning exist in parallel (Berger & Luckmann, 1967). Thus, this thesis takes a social constructionist perspective. According to social constructionism, the only thing we have access to is our interpretations of the world, and thus language plays a fundamental role (Burr, 2003). The concept Expressions of shared interpretations reflects this centrality of language; the concept concerns how participants express their interpretations.

There are philosophical tensions in social constructionism (Hacking, 2000; Halling & Lawrence, 1999). With a strict social constructionist worldview everything is socially constructed, which is problematic since it simultaneously is the answer for everything and yet offers no explanations. To address this problem, it becomes important to clarify what the social constructions concern (Hacking, 2000). The social constructionist position in this thesis can be summarized as “... the realist perspective that
combines a realist ontology (the belief that a real world exists independently of our beliefs and constructions) and a constructionist epistemology (knowledge of the world is inevitably our own construction)” (Creswell, 2013, p. 23).

The qualitative approach and the social constructionist epistemology in this thesis have implications for the concept of truth. Traditionally truth has been described as correspondence between statements and reality. Research based on truth as correspondence is guided by the question “To which real phenomena do the collected and studied statements correspond?” However, instead of describing truth as a single dimension it can be sketched as a triangle (Alvesson & Sköldberg, 2008). Truth as correspondence is one of the three sides of the triangle, with usefulness and meaning the other two. Usefulness is guided by the questions “How can it be used” and meaning by “What does this mean?” (Alvesson & Sköldberg, 2008). The X in Figure 2 clarifies how this thesis relates to the trilateral dimension of truth. The X is positioned to the right in the triangle, indicating that this thesis was closest to truth as meaning. The position of the X also points out that usefulness is an important aspect of truth in this thesis. This can be explained by the foundation of this thesis; in improvement science usefulness is central.

![Figure 2. The trilateral concept of truth. Source: Alvesson & Sköldberg (2008, p. 49). Figure reprinted with permission from the publisher. The idea to mark the position of this thesis’ relation to the trilateral concept of truth originates from Lifvergren (2013). Permission has been given by Lifvergren to re-use the approach in this thesis.](image-url)
**Research process**

The research shared similarities with the Systematic combining approach, a research approach grounded in abductive logic (Dubois & Gadde, 2002). The systematic combining approach builds on two parallel processes: matching and direction/redirection. Initial concepts are used as guidelines, supporting the entry to the empirical world. The initial concepts are developed, based on the researcher’s attempts to match theory and reality throughout the whole research process. Thus, the matching activities can lead to redirections in the research process (Dubois & Gadde, 2002). In this thesis, introductory literature reviews were carried out, corresponding to Phase 1 in Figure 3.

![Figure 3. The research process in this thesis. Expressions of shared interpretations are abbreviated “ESI” and research questions “RQs” in the figure.](image)

The objective with the literature reviews was to circle the research field and to get guidance into the work. Based on Study 1, shared cognitions as intangible outcomes of CQI efforts were explored in Paper 1, which corresponds to Phase 2. Paper 1 served as a basis for the continuous research. The paper made it evident that this thesis, in order to examine intangible outcomes of CQI efforts in health- and elderly care in depth, needed to capture how clinical microsystems (CMSs) and healthcare professionals “hammer out a common way to encode it and talk about it” (Weick, 1995, p. 188). Hence, after the initial reviews more literature reviews were carried out and the purpose, the research questions and the concept of Expressions of shared interpretations were developed. This corresponds to Phase 3 in the research process. The concept Expressions of shared interpretations allowed for the usage of different theoretical frameworks and different theories were used in Papers 2 – 4. This
corresponds to phase 4 in Figure 3. In phase 5, the results presented in the papers were discussed.

**Overall research design combining three studies and four papers**

This thesis is a compilation thesis. It is based on three studies and comprised of four papers. Aspects of the relationships between the studies and papers are visualized in Figure 1, Table 1 and Table 5. The research was designed to support a discussion of the results on a meta-level. Thus, the research questions of this thesis were transformed into specific research questions for the papers. The research questions were transformed into several papers, instead of elaborating one per paper. In this way, results from more than one paper could be used to elaborate the research questions as they were expressed in this thesis. At the same time, this research design linked the papers together. Table 1, below, illuminates which research questions the papers examined.

Table 1. Linkages between research questions and papers of this thesis. Expressions of shared interpretations are abbreviated “ESI” in the table.

<table>
<thead>
<tr>
<th></th>
<th>Research question 1: How does ESI develop?</th>
<th>Research question 2: How is ESI influential for CQI efforts?</th>
<th>Research question 3: How does ESI change over time?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper 1</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paper 2</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Paper 3</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Paper 4</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Results underpinning the Discussion</td>
<td>∑Research question 1</td>
<td>∑Research question 2</td>
<td>∑Research question 3</td>
</tr>
</tbody>
</table>

On the next page Figure 4 highlights the overall research design and the relationships between research questions, studies, papers and theories. In Table 5 at the end of this section, the study designs of the three studies are outlined.
Empirical context

“Quality healthcare for all” is a cornerstone of the Swedish welfare state (Anell, 2005, p. 237). One of the foundations is the Healthcare Act (SFS 1982:763), which underlines the right to equal care for all citizens and the vision of equal health for all. The public health insurance is financed by tax revenues and is part of the public service (Blomqvist, 2007). Healthcare in Sweden is a public right, regulated but strongly decentralized.

Sweden has 290 municipalities, each with far-reaching autonomy. Since the Elderly Act in 1992 (SOSFS 2005:27) social services in municipalities have overall responsibility for elderly care, excluding emergency care and medical care (Thorslund, 2007). The Act of System of Choice (SFS 2008: 962) allows for a variety of suppliers of health centres, nursing homes and home care services. The bulk of these services are still under municipal management, although there are local exceptions. There are 20 county councils/regions in Sweden.
The Swedish health- and elderly care is under pressure. The number of elderly is increasing. In 2010 approximately 18% of the population was 65 years or older and by 2050 the proportion is expected to be 25%. The proportion of inhabitants over 80 years of age is expected to increase from 5% to 10% (Swedish National Board of Health and Welfare, 2014a). A national regulation from 2011 (SOSFS 2011:9) states that organizations providing healthcare (and dental care, social care, and support and services to disabled individuals) are obliged to develop and follow a management system for quality. The reports Öppna jämförelser [Open comparisons] are compiled and updated yearly by the Swedish National Board of Health and Welfare and the Swedish Association of Local Authorities and Regions (Swedish National Board of Health and Welfare, 2014b). The objective with the reports is to make health- and elderly care data transparent and to enable county councils/regions and municipalities to compare and develop their results in major processes. To develop health- and elderly care operations, CQI efforts can be used (Peterson, 2015; Thor et al., 2016).

Scholars have reported on CQI methodologies employed in healthcare, which illustrate the relevance of CQI in this sector: Lean production (de Souza & Pidd, 2011; Kollberg, Dahlgaard, & Brehmer, 2007; Waring & Bishop, 2010); Total Quality Management (Talib, Rahman, & Azam, 2011; Övretveit, 2000); Six Sigma (Antony, 2004; Lifvergren, Gremyr, Hellström, Chakhunashvili, & Bergman, 2010); and CMSs (Nelson et al., 2002; Nelson et al., 2007).

The concept of CQI is a diverse concept associated with different methodologies (Bhuiyan & Baghel, 2005). The plurality of methodologies leads to a certain lack of clarity and a way to deal with this is to examine common denominators for the methodologies. With a special focus on healthcare, O’Neill et al. (2011) identified six key elements of CQI methodologies: systematically collected data, adaptation to local conditions, feedback at meetings involving leaders, iterative development processes, some degree of data-driven change process and finally, use of recognized change method. These key elements highlight that CQI efforts in healthcare are flexible and locally developed rather than just implemented. Leadership has also been emphasized by several scholars (Bergman & Klefsjö, 2010; Blumenthal & Kilo, 1998; LeBrasseur et al., 2002). In addition to customer focus and leadership, Bergman & Klefsjö
(2010) highlighted four cornerstones: decisions based on facts, participation, focus on processes and continuous approach to improvement.

Batalden and Davidoff (2007, p. 2) have suggested a definition of quality improvement in healthcare that originates in a system approach: “The combined and increasing efforts of everyone – healthcare professionals, patients and their families, researchers, payers, planners and educators – to make the changes that will lead to better patient outcomes (health), better system performance (care) and better professional development (learning)”. This definition underlines that quality improvement is a collaborative act performed at several levels in the healthcare system. The continuous aspect (see key elements above) is further accentuated with the choice of the wording increasing.

The CQI activities in this thesis are called CQI efforts. The rationale for calling the studied CQI activities “efforts” is that they aim at better health, care and learning (Batalden & Davidoff, 2007) and are influenced by the key elements listed by O’Neill et al. (2011), regardless of the methodology in use.

**National quality registers**

Sweden has taken the international lead in the development and dissemination of national quality registers (NQRs) (Swedish Association of Local Authorities and Regions, 2010). In 1989 eight NQRs were nationally accepted, by 2003 the number had grown to 42, and by 2015 there were 106. One strategy to support the use of NQRs is the governmental introduction of performance-based compensation for healthcare providers (Nyström, Strehlenert, Hansson, & Hasson, 2014; S2012/8765/FST). National quality registers are systematic and structured gatherings of data about specific patient groups. Their purpose is to support quality improvement, to produce statistics, and to enable comparisons and research (SFS 2008: 355). Data from NQRs can be used in CQI efforts (Peterson et al., 2014). Healthcare professionals, mostly physicians, have initiated the majority of NQRs. Registration in the registers is voluntary and NQRs are dependent on healthcare professionals’ commitment to report data correctly (Levay & Waks, 2009). Data from NQRs underpin several measures in Öppna jämförelser [Open comparisons] (Swedish National Board of Health and Welfare, 2014b).
Leaders of NQRs are expected to improve the completeness, coverage, validity, timeliness and comparability of NQRs (Emilsson, Lindahl, Köster, Lambe, & Ludvigsson, 2015). Completeness (percentage of registered patients in target population on national level) and coverage (numbers of units affiliated to the NQR) specifically underline that NQRs need to be disseminated to, and used in, all relevant work units. The number of scientific articles based on NQR data has increased rapidly (Lindahl, 2016), and some studies describe how NQRs are implemented (Carlhed et al., 2006; Eldh et al., 2014; Peterson et al., 2007; Rosengren, Höglund, & Hedberg, 2012).

Senior alert (SA) is an NQR that has rapidly increased its coverage (Edvinsson, Rahm, Trinks, & Höglund, 2015; Nyström et al., 2014). During a project period SA received national funding to disseminate the register to all relevant work units in Sweden and in September 2014, all county councils/regions and 288 (of 290) municipalities in Sweden were affiliated (Nyström et al., 2014; Senior alert, 2014).

