Creating a Force of Development in Swedish Healthcare

A Contribution from the First-Line Managers’ Perspective When Driving Improvement Work Based on Lean

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Abstract

This thesis is about the healthcare managers, working at operational levels, defined as the first-line managers. These managers often are given the role and responsibility to integrate improvements into daily work. A stronger development ability of Swedish healthcare requires first-line managers with a developed ability to lead change. Thereby efforts must be made to provide these managers with supportive work conditions when leading and developing organizations. One approach to organizational development is Lean, which refers to a strong improvement culture based upon a supportive and highly engaged leadership as well as a strong customer focus. The purpose of this thesis is to contribute to knowledge about and an understanding of the conditions that influence first-line healthcare managers’ abilities to drive improvement work based on Lean. Some of the conditions investigated are; time, receiving support from the own manager, feeling joy in improvement work and being assured about the effects of Lean.

The thesis is based on three separate analyses of a web-based survey, which relate to the two research questions. The study was conducted in a Swedish healthcare organization two years after the initiation of Lean. The analyses are presented in three separate papers. The first research question considers; How can an instrument be developed that investigates first-line managers’ views on their role, conditions and ability to drive improvement work based on Lean? The second question is; What can be learned from using the instrument that investigates first-line managers’ views on their role, conditions and ability to drive improvement work based on Lean? A qualitative study based on a hermeneutic, inductive, qualitative research approach was conducted in order to meet the research purpose and answer the research questions.

The thesis is mainly based on three papers. In paper 1 it is stated that the assuredness about the effects of Lean was quite high among the managers when the survey was conducted, such as that Lean contributes to a greater patient focus and to the development of an improvement culture. In paper 2 it is noted that the first-line managers view their role as crucial in improvement work based on Lean. Time, support from coworkers, and a clear vision and clear goals were the three conditions they considered to be most important for their ability. The results presented in paper 3 show that to initiate improvement work based on Lean, they ask for own managers who are assured about Lean and include them in discussions. They view their role and responsibility in relation to their coworkers as extensive, for instance in creating a culture where problems and mistakes are viewed as possibilities to
improve and for encouraging that new work procedures are tested. The findings indicate a need for a deeper understanding of Lean. It is concluded that a thorough understanding of Lean is a main condition for the first-line managers’ ability to drive improvement work based on the approach. Developing a common view of Lean takes time, which is important to emphasize in the practical setting to motivate for a long-term perspective. This development takes highly motivated, assured and persistent leaders with a continuous improvement attitude and a mission to improve healthcare together.

There is also an applied research question; How can the use of the instrument contribute to developing first-line managers’ role, conditions, and ability to drive improvement work based on Lean? In its essence, Lean is concerned with improving a system and since the instrument raises questions about relationships between organizational members, it sets focus on the system and calls on a system view. The responsibility for one management level must continuously be set in relation to another, when putting the pieces together in the “improvement puzzle”. Change depends on adjustments in human behavior and the instrument establishes a focus on the people in the processes necessary for development and results. The instrument also provides opportunity and structure to investigate and talk about the soft conditions important for the ability, such as receiving support from the own manager, and feeling inspiration and being assured. The practice of Lean requires changes in attitudes, new habits, new skills in the whole system, meaning in each individual from the executive management to the front-line workers. Thereby self-reflection becomes important, which requires forums for dialogue. It is concluded that such forums can influence first-line healthcare managers’ abilities to drive improvement work based on Lean. In dialogue forums improvement work can be reflected upon and learned from together.

**Keywords:** healthcare, first-line managers, organizational development, improvement work, Lean.


Avhandlingen baseras främst på tre artiklar. I den första artikeln konstateras att övertygelsen om effekterna av Lean var relativt hög bland cheferna, såsom att Lean bidrar till ökat patientfokus och till utveckling av en förbättringskultur. I den andra artikeln beskrivs att enhetscheferna ser på sin roll som avgörande vad gäller förbättringsarbete baserat på Lean. Tid, stöd från medarbetare, samt en tydlig vision och tydliga mål var de tre förutsättningar som de ansåg vara viktigast för deras förmåga. De resultat som presenteras i artikel tre beskriver att enhetscheferna behöver egna chefer som är övertygade om Lean och inkludera dem i diskussioner när de ska initiera förbättringsarbete baserat på Lean. Vad gäller deras roll anser de sig ha ett omfattande ansvar gentemot medarbetarna, till exempel när det gäller att skapa en kultur där problem och misstag betraktas som möjligheter att förbättra och där alla uppmuntras till att pröva nya arbetssätt.


Nyckelord: hälso- och sjukvård, första-linjens chefer, enhetschefer, organisationsutveckling, förbättringsarbete, Lean.
List of papers

This thesis is mainly based on the following three papers:

**Paper 1**

An earlier version of the paper was published in the Proceedings of 17th QMOD International Conference, Quality Management & Organizational Development, Sep 2016, Rom, Italy.

**Paper 2**

**Paper 3**
1 Introduction

The purpose of this chapter is to introduce the reader to the topics and context of this thesis and to present the purpose and research questions.

1.1 Background

Globally, healthcare is stated to require change and development that to a large extent concern improvements in efficiency, quality of care and becoming a more attractive employer to meet future requirements (Moraros et al., 2016; van Rossum et al., 2016). Swedish healthcare has struggled for a long time with its financial resources (SKL, 2014). Although medical quality in Sweden is highly ranked, in terms of availability, the interaction between healthcare principals and the patient participation needs for improvement are seen (ibid). In addition, it is difficult to develop healthcare, and why this is so is a frequently debated question (Eriksson, 2005). Today, there is a strong focus on the development ability and force of development of Swedish healthcare. For many years there has been an intense effort toward improvement, with national initiatives aimed at developing healthcare; nonetheless, development remains slow (Swedish Agency for Health and Care Services Analysis, 2016; Källberg 2013). To increase the rate of change a systematic and continuous improvement as part of daily practice is required (ibid).

There is a growing trend to engage healthcare coworkers in quality improvements, and to do so, different management models and strategies from the industry are used (Andersson, 2013; Dahlgaard et al, 2011, Ericsson, 2005). During the twenty-first century in particular, Lean has been the used strategy to meet the challenges of healthcare (Moraros et al., 2016, van Rossum et al., 2016). Organizational development based on Lean must gain broad support and significant participation by coworkers and all management levels (Deblois & Luigi 2016; Poksinska, 2010). Involving everyone is a responsibility of leadership (Berglund 2010). However, research and practical experience show that initiating Lean does not always lead to the desired and expected effects (Bagley & Lewis, 2008). There is an ongoing debate about whether management concepts are useful or not, including how they are understood and used (Andersson, 2013; Osterman, 2015). Usually, success stories in certain healthcare organizations inform the decision to use change concepts, and failures are explained as being due to the concept and not because of how it was interpreted and used (ibid).
The complex healthcare, characterized as being highly political and including powerful professional groups and a regulatory system, complicates the application of improvement concepts that have been successfully employed in other organizations (McNulty & Ferlie, 2004). Moreover, often neither the healthcare complexity nor the needed conditions for change are understood by decision-makers, which affects the implementation of them (Eriksson et al., 2013; Liff & Andersson, 2011). The debate over management concepts has a somewhat single-handed focus in terms of effects and results (Eriksson et al., 2013). Meanwhile, less focus is placed on the underlying process and the conditions necessary for success (ibid). This view is supported by Deming (1994), who indicates that in organizational development, managers should learn about and focus on an organization’s processes rather than on its results. Fryer et al. (2009), also emphasizes an organization’s process-view to reach an understanding of the relationships that lead to quality development.

Radnor and Walley, (2008) and Larsson, (2008) emphasize the need to establish supporting, enabling conditions when organizations plan to initiate Lean. For instance, support from and commitment of all managers (Marte et al., 2015), along with improvement efforts conducted with conviction and goal awareness by all leaders are crucial (Kotter, 2007). Without conditions the improvement concept will not be effective (ibid). It is the role of top management to look at the big picture and establish conditions for organizational development to ensure the success of the chosen improvement concept (Swedish Agency for Health and Care Services Analysis, 2017 & 2016; Bergman & Klefsjö, 2010; Mann, 2009). This requires a thorough understanding of the concept (Emiliani, 2012).