Senior alert was initiated by Region Jönköping County and developed in national collaboration. Senior alert is a register with focus on prevention. It provides risk assessment tools to estimate the tendency of elderly individuals (patients and residents in nursing homes) to fall, to develop pressure ulcers and to get malnourished (Törmä, Winblad, Cederholm, & Saletti, 2012). These tools can be supplemented with tools to assess risks for catheter-related infections and bad oral health (Nyström et al., 2014). Senior alert supports healthcare professionals to systematically improve their care preventive process: to assess risks, take preventative actions, to work with processes and to monitor results. This challenges healthcare professionals to question their current ways of working, their accountability and their cooperation with other health- and elderly care providers to achieve good results.
Settings, inclusion criteria and participants in the studies

Study 1

The setting in Study 1 was a clinic reputed for its well-organized process work at a county hospital in Sweden. The clinic had earlier received a national award for its CQI efforts (SIQ, 2009). The clinic management was contacted and accepted the study. The clinic management asked CMSs engaged in CQI efforts to participate in the study. In CMSs that agreed, individual healthcare professionals decided whether they wanted to participate in interviews. Three CMSs were included. They had regional responsibility for the care of a specific patient group and were inter-professional consisting of physicians, nurses/specialist nurses, assistant nurses, occupational therapists and physiotherapists. The CMSs worked with processes, guidelines, benchmarking, CQI efforts and collaborations with patients and families. To preserve confidentiality the CMSs were called “X”, “Y” and “Z” in the study. For the same reason the number of participants from each CMS, and their professions, were aggregated in Table 2. The participants are presented below. Paper 1 is based on Study 1.

Table 2. Participants in Study 1.

<table>
<thead>
<tr>
<th>Description</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual interviews: nurses</td>
<td>6</td>
</tr>
<tr>
<td>3 CMSs including:</td>
<td></td>
</tr>
<tr>
<td>Managers</td>
<td>1</td>
</tr>
<tr>
<td>Nurses</td>
<td>6</td>
</tr>
<tr>
<td>Physicians</td>
<td>2</td>
</tr>
<tr>
<td>Physiotherapists</td>
<td>1</td>
</tr>
<tr>
<td>Occupational therapists</td>
<td>1</td>
</tr>
<tr>
<td>Assistant nurses</td>
<td>1</td>
</tr>
<tr>
<td>Participants</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>(17 female/1 male)</td>
</tr>
</tbody>
</table>
Study 2

The setting in Study 2 was the CQI effort to disseminate SA nationwide. Region Jönköping County was commissioned for this work and the region hired external change agents (ECAs) to facilitate the effort. In Study 2, the inclusion criteria were ECAs that voluntarily wanted to participate in the study and that had the same employment date and employment length. Eight ECAs were included. Their mission was to accelerate organizations’ affiliations to the register and to support work units adjusting their local practices in accordance with SA. The included ECAs visited 532 work units in the first six months of their employment, which indicates that they gained rich experience from a multitude of work units adopting SA. The participating healthcare professionals are briefly presented in Table 3. Papers 2 and 3 are based on Study 2.

Table 3. Participants in Study 2.

<table>
<thead>
<tr>
<th></th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nurses</td>
<td>6</td>
</tr>
<tr>
<td>Physiotherapists</td>
<td>1</td>
</tr>
<tr>
<td>Assistant nurses</td>
<td>1</td>
</tr>
<tr>
<td>Participants</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>(8 female/ 0 male)</td>
</tr>
</tbody>
</table>

Study 3

The setting in Study 3 was nursing homes in municipal elderly care working with SA. The inclusion criterion was work units at initial stages of SA integration. The ECAs from Study 2 had profound knowledge of the dissemination situation in work units in Sweden and suggested work units. These work units were contacted and three agreed to be included in the study. The managers at included work units suggested CMSs and informed them about the study. The CMSs agreed to be included and healthcare professionals from these CMSs could voluntarily participate in interviews.

Fifteen individuals working in three CMSs were included in the study. Individual participants were managers, nurses and assistant nurses engaged in the SA work. Professions in CMS meetings were nurses, assistant
nurses, physiotherapists and occupational therapists. Managers facilitated CMS meetings, which lasted for several hours. Individuals in CMS meeting participated in parts of the meetings, when the patients they were responsible for were subject of the discussions. This means that the participants in CMS meetings were continuously replaced in the meetings. Participants in individual interviews are briefly presented in Table 4. Paper 4 is based on Study 3.

Table 4. Participants in Study 3.

<table>
<thead>
<tr>
<th></th>
<th>No.</th>
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<tbody>
<tr>
<td>3 CMSs including:</td>
<td></td>
</tr>
<tr>
<td>Managers</td>
<td>3</td>
</tr>
<tr>
<td>Nurses</td>
<td>2</td>
</tr>
<tr>
<td>Assistant nurses</td>
<td>10</td>
</tr>
<tr>
<td>Participants</td>
<td>15 (12 female/3 male)</td>
</tr>
</tbody>
</table>

The work units in Study 3 were empirical contexts where Expressions of shared interpretations as a phenomenon was studied. To preserve the confidentiality of the CMSs their names were substituted with letters. Work units A and B were situated in rural areas, while Work unit C was in an urban area. The work units are briefly presented in Figure 5, next page.
Work unit A was a municipal nursing home in central Sweden. The municipality had approx. 25 500 inhabitants (SCB, 2012). All nursing homes should work with SA. Work unit A provided care for elderly with or without dementia and was dimensioned for 50 residents. There were 37 individuals employed at various percentages of full-time employment, and the ratio of care staff per resident was slightly below the national average of 0.3. Work unit A started early to work with SA. Several professions were engaged in the work, but only nurses registered in SA. Work unit A elaborated with different kinds of meetings to integrate SA with the continuous care and planned to work with other NQRs as well.

Work unit B was a municipal nursing home in southern Sweden. The municipality had approx. 84 500 inhabitants (SCB, 2012). All nursing homes were expected to work with SA. Work unit B volunteered to start early. Work unit B provided care for elderly with dementia and had apartments in which elderly could reside periodically to relieve the partner at home. Work unit B was dimensioned for 38 residents and 35 individuals were employed at different percentages of full-time employment and the ratio of care staff per resident was slightly below national average. It was planned that several professions should register in SA, but mainly nurses registered. The managerial situation was turbulent, and hampered the dissemination.

Work unit C was a municipal nursing home in southwest Sweden, in a region with approx. 526 000 inhabitants (SCB, 2012). The decision to affiliate to SA was taken late. Work unit C was expected to rapidly disseminate the register locally. Work unit C provided care for elderly with or without dementia and was dimensioned for 100 residents. The ratio of care staff per resident was slightly below national average. Work unit C elaborated with different kinds of meetings to integrate SA with the preventive work and nominated specific coordinators. Turnover among managers and organizational changes delayed the dissemination.

Figure 5. Work units in Study 3.
Types of research and data collection methods in the studies

Study 1

Study 1 was a case study (Stake, 1995). The choice of clinic was based on a non-probability and purposive choice strategy, choosing an extreme case. Individual interviews with healthcare professionals, participating observations and an interactive feedback session with the management provided knowledge on how to construct the interview guide for the group interviews, and how the interviews should be organized to facilitate participation. Professionals in clinical microsystems were interviewed in group interviews. Analysis of documents and information accessible at the intranet underpinned the general description of the clinic and its internal processes. The data collection period was from February 2008 to August 2011. Study 1 comprised nine interviews.

Study 2

Study 2 was a qualitative, inductive interview study. The choice of participants was based on a non-probability, purposive sampling strategy. The primary data collection method was semi-structured interviews and two sets of interviews were conducted, one year apart (2010 and 2011). Observations at conferences, participation in group discussions and analysis of documents and websites provided additional data underpinning the introduction of the paper, and the sections describing the participants and their mission. Study 2 comprised 16 interviews.

Study 3

Study 3 was a qualitative, deductive, longitudinal collective case study (Stake, 1995). The study was instrumental, meaning that the cases were used to study a specific phenomenon within the cases, rather than the cases as such (Stake, 1995). In this research, the cases were used to study programme theories (PTs) of the quality register SA. The choice of work units was based on a non-probability and purposive choice strategy. The primary data collection method to develop CMSs’ PTs was individual semi-structured interviews. Three sets of interviews approximately one
year apart were conducted (2011-2013). Participant observations at CMS meetings were also carried out. In smaller nursing homes, the same participants were interviewed one or two years in a row and on one occasion two participants preferred to participate in the same interview. Study 3 comprised 22 interviews and four participant observations. Clinical microsystems’ PTs were compared with the PT of the initiator of the quality register. To develop this PT, an interactive approach was used and the data collection method was an iterative, multistage collaboration process between the researchers and two SA experts.

**Data analysis**

Expressions of shared interpretations are qualitative, abstract and complex phenomena, which puts high demands on the methods used to analyse collected data. Expressions of shared interpretations concern shared interpretations and meanings, accentuating that methods used need to be based on shared commonalities or patterns in the data, and also describing and exploring these commonalities. In that way, understanding of the complexity of the phenomenon can be provided. Some kind of schemata or structural order of the descriptions can facilitate the examination and establishment of how Expressions of shared interpretations develop, change over time, and are influential for CQI efforts.

In this thesis three methods were used to analyse data: qualitative content analysis, thematic analysis and directed content analysis. A central aspect of these methods is that they identify commonalities (themes and categories) across data. To examine time-related changes, comparative analysis of themes and categories year to year were made.

**Paper 1**

A qualitative content analysis was applied to analyse the data in Paper 1. Qualitative content analysis is a suggested method to analyse focus group discussions (Stewart, Shamdasami, & Rook, 2007). In the paper, an abductive approach was applied (Alvesson & Sköldberg, 2008). The transcribed interviews were read thoroughly and empowerment seemed to be a common thread in the data. Thus, before the qualitative content analysis was carried out, a thorough literature search on empowerment was conducted. It appeared fruitful to use the four cognitions by Kirkman and
Rosen (1999) as categories. However, after the first coded interviews it became evident that a fifth category was needed to capture the richness of the empirical material. In the next step of analysis, the five categories were used to code the data. The codes were then refined into 21 sub-categories.

The levels of empowerment in the CMSs were estimated in a qualitative and interpretive analysis of data. The researchers analysed the coded data separately and discussed their estimates until consensus was achieved. The levels used were strong, medium and weak.

Some interactive approaches were also used (Nielsen Aagaard & Svensson, 2006). The clinic management participated in the construction of the semi-structured interview guide and in order to verify the sub-/categories, a feedback session was organized at the clinic.

**Paper 2**

A thematic analysis was applied to analyse the data in Paper 2 (Braun & Clarke, 2006). The material was read through and meaning units marked. Meaning units were coded, compared and sorted based on their interpreted latent content. Building on this, eight sub-themes emerged, and they were labelled according to their interpreted latent content. The sub-themes were compared and analysed, and based on their different features two themes emerged. The themes were labelled according to their fundamental characteristics. The themes were analysed in a search for a main theme that could be interpreted as shared and coherent. Finally a typology was developed (Fig. 6, Results).

**Paper 3**

In Paper 3 the thematic analysis from Paper 2 was supplemented with a methodology to capture changes over time. Study 2 comprised two sets of interviews, the first from 2010 and the second from 2011. In Paper 3, it was counted how often the sub-/themes were present in 2010 and 2011, and these counts then underpinned the comparative analysis between years. These counts should not be mistaken for those used in traditional quantitative content analysis (Berelson, 1952). In quantitative content analysis, the analytical effort usually stops with the presentation of numerical results (Morgan, 1993). The counts in Paper 3 were based on the
number of times the sub-/themes, underpinned by their interpreted content, were present in the analysed data. These counts were then used to support to interpretation of the patterns in the data (Morgan, 1993). In Paper 3, figures were created to provide an overview and to facilitate the time-related comparisons.

**Paper 4**

A directed content analysis was applied to analyse the data from CMSs and healthcare professionals in Paper 4. Directed content analysis originates in a theory or research, which the study aims to validate or extend. Thus, the method fits research areas with a cumulative body of knowledge (Hsieh & Shannon, 2005). The coding is a structured process using predetermined categories being operationalized from theory (Hsieh & Shannon, 2005). Programme theories are based on assumptions, and assumptions are not always stated (Dixon-Woods et al., 2011). Thus, the analysis in Paper 4 focused on the latent level of the text. An interactive approach was used to develop the coding scheme (Nielsen Aagaard & Svensson, 2006). In an iterative multistage collaboration process between the researchers and a small panel list of SA experts, the initiators’ programme theory (PT) of SA was developed. The elements of the PT were operationalized into a coding scheme used in the deductive coding of the data from CMSs. A software program for qualitative analysis (NVIVO) was used to facilitate the coding. The coding was compared with the initiator’s PT and (dis) similarities were articulated in key sentences.

To examine changes over time, comparisons between the years were made and differences were described in additional key sentences. Based on this material, CMSs’ emergent PTs were written up. In the last step of the analysis, CMSs’ PTs were compared with the PT of the initiator.

**Meta-analysis of the results of the papers**

A directed content analysis was applied in the meta-analysis of the results presented in the four papers (Hsieh & Shannon, 2005). Instead of departing in operationalized categories from a theory, the predetermined categories for the meta-analysis were the research questions of this thesis. Starting with the research questions, the result sections of the papers were read and relevant results marked and coded according to the research questions.
These bodies of knowledge were used to discuss the research questions of this thesis.

**My prior understanding**

In qualitative research, reflexive interpretation has been suggested (Alvesson & Sköldberg, 2008). With reflexive interpretation, researchers include a self-critical approach in the research process and examine their own interpretations and perspectives. One postulate for reflexive interpretation is that the researcher positions himself or herself in the research field (Alvesson & Sköldberg, 2008), and consequently, it becomes important to describe my prior understanding of the research questions and the context of this thesis.

I have led CQI efforts and taught CQI methods in health- and elderly care for almost two decades, and in the past year I have held quality improvement courses at the university. “System of profound knowledge” has been a starting point in my teaching. My colleagues and I have described health- and elderly care as complex systems, we have lectured about variation and talked about the iterative nature of learning in CQI efforts. We have also discussed “psychology”, that it is important to take individuals’ different levels of curiosity and motivation into account. While CMSs struggled to find indicators to report the results of their improvement efforts, I wondered if the CQI efforts resulted in other kinds of outcomes as well. I questioned if “psychology” and “theory of knowledge” (as described in “system of profound knowledge”) only were prerequisites and preconditions for CQI efforts. Through an iterative problematisation process between my own assumptions and the dominant scientific description that CQI efforts primarily lead to tangible outcomes, the research questions of the thesis were developed (Alvesson & Sandberg, 2011).

Besides being engaged in teaching CQI methods, I have been involved in the development and use of NQRs in Sweden. I have been engaged in the development of an internal prototype of SA. Our position was to create a process-oriented NQR, unlike most NQRs, which are diagnosis or intervention oriented. The purpose with this design was to create an NQR that would encourage CMSs and healthcare professionals to report and
follow their own performance measures in order to work with local CQI efforts. In the early days of SA I was engaged in teaching SA, but in the last ten years my relation to SA has been more distant. Although my formal role in SA ended a long time ago, the curiosity for intangible outcomes of CQI efforts has continued to be a vibrant and relevant question for me. I have an educational background in human resource management and it is likely that this theoretical background has influenced my curiosity for the interconnectedness between CQI efforts and those performing change. On a practical level, my background in CQI efforts and NQRs has facilitated my contacts in health- and elderly care. This background has also proved helpful when e.g. formulating interview guides.

**Ethical considerations**

No applications for ethical approvals were submitted prior to the studies in this thesis. The argument for this was that none of the studies included groups pinpointed in the Swedish legislation (SFS 2003:460; SFS 2008:192).

The participants in the studies were CMSs and healthcare professionals; organizational members in health- and elderly care that did not talk about customers, patients or personal feelings. Several researchers have not applied for ethical reviews for research on CQI efforts in health- and elderly care either (Andersson, 2013; Burström, 2014; Höög, 2014; Staines, Thor, & Robert, 2015).

Even when the research was not subject to the legislation it was important to consider ethical aspects of the work. There are several internationally approved guidelines to protect humans in medical research, e.g. the guidelines developed by the Council for International Organisations of Medical Sciences (CIOMS, 2002) and the Belmont Report by The Office for Human Research Protections (OHRP, 1979). Medical research was not the topic of this thesis, but the three general ethical principles of respect for persons, beneficence and justice (CIOMS, 2002; OHRP, 1979) were central principles for the ethical considerations.
Respect for persons

All work units, CMSs and individuals participated on a voluntary basis. Managers were given written and oral information about the studies and managers informed work units. In all studies, the participants were given oral information about the purpose and the procedures of the study. The principles of confidentiality and voluntariness were emphasized and the participants gave verbal consent to participate. The results from Papers 1, 2, 3 and 4 were presented so that confidentiality of participants and organizations was safeguarded. To protect participants the data from studies are stored in a special locker at the university.

Special consideration regarding anonymity was made in Study 1. The included clinic was well reputed for its CQI efforts and it had received national recognition for this (SIQ, 2009). Individuals knowledgeable about CQI efforts in Sweden could therefore make qualified guesses as to which clinic was included. Staff at the clinic, or individuals with close knowledge of the clinic, may even be tempted to consider which CMSs the study included. Therefore, it was important to weigh the benefits of learning from good examples against the risks participants were exposed to. Several researchers highlight best practices and point out the names of clinics and CMSs (Andersson Gäre & Neuhauser, 2007; Bodenheimer, Bojestig, & Henriks, 2007; Nelson et al., 2002; Vincent, 2010; Staines et al., 2015; Øvretveit & Staines, 2007). This enables health- and elderly care organizations to make contact and learn more from successful organizations, which is in line with the regulations for systematic quality improvement in healthcare (SOSFS 2011: 9). However, this also risks the anonymity of individual participants. Taken together, this led to the decision to mention the organization by name, but omit the name of the clinic and CMSs.

Beneficence

In a hectic work life, there is limited space to reflect on the work. The interviews provided participants with opportunities to gain perspective on their work and their work units’ development. From this perspective, participants could benefit from participation. However, I also needed to consider non-maleficence. When SA was challenged to disseminate nationally, I recognized it as an opportunity to study Expressions of shared
interpretations. I was asked to work at the SA administration, but needed to make ethical considerations in advance. I decided to hold an internal back office position. With this position, I had limited contact with users of SA and I considered that this independence between users and myself protected participants’ actual and experienced non-maleficence. Non-maleficence was also strongly emphasized in Study 2. When the ECAs were invited to participate in the study it was strongly stated that participation was voluntary and that their positions in the interviews had no impact on their employment.

**Justice**

The ethical principle of justice emphasizes the importance for researchers to examine whether the research is aimed at those who need it most and if participants are equally treated. This fairness of distribution concerns e.g. gender, age and social class (OHRP, 1979). The employee voice of improvement needs to be clearer. Employees are expected to engage in CQI efforts but the interest in employees’ interpretations and experiences of CQI efforts is to date limited. Thus, the focus of this thesis is on groups that need to be paid attention to.

**Overview of the three studies and four papers**

The studies and papers of the thesis are summarized in Table 5, next page. The study designs of the included studies are also outlined.
Table 5. Summary of studies and papers in this thesis.

<table>
<thead>
<tr>
<th>Research</th>
<th>STUDY 1</th>
<th>STUDY 2</th>
<th>STUDY 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary data collection</td>
<td>Semi-structured interviews (CMSs: group interviews. Individuals: individual interviews), participant observations, interactive feedback session.</td>
<td>Semi-structured interviews (individual), participant observations.</td>
<td>Initiator’s PT: An iterative interactive multistage collaboration process. CMSs’ PTs: Semi-structured interviews and participant observations (CMS meetings).</td>
</tr>
<tr>
<td></td>
<td>Σ 9 interviews</td>
<td>Σ16 interviews</td>
<td>Σ22 interviews and 4 participant observations</td>
</tr>
<tr>
<td>Study design</td>
<td>Qualitative abductive study</td>
<td>Qualitative inductive interview study</td>
<td>Qualitative deductive longitudinal instrumental collective case study</td>
</tr>
<tr>
<td>Sample size</td>
<td>3 CMSs (incl. 12 individuals), 6 individuals</td>
<td>Σ 8 participants</td>
<td>15 individuals in 3 CMSs</td>
</tr>
<tr>
<td></td>
<td>Σ18 participants</td>
<td></td>
<td>Σ15 participants</td>
</tr>
<tr>
<td>Authors</td>
<td>Müllern, T., &amp; Nordin, A.</td>
<td>Nordin, A., Andersson Gäre, B., &amp; Andersson, A-C.</td>
<td>Nordin, A., Andersson Gäre, B., &amp; Andersson, A-C.</td>
</tr>
<tr>
<td>Purpose of paper</td>
<td>Develop a model for systematical ly describing team interactions leading to sustained levels of empowerment in improvement teams.</td>
<td>Examine how ECAs interpreted their work in a nationwide dissemination project of an NQR.</td>
<td>Examine and establish how ECAs’ sense-making changed.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Examine and establish PTs of SA in CMSs. Establish how CMSs’ PTs emerge in relation to the established PT.</td>
</tr>
<tr>
<td>Theoretical framework</td>
<td>Team cognitions</td>
<td>Sensemaking theory</td>
<td>Cognitive shifts</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Programme theory</td>
</tr>
<tr>
<td>Analysis method</td>
<td>Qualitative content analysis. Qualitative &amp; interpretive approach.</td>
<td>Thematic analysis</td>
<td>Thematic analysis, comparative analysis of counts.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Directed content analysis.</td>
</tr>
</tbody>
</table>
Results in the papers

In this section, the major results reported in the papers of this thesis are presented.

Paper 1

The purpose of Paper 1 was to develop a model for systematically describing team interactions leading to sustained levels of empowerment in improvement teams. Three clinical Microsystems (CMSs) called “X”, “Y” and “Z” from a hospital clinic in Sweden were included.

The scientific uncertainty of studying team empowerment without problematizing cognitions as shared phenomena was pointed out. By highlighting the possibility to explore interactions of empowerment, the paper explored how team cognitions of empowerment evolved as something CMSs engaged in continuous quality improvement efforts (CQI efforts) did. Previously Autonomy, Potency, Impact and Meaningfulness have been identified as cognitions of team empowerment (Kirkman & Rosen, 1999) A major finding described was that these four cognitions could be supplemented with a fifth cognition: Identity. The identity cognition highlights the sense of belonging to the CMS and jointly creating a we-feeling. It is notable that this cognition has not been considered as a part of team empowerment earlier.

In total, five team cognitions were described and an important finding was that these team cognitions could be used as categories identifying different kinds of interactions that make up the specific cognition. The five team cognitions and their definitions are described in Table 6, next page.
Table 6. Definitions of team cognitions of empowerment.