Research has to date focused primarily on higher management and on physicians (Kumah et al.; 2016; Helfrich et al., 2007). Meanwhile, first-line healthcare managers have received less attention (Ericsson & Augustinesson 2015; Aij; 2015; Birken et al. 2012). These managers are supervised by top managers and supervise employees, and thus are both employees and managers (Birken et al. 2012). Often, they are described as the link between their own managers and their coworkers (Hutchinsson & Purcell, 2010). First-line managers often become initiators of change, given their role and responsibility to integrate improvements into daily work (Kumah et al., 2016; Lundqvist, 2014). A Lean initiative’s collapse is often blamed on lower leadership levels and some state that first-line managers’ resistance to change is the primary obstacle (Bagley and Lewis, 2008). Others state that failure is caused by weak or absent support by executive leadership (Hutchinsson & Purcell, 2010; Mann, 2009). However, a system approach to change has been
highlighted by Deming (1994). As all management levels are closely related and equally important, all leaders must play complementary roles, (Mann, 2009). Often thought, everyone’s respective roles and accountabilities must be defined as large organizations have several management levels (Imai, 2012). Usually, the relationships between different management functions and hierarchical levels are complex (Marte et al. 2015). The communication and dialogue commonly need to be improved in order to counteract confusion and resistance (Halling & Renström, 2011). This is important if, as defined by Yukl and Kaulio (2011) leadership is going to become a shared responsibility because for leaders to exercise their leadership, support is needed from their coworkers. Bergman and Klefsjö (2013) indicate the same as they explain the view of leadership as being co-created, meaning that organizations need both a supportive leadership and a developed coworkership, with coworkers taking an active role in improvements. These two groups depend on one another and constantly interact (ibid).

There is clearly a need to analyze the conditions for change in healthcare (Andersson, 2013). Considering Lean implementations, these must be understood from the organization’s point of view, (Lundqvist, 2014; Mazzocato et al., 2010). A stronger development ability of Swedish healthcare requires first-line managers with a developed ability to lead change (Swedish Agency for Health and Care Services Analysis, 2017). Thereby efforts must be made to provide these managers with supportive work conditions when leading and developing organizations (ibid). Research and numerous reports (Swedish Agency for Health and Care Services Analysis, 2017 and 2016; Cano et al., 2017; Ericsson & Augustinsson, 2015; Härenstam et al. 2013, Larsson, 2008) indicate the need for knowledge and understanding of what “good and supportive conditions” means in practice, according to the first-line managers.
1.2 Purpose and research questions

The purpose of this thesis is to contribute to knowledge about and an understanding of the conditions that influence first-line healthcare managers’ abilities to drive improvement work based on Lean.

**RQ 1**

How can an instrument be developed that investigates first-line managers’ views on their role, conditions and ability to drive improvement work based on Lean?

**RQ 2**

What can be learned from using the instrument that investigates first-line managers’ views on their role, conditions and ability to drive improvement work based on Lean?

**ARQ** (Applied research question)

How can the use of the instrument contribute to developing first-line managers’ role, conditions, and ability to drive improvement work based on Lean?

This research process was at the outset inspired by the model; “Prerequisites for middle managers to drive a sustainable development effort”, by Larsson (2008). Since first-line managers are familiar with the operational activities, they can perform a vertical integration by functioning as a channel to the top, Larsson (2008) explains. Additionally, an approval from the top is required regarding the development processes that are driven from the ground, which is illustrated in the model;
First-line managers can bring together the strategies from executives (top down) and from coworkers (bottom up). In dialog with other first-line managers and external contacts an informal support is provided, where daily activities are reflected on and learned from. Thereby their operative and development role can be better balanced and the bottom-up and top-down approach can tie together (Original by; Larsson, 2008, p.241).

1.3 Connection between RQ: s and the appended papers

The RQ: s are connected to the appended papers in accordance with Fig. 1.2. The ARQ is not answered by the empirical studies but discussed in each article and in the main findings.

Connections between the research questions and the papers.
1.4 Structure of the thesis

*The research is presented in seven chapters that highlight the following perspectives:*

**Chapter 1**
Introduces the reader to the topics, context and presents the purpose and research questions of this thesis.

**Chapter 2**
Provides a theoretical framework for the research area, with a selection of theories which are described and discussed.

**Chapter 3**
Describes the research methodology used to fulfill the purpose of this thesis and to answer the research questions. This chapter also includes reliability, validity, generalization and ethics.

**Chapter 4**
Presents a summary of the appended papers on which this thesis is based.

**Chapter 5**
Presents the main findings with a reconnection to the two research questions and to the applied research question.

**Chapter 6**
Includes the discussions, a reconnection of the main findings to theory and a general discussion of the purpose of this thesis.

**Chapter 7**
Presents the conclusions and suggestions for future research.

The thesis closes with references followed by the papers and an appendix.
2 Theoretical frame of reference

This chapter presents the background behind the purpose of the thesis and the research questions. It also presents the theory behind the constructed instrument.

2.1 Developing Swedish healthcare

Since the 1970s and 1980s, various attempts worldwide have been made to advance healthcare efficiency (Radnor, 2011). Since the mid-1970s, there have been intense discussions in Sweden regarding how to use fewer resources while maintaining a high level of care (Eriksson, 2005). Swedish healthcare is facing challenges due to demographic developments such as an aging population and a limited availability of staff (Swedish Agency for Health and Care Services Analysis, 2016). The costs have increased due to rapid medical and technological developments creating possibilities for better diagnostics and treatments (ibid).

How to use the resources efficiently to meet current and future needs is a question constantly on the country’s healthcare agenda and is debated whether detailed control is the answer to that challenge or rather if greater trust in the profession’s ability is needed (SOU 2016:2). Lately, there has been a tendency for a higher degree of control, not only from politicians but also from the Swedish National Agency for Public Health (SBU), the Swedish National Agency for Medical Evaluation and the Association of Swedish Municipalities and Country Councils (SKL) (Andersson, 2013; Calltorp & Maathz 2008; SKL, 2006). At the national level, visions are formulated, legislation is established, and regions are constructed to increase healthcare’s force of development (Swedish Agency for Health and Care Services Analysis, 2016). Despite various efforts to advance healthcare on national level, the practical care work is conducted in a relatively traditional way Andersson, (2013) states. New ideas and solutions have difficulty breaking through into practice (ibid). Most importantly to develop healthcare, changes must take place where patients and professionals meet on an everyday basis (SOU 2013:44; Calltorp & Maathz, 2008).

Healthcare organizations are also described in the literature as healthcare systems. In this thesis the concept system is used, in accordance with Deming (1994); A system is composed of interrelated or interacting components of processes and people, with a clearly defined and shared goal. It can be compared to an orchestra where everyone supports one another and plays together as a whole – as a system (ibid). All interconnecting components must
interact (not be used to their maximum) to reach optimization of the system (ibid). Deming (1994) also notes that the people, within the system can band together for optimization, only if they are free of fear and competition. It is noted that healthcare organizations (healthcare systems) generally are complex (Andersson, 2013; Dahlgaard et al., 2011; Eriksson, 2005). It is difficult to develop due to its traditionally hierarchical structure comprising politicians, laws, rules and regulations (ibid). It is also due to a management system with managers at different levels and in various and numerous departments (ibid). Patients often describe their experience of the care process as fragmented, a common experience of complex organizations according to Eriksson (2005). Mann (2009) explains this phenomenon as the common flow interruptions in complex organizations. Development considering cooperation both within and among departments is required to meet the patients’ needs of a cohesive care process (Eriksson, 2005; Glouberman & Mintzberg, 2001). Such development is noted as difficult to obtain due to the structure with medically specialized departments and care receptions with own employees, economy and routines (ibid). The complexity and development of healthcare can be understood due to its three integrated parts: a political part, an administrative and management part, and a professional part, all of which have various views and perspectives (Swedish Agency for Health and Care Services Analysis, 2016; Eriksson, 2005). Politicians set goals and address the public’s interest regarding different groups of patients, having different needs (ibid). Management logic, as part of the administrative system, primarily focuses on limiting resources, considering the needs of the entire group of patients (Eriksson, 2005). Meanwhile, professionals within a certain department tend rather to be loyal to and caring for their own group of patients, thereby limiting their view to only being responsible for their part of the care process (Eriksson, 2005; Glouberman & Mintzberg, 2001). Professionals do not necessarily consider the overall organizational goals and resources and may rather view the organization as a place in which to practice their profession Glouberman and Mintzberg, (2001) claim. They do not necessarily have a close relationship to the organization or to their own manager (ibid). Additionally, powerful medical professions with different perspectives essentially complicates the development (ibid). Employees, for instance physicians and nurses, have a legitimate competence, meaning that care is conducted based on their own responsibility, leading to a professional autonomy (Anderson & Alvehus, 2017). This contributes to a strongly institutionalized system based on norms, values and actions which has
developed over a long period of time (Eriksson, 2005). In practice, the obvious norms and values decide how the work should be performed (the actions), which creates strong customary ways of doing things (habits) and thus makes development difficult (Mann, 2009; Eriksson, 2005). If decisions made at a certain management level differ from professional norms and values, employees can either resist or consent (Eriksson, 2005). Thereby professional autonomy is used against the management system (ibid). Thus, healthcare professionals usually control the operational level, as they do not act on higher management initiatives if these defy their professional identity (Kastberg & Silverbo, 2016).