<table>
<thead>
<tr>
<th>Cognition</th>
<th>Definitions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identity</td>
<td>Interactions within teams that define and clarify a sense of belongingness.</td>
</tr>
<tr>
<td>Autonomy</td>
<td>Interactions within the team that foster a sense of responsibility.</td>
</tr>
<tr>
<td>Potency</td>
<td>Interactions within the team that enhance the ability to perform team-related tasks.</td>
</tr>
<tr>
<td>Impact</td>
<td>Interactions within the team that enhance the capacity to reach intended effects.</td>
</tr>
<tr>
<td>Meaningfulness</td>
<td>Interactions within the team that create task-related meaning and value for the team and its members.</td>
</tr>
</tbody>
</table>

A total of 21 interactions linked to certain team cognitions of empowerment were identified. The interactions described in the paper were those reported by the participants, and the interactions can be described as communicated, or *expressed* interactions. The Identity and Autonomy categories were linked to five interactions each. The Potency and Impact categories were linked to four interactions respectively and the Potency category was linked to three interactions. The interactions point out that CMSs can engage in a multitude of activities to increase their level of empowerment, and that they are not solely dependent on their managers to increase their team empowerment. The 21 interactions and their connections to team cognitions are outlined in the profile in Table 7, next page.
Table 7. Profile of cognitions and interactions for team empowerment.

<table>
<thead>
<tr>
<th>Cognition</th>
<th>Interaction for team empowerment</th>
<th>“X”</th>
<th>“Y”</th>
<th>“Z”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identity</td>
<td>Defining the purpose of the team</td>
<td>Strong</td>
<td>Strong</td>
<td>Weak</td>
</tr>
<tr>
<td></td>
<td>Expressing role clarity</td>
<td>Strong</td>
<td>Strong</td>
<td>Weak</td>
</tr>
<tr>
<td></td>
<td>Sharing ideas and approaches</td>
<td>Strong</td>
<td>Strong</td>
<td>Weak</td>
</tr>
<tr>
<td></td>
<td>Caring about well-being</td>
<td>Strong</td>
<td>Strong</td>
<td>Weak</td>
</tr>
<tr>
<td></td>
<td>Expressing team expectations</td>
<td>Strong</td>
<td>Strong</td>
<td>Weak</td>
</tr>
<tr>
<td>Autonomy</td>
<td>Acting responsible for quality and results</td>
<td>Strong</td>
<td>Strong</td>
<td>Medium</td>
</tr>
<tr>
<td></td>
<td>Seeking inspiration</td>
<td>Strong</td>
<td>Strong</td>
<td>Medium</td>
</tr>
<tr>
<td></td>
<td>Reflecting over relations between recourses and expectations</td>
<td>Strong</td>
<td>Medium</td>
<td>Medium</td>
</tr>
<tr>
<td></td>
<td>Mastering the work process</td>
<td>Strong</td>
<td>Strong</td>
<td>Weak</td>
</tr>
<tr>
<td></td>
<td>Paying respect for individual prerequisites</td>
<td>Strong</td>
<td>Strong</td>
<td>Weak</td>
</tr>
<tr>
<td>Potency</td>
<td>Mastering the team</td>
<td>Strong</td>
<td>Strong</td>
<td>Weak</td>
</tr>
<tr>
<td></td>
<td>Taking the advantage of being a team</td>
<td>Strong</td>
<td>Strong</td>
<td>Medium</td>
</tr>
<tr>
<td></td>
<td>Improving the team</td>
<td>Strong</td>
<td>Strong</td>
<td>Medium</td>
</tr>
<tr>
<td>Impact</td>
<td>Focusing on the results</td>
<td>Strong</td>
<td>Medium</td>
<td>Medium</td>
</tr>
<tr>
<td></td>
<td>Focusing on patients</td>
<td>Strong</td>
<td>Strong</td>
<td>Medium</td>
</tr>
<tr>
<td></td>
<td>Communicating externally</td>
<td>Strong</td>
<td>Strong</td>
<td>Medium</td>
</tr>
<tr>
<td></td>
<td>Deciding and executing</td>
<td>Strong</td>
<td>Strong</td>
<td>Medium</td>
</tr>
<tr>
<td>Meaning-fullness</td>
<td>Making life better for patients</td>
<td>Strong</td>
<td>Strong</td>
<td>Strong</td>
</tr>
<tr>
<td></td>
<td>Capturing the value of the activities</td>
<td>Strong</td>
<td>Strong</td>
<td>Medium</td>
</tr>
<tr>
<td></td>
<td>Validating goals and ambitions</td>
<td>Strong</td>
<td>Strong</td>
<td>Strong</td>
</tr>
<tr>
<td></td>
<td>Seeking personal and professional encouragement</td>
<td>Strong</td>
<td>Strong</td>
<td>Medium</td>
</tr>
</tbody>
</table>
The empowerment profile was a central result. The profile is based on the cognitions and interactions described in the paper and visualizes the empowerment level (strong, medium, weak) of teams.

The profile visualizes differences in empowerment levels between the CMSs. “X” was evaluated Strong on all interactions, whereas “Z” was evaluated at this high level of empowerment on only two interactions; *Making life better for patients* and *Validating goals and ambitions*. These two interactions are connected to the team cognition Meaningfulness and were evaluated Strong for all three CMSs. The clinic was well reputed for its quality improvement work and the results in the meaningful category reflect this well; customer focus and performance measures are central to CQI efforts.

The team cognition *Identity* was explanatory for the understanding of levels of team empowerment. The CMS with the weakest identity was in general also weaker in the other cognitions of team empowerment. However, it is hazardous to claim that high levels of identity lead to high levels in the other cognitions. It can just as well be the opposite; that high levels in the other four cognitions cause a strong identity. However, the paper pointed at the interrelatedness between levels of identity and levels of the other team cognitions. Identity was influential for CMSs working with CQI efforts. This identity supported CMSs to define the purpose with the CMS, to be clear about roles, to share ideas and to express team expectations.

**Paper 2**

The purpose was to examine how external change agents (ECAs) engaged to disseminate a national quality register (NQR) in Swedish health- and elderly care interpreted their work.

The thematic analysis revealed that the ECAs expressed their sensemaking in a variety of ways. The sensemaking could be organized into eight sub-themes, two themes and one main theme. These themes were merged in the paper into a typology, depicting the sensemaking of ECAs. The typology is depicted in Figure 6, next page.
Desirable Future Outcomes was identified as the main theme. This main theme made clear that the ECAs avoided anchoring their sensemaking in prevailing deficient organizational outcomes. On the contrary, regardless of how the sensemaking was expressed, it described various desirable future outcomes. The sensemaking extended the stated purpose of SA and the ECAs described their dissemination work as a pledge of a better future of health- and elderly care.
The two themes in the typology revealed two fundamental perspectives in the sensemaking among the ECAs. One theme was *Organization-focused sensemaking*. This sensemaking held an organizational perspective and included five sub-themes. *Structure for a systematic work approach* was a sub-theme in the organization-focused sensemaking theme describing SA as an instrument supporting healthcare professionals to work systematically with prevention. The *Transparency* sub-theme described how the ECAs interpreted how their work facilitated increased transparency. This transparency was believed to provide healthcare professionals with awareness of actions needed to be taken in order to improve prevention. The sub-theme *Financial benefits* described how the ECAs believed their work supported improved housekeeping in health- and elderly care organizations, e.g. by reducing incidents and harm among patients. With the *Cooperation* sub-theme, the ECAs emphasized the need to improve patient-focused teamwork and that SA supported this. Senior alert was also supposed to support cooperation across organizational and professional boundaries. The fifth sub-theme, *Engaged creativity*, described how the ECAs interpreted how their work promoted engaged creativity. Senior alert was described as a tool supporting dedication and the generation of new thoughts and ideas among healthcare professionals.

The second theme in the typology was *Patient-oriented sensemaking*. This theme described how the ECAs interpreted their work from a patient-oriented perspective and included three sub-themes. The sub-theme *Prevention* described how the ECAs interpreted how their work facilitated healthcare professionals to improve prevention among the elderly: the stated purpose of SA. With the sub-theme *Equal safety*, the ECAs described how they provided structures enabling the delivery of equally safe health- and elderly care. They believed the elderly could be offered individual, equal, continuous and safe care on an everyday basis. With the sub-theme *Better life*, the ECAs described how they interpreted their engagement in making life for the elderly better. The use of SA was supposed to support a good life in a broad sense, including meaningfulness, quality of life and impact.

The paper provided a close picture of prospective sensemaking and the typology illustrated how the sub-/themes were interrelated. Sensemaking has primarily been defined as a retrospective process, but there are
situations when sensemaking is initiated by events that have not yet occurred, or by events that are new or unfamiliar. This type of prospective sensemaking tries to make sense “for the future” (Gioia & Mehra, 1996, p. 1229). In such situations, concerned parties need to get involved in creative processes thinking in a “future perfect tense” (Gioia, Corley, & Fabbri, 2002. p. 623). This corresponds well with the results highlighted in Paper 2. The use of ECAs to disseminate an NQR was a novel approach at the time and the ECAs were expected to develop an appropriate work approach of their own. In this situation, the ECAs made sense in a “future perfect tense” (Gioia et al., 2002, p. 623).

Another important finding was that SA functioned as an artefact influencing how the ECAs made sense of their work. The systematic registration and the transparency the register provided, e.g., raised their awareness about equity. The multitude of sub-/themes also highlighted that the ECAs could balance different quality aspects, without letting the financial perspective (the sub-theme Financial benefits) take over. This is in line with other studies on SA (Norman & Fritzén, 2012).

**Paper 3**

The purpose of Paper 3 was to examine and establish how the sensemaking among a group of ECAs engaged to disseminate an NQR nationwide in Swedish health- and elderly care changed. To chisel out the emergent sensemaking, the theoretical concept of cognitive shifts was used.

Spider diagrams were presented to illustrate the character of the sensemaking and how it changed. The basis for the spider diagrams were the sub-/themes elaborated in Paper 2, i.e., the main theme Desirable future outcomes, the two themes Organization-focused sensemaking and Patient-oriented sensemaking, and the eight sub-themes Systematics, Transparency, Financial benefits, Cooperation, Engaged creativity, Prevention, Equal safety and Better Life.

To illuminate changes, the frequencies of sub-themes used in May 2010 (initial sensemaking) and May 2011 (renewed sensemaking) were compared. The frequencies created profiles in the spider diagrams, visualizing the changed sensemaking. The spider diagrams are depicted in Figures 7a and 7b, next page. The gradations point out the number of times
the various sub-themes were used and to keep the two themes apart, patient-oriented sub-themes are highlighted in capital letters. Frequencies are specified in parentheses.

Figure 7a. Spider diagram of used sub-themes in the initial sensemaking, May 2010.

Figure 7b. Spider diagram of used sub-themes in the renewed sensemaking, May 2011.

Comparisons between the profiles in the spider diagrams made clear that the emphasis on group level shifted from organization-focused sensemaking towards patient-oriented sensemaking. In the initial sensemaking, the ECAs used organization-focused sensemaking sub-
themes 19 times and patient-oriented sensemaking sub-themes seven times. In the renewed sensemaking the equivalent numbers were nine and 14. The displacements of the peaks of the profiles indicate the larger changes: transparency and better life.

The concept cognitive shift refers to changes in the frameworks used in sensemaking. Cognitive shifts highlight how sensemaking develops in a certain direction and the identification of cognitive shifts implies that the sensemaking on group level developed following specific trajectories.

One identified cognitive shift was Subject of work. This cognitive shift illuminated that the ECAs on group level developed their interpretations regarding for whom the work was beneficial. In the paper, the emphasis shifted from affiliating organizations to patients.