Generally, people’s identity (our own and others’ perception of who we are) has a major impact on how people act (March 1994). One’s identity with a particular healthcare profession tends to be more important than following organizational guidelines (Andersson, 2013; Andersson, 2005). For instance, if it is not within a physician’s professional identity to engage in improvement issues, she or he will not participate (ibid). Professional logic, which uses medical expertise and a science approach, is often in opposition to political and managerial logic, whereby different professions’ cultures tend to dominate more than a single organizational healthcare culture (Glouberman & Mintzberg, 2001). The more complex the organization, the more identity and culture will guide people’s actions rather than the formal organizational structure (Eriksson et al., 2013). Therefore, commonly a stronger focus on the concepts culture and identity are needed in such organizations (ibid).

Knowledge of the different, contradictory logics and an understanding that they affect healthcare organizations in improvement work is important, Andersson, (2013) explains. The complexity of healthcare will always exist and must be addressed in improvement work (ibid).

There is never a single best solution in complex organizations, but rather different perspectives must be balanced and explained (Andersson & Alvehus, 2017). Finally, healthcare is also affected by the complex development of society, where the people communicate electronically and less often meet face to face (Eriksson, et al., 2013). This might create difficulties in building cooperative organizations based upon empathy, supportive relationships and a common understanding of how to drive change.

To face problems of quality and efficiency, and to cope with a challenging situation, healthcare invests efforts in quality improvement models, such as Lean (Moraros et al., 2016; van Rossum et al.; 2016; Al-Balushi et al., 2014), which will further be described in section 2.4. The underlying essence of these approaches is often attributed to the quality movement (Nugent, 1999).
Bergman and Klefsjö (2010) describe the concept quality model as an approach to achieving and sustaining a high-quality output in organizations, and as a collective term for the development of management theories, programs and practices in the quality movement. Lindskog (2014) explains that some identify quality models such as Lean (further described in chapter 3) as part of a reform movement in the public sector called New Public Management (NPM). Critical voices explain NPD as the public sector trying to imitate private businesses in terms of steering and work procedures (ibid). However, the umbrella term NPM was created by researchers following the initiation of quality initiatives in the public sector (Andersson & Alvehus, 2017). The term is currently used to describe the various ideas behind the changes in steering and organization of the public sector made since the 1980s. Many ideas are influenced by industry (Almqvist, 2004).

2.2 The first-line healthcare managers’ role and responsibilities

The management group with considerable responsibility for people and processes including the implementation of a Lean is the first-line healthcare managers (McCann et al. 2015, Larsson, 2008). The concept of a first-line manager in this thesis is used for the manager who directly supervises the work of front-line employees and who reports to and is supervised by a manager at least one hierarchical layer below the chief executive officer, in line with Birken et al. (2012). These managers are sometimes referred to as clinical managers or middle managers (Birken et al., 2012; Larsson, 2008). They are often originally clinicians such as nurses or physicians who have taken on a managerial role (McCann et al., 2015; Larsson, 2008; Ericsson, 2005) and sometimes identify themselves as clinicians rather than as managers (McCann et al., 2015).

The Swedish Healthcare Act (HSL, paragraph 31) indicates that quality in healthcare systematically and continuously must be developed and secured. Each caregiver is responsible for having a management system for planning, leading, evaluating and improving the organization and ensuring that employees work according to its guidelines (Swedish Agency for Health and Care Services Analysis, 2016). There are written regulations and general advice (SOSFS 2011:9) to systematically support quality work. The preamble to the law (SOSFS 2011:9) clarifies that the first-line managers are specifically responsible for high quality, including providing patient security and promoting cost-effectiveness, whereby they play a key role in meeting
demands. First-line healthcare managers play an essential role because of their strategic location between their own managers and the coworkers (Deblois & Lepanto, 2016; Ericsson & Augustinsson, 2015). These managers have a broad role and mission; They are responsible for coworkers and patients, for laws being followed and for national knowledge management being used (Swedish Agency for Health and Care Services Analysis, 2016; Ericsson & Augustinsson, 2015). They share with politicians and top managers the extensive responsibility for improving healthcare (ibid). They also have the authority and possibility to influence healthcare development, for instance, by prioritizing improvement work (used synonymously with change work and organizational development in this thesis) through allocating resources (Swedish Agency for Health and Care Services Analysis, 2016; Birken et al. 2012). In their role they can contribute to a climate where improvement work is an expected part of everyone’s job and ask for support when it is needed (Larsson, 2009). Their position is therefore crucial in creating conditions for action in the workplace (Södergren, 2009).

It is generally accepted that a leader’s strong, clear and visible engagement for improvement work is crucial to improving organizations (Bergman & Klefsjö, 2010; Kotter, 2007; Sörqvist, 2004). First-line managers’ commitment to organizational change influences frontline workers’ support for change work and is an important driver for it (Fryer et al., 2018; Marte et al., 2015). In other words, they can influence coworkers to be more developmental oriented (Larsson, 2009). However, studies show contradictory results in terms of these managers’ commitment to change work; for instance, that their lack of support and commitment is most prevalent in the public sector (Marte et al., 2015). Additionally, it is noted that their resistance to change is a primary obstacle when implementing Lean (Bagley & Lewis, 2008). Meanwhile, a recent survey among 1000 Swedish first-line healthcare managers indicates the opposite, stating that they are generally committed and have a mandate to lead improvements (Swedish Agency for Health and Care Services Analysis, 2016). These managers surveyed noted that they lack the analytical skills required for improvement work (ibid).

One must note that first-line managers are part of a larger system (built up by the processes). Their actions are affected, for instance, by the results requested and prioritized by higher management, by political directives, by the budget system, by the available developmental support, by the IT system and by what the organization signals as valuable in the managerial role (Swedish Agency for Health and Care Services Analysis, 2016). It has been found that along with increased expectations of a development of healthcare, higher
demands and pressures have been placed on first-line managers, which may affect their role, work experience and health (Kumah et al.; 2016; Björk et al., 2013; Tyrstrup, 2012). Björk (2013) found that they are given numerous illegitimate work tasks; these tasks fall outside the core of their occupation and professional identity, are perceived as unnecessary or unreasonable, and are commonly associated with stress.

It is indicated that first-line managers’ work status and role are not simple, as they must address the complex healthcare context (Lundqvist, 2014; Björk, 2013; Eriksson, 2005) as described in section 2.1 of this thesis. It is stated that these managers are expected to follow political assignments to develop healthcare but without conditions to take that role, such as support and time (Larsson), further explained in 2.3. Since political requirements and ambitions do not always align with patients’ and employees’ needs, feelings of conflicting loyalty are common (ibid). Their work role, responsibility and conditions may be unreasonable and the ambition to integrate operating and developmental issues may even be an impossible mission (ibid).

Later years it has been stated that the expectations regarding first-line healthcare managers’ role and responsibility must be clarified and their work context understood and balanced (Andersson & Alvehus, 2017; Kumah et al.; 2016; Lundqvist, 2014; Björk et al., 2013; Härenstam et al. 2013; Tyrstrup, 2012). Additionally, research indicates a need for leadership education that prepares first-line managers for leadership responsibilities and a need for a clearly defined competency and role (Kumah et al., 2016; Phillips & Byrne, 2013). They generally learn through on-the-job training and trial-and-error, which falls short of effective leadership development (Phillips & Byrne, 2013).

2.3 The first-line healthcare managers’ ability and conditions to drive change

First-line managers’ ability to drive improvement work is extremely crucial for the developmental force of Swedish healthcare (Swedish Agency for Health Care analysis, 2016). In this thesis, the concept ability is the manner in which managers practice (execute) leadership, as noted by Liker (2004), which is critical to the outcome of an improvement concept such as Lean as it affects employee behavior. The word ‘ability’ is used synonymously with capacity, in line with Ionescu et al. (2014).

Knowledge and understanding can obviously be achieved through leadership education, which if used in practice can increase first-line managers’ ability to initiate change and inspire involvement and commitment. However, defining
work roles and responsibilities in documents and providing education does 
not seem to be sufficient to raise the ability. Through the reading it is 
understood that a focus must be set on different conditions that support first-
line managers’ ability to lead improvement work, which according to the 
literature lack. A lack of access to organizational empowerment structures, 
meaning adequate conditions such as support, provision of resources, time, 
role clarity and recognition is noted (Ionescu et al., 2014; Hutchinson & 
Purcell, 2010; Lussier, 2006). Their need for conditions must be understood by 
politicians and top managers, including of how to increase the first-line 
managers commitment to improvement work (Ericsson & Augustinsson 2015; 
Lundqvist 2014; Larsson, 2008). Moreover, given adequate support, 
competency and skills, first-line managers can perform to the maximum of 
their ability (ibid). The clarification of the conditions is noted to be within the 

Developing the ability to manage, coordinate and lead change requires certain 
knowledge and skills, where hard and the soft skills are noted as equally 
important (Kumah et al., 2016; Ionescu et al., 2014). Soft skills include for 
instance effective listening and building relationships, coaching coworkers, 
networking and conflict resolution (Baesu & Benjinaru, 2014). Soft skills 
enable managers to effectively engage and motivate coworkers to actively 
participate in improvement work and secure commitment (Kumah et al., 2016; 
Ionescu et al., 2014). In terms of creating commitment to improvements, an 
important part of leadership is the soft ability to explain, describe, and argue 
as part of communication (Ljungberg & Larsson, 2012; Larsson, 2008). The 
ability to communicate is crucial to how coworkers embrace improvement 
initiatives, as it affects their understanding of and conviction for improvement 
work, thereby increasing their engagement (ibid). Communication not only 
refers to what words are used but also to inspiring, motivating and 
encouraging, as emphasized by Kvist et al. (2007), and thus also refers to how 
leaders communicate. Hard skills include technical competencies, work 
scheduling (Ionescu et al. 2014), planning, organizing and coordinating 
 improvement work, problem-solving and data analysis, (Kumah et al., 2016).

Support from executives was mentioned as an important condition in section 
2.3. How their role is related to first-line managers’ role is further explained 
below. As stated in the introduction to this thesis, there has been a strong 
research focus on higher management’s legal and moral obligation to ensure 
a high quality of patient care in healthcare (Kumah et al.; 2016; Parand et al., 
2014; Helfrich et al., 2007). As a logical consequence, with that responsibility 
comes the role of providing conditions for improvements, an argument
supported by Parand et al. (2014) and Eriksson (2005). Lussier (2006) even expresses this responsibility as an obligation within the top management’s role, otherwise they cannot expect first-line managers to drive change effectively. This includes not only providing necessary information and resources, but also offer personal support (ibid). It is the top managers who facilities change; They set the focus of improvement work, ensure that improvement skills are available, ask for results, create systems to ensure that development takes place, Bergman and Klefsjö (2010) explain. The importance of setting focus was also found in the survey among the 1000 Swedish first-line healthcare managers (described in section 2.2.). It was concluded that the kind of improvement work first-line managers conduct is to a large extent an issue for top management and politicians. The surveyed managers’ views were that the improvements seen at the department level were aligned with the top managers expectations. Patient were though not involved, although, currently it is clearly stated that both patients and employees must be involved to a greater degree in improving healthcare (Swedish Agency for Health and Care Services Analysis, 2016 & 2017).

First-line healthcare managers often experience that their own managers do not sufficiently promote or actively support improvement work (Vingård 2017; Lundqvist 2014; Larsson 2008). Emiliani (2012) states that they may also experience that their own managers are not self-assured about an improvement initiative such as Lean. As stated in section 2.3, first-line managers’ commitment to organizational change influences frontline worker support for improvement work, whereby it is an important driver for it (Marte et al., 2015). Additionally, it is understood that executive managers’ commitment becomes important to first-line managers’ commitment; for instance, Fryer et al. (2018) point to executive manager support as a key factor for first-line managers’ commitment to change. Additionally, Emiliani (2012) and Spear (2004) emphasize leadership participation in a practical setting as a necessary condition, since for managers to say or write that they support the improvement concept is never enough. The importance of top managers who personally participate in improvement activities as a supportive condition will be further explained in section 2.5.
2.4 Lean – an approach to organizational development

One commonly used approach to organizational development is Lean production, named by the researcher John Krafcik (Krafcik, 1988). Lean will be described in the following section.

The origin, definitions and aim of Lean

During this reading and writing process, the width of the concept Lean has become clear. Thus, it is agreed with Radnor et al. (2011) that Lean is not easy to define, and with Pettersen et al. (2015) and Dahlgaard et al. (2011), who emphasize the awareness about the distinctive definitions. Lean is not explained with one simple word or a short phrase and the different ways of defining and explaining Lean makes it loosely defined and ambiguous. Next, Lean will be described, whereby the width of it becomes evident.

The evolution of Quality Management (QM) initiatives has generally been influenced by Japanese culture (Dahlgaard-Park, 2011); one such initiative is Lean, which began in the auto industry (Womack & Jones, 1990). The Lean concept was popularized by Womack et al. in the book, The Machine That Changed the World (1990), which explained how the Toyota production system could improve quality and simultaneously reduce the cost of their cars (ibid). Lean was created on the basis of the Japanese Toyota Production System (TPS) and then developed in parallel with TPS; however, it has also had its own separate development (Hines et al., 2004). The history of Lean can be traced back to the mid-1930s, from where it borrowed key concepts and practices developed, for instance, by Henry Ford, with a history in the management system dating to the late 1800s (Emiliani & Stec, 2005). Moreover, Lewis and Lewis (2000) argue that knowing the historical context of Lean is important to see that the nature of Lean is more complex than merely tools and techniques providing results, a common discussion that will be further described and reflected upon in this thesis.

Cano et al. (2017) define Lean as a Quality management initiative. Radnor et al. (2012) describe Lean as the current management practice and trend. Lean is defined as a management system and an improvement concept by Womack and Jones (2003), and as a philosophy and a change initiative that refers to a strong improvement culture based upon a supportive, highly engaged leadership and a strong customer focus by Liker (2009). The Lean philosophy, in short, rests on values, principles, methods and tools that support organizational development toward a desired future state (Liker, 2004; Womack & Jones, 2003). This includes that organizations must employ long-
term thinking, have a holistic view and a strong customer focus as well as a focus on participation, continuous improvement and committed leadership (ibid). Modig and Åhlström (2015) explain that a Lean organizational strategy includes four parts: Values (describes how an organization should behave), principles (describes how an organization should think), methods (describes what an organization should do) and tools (describes what an organization should use). That Lean is an improvement strategy emphasizing a bottom-up approach, meaning employee-driven improvement work, is noted by Sörqvist (2013). Bhasin and Burcher (2006), though emphasize their view of Lean as a philosophy instead of as “another strategy”. Womack and Jones, (1996) explain Lean through the five Lean principles. These are based on the underlying assumption that organizations comprise processes, and by engaging with these five principles in a stepwise, sequential way, organizations can work to add value, reduce waste and continuously improve an ever-repeating process (ibid). Liker, (2009), instead explains Lean through 14 Lean principles. Lean is particularly rooted in two key principles Emiliani and Stec, (2005) state: continuous improvement and respect for people.

A core philosophy of Lean is to continually improve a process by removing the nonvalue adding steps (waste), and the initial wastes were defined by Taiichi Ohno for the manufacturing environment (Liker, 2009). However, since then Lean has been adapted to the healthcare context, for instance by the NHS Institute for Improvement and Innovation in England (Radnor et al., 2011), later replaced by NHS Improving Quality and The Sustainable Improvement Team.

Sörqvist, (2013) and Mann, (2009) define Lean as a process approach based on a shared view of the customer, focusing on working procedures and work processes (how the work is performed) and how these can be improved. The focus is the customer instead of on short-term financial results (ibid). Lean represents a continuous improvement efforts, Cano et al., (2017) note and a long-term organizational development Sörqvist, (2013) conclude.

The bottom-up approach of Lean is also noted by Dahlgaard et al. (2011, p. 677) who define Lean healthcare as “a management philosophy to develop a hospital culture characterized by increased patient and other stakeholder satisfaction through continuous improvement, in which all employees actively participate in identifying and reducing nonvalue adding activities (waste)”. Joosten et al. (2009) state that Lean is a management approach focused both on operational aspects and on developing a quality culture, but add that Lean is a hands-on improvement method.
Lean can also be understood using the concepts of structure and culture, where culturally, Lean focuses on a well-developed, committed leadership that supports people’s willingness to influence and improve (Sörqvist, 2013). Influenced by Womack and Jones (2003), Toussaint and Berry (2013) define Lean in healthcare as “an organization’s cultural commitment to applying the scientific method to designing, performing, and continuously improving the work delivered by teams of people, leading to measurably better value for patients and other stakeholders” (p. 75). Structurally (physically), Lean is about flows (processes) developed according to customer needs, where neither more nor less than the need is produced. Efficiency and the maximum value creation are reached by all the time aiming toward the greatest possible flow activity. In practice this is done by eliminating activities that are nonvalue adding and by maximizing the value added (Sörqvist, 2013). Thus, a work progress at an even pace without interruptions and adjusted to customer needs and demands is the visionary state (ibid).

The overall aim of Lean is to increase the organizational ability to provide value for the external and internal customer (Liker, 2009; Womack & Jones 2003). Creating value for the external customer means delivering the value that customers seek in the services or products they buy (Emiliani and Stec, 2005). In Lean, value is a key concept, defined as “the capability to deliver exactly the product or service that the customer wants with a minimum time between the moment the customer asks for the product or service and the actual delivery at an appropriate price” (Womack and Jones, 2003, p. 29). By first defining what the customer wants, process-steps can be divided into value-adding and nonvalue adding, containing value-adding and nonvalue adding activities (ibid). Mann (2009) points out that Lean is often mischaracterized as being fixated with cost reduction. Rather, in its essence, Lean is concerned with improving a system (ibid).