Another identified cognitive shift was Width of scope for patient orientation. The three patient-oriented sub-themes Prevention, Equal safety and Better life had different width of scope for patient orientation, with the narrowest scope in Prevention and the widest in Better life. Thus, the use of different patient-oriented sub-themes also revealed how the ECAs interpreted the width of scope for their patient-oriented work. The scope for patient orientation seemed narrower in the initial sensemaking and broader in the renewed sensemaking.

The sub-themes of organization-focused sensemaking reflected important aspects of the concept of continuous quality improvement, e.g. systematic work approach, transparency and staff engagement. However, the organization-focused theme lacked a strong patient focus, which is a hallmark of this kind of change. Taking stock of this, Perception of organizational change was identified as a cognitive shift. The perception of change was closer to the concept of continuous change in the initial sensemaking and closer to continuous quality improvement in the renewed sensemaking.

A new kind of issue-related cognitive shift was also suggested. Issue-related cognitive shift is a major type of cognitive shift sensegivers use to impose change on change recipients. Hitherto two kinds of issue-related cognitive shifts have been identified in the scientific literature: framing of the problem or framing of the solution (Foldy et al., 2008). However, the
highlighted cognitive shifts in the paper were not consistent with any of these types. The ECAs made sense by describing altered expectations on the outcomes of their work, and thus, the Outcome-related cognitive shift was suggested as a complement to the established issue-related cognitive shifts. The outcome-related cognitive shift concerns change recipients’ modified expectations of the consequences of their actions.

The strengthened patient orientation described in Paper 3 indicates that the foundation for person-centred care improved, which by extension can lead to increased clinical outcomes (Olsson, Jakobsson Ung, Swedberg, & Ekman, 2013). This was an important qualitative outcome that the use of traditional quantitative outcome measures would not have captured. Consequently, the paper highlighted the value of completing tangible outcome measures with qualitative approaches to capture intangible outcomes.

Paper 4

The purpose of Paper 4 was to examine and establish programme theories (PTs) of SA in CMSs at work units in elderly care. By comparing these PTs with that of the initiator, the paper reported on how PTs in CMSs emerged in relation to the established PT of the initiator of the register.

To enable comparisons, a model describing the initiator’s perspective on SA was developed. The model included three levels: a generic level and the levels of programme logic and PT. The model is depicted in Figure 8, next page.
At the first level, four general concepts constituting and structuring the other levels of the model were pinpointed. Reading horizontally from left to right, the generic concepts were Change recipients, Material and artefacts, Actions and Outcomes.

At the second level, the programme logic highlighted the initiator’s sequential description of the improvement initiative. Reading from left to right, CMSs, healthcare staff, leaders and elderly/patients were the identified change recipients and computers, proposals for measures, risk assessment scales and standardized outcome reports the pinpointed material and artefacts. Risk assessing, registering in SA, taking preventive actions, following up outcomes and improving were encircled as actions.
These actions were expected to lead to improved outcomes: fewer falls and pressure ulcers, and less malnutrition, bad oral health and incontinence.

At the third level of the model, the PT highlighted the initiator’s assumptions underpinning how and why the improvement initiative functioned. The initiator assumed Change recipients were motivated and knowledgeable, e.g. about their responsibilities. The initiator also assumed that change recipients were supportive and driven by determination. Furthermore, change recipients were assumed to be cooperative and courageous, e.g. by taking independent responsibility for preventive actions. Concerning Material and artefacts, the initiator assumed that computers were available, and that processes and routines were clear and customized. The initiator assumed that SA was integrated into the preventive work, that the register provided transparency and supported collaboration and improvement. The initiator’s PT included a total of ten different Actions, e.g. that CMSs discussed and reflected on processes, routines and outcomes, and that leaders asked for outcomes. Under the Outcome concept, the PT highlighted that the initiator assumed preventive actions needed to improve.

The CMSs and the initiator had different assumptions, and thus differing PTs. Concerning Change recipients, CMSs’ assumptions clearly diverged from the initiator’s. Clinical microsystems assumed change recipients in general avoided rather than supported SA. Over time CMSs’ assumptions developed and increasingly resembled that of the initiator. This was particularly the case for levels of knowledge.

Assumptions about Material and artefacts initially differed, but these differences decreased. Processes and routines of SA were customized and incorporated, and SA provided increased transparency. At the end of the study period, SA was integrated in daily work and supported improvement activities. Despite this, CMSs had difficulty seeing how SA supported collaboration.

Assumptions about Actions developed and came to resemble the initiator’s assumptions more. At first, CMSs could not see how SA supported risk prevention. The leadership support was perceived as weak and CMSs almost never strove to gain an overview. However, during the study period larger cohorts of CMSs and healthcare staff learned about SA.
Assumptions about Outcomes included no major differences between the initiator and CMSs. All CMSs improved their outcomes. Levels of SA registration increased and included the majority of patients. Clinical Microsystems assumed they had fewer fractures, better weight control, better nutrition, fewer pressure ulcers, fewer falls of the elderly, better oral health and a better patient focus now than before. During the study period, CMSs’ assumptions regarding outcomes became more challenging and increasingly included a strengthened patient perspective. Clinical Microsystems developed the assumption that there was an urgent need to improve outcomes and that it was crucial to shift from a reactive to a proactive work approach.

One major reported result was the influential impact SA had on CMSs. CMSs’ behaviours and PTs changed. These results became transparent in the comparisons between the initiator’s and CMSs’ PTs, and are presented in Table 8, next page.
Table 8. Comparisons between Program theories of Senior alert.

<table>
<thead>
<tr>
<th>Results in comparisons</th>
<th>Descriptions of results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Similar programme logic but different PTs</td>
<td>Even if the initiator and CMSs described similar programme logics, they were not underpinned by the same assumptions. These surface level resemblances risked misleading both parties to believe they shared PTs, which they in fact did not.</td>
</tr>
<tr>
<td>Confusion between motivation and discomfort</td>
<td>CMSs improved their work and raised their expectations on outcomes. Nevertheless, they claimed they were not motivated. CMSs reported they expected inadequate support, and feelings of discomfort. Hence, the CMSs confused motivation with feelings of discomfort.</td>
</tr>
<tr>
<td>Confusion between teamwork and solitary registration</td>
<td>CMSs had difficulties seeing SA as a convenor for team-based work. They assumed reporting into the system was the predominant activity and that this was done by a single healthcare worker. Consequently, they assumed SA was solitary work.</td>
</tr>
<tr>
<td>Connection between improved outcomes and patient-oriented expectations</td>
<td>At first CMSs mainly stressed the need to develop internal administrative processes. Later they emphasized the importance of improving patient-oriented outcomes. This implies that internal improvement, and the structured work imposed by SA, affected CMSs to higher expectations on patient-oriented outcomes.</td>
</tr>
<tr>
<td>Emergent and converging PTs</td>
<td>First there were major differences between the PTs. With time, CMSs´ PTs converged, i.e., emerged, and resembled the PT of the initiator more.</td>
</tr>
<tr>
<td>Disconnection between learning, improved work and outcomes</td>
<td>During the study period, CMSs´ knowledge developed, their patient focus strengthened and the clinical outcomes improved. Despite this, CMSs did not connect these improvements with SA. During the incremental development of the preventive work, CMSs continuously internalised knowledge gains and changed work behaviours, and consequently did not recognize SA as a change agent.</td>
</tr>
</tbody>
</table>
Discussion

Discussion of results

In this subsection, the research questions are discussed in light of the results presented in the papers of this thesis. A draft of a general programme theory (PT) of continuous quality improvement efforts (CQI efforts) including Expressions of shared interpretations as intangible outcomes in health- and elderly care is outlined. The results are also elaborated in relation to Deming’s “system of profound knowledge”.

Expressions of shared interpretations develop as intangible outcomes of continuous quality improvement efforts

The overall aim with this thesis was to explore Expressions of shared interpretations as intangible outcomes of CQI efforts from the perspective of clinical Microsystems (CMS) and healthcare professionals, and the papers pointed out different examples of this. The Identity category was one example (Paper 1). This team cognition concerned CMSs’ sense of belonging to a CMS and having a “we-feeling”. The paper pointed at the interrelatedness between levels of identity and levels of the other cognitions, but there was no basis to claim cause and effect relations.

A few scholars have reported on intangible outcomes of CQI efforts, even if the term was not used in these papers (see subsection Improvement science). Some described outcomes that could be understood as being related to identity, and these outcomes were claimed to be effects, not causes. Weir et al. (2016) reported that physicians who participated in a CQI training perceived enhanced self-efficacy. Self-efficacy refers to an individual’s perceived ability to be successful in the task or goal at hand, and it has shown to be a strong predictor of behavioural change (Bandura, 1997). On group level the concept collective efficacy refers to “a group’s shared beliefs in its conjoint capabilities to organize and execute the courses of action required to produce the given levels of attainment” (Bandura, 1997, p. 477). A prerequisite for CMSs to perceive enhanced
collective efficacy is that the professionals know who they are and what they should achieve together. Thus, identity is tangent to aspects of collective self-efficacy including purpose of the team, role clarity and team expectations. Skytt, Engström, Mårtensson and Mamhidir (2016) reported on participants’ expectations and experiences of a CQI effort aiming to simultaneously implement three of Senior alert’s (SA) risk assessment scales. Among other results, participants increasingly became aware about “one’s own sphere of control” (Skytt et al., 2016, p. 1918). The increased awareness of the responsibilities and possibilities in “one’s own sphere of control” has connections to identity, especially the clarity of roles and expectations. Dixons-Wood et al. (2011) reported on intensive care units decreasing the rate of central venous catheter bloodstream infections. One explanation for the success was the “sense of network community” the implementation project led to. “Sense of network community” supported social control and personal investment among participants. Identity shared some commonalities with the “sense of network community category”, e.g. the close communication and belongingness. However, the identity category complemented with an aspect of caring the other studies did not include. The CMSs described a personal engagement and how they cared for individuals in the CMSs and for the CMSs as such.

Healthcare professionals developed specific perceptions as they engaged in the CQI efforts. They gained broad perceptions on the purpose of CQI efforts. These perceptions included several aspects of organization focus and patient orientation, and healthcare professionals could balance these different quality aspects well (Paper 2). Most characteristically, the perceived purpose of CQI efforts was closely connected to the future (Paper 2 and Paper 3). Health- and elderly care is characterized by a “here-and-now” approach in terms of CMSs and healthcare professionals working with patients, as they are present in the daily operations. In the papers, the perceptions concerning CQI efforts extended beyond the current patients and their current situations. Consequently, the engagements in CQI efforts seem to have supported healthcare professionals to an extended time horizon of their work. Other highlighted perceptions concerned the subject of the work, width of scope for patient orientation and organizational change (Paper 3). If a PT develops as a consequence of a CQI effort, this developed version of the PT can be interpreted as an example of Expressions of shared interpretations. This is
described in Paper 4, and thus, an *updated PT* was an additional example of Expressions of shared interpretations as intangible outcomes. *Patient orientation* was reported in Papers 2 and 3, and some other scholars have described patient orientation as intangible outcomes (Skytt et al., 2016).