Seddon (2005) notes that the overall organizational aim when implementing Lean is to reach perfection, or as Liker (2004) expresses it, to strive toward perfection. Other authors write about the strive towards a Lean transformation (Van Rossum et al., 2016; Radnor and Osborn, 2013) or toward a Lean organization which means that the culture must develop (Sörqvist, 2013; Dahlgaard-Park (2006).

In this thesis, Lean has been approached as an approach to organizational development, which explains the expression used; “Improvement work based on Lean”. The understanding of Lean has though expanded along the research process and thereby also the view of Lean, which is further explained in chapter.7. That Lean entails developing a corporate culture that involves
everyone (everybody’s participation) and requires new habits, new skills, and
often a new attitude throughout the organization, is a perspective that is
highlighted in this thesis. This view and perspective of Lean is seen as
important since it motivates for the long-term perspective.

**Success or failure when implementing Lean in healthcare**

Although Lean originates in the production industry, it can fit other
organizations, such as healthcare, (Poksińska, 2010; Joosten et al., 2009), where
it first appeared in the UK in 2001 and in the USA in 2002 (De Souza, 2009).
Research and practical experience show that the initiation of Lean is not easy
and does not always lead to the desired and expected effects, Bagley & Lewis,
(2008) state. Many Lean efforts fail, or at least do not deliver what was
promised at the beginning (Radnor & Osborn, 2013). Lean can improve the
efficiency and quality of care in the short term, but sustainable results after
the initial period has been shown difficult to achieve (Mazzocato et al., 2016;
Mc Cann et al., 2015). Generally, there seem to be challenges as to how
healthcare professionals become engaged (Holden, 2011), how leadership is
developed and how Lean is used (Radnor et al., 2012).

There are many studies on what support and hinder Lean, and words such as
’success factors’, ‘enablers’, ‘barriers’, and ‘obstacles’ are used in research.
Barriers include the lack of customer orientation and a focus on methods and
tools instead of on people and organization (De Souza, 2009; Mann, 2009;
Radnor & Walley, 2008; Fillingham, 2007; Emiliani & Stec, 2005). The view of
Lean as a set of tools and techniques to create efficient, standardized and
improved processes is common (Poksińska, 2010; Radnor & Walley, 2008).
Barriers are also a lack of management commitment and support, a lack of
planning and resources and a single-minded focus on reducing costs,
typically through layoffs (Sörqvist, 2013; Emiliani & Stec, 2005). Other noted
barriers are a fundamentalist view of Lean, a short-sightedness, a lack of
awareness about and connection with strategy and goals (Sörqvist, 2013;
Radnor & Walley, 2008), employees working in silos and a lack of
understanding of what is system thinking, and of Lean as a system-wide
improvement philosophy (Radnor et al., 2011; Radnor & Walley, 2008). In
practice, a majority of healthcare providers tend toward small, enclosed
projects rather than adopting an organizational or system-wide approach to
Lean (De Souza, 2009). Meanwhile, to generate changes in mindset, Lean must
be implemented as a whole-system philosophical approach and seen as a
whole-system change (Radnor & Walley, 2008). Liker (2004), who calls
Lean “the Toyota Way,” emphasizes that the tools that support the Lean
philosophy must be adjusted to the situation in each organization and, most importantly, that the desired Lean principles must be understood, believed in and perused when using the tools.

Failures are often described as a consequence of failure to change the organizational culture (Sörqvist, 2014; Joosten et al., 2009; Bhasin & Burcher, 2006). Superficial tool based Lean implementations create resistance and make it even more difficult to improve healthcare in the long run, and thus organizations ought to think twice before adopting Lean, Joosten et al., (2009) argue. Furthermore, Mann (2009) emphasizes that implementing tools represents at most 20 percent of the Lean effort, whereas the other 80 percent depends on changing leaders’ practices and behaviors, and ultimately their mindsets. Eriksson et al., (2013) concludes that cultural change is needed and argues that failures cannot simply be blamed on a tool approach; Rather, we must change our views about improvement work in organizations, as we tend to see them as something that applies to others and not necessarily to ourselves or our own unit, they state. Often there is an overriding belief that structures such as written plans will make the change for us; meanwhile, we may forget that change must happen in each one of us (ibid).

Considering Lean’s enablers and barriers, it becomes obvious that a deep and common understanding of Lean by all organization members is crucial, but, as Osterman (2015) notes, receiving such understanding is time consuming. Lean is complicated and difficult to understand, Osterman (2015) continues, arguing that the underlying problem for any explanation of failures with Lean is a lack of a deeper understanding (ibid). Crosby (1995) agrees, stating that no matter what the concept may be, the key when implementing quality improvements is that all leaders understand the current concept and quality in the same way, instead of introducing a complex system or program to be implemented.

Generally, initiating Lean is a top-down decision (Larsson, 2008; Giangreco & Peccei, 2005), and through the readings it was found that the physician and top managers’ commitments are lacking to a large extent. These are key determinants for sustainable Lean implementations (Birken et al. 2012; Helfrich et al., 2007). Additionally, Cano et al. (2017) found leadership commitment, particularly within top management, to be the most critical factor in the public sector, also concluded from the literature study by Parand et al. (2014). Resistance to change among coworkers is a barrier and is more likely to occur when change is imposed by top management (ibid). Lean implies a bottom-up approach with strong focus on dedicated participative coworkers, where everybody take responsibility to improve in their daily
work (Rother, 2010; Bergman & Klefsjö, 2010; Joosten et al., 2009; Liker, 2009). Quality improvement efforts will only work in organizations that adopt it voluntarily, Crosby, (1995) concludes.

Liker (2007) emphasizes that a system view (system thinking) supports organizations in adopting the Lean philosophy. As explained by Deming (1994), system thinking is fundamental for any successful improvement work, and commonly there is a need for it. System thinking is the ability to view things holistically and see how the various integral parts affect one another (Bergman and Klefsjö, 2010). The management must know the system, its limits and the interactions between its processes and its people (Deming, 1994). Everyone must share a distinct understanding and commitment to the purpose of the system, which is stated by the management (ibid). Everyone must understand the interdependent role she or he plays with the rest of the system, meaning in the big picture (ibid). The management is responsible for making people and processer interact (ibid).

Lastly, an observation made along the research process is that often research concerns Lean’s implementation success, with a focus on final results, also noted by Fryer et al. (2018). A tendency to make the use of management concepts a goal in itself has also been reflected upon along the research process, rather than focusing on what the use will contribute to in the organization. This tendency is also noted by Alvesson and Svenning, (2008) and Bamford and Daniel, (2005). Sörvqvist (2013) points to the risk of a fundamentalist view of Lean, and Andersson (2013) comments that it is easy to become enamored with improvement concepts, as their rhetoric may have a strong influence on people. Thus, one sees it as most important to continuously remind everyone in the organization about what needs to be developed from the external customers’ point of view and how the Lean concept can support such development.

Developing a Lean culture

Lean seeks to reconfigure organizational processes, reduce waste and enhance productivity by using analytical tools and techniques; but most importantly, Lean is coupled with creating a culture of continuous improvements (Womack & Jones, 1996). Researchers agree strongly about the need for cultural development of in organizations (Cano et al., 2017; Andersson, 2013; Joosten et al. 2009, Mann, 2005), although Cano et al. (2017) argue that there is not enough discussion on how to achieve this. The typical Western approach to organizational development is trying to get everyone to think the right way, whereby it is assumed that values and attitudes will change, and
people will start doing the right things, according to Shook (2010). Shook further argues that the way to change a culture begins by changing how people behave (what they actually do) rather than how they think: “It’s easier to act your way to a new way of thinking than to think your way to a new way of acting” (Shook, p. 66).

Often the focus in improvement work is on structure, although the structural (physical) and cultural development must align, and Lean focuses on both these aspects (Sörqvist, 2014; Joosten et al. 2009). However, important conditions for developing the culture are discussed, such as by Radnor and Walley (2008), who emphasize that everyone must be trained in the Lean philosophy. Mazzocato et al. (2016) explain that the development of an improvement culture is supported by structures and practices that enable employees to identify and propose ideas for improvements. The use of tools can gradually develop the culture and new behaviors Radnor and Bucci (2007) note. A continuous improvement attitude as the driving force to developing the culture is emphasized (Aij and Rapsaniotis, 2017; Toussaint & Berry, 2013; Lewis & Lewis, 2000), for instance, seen in how employees identify and solve problems (ibid). Shook (2010) concludes that the most important cultural change in organizations is related to the entire concept of problems: how we think about them and how we react when someone else finds and exposes them to us. The cultural shift requires a change in our attitude toward viewing problems as possibilities to improve and to learn from (ibid). Trying and failing is a part of the Lean process, where the attitude is that as long as you learn and continue trying, there is no loss, (Lewis and Lewis 2000).

Fryer et al. (2009) implies a need for a total identity change of those working in healthcare from being a single healthcare department performing a specialized activity to the view of being part of a workflow within a system in which activities start with the customer’s needs. The process orientation in Lean is about cultural change rather than structure, Liker (2007) emphasizes. When considering this statement, it is seen that such culture change requires cooperation between coworkers, between different departments and between management levels, as described in this thesis. A culture with supportive relationships between its people stimulates the behaviors necessary for developing organizations; people share information, dare to test new work procedures, support change and think less in terms of “us and them”, which all contribute to high performance and productivity (Blatt & Camden, 2007). This makes the strong connection between culture and efficiency clear, noted by Zheng et al. (2010). The culture must support the employees doing and improving the work (Liker, 2004), which includes being characterized by trust,
shared responsibility, and openness to experimentation without fear of failure (Mann, 2005). By focusing on relationships, it is seen that the organization’s process view is supported, and as learnt through the readings, making a choice to implement Lean entails aiming for a process orientation and simultaneously aiming for cultural development.

Organizational culture is created by the individuals in the organizations (Schein 2010; Senge, 2006), and leaders are able to affect culture, since their actions and behavior constantly affect employees (Yukl & Kaulio, 2011). Thus, leaders are responsible for continuously evolving the culture (Schein 2010; Senge, 2006), or as researchers (van Rossum et al. 2016; Schein 2010; Mann, 2009; Mann, 2005; Womack & Jones, 2003) claim; The main factor in changing organizational culture and successfully applying Lean is leadership. Aij and Rapsaniotis (2017) conclude from their review study that it is the leaders who must promote the environment, where problems and mistakes are approached as opportunities for learning and improvement (a continuous learning environment), rather than assign blame to anyone. Lean implementations require managers who, to a higher extent, act, interact, and communicate with their coworkers, whereby the culture will evolve toward being open and communicative (Hines et al. 2008; Katz-Navon et al., 2006).

Leadership and Lean

As described in the previous section, leaders and leadership are closely connected to organizational culture, and a broader view of leaders as cultural change agents has emerged since the 1980s (Schein, 2010). Some authors use the expression ‘Lean leadership’ (Poksińska et al., 2013; Liker & Convis, 2011; Mann, 2009; Womack & Jones, 2003), while others describe what comprises leadership when applying Lean (Aij & Rapsaniotis 2017; van Rossum et al. 2016). It has become clear along this research process that Lean call for leaders who acquire certain skills (practices), attitudes, understandings, knowledge and behaviors. Mann (2009), explains that Lean leaders require not only the ability to use Lean tools but also the ability to model and share the underlying Lean principles. Lean leadership appears to be the missing link between Lean and maintaining a sustainable continuous improvement process (ibid).

Lean leadership is needed at all organizational levels, one that systematically engages everyone and aligns the Lean philosophy and tools with the organization’s strategic goals, vision and values (Aij & Rapsaniotis, 2017). All too often healthcare leaders try to implement Lean through a single-handed application of tools and methods, aiming for quick solutions (ibid). A thorough understanding of Lean principles and practices within leadership is
critical for the implementation of Lean (Cano et al., 2017; Radnor, 2009), with the principle, respect for people as the key (Emiliani and Stec, 2005). However, Liker and Convis, (2011) emphasize that Lean leadership must be supported by Lean managerial practices and tools, and it may be fruitful to outline the four principal elements of the Lean management system; In short, they are: leader standard work (daily routine activities such as walks to the workplace), visual controls (a system of information displays, and tools to provide an understanding of conditions to manage processes (Liker & Convis, 2011; Mann, 2005), daily accountability processes (a meeting structure aimed at ensuring follow-up on problems and at improvements) and discipline, which is necessary to executing the first three elements (Mann, 2005). Lean leadership is a hands-on leadership, where through personal participation in improvement activities, leaders deepen their understanding of Lean (Cano et al., 2017; Spear, 2004). Most importantly, through actions they show their support, which communicates the importance of improvement (ibid).

Aij & Rapsaniotis, (2017) underline that leadership behavior is also a tool; for instance, the walks to the workplace, through which leaders learn to assess processes, build relationships and as noted by Liker (2004) gain an in-depth understanding of the work. Lean leadership can also be explained as a process within Lean (Mann, 2009). Organizational culture can thereby be viewed as the product of its management system (ibid). Explicit definitions of leaders’ roles, work processes and schedules, (structure) support the development of a Lean culture and its sustainable implication (ibid). Mazzocato et al. (2016) similarly note that Lean leadership must involve continuous improvement processes at the management level, with strong patient focus and a system view of the organization. Therefore, communication channels among units are emphasized rather than a unit perspective (internal focus) (ibid).

Aij and Rapsaniotis (2017) also conclude that Lean implications require strong leadership to affect behaviors, attitudes and culture, whereas strong leadership in this thesis is interpreted as being an agreed-upon approach to improvement work based on thorough knowledge within the entire leadership. A major shift is required in the healthcare managers’ role in changing culture and receiving sustainable Lean implications (Aij & Rapsaniotis, 2017; Van Rossum et al., 2016; Liker & Convis, 2011). This means a need for a strong ability to facilitate, coach, teach and actively engage with the employees in daily improvement work and encourage the contribution of ideas. Lean leaders do not solve problems themselves, but instead ask questions to encourage employees to think problems through for themselves and together with others (Liker & Convis, 2011; Liker, 2004; Spear, 2004). The
leader’s facilitating and teaching role includes helping employees develop new skills and understand their responsibility to improve their own operations and also providing necessary resources for this process (Spear, 2004). By coaching and developing others, leaders teach employees the values and cultural norms of the organization (Mann, 2005).

Lean leaders have endurance and discipline, both necessary for a consistent Lean management approach, Mann, (2009) states. They need a strong commitment to self-development, which creates a basis for their coaching role, as Liker & Convis (2011) explain. Liker (2004) further states that these leaders should have thorough knowledge of and be committed to their own organization and to the improvement concept. Lean leaders are thereby supported by their strong belief in Lean, which drives certain behaviors and, over time, results in managerial competencies, as Emiliani (2008) explains. To become the involved, engaged and actively supporting leader required for the development of conscious, systematic, continuous improvement work, this thesis emphasize a condition; The managers themselves need external support and time for learning and reflection, as indicated by others (Fryer et al., 2018; Cano et al., 2017; Van Rossum et al., 2016; Parand et al., 2014; Kvist, 2007; Larsson, 2008).

Lastly, it should be emphasized that where Lean have been most successful, there is a long-term stability in top management, as it takes time to learn the Lean management system (Aij & Rapsaniotis, 2017; Emiliani & Stec, 2004). Mann (2009) explains that executive leaders develop other Lean-thinking leaders through their personal involvement. Further he notes that these leaders should read about Lean tools and principles, but that the most important Lean education comes via structured walkarounds.

2.5 The use of surveys in healthcare

In this section, the theory of survey use in healthcare will be described.

Survey questionnaires asking about employees’ views and opinions started being used in the 1940s (Hartley, 2001). Thereby support for a certain change initiative, and whether that change had been instituted, was investigated (ibid). De Waal (2014) calls the surveys used in organizations ‘employee satisfaction surveys’, Wiley (2012) defines them as ‘employee engagement surveys’ and Hartley (2001) points to them as ‘employee attitude surveys.

The main purpose of surveys has generally been to control and ensure quality in organizations (Pongatichat Johnston, 2008; Sörqvist, 2004). There is a widely accepted idea that there is a strong positive relation between employee
satisfaction (equated to employee engagement) and organizational commitment and results (De Waal, 2014). Surveys are highlighted as a management technique by De Waal (2014) through which employees are encouraged to share their views about the organization. Surveys are now frequently used by organizations throughout the world, and an increasingly used research method across various social science disciplines (De Waal, 2014; Wiley, 2012).

The increased use of surveys may be explained by the idea that they raise engagement in organizations and thereby drive change (Wiley, 2012). In particular, researchers studying organizational development have focused on the use of systematic feedback from surveys as an approach to cultural change (Hartley, 2001). Thus, there has been a shift from using surveys as a neutral technical instrument of information gathering to a means whereby the actual act of the survey procedure brings about a desired organizational and cultural change, (ibid). For instance, Bergman and Klefsjö (2010) claim that through the use of surveys (defining them as quality measurements), a continuous improvement culture can develop, and De Waal (2014) emphasizes that surveys are an integral part of organizations with such a culture. The idea that survey questionnaires can influence organizational change is not new (Hartley, 2009). In the 1990s, French and Bell (1990) find that survey results must be shared among groups of employees and not only among managers if they wish to develop organizations. Earlier proponents advocated this kind of approach to surveys, such as Nader (1977) and Viteles (1953), who argue that employee survey results must be used, as these affect the participants, whether employees or managers. Viteles (1953, p. 394) noted that “An employee survey is similar to a hand grenade. Once you pull it out, you have to do something with it. Otherwise, it may harm you rather than help you”.