**Making assumptions regarding Expressions of shared interpretations explicit**

The critical subsequent question is why this kind of outcome should be illuminated in the first place. A text by Don Berwick can reply to this question (Bate et al., 2008, p. vii). Berwick described a walk along a river with a friend. They wondered why it was so silent and why no birds were to be seen. They asked a man passing by about this and he poured out some birdseed and:

...*magic happened. Within seconds a bird alighted on his open hand to nibble at the seed. An instant later our hands were occupied likewise. And, suddenly, the woods were teeming with birds. Our newfound guide pointed, high and low, to the right and to the left, naming one species after another. Our “empty” forest was, in fact, full of life and sound. It had been there; without the “birdman”, we had not seen it or heard it. Looking is not seeing. Listening is not hearing. It is possible to miss so much that is right in front of us if we lack the categories and skills.* (Berwick, in Bate et al., 2008, p. vii)

Accordingly, without having categories and skills to recognize Expressions of shared interpretations as intangible outcomes, leaders and initiators of change can believe these types of outcomes do not exist. The consequence of not knowing about Expressions of shared interpretations is that leaders and initiators of change can neither take Expressions of shared interpretations into account nor take advantage of this kind of outcome. Expressions of shared interpretations continue to be silent birds in the forest. To avoid this, Expressions of shared interpretations need to be included in PTs. Programme theories are often too implicit (Davidoff et al., 2015; Davies, Walker, & Grimshaw, 2010; Grol, Bosch, Hulscher, Eccles, & Wensing, 2007).
One way of making PTs more explicit is to include assumption of Expressions of shared interpretations as intangible outcomes. Thus, the construction of a general PT of CQI efforts in health- and elderly care is an important next step in this thesis.

**A general programme theory of continuous quality improvement efforts in health- and elderly care**

Figure 9 (p. 61) is a draft of a general PT of CQI efforts including Expressions of shared interpretations as intangible outcomes. There is no claim that the PT is complete, but it has the ambition to summarize and connect key findings from the papers. In the subsequent text, the numbers within parentheses indicate the order in which the various parts of the PT are explained. Even if the text is written in a linear manner, moving from No. 1 to No. 8, the objective is not to claim that the reality is simple, or characterized by linear causality. On the contrary, the objective with the PT is to visualise mutual interdependence between the included elements and to support the reader in taking different perspectives on Expressions of shared interpretations as intangible outcomes. The PT aims to describe the complex, interconnected and continuous development of Expressions of shared interpretations as intangible outcomes. Thus, the numbering is just a structured walk through the PT. In the figure, the concepts of change initiators and change performers are introduced.
Figure 9. A general programme theory of continuous quality improvement efforts in health- and elderly care. Expressions of shared interpretations are abbreviated “ESI” in the figure.
Reading the figure horizontally from left to right, the first step in the figure is the need or idea to develop health- and elderly care (No. 1, Fig. 9). At PT level, these needs/ideas can be assumed to stem from a multitude of origins; the belief that health- and elderly care can be better, that prevailing deficiencies need to be overcome, or the urge to try something else.

The needs/ideas are noticed by change initiators (No. 2, Fig. 9). Change initiators are the individuals who launch a change. In this thesis, the change initiators were CMSs and the initiator of SA. At PT level it can be assumed that change initiators are intentional, and that they have PTs. It can also be assumed that the expectations on Expressions of shared interpretations as intangible outcomes are not articulated.

The CQI effort (No. 3, Fig. 9) is the organized effort to take action on the identified needs/ideas. It can be learning collaboratives, or as in this thesis, a CMS approach, the dissemination of a national quality register (NQR) or the uptake of an NQR. At PT level, this thesis demonstrates that the designs of CQI efforts have large impact, and that change initiators need to carefully consider what implications the designs have. The papers have e.g. illuminated that the design impacted how change performers perceived patient orientation, and how they could balance different quality aspects. Dixon-Woods et al. (2011) have also made it clear that change initiators needed to be more knowledgeable of what their designs actually led to. In the case of “Explaining Michigan” (Dixon-Woods et al., 2011), the design led to a sense of network community and isomorphic pressures.

Change performers (No. 4, Fig. 9) are the individuals performing change. The concept highlights that change performers are not passive recipients, or participants, of change. They are de facto actors, and they have a considerable impact on how the CQI effort should be conducted and monitored. In this thesis, CMSs and healthcare professionals were change performers. At PT level it can be assumed that change performers are governed by their experiences and understanding (Sandberg & Targama, 2007).

Change performers engage in CQI efforts (No. 5, Fig. 9). The CQI efforts are conducted and monitored. At PT level, it is not self-evident that the actions support the changes. The actions could also be to question, undermine, or refuse the changes. The actions in combination with the
design of the CQI effort lead to tangible outcomes and in the best case, improved care (No. 6, Fig. 9). The figure also highlights that the CQI efforts lead to a multitude of Expressions of shared interpretations as intangible outcomes (No. 7, Fig. 9). Examples of this were described in previous subsections in this section.

A hallmark with CQI efforts is that change is not implemented as a predetermined package. Instead, several small changes are tested and evaluated. Adjustments are continuously made to develop health- and elderly care incrementally in the desired direction (Bergman & Klefsjö, 2010). Each test can be monitored using a PDSA cycle. The PDSA cycle is a well-established model providing change performers with a structure for the CQI work. The abbreviation PDSA stands for Plan, Do, Study and Act. The Improvement ramp, Figure 10 below, illustrates this step-wise order in CQI efforts.

![Improvement Ramp Diagram](image)

Figure 10. The improvement ramp. Modified and abbreviated after Langley et al., 2009, p. 103.

**Expressions of shared interpretations are influential for continuous quality improvement efforts**

As shown in Figure 9, change performers study the tangible outcomes in the S-section of the first PDSA cycle (S stands for Study in the PDSA cycle, Fig. 9). They might discuss the developed Expressions of shared interpretations, if these outcomes are recognized (Rivas et al., 2012).
Change performers try to justify the outcomes, actions and decisions they have made. In this action-driven sensemaking, change performers develop explanations for what they have done and achieved. Furthermore, to build a coherent understanding they also try to connect new pieces of understanding to old pieces, termed belief-driven sensemaking (Weick, 1995). Thus, it can be assumed that sensemaking is a central activity for change performers in CQI efforts. The sensemaking (No. 8, Fig. 9) leads back to the change performers (pointed out by the light grey arrow) and constitutes their developed state-of-the-art Expressions of shared interpretations as they start to plan their second PDSA cycle. The dark grey arrow (Fig. 9) depicts the start of a second PDSA cycle. In this way, sensemaking can be described as an arrow that revolves around each PDSA cycle before it takes off for the subsequent PDSA cycles in the improvement ramp. This is illustrated in Figure 11.

Figure 11. The role of sensemaking in CQI efforts. Modified and abbreviated after Langley et al., 2009, p. 103.

It is advantageous for those performing change to have some kind of “sharedness” (Bergman et al., 2015; Cannon-Bowers & Salas, 2001; Espinosa et al., 2004; Espinosa et al., 2007; Johnson et al., 2007; Langan-Fox et al., 2004; Lyles & Schwenk, 1992; Mathieu et al., 2000; Mohammed et al., 2010; Sandberg & Targama, 2007). Expressions of shared interpretations can diminish the risk of faults and conflicts and improve coordination, communication and focus skills (Bergman et al., 2015; Espinosa et al., 2004, Langan-Fox et al., 2004). This kind of
competence supports CMSs to function better. The Expressions of shared interpretations established in the papers (Papers 1, 2, 3 and 4) of this thesis pointed at an additional value. Empowerment, the focus on patients, outcomes, future and meaning indicate that the Expressions of shared interpretations functioned as a driving force in the continuous engagement in the CQI efforts. To return to the metaphor of sensemaking as an arrow circling around the PDSA cycles, Expressions of shared interpretations load the arrow with direction and energy (Fig. 11). Thus, Expressions of shared interpretations provide change performers with momentum to engage in the forthcoming PDSA cycles (No. 5, Fig. 9). Furthermore, a PT gives guidance into the design of a specific CQI effort. If a PT develops as a consequence of the CQI effort, this new version can have major impact on the re-design (No. 3, Fig. 9) and continuation of the CQI effort (No. 5, Fig. 9).

**Expressions of shared interpretations change over time**

The papers in this thesis highlight several examples of how Expressions of shared interpretations changed over time. The patient orientation increased. The interpretation that patients were the subjects of the work was strengthened and the width of scope for the patient orientation broadened to include a better life (Paper 3). The expectations on outcomes increased. This was reflected by the expectation that outcomes promptly needed to improve, and that outcomes should be more patient oriented (Paper 4). The perception of change developed and came to more closely correspond to the concept of continuous quality improvement (Paper 3). Senior alert was recognized to support CQI work, and CMSs became more knowledgeable about their responsibilities (Paper 4), which closely relates to the category Skytt et al. (2016, p. 1918) called “one´s own sphere of control”.

It is not evident that change performers noted this type of development. Nevertheless, the changes probably did have a major impact on their PTs. This is in line with the results in Paper 4, which illuminated that CMSs´ PTs emerged and converged, meaning that in time the PTs became more similar with the PT of the initiator. This is interesting to note, especially in light of the claim that there is a need for “ex post theories of interventional programs” (Dixon-Woods, 2011, p. 167). Instead of describing PTs as
phenomena that change once (pre/post change), the PDSA cycles in Figure 10 describe PTs as emergent.

Organizational learning and sensemaking are mutually constitutive and interdependent elements, hard to separate (Dwyer & Hardy, 2016). This suggests that it is pertinent to consider the dynamics between these elements in the general PT (Fig. 9). On a level of principle, the relationships between organizational learning and sensemaking in the PT can be delineated as follows. Organizational life can be described as streams of events (Weick, 1995). Sometimes an event stands out and draws attention. In the context of CQI efforts, the cue could be a tangible outcome clearly diverging from the positive perceptions of the operations change performers have. When change performers pick up (bracket) the cue, they try to answer the question “what is going on here” (Colville, Pye, & Brown, 2016, p. 9). Change performers make sense of the cue with the objective to find plausible answers and to construct coherent understanding. In the context of CQI efforts, this could mean that change performers strive to find explanations for the poor outcomes. However, sometimes there are no good explanations. Such situations are disturbing and stimulate organizational learning. Thus, organizational learning can be described as something that occurs in the intersection between organizational order/disorder (Colville et al., 2016). In the context of CQI efforts, this could mean that change performers decide to learn more about the operations that caused the poor outcomes. In the succeeding sensemaking activities (No. 8, Fig. 9), change performers make sense of the acquired learning by contextualizing it and attributing meaning to it. Thus, in the general PT organizational learning is preceded by, and ends with, sensemaking.

It has previously been argued in this thesis that organizational culture is a broader concept than Expressions of shared interpretations. This does not, however, exclude the possibility that organizational culture also is relevant to consider in the general PT. Organizational culture is an empirically based abstraction with shared assumptions at its core (Schein, 2010). The organizational culture precedes a CQI effort and influences the initial PT. Change performers are situated in their organizational culture when they make sense of the CQI effort (No. 8, Fig. 9). They strive to tie rituals,
climate, values, behaviours, learning and assumptions into a “coherent whole” or a “gestalt” (Schein, 2010, p.17).

According to Argyris (1976), organizational learning occurs in two ways, as single loop learning and double loop learning. When change performers correct errors without altering underlying assumptions, single loop learning occurs. In the context of CQI efforts, this could mean that change performers try to improve outcomes without questioning the underlying causes for the poor outcomes. Double loop learning occurs as change performers correct errors by re-evaluating values and assumptions (Argyris, 1976). In the context of CQI efforts, this could mean that change performers question both the problem and the solution at hand. This means that single loop learning induces changes within prevailing organizational culture, whereas double loop learning can implicate adjustments of the organizational culture. The Expressions of shared interpretations explored in the papers of this thesis, are in the range of observable events and underlying factors that can relate, reflect, and impact organizational culture.

**Expressions of shared interpretations and the “system of profound knowledge”**

Deming deemed it crucial that leaders understand how the different sets of theories in “system of profound knowledge” interacted (Deming, 2000). Even if he saw “knowledge of variation”, “appreciation of the system”, “psychology” and “theory of knowledge” as separate sets of theory, he considered a large proportion of their impact to be based on their interconnectedness. The general PT in Figure 9 provides added understanding to some of the interconnectedness, especially regarding “psychology” and “theory of knowledge”. The general PT exemplifies how change performers can gain understanding, motivation and meaning for the CQI effort as they continue the CQI work. A great deal of motivation in the PT can be understood as a consequence of the work, instead of a prerequisite to it. Consequently, the ever-prevailing question of how to motivate CMSs and healthcare professionals to engage in CQI work could be complemented with questions such as: “How can leaders support CMSs and healthcare professionals to set the bar for their first PDSA cycle at a level they believe is manageable?” and “How can leaders support CMSs
Methodological considerations

In this subsection, methodological considerations regarding this thesis as a whole are made. Theoretical generalizability is claimed. This is followed by methodological discussions of the studies.

Methodological considerations regarding this thesis as a whole

The scientific debate about the possibility of generalizing from qualitative research in general, and case studies in particular, is still vivid (Flyvbjerg, 2006). Several types of generalizations are suggested for qualitative research and this thesis claims theoretical generalization, also called analytical generalization (Eisenhart, 2009). With theoretical generalization, the primary concern is not to extend conclusions over larger populations. Instead, conclusions are seen as generalizable into contexts where they are perceived as theoretically relevant (Eisenhart, 2009). In theoretical generalization, theoretical concepts are used to reveal patterns and to provide more general perspectives on the studied qualitative phenomena (Halkier, 2011). Thus, theoretical generalization is an approach that progressively increases the understanding of specific phenomena, going beyond studied contexts (Eisenhart, 2009).

Study 3 was a collective instrumental case study, and this kind of research supports theoretical generalisation. In collective instrumental case studies, researchers study a number of cases in order to investigate a phenomenon or general condition. In such research, cases are chosen based on the belief that they can provide better understanding of the studied phenomenon (Stake, 2000).

Additionally, Expressions of shared interpretations is a theoretical concept, which was explored by the use of several theoretical frameworks. The results were not concrete tools or procedures that could be implemented. Instead, this thesis provides transparency and understanding to a concept that hitherto has been neglected in improvement science. The general PT of
CQI efforts (Fig. 9) brings together the results presented in the four papers and the discussion of the research questions. The PT is based on previous research, and contributes to cumulative theory building.

In qualitative research, different interconnected methods and interpretive practices are used to gain a better understanding of the subject matter at hand (Denzin & Lincoln, 2011). This thesis reflects this posture by employing different theoretical frameworks, which is closely related to theory triangulation. Theory triangulation is a strategy to safeguard credibility (Lincoln & Guba, 1985). In this kind of triangulation, different theoretical perspectives are used to examine the same data from various perspectives (Patton, 1999). In that way, theory triangulation can be understood as a technique to ensure the research is rich, supporting a broad understanding (Stake, 1995). The theoretical frameworks in this thesis were not used to explore the same data (except for Study 2). Instead, the theoretical frameworks underpinned the exploration of the same theoretical concept: Expressions of shared interpretations. Together the theoretical frameworks provided a richer understanding of Expressions of shared interpretations than a single theory could, and thus, the research design supports credibility to a higher degree than the use of a single theory would have done. This methodological consideration is presupposed however by the estimation that the papers reflected aspects relevant for this thesis. Without these links, it would not be possible to deal with the overall aim and research questions of this thesis. Acknowledging this critical issue, interconnectedness has carefully been considered and the construction of the general PT of CQI efforts (Fig. 9) was a way to visualize and expose the interconnectedness.

**Methodological considerations regarding the studies**

Even if theoretical generalization is claimed in this thesis, trustworthiness remained a central methodological quality for the research. Credibility, dependability, conformability and transferability are suggested constructs to ensure trustworthiness in qualitative research (Lincoln & Guba, 1985). A qualitative approach was used in this thesis and therefore, several strategies were carried out to safeguard trustworthiness.

Credibility concerns data’s ability to address the intended focus of the research (Lincoln & Guba, 1985). Four strategies for credibility were
applied in the studies. The studies included time periods between one to three and a half years, covering a total of six years, and thus prolonged engagement was one strategy for credibility. Analyst triangulation was another strategy, applied in all studies but most salient in Study 1 and 3. This kind of triangulation implies that several researchers are involved in the process of analysing data (Patton, 1999). Another triangulation method was triangulation of sources. In Study 2 (Paper 3) and Study 4 comparisons of data over time were made, which is an example of triangulation of sources (Patton, 1999). Peer debriefing was also used to safeguard credibility in the sense that my supervisors reviewed the research. In Study 1, the strategy of member checking was used. However, member checking was not considered an appropriate strategy in the other studies. In these studies, it was believed that the member checking strategy risked interfering with the development and timely changes of Expressions of shared interpretations.

Dependability concerns the replicability and consistency of research (Lincoln & Guba, 1985). Audit is a strategy to safeguard the perspective of trustworthiness and therefore, all papers were previously presented at scientific conferences to allow feedback from internationally recognized researchers. The feedback was indicative for the continued writing of the papers. To enable replication of studies, detailed descriptions of the research design and research process are required and the studies were described both in the papers and in this thesis. However, the changing nature of phenomena examined in qualitative research complicates the possibility of claiming dependability (Shenton, 2004). This could have accuracy for this thesis. The data was collected over an extended period of time and if the studies were repeated, it would be under other timely and contextual prerequisites. This means that the consistency of the research findings is not self-evident. An additional aggravating factor is that the studies concern theoretical concepts: team cognitions, sensemaking, cognitive shifts and PTs. Theoretical concepts are based on interpretations and it is difficult to bring in proof that they correspond to truth, or describe how they precisely change. At the same time, theoretical concepts bring understanding to abstract phenomena. This implies that a central methodological consideration regarding dependability in the studies concerns what the dependability concerns in terms of correspondence, meaning or usefulness (Alvesson & Sköldberg, 2008). I consider that the
studies meaningfully contribute to existing theory building, which indicates that the research is consistent.

Conformability concerns how researcher bias can be controlled and minimized. One strategy for this aspect of trustworthiness is audit trail (Lincoln & Guba, 1985). The strategy points out that the process of analysis and the development of sub-/categories must be clear and transparent. This was emphasized in the papers. However, one important conformability strategy was missing: reflexivity. Interpretation plays a central role in qualitative research. Researchers interact with what is being researched and are part of the research practices (Alvesson & Sköldberg, 2008). This implies that researchers need to make themselves visible in the research, so that others can evaluate their bias. I have a background in human resource management, CQI efforts and NQRs, and the confirmability could be improved if this was transparent in the papers. Readers could then evaluate whether my background was a benefit or a burden. For this reason, I have presented myself and my work in the subsection My prior understanding.

Transferability concerns if and how results and conclusions are transferable to other times, settings, situations and people. Thick descriptions are a suggested strategy for transferability, since they help readers to evaluate whether they perceive the results as transferable (Lincoln & Guba, 1985). Thus, the study designs and contexts were described in the studies of this thesis.

**Empirical implications**

*In this subsection, the empirical implications of the suggested general PT of CQI efforts are considered. This is followed by considerations regarding the empirical implications from the papers.*

**Empirical implications regarding the general programme theory of continuous quality improvement efforts in health- and elderly care**

In this thesis, thoughtfulness is emphasized. At first glance this claim may appear trivial, but it is not. In the P-section of the PDSA cycle, change performers closely examine the need or problem at hand, preferably by the
use of improvement tools (Bergman & Klefsjö, 2010). These tools support collaboration, creativity and analysis of critical aspects of the operations, primarily tangible aspects. The Ishikawa diagram promotes a more far-reaching inquiring mind. It supports a structured investigation of root causes of problems with the use of “why” at five levels (Bergman & Klefsjö, 2010). However, none of the improvement tools support change performers to gain understanding about the CQI effort as such. The improvement tools do not support inquiry about the assumptions underpinning the CQI effort, or how these assumptions are interconnected in a PT. Nor do they inquire how the improvement design is interconnected with them as change performers or the organizational culture. This implicates that change performers need to complement the improvement tools with an inquiring mind. However, it is difficult to discover your own assumptions, or the learning that occurs (Rivas et al., 2012). Therefore, it is profitable that change performers engage in thoughtful dialogues regarding the CQI efforts. To support these dialogues, leaders need to act as inquirers. This means that leaders are present in the dialogues and support change performers to question their assumptions, carefully consider all aspects of the CQI effort and support them in their understanding of Expressions of shared interpretations as intangible outcomes. Thus, this thesis emphasizes leaders as inquirers.

The thoughtfulness also has practical implications for CQI methodologies. With the Model for improvement, Langley et al. (2009) have combined the PDSA cycle with three fundamental questions that should precede and direct CQI efforts (Fig. 12).
In practical improvement work, change performers are encouraged to work with the questions:

- What are we trying to accomplish?
- How will we know that a change is an improvement?
- What changes can we make that will result in improvement?

Figure 12. The Model for improvement. Source: Langley et al. (2009, p. 24). Figure reprinted with permission from the publisher.

Taking stock of the contributions in this thesis, a fourth question is suggested to complement the Model for improvement:

- What are our assumptions?

This may seem like a modest proposal, but it can have great practical significance. This fourth question pinpoints the need to be thoughtful in every step of the CQI effort, not just in the analysis of the problem at hand. The focus on assumptions enables change performers to discover their assumptions, and to reflect over how they are compatible in a PT. The
focus also supports change performers to become aware of their assumptions regarding Expressions of shared interpretations as intangible outcomes.

It is possible, for example, that change performers, in the process of examining assumptions, first discover their assumptions regarding the significance Expressions of shared interpretations have for the CQI effort. Thus, the suggested fourth question in the Model for improvement supports the development of thoughtful and explicit PTs of CQI efforts. The role of leaders as inquirer is also supported by the fourth question. The question supports them to act as sensegivers, which is an important leadership role in CQI efforts (Iveroth & Hallencreutz, 2016).

Continuous quality improvement efforts in health- and elderly care are characterized by a “just get on with it” attitude, meaning that especially the P-sections of PDSA cycles are underinvested (Reed & Card, 2016, p. 149). An inquiring mind, thoughtful dialogues, leaders as inquirers and the question ”what are our assumptions” can be seen as empirical implications supporting deutero-learning: a meta-approach on single- and double-loop learning (Argyris, 2003; Tosey, Visser, & Saunders, 2012). Thus, the empirical implications highlighted in this subsection address the “just get on with it” problem. Based on their qualitative nature, it is not a feasible goal to make all kinds of intangible outcomes tangible, but the thoughtfulness could support an understanding of them and support learning.