Generally, there is barely any improvement action following a survey, and data alone do not generate improvements, although this is a common belief (Statens offentliga utredningar, 2013; Fryer et al., 2009). Critical voices note that as long as the results are not addressed adequately, employee surveys do not help organizations to improve in a sustainable manner (De Waal, 2014). Recently organizations even appear to be losing interest in employee surveys (Wiley, 2012). Additionally, large resources such as time, human effort and money are spent on collecting and analyzing data but without necessarily leading to expected outcomes, De Waal (2014) and Stadskontoret (2011) argue. This can be viewed as extremely unnecessary and even immoral; others note (Ljungberg & Larsson, 2012; Seddon, 2010; Bergling & Duell, 2007). Managers may become frustrated because survey scores are not high and employees
may become frustrated because they do not feel taken seriously by management after being under the impression that they will act upon issues they were asked about (Lindgren, 2012). Not until being analyzed can data increase our understanding of a situation and motivate appropriate actions. Analyzed data can provide valuable information for politicians and executives and guide them when making decisions about improvement actions (Lindgren, 2006; Stadskontoret, 2011). Moreover, before facts are acted on, someone capable must describe the results in a convincing manner (Fryer et al., 2009).

De Waal (2014) concludes that there are four problems with employee surveys. The first problem is the lack of action based on the survey results from the management side (poor follow-up). This is explained by a lack of time in management or a belief that measuring satisfaction equals creating satisfaction, whereby nothing needs to be done. Giving employees a voice is thereby seen as a good thing to do, but too often the managerial response to survey findings is no response at all (Wiley, 2012). Another reason why results are not acted upon is that management has not clearly defined and communicated why the survey was conducted in the first place, and thus the results are only produced and reported (Lindgren, 2012). De Waal (2014) and Wiley (2012), however, argue that poor follow-up is mainly due to a lack of discipline and focus within management. De Waal (2014) further explains that poor follow-up signals a need to develop a continuous improvement organizational culture, wherein managers address problems adequately and systematically and are knowledgeable about how the attitudes expressed can be used for improvements.

The second problem concerns asking survey questions that management are unable or not permitted to act upon, thus giving false hopes to employees; thus, survey questions must be more thoughtfully composed (ibid). The third problem indicated by De Waal (2014) is that surveys are either too short or too long, whereby managers receive too little or too much information to act upon. Additionally, sometimes they primarily confirm the already known, without contributing new knowledge or insights according to Lindgren (2006). Surveys can then become more similar to rituals than value creators in an organization (ibid). On the other hand, Hartley (2001) notes that by receiving support for the already known, managers are more confident in their decisions about what actions to take.

Finally, the fourth problem concerns the often too-wide focus in surveys on internal employee satisfaction, such as on the work environment (ibid). Instead, De Waal (2014) suggest that surveys can be used to help managers
identify issues that support efficiency and quality and that develop organizations; for instance, those that support dialogue and interaction between managers and employees and those that improve cooperation among organizational units. Such issues are rarely asked about even though employees are often very knowledgeable about them (ibid). Tengblad and Andersson (2016) additionally note that by using questionnaires, the important dimension of interaction between leadership and coworkershop can be investigated, instead of evaluating an individual leader, measuring the temperature or making a baseline. Just as De Waal (2014) and Tengblad and Andersson (2016) call for a broader and more holistic approach to surveys, Deming (1994) indicates that the use of surveys to support improvements requires systematic thinking, with a holistic perspective on the organization and a consideration of the system’s complexity.

The systematic processing of survey results can contribute to a higher understanding, and hence a higher value, of a survey, but quite often there is also a need for a clear plan regarding how the results are to be used to improve the organization (Stadskontoret, 2011; Bergman & Klefsjö, 2007).
3 Research methodology

This chapter describes the research methodology used to answer the research questions. It starts with a short description of the research journey. Then, the performed study is described and connected to the research purpose. Subsequently, the approach is connected to methodological theories. The chapter ends with a discussion of the concepts reliability, validity, generalizability and ethics considering this research.

3.1 My research journey – an overview

The research was initiated through a partnership between Mid Sweden University and a Swedish healthcare organization in 2013 as part of a political initiative to implement Lean in healthcare. In line with my background, the research was to be conducted by someone working within the healthcare organization with a master's degree in Quality Management and Quality techniques. The research journey started in the middle of February 2014 and has been in progress from then until September 2019, resulting in this thesis. The research process thus lasted for approximately five years.

This thesis is based on three separate analyses of a web-based survey conducted in 2014, which relate to the research questions RQ 1 and RQ 2. The analyses were presented in three separate papers. The applied research question, ARQ, was addressed in the discussion section within each of the three papers and then further expanded upon in the thesis.

Paper one was first published as a conference paper and presented at the 17th QMOD conference in Rome, Italy, in 2016. It was rewritten during the second year of research and published in the Management and Production Engineering Review in 2017. The writing process of the second and third papers started in 2016. Paper two was accepted to be published in International Journal of HealthCare Quality Assurance, in May 2019. Paper three was submitted to International Journal of Quality and Service Sciences, in June 2019. The main findings and conclusions from the three papers are presented in this thesis. The overall research process is illustrated in fig. 3.1;
Fig. 3.1. The research process presented on a time axis from the start of Feb 2014 until Sep 2019, including parts and connections within the research from the initial literature review through the completed papers, main findings and conclusions.

3.2 The research process

A qualitative study, based on a survey design, was used in this research. The study was carried out in two phases: 1) literature review and survey development and 2) administration of a web-based survey and analysis of data. The research will next be presented in more detail.

Fig. 3.2. Overview of the conducted study, research strategy and how data were collected

3.2.1 Literature review

The research journey started with a literature review in February 2014. Theory about healthcare and Lean implications was studied in depth to obtain knowledge about the current field of research. For instance, articles presenting success factors, enablers and barriers when implementing Lean
were studied. Through the readings, a picture of different aspects concerning the development of healthcare emerged, and first-line managers were found to be highly crucial. It appeared that research commonly focuses on Lean as a concept to be implemented, with a strong focus on its effects and results and on a discussion of whether Lean is a useful approach for healthcare development. With these understandings in mind, there was a curiosity to learn more about what is behind the results in reaching a sustainable change process from the perspective of first-line healthcare managers.

Existing studies connected to the purpose of this thesis have been part of the entire research journey, such as concerning what characterizes Swedish healthcare and the challenges considering its development. Through these studies, my understanding and scientific knowledge have continuously developed along with the research process. Articles were found in databases such as Google scholar, Emerald and Scopus. Terms such as healthcare, public sector, first-line healthcare managers, Lean, enablers, barriers, crucial factors and conditions were used in the searches. Relevant sources were also found in reference lists of papers in the studied articles and suggested by the researchers at Mid Sweden University. Courses were also chosen and designed to support the research process.

From the literature review, the problem was formulated, and the purpose of the thesis was defined. The two research questions were formulated in August 2014. As mentioned in section 3.1, the idea about the applied research question (ARQ) developed through the readings and was finally formulated in the beginning of 2018.

3.2.2 Developing a survey design with a web-based questionnaire

A survey was designed and chosen as the research strategy to investigate the first-line managers’ views on their role, conditions and ability to drive improvement work based on Lean to achieve the purpose of this research; To contribute to knowledge and understanding of the conditions that influence first-line healthcare managers’ abilities to drive improvement work based on Lean.

As determined when studying the literature, the word survey can relate both to the data collection method itself and to the research strategy (Creswell, 2014; Denscombe, 2010). Rossi (2013) presents surveys as using a systematic collection of data to investigate people’s views, perceptions, attitudes, beliefs, experiences, opinions and knowledge based on questions that are as precise and unambiguous as possible. According to Thiel (2014), a survey is a system for collecting information to identify, investigate, describe, compare, or
explain attitudes, views, opinions, values, feelings, knowledge and behaviors. Denscombe (2010, p.3), on the other hand, writes about a survey as a research strategy that is “a plan of action designed to achieve a specific goal”. This is in line with this research, where the survey is seen as a road map and practice for how to achieve the purpose, whereby the survey includes both the development of an instrument and the collection of data.

As noted, this research aimed to investigate (explore) but also to describe (see section 3.3) the first-line managers’ views, whereby a survey design was considered a suitable research strategy. The choice also depended on a feasible strategy, which will be further discussed in the methodology discussion in chapter 6. Within surveys, information is often collected from large study groups, usually by means of interviews or questionnaires (Rossi, 2013). Through readings about research methodologies and through discussions with mentors, it was decided to develop a web-based questionnaire as a data collection method. For instance, Hartley (2001) notes that fixed-format self-completion questionnaires using Likert scales are the most frequently used survey instrument.