**Empirical implications regarding results in the papers**

The results presented in the papers have several empirical implications. In Paper 1 the profile of cognitions (Table 7, p. 45) can be used in experimental settings to understand which prerequisites CMSs have to work with CQI efforts. For a CMS to make the profile the CMS needs to collectively and step-by-step assess the extent to which it performs the suggested interactions. If the evaluation is continuously updated, the profile can be used to measure how team empowerment develops over time. The interactions in the profile can also function as a bank of ideas for CMSs striving to increase their empowerment level.
Paper 2 highlighted that NQRs can affect the sensemaking of change performers. This makes the design of NQRs critical. Leaders and designers of NQRs need to use this understanding strategically and consider how the NQRs can support external change agents (ECAs) to balance acquired quality aspects. These considerations need to include what influence e.g. financial incentives have, and if the NQRs support desired values and behaviours.

Paper 3 reported about cognitive shifts. These cognitive shifts can be translated into four reflective questions: “For whom is the work beneficial?” (Subject of the work); “How is the work beneficial for patients?” (Width of scope for patient orientation); “How does the work support improvement?” (Perception of organizational change); and “What are the long-term consequences of the work?” (the Outcome-related cognitive shift). With insights into how the change recipients answer the reflective questions, ECAs can estimate the level of patient orientation. By repeatedly returning to the questions the developed patient orientation can be made transparent, thus supporting the ECAs to act accordingly in their role as sensegivers.

The insight that NQRs can function as artefacts leading the way for certain meanings gives leaders of NQRs reason to consider how their registers are designed. It also gives leaders in health- and elderly care reason to ponder how the NQRs are introduced to develop a meaning that works in the specific context.

The results in Paper 4 also have empirical implications. If PTs can be understood as intangible outcomes of change, tangible outcome measures appear not to be enough to monitor change. Thus, to capture the comprehensive results of CQI efforts, leaders need to complement explicit metrics measures with qualitative analysis on interpretive and latent levels.
Theoretical contributions

Scholars have claimed that organizational change requires cognitive reorientation, and that the cognitive reorientation depends on the nature of the change (Weick & Quinn, 1999). As a parallel to this, this thesis claims that in the study of CQI efforts, cognitive reorientation also is needed. In this way, this thesis provides new insights into the research field of improvement science. Specifically, this thesis provides deeper understanding, and new perspectives, on “system of profound knowledge”. Instead of seeing “psychology” and “theory of knowledge” (as described in “system of profound knowledge”) as prerequisites for change, this thesis explores how Expressions of shared interpretations are intangible outcomes of CQI efforts, from the perspective of CMSs and healthcare professionals.

Another theoretical contribution with this thesis is the general PT of CQI efforts in health- and elderly care (Fig. 9). It proposes a comprehensive picture of CQI efforts illustrating the interconnectedness between change initiators/performers, sensemaking, organizational learning, organizational culture and Expressions of shared interpretations. With the exception of Expressions of shared interpretations, several of the components in the general PT have been studied earlier. What the figure offers, however, is an overall picture of the interrelatedness of the components, the description of the emergent character of Expressions of shared interpretations and PTs, and the central role of sensemaking in CQI efforts.

The research design addresses the scientific call for a more extensive use of theory in the study of improvement (The Health Foundation, 2011). This enables a detailed and close-up study on Expressions of shared interpretations, disclosing latent and qualitative aspects that otherwise could not have been recognized. The illustrations in the papers make the theoretical concepts and frameworks more readily available. The development of the figures is driven by the conviction that “the learning is in the details”, to paraphrase “the devil is in the details”. This is in line with improvement science’s aspiration to be useful.

In the papers, several theoretical contributions are made. In Paper 1, Identity is suggested as complementary team cognition, building on the work by Kirkman and Rosen (1999). With this contribution, the paper continues the exploration of team empowerment as shared cognitions.
Empowerment is a theoretical concept, which impedes the study of it. It can be difficult for respondents to report experiences of empowerment and researchers need functioning operationalizations to observe it. The cognitions and interactions described in Paper 1 offer a detailed clarity to the concept, and thus make empowerment a more tangible concept. Paper 2 provides a close description of prospective sensemaking, which is an aspect of sensemaking theory that hitherto has not been sufficiently examined (Stigliani & Ravasi, 2012). Paper 3 builds on the work by Foldy et al. (2008) and suggests an additional kind of issue-related cognitive shift, *the Outcome-related cognitive shift*. The paper also illuminates the emergent character of sensemaking in close detail. Paper 4 contributes to the research on PTs. The paper illuminates that PTs are emergent, and that they need to be seen as dynamic phenomena and latent outcomes of change. The value of studying different parties’ PTs is also highlighted.

In summary, this thesis provides added understanding. According to Marton, Wen and Wong (2005), understanding occurs through variation, in two ways. Understanding can be achieved by focusing on common relationships between obvious different things, or by looking at different aspects of the same thing. The insight that concepts can vary, whilst the meaning they reflect is invariant, provides understanding of how employed concepts can be used in wider ranges of situations. In this thesis, Expressions of shared interpretations is used as an overarching concept enabling the usage of different frameworks. Thus, the invariant use of Expressions of shared interpretations and the variation of theoretical frameworks add understanding to “system of profound knowledge”.

A focus on different parts, aspects, elements and differences of employed concepts is also valuable for enhanced understanding (Marton et al., 2005). Diversity provides a detailed understanding of the specificity and conditions of the employed concepts. The close and detailed reports on different aspects of Expressions of shared interpretations as intangible outcomes, including description of patterns, variations and time changes also provides added understanding to “system of profound knowledge”.

77
Limitations and future research

As with any research process, this thesis has limitations. Patients are involved in CQI efforts in various ways, and the plenitude of concepts describing patient involvement underlines the topicality of the issue (Batalden et al., 2015; Gustavsson, 2016). Going back to the general PT of CQI efforts in health- and elderly care (Fig. 9), there is a possibility that patients are perceived as missing in the figure. However, the question is whether such a perception is valid. Perhaps such a perception instead reveals that patients are not seen as initiators of change (No. 2, Fig. 9) or performers of change (No. 4, Fig. 9). This thesis takes the position that patients can be both initiators and performers of change. Just as CMSs and healthcare professionals can identify needs and act as sensemakers performing change, patients can too. Additionally, patients are by definition included in the concept of CMSs (Nelson et al., 2007).

Patients' experiences of CQI efforts are of great importance (Gustavsson, 2016), and the lack of an explicit patient focus is a limitation with this thesis. To address this, a suggested area of future research is to study Expressions of shared interpretations as intangible outcomes from the perspective of patients. There are several interesting questions to explore:

- What kinds of Expressions of shared interpretations develop as patients engage in CQI efforts?
- How are patients’ Expressions of shared interpretations influential for CQI efforts?
- How do patients’ Expressions of shared interpretations change?
- What impact does patient involvement have on CMSs’ and healthcare professionals’ PTs?

Co-creation of care, which means that patients, CMSs and healthcare professionals together develop health- and elderly care as a service, is an area that has attracted increasing scientific interest (Batalden et al., 2015). The suggestion to study Expressions of shared interpretations and PTs from the perspective of patients can offer new perspectives and enhanced understanding to the interrelatedness of co-creation and tangible/intangible outcomes of CQI efforts. This understanding is an important piece in the cumulative development of the general PT of CQI efforts in health- and elderly care.
My concluding remarks

Continuous quality improvement efforts (CQI efforts) are potentially powerful interventions. They can improve clinical outcomes, preventive operations and patient safety. Continuous quality improvement efforts also lead to Expressions of shared interpretations, intangible outcomes from the perspective of change performers such as CMSs and healthcare professionals.

Continuous quality improvement efforts can influence how change performers perceive themselves, their services, the purpose of the operations and the customers/patients they work for. Expressions of shared interpretations provide change performers with momentum to engage in forthcoming PDSA cycles and sensemaking is a central activity. Thus, CQI efforts should not be initiated, or driven, in an instrumental manner. CQI efforts require thoughtfulness. The improvement tools need to be complemented with an inquiring mind and thoughtful dialogues facilitated by leaders as inquirers. The Model for improvement is also suggested to be complemented with a fourth question: “What are our assumptions?”

Coming to my concluding remark, I believe Expressions of shared interpretations is a helpful concept to gain a comprehensive understanding of the impact CQI efforts have in health- and elderly care. I hope the concept no longer is a silent bird in the forest (see Berwick, in Bate et al., 2008, p. vii), and that I have given Expressions of shared interpretations both voice and plumage, providing leaders with understanding of how to better plan, lead and evaluate CQI efforts.
Summary in Swedish

Svensk sammanfattning

Den här avhandlingen är förankrad i förbättringsvetenskapen, forskningsområdet om förbättring. Förbättringsvetenskap (improvement science), är en pragmatisk vetenskap som beskriver och utforskar kontinuerlig kvalitetsförbättring i verkliga sammanhang. ”System of profound knowledge” är grundpelare inom förbättringsvetenskapen. ”System of profound knowledge” utvecklades av Deming och omfattar fyra set av teorier av stor vikt för att utveckla kvalitet i organisationer; ”Kunskap om variation”, ”Psykologi”, ”Kunskapsbildning” och ”Systemtänkande” (Deming, 2000). Genom mätningar som leder till kunskap om variation kan kvalitetsförbättring ledas på ett insiktsfullt sätt. Den här avhandlingen lyfter dock fram att den traditionella betoningen på operationaliserade kvantitativa mätetal riskerar att skymma kvalitativa och mer svårfångade resultat som kontinuerlig kvalitetsförbättring också kan leda till. På det sättet adresserar avhandlingen behovet att bredda forskningsområdet improvement science genom att inkludera kunskaper som utvecklats efter Demings tid.

Forskning har visat att det är fördelaktigt att de som utför förändringar har något gemensamt, eller ”delat”. Det förbättrar t.ex. kommunikation och koordination. Det finns många begrepp för ”delat”, t.ex. delade kognitioner, förståelser, kunskaper, tolkningar och referensramar. Trots mångfalden av begrepp och vetenskapliga studier har ”delat” huvudsakligen beskrivits som en förutsättning, och inte som ett resultat av kontinuerligt kvalitetsförbättringsarbete. I den här avhandlingen är utgångspunkten att ”delat” kan vara ett resultat av kontinuerligt kvalitetsförbättringsarbete och ”Expressions of shared interpretations” (uttryck av delad tolkning) används som ett övergripande begrepp.

en kvalitativ ansats och består av fyra artiklar, baserade på tre studier. Den empiriska kontexten är vård- och omsorgsorganisationer (sjukhuskliniker i landsting/regioner samt kommunala äldreboenden), som ger vård och omsorg. Semi-strukturerade intervjuer är en gemensam datainsamlingsmetod i de tre studierna och sammanlagt har 47 intervjuer genomförts. Tre olika metoder, kvalitativ innehållsanalys, tematisk analys och riktad innehållsanalys används för att analysera data. För att undersöka förändringar över tid görs jämförande analyser av teman och kategorierna mellan åren. Tyra olika teoretiska ramverk används; Teamkognitioner (papper 1), sensemaking teori (papper 2), kognitiva skiften (papper 3) och programteori (Papper 4).


I papper 4 är ett teoretiskt bidrag att programteorier beskrivs som emergenta och dynamiska fenomen som behöver studeras utifrån flera intressenters perspektiv.


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99