The questionnaire was constructed for the purpose of the thesis, based upon previous literature and research. The development started after the purpose was set in August 2014 until November 2014. A stepwise, simple and systematic working procedure called “operationalizing” was used in the construction, as suggested by Eljertsson (2014). This procedure meant that, first, the purpose of the thesis was broken down by defining three question areas (categories) as follows: “the view on the first-line managers’ conditions and needs”, “the view on their role and responsibility” and “the view on their ability”. Notes taken from the literature review along the research process were sorted under these three question areas. A knowledge base was thereby achieved for the creation of questions and for a later analysis of data. One example within the question area “the view on the first-line managers’ conditions and needs” was the following question: To what extent do you agree that the following statements are conditions to initiate improvement work based on Lean in your own department? Another example was; Mark three factors that you consider to be most important for your ability to drive improvement work in your unit. An example within “the view on their role and responsibility” was the following: To what extent do you experience that the following statements are in accordance with your own role in relation to your coworkers? Within “the view on their ability”, the following was asked: To what extent do you consider yourself to have sufficient competence to drive improvement work based on Lean within this healthcare organization?
In total, the questionnaire contained 18 questions. The final questionnaire contained:
- Six closed-ended background questions designed to collect demographic data.
- One open-ended (nonstructural) question where managers were asked to list the three work-tasks they spend most of their time on.
- Eleven closed-ended questions, out of which two had 12 preconstructed choices. The remaining nine were of Likert type using a scale of one to five.

The Likert-type questions were given odd numbers to provide the possibility for more neutral answers. The respondents were to indicate on the Likert-type scale to what extent they agreed with the different statements. For instance, one statement regarding conditions to initiate improvement work based on Lean in relation to the first-line managers’ own manager was the following:

It is a condition that my own manager is assured about Lean as the organizational improvement philosophy.

1=Do not agree at all. 5=Totally agree.
☐ ☐ ☐ ☐ ☐

3.2.3 Testing the web-based questionnaire

First, an expert panel of five researchers from the research group in the department of Quality Management and Quality techniques at Mid Sweden University reviewed the questionnaire, offering their suggestions for further improvements. Improvements were made considering the wording and thereby the readability of the questionnaire.

Next, the questionnaire was tested in a pilot study, which consisted of five first-line healthcare managers. They were asked to participate by the Lean coordinator in the healthcare organization where the study was to be conducted. After the questionnaire was tested, there was a phone-discussion meeting with each of the managers to determine whether the questions were relevant in the practical setting and how the questions were comprehended considering the wording. The feedback was used and followed by minor improvements.

3.2.4 Data collection through the web-based questionnaire

A week before distributing the web-based questionnaire, written information about the planned survey and its purpose was e-mailed to all 112 first-line healthcare managers. It was mailed with an information letter signed by the executive healthcare manager, who emphasized the importance of everyone’s participation. The letter indicated that participating was voluntary, that data
would be used confidentially and that the answers would be handled anonymously. The study aimed to include the full population under study, meaning that all first-line healthcare managers in the organization were invited to participate in the study.

Data from the questionnaire were collected for four weeks with a reminder sent three times. Data were then stored in the calculation program Microsoft Excel. Before analyzing data, a response analysis was conducted, showing that 33 out of 112 managers did not answer, which was an external loss of 29%. A falling trend was observed in the questionnaire, where 79-65 managers answered the entire questionnaire (71-58%), giving an internal loss between 29% and 42%.

3.2.5 Analysis, presentation of data collected from the questionnaire

The analysis of data, based on the literature studies from the beginning and along the research process, included searching for explanations behind the data. Through the processing and interpretations of the data, the research aimed to fulfill the purpose.

In 2015, the answers from the 11 closed-ended questions and six background questions were entered and processed by the preconstructed SPSS (Statistical Package for the Social Sciences) calculation and computer program. Thereby diagrams were used to visualize data and support the analysis. Each question was analyzed separately one by one.

Of the 18 questions, in total, data from six questions were used, summarized and analyzed qualitatively, presented in three papers constituting this thesis. Five of these six analyzed questions were Likert based, all of which were analyzed and presented descriptively, using mean scores and percentages. Additionally, the data from the only nonstructural question were analyzed by looking for themes and patterns to then be sorted into different categories, noted by Eljertsson (2014) as a commonly used procedure when handling open-ended questions.

In summary, Paper one is based on one Likert-type question within the area “the view on their conditions” (appendix 1, question nr. 10). Paper two is based on two Likert-type questions related to “the view on their conditions and needs” (appendix 1, question nr. 4 and 5) and one nonstructural question (nr. 12) within the area “the view on their role”. Paper three is based on two Likert-type questions within the areas “the view on their conditions and needs” and “the view on their role and responsibility” (appendix 1, nr. 8 and 9). The three separate analyses from the web-based questionnaire were presented in three separate papers, as noted in 3.1. Finally, the thesis integrates the data
presented in the three papers to provide a holistic picture in answering RQ 1 and RQ 2.

3.3 Types of qualitative research

Research can be classified based on its purpose. The most common classifications are exploratory, descriptive, and explanatory (Yin, 2003; Saunders et al., 2000). Each of these different types of purposes for research is a way of collecting and analyzing empirical data following its own logic (Yin, 2003). To explore, describe and explain are also different ways to use research (Onwuegbuzie & Leech, 2006; Saunders et al., 2000).

To address the purpose of this research, both exploratory and descriptive approaches were used. As in descriptive research, this research is used to identify and describe the characteristics of a population and a phenomenon, in this case, the first-line managers and their views (Yin, 2012; Onwuegbuzie & Leech, 2006). This research describes what affects the first-line managers’ ability to drive improvement work in healthcare, in accordance with Yin (2012), who explains that a descriptive strategy for research is suitable when studies seek to explore what is happening or has happened. This research has only one source of data, which is common in descriptive studies (Olsson & Sörenssen, 2011). Creswell (1994) classifies qualitative research as descriptive, as the researcher is interested in the research process, in line with the present research. According to Saunders et al. (2000) and Yin (2003), exploratory studies such as this one is used to seek new insights, to ask questions, to assess populations and phenomena in a new light and to clarify the understanding of something. The research questions in this thesis deal with how or what, which is typical for exploratory research (Yin, 2003). In line with this research, exploratory studies permit the use of only one data collection method, although several data collection techniques are commonly used since exploratory studies aim to be comprehensive (ibid). The research of this thesis can be seen as providing more basic knowledge of an issue that may result in a more specific problem formulation if further investigated, which often is a feature of explorative studies (Wallén, 1996). Such studies can be qualitative as in this research, although they are often quantitative (Yin, 2003).

To restate the purpose of this research, an exploratory qualitative study was conducted, based on a mainly descriptive survey, to investigate first-line managers’ views on their role, conditions and abilities to drive improvement work based on Lean.
3.3.1 Research approach

The research approaches are decided after the research purpose and research questions are set, which means that the purpose and questions guide the approaches (Creswell, 2007). The research purpose and questions are always the basis for the choice of methodology and approach (ibid). Researchers must pay attention to the following aspects and approaches when seeking answers to research questions: Is the research going to be founded on hermeneutics or positivism? Is it going to be performed according to deduction, induction or abduction? Is the research qualitative or quantitative or a mix? These approaches relate both to the purpose of research and often to each other; for instance, an inductive approach is primarily used within the hermeneutic sciences and within qualitative studies (ibid).

In this research, a qualitative study based on a hermeneutic, inductive, qualitative research approach that permits exploration and description was conducted in order to meet the research purpose and answer the research questions. In the following, the research approach of this thesis will be presented.

Positivism or hermeneutics

The two research philosophies about how knowledge is developed are positivism and phenomenology (Saunders et al., 2000). The hermeneutic world view has developed from phenomenology (Björkqvist, 2012). If a researcher has a positivistic view, he or she aims for objectivity and seeks to find universal explanatory models (Wedin & Sandell, 2004), strives to develop theories referring to measurable phenomena or to develop connections between those (Hartman, 2004). This researcher aims to derive law-like generalizations similar to those produced by natural scientists, where quantifiable observations lend themselves to statistical analysis (Saunders et al., 2000). With a phenomenological view, it is instead argued that the social world is far too complex to be theorized about based on definite laws (ibid). It is seen that rich insight will be lost if the complex world is reduced to a series of law-like generalizations (ibid). In contrast to the positivistic researcher, the hermeneutic researcher strives to see the whole picture of the object of research (Patel & Davidsson, 2011).

My prior experience and previous knowledge have given me a phenomenological view on developing knowledge. My preunderstanding is influenced by 20 years of work within healthcare, by many years of studies of for instance physiotherapy, Quality management and Quality techniques, psychology, neuropediatric and lately also by working with organizational
development. Therefore, a hermeneutic view has guided the research process in contributing to knowledge and understanding of the conditions that influence first-line healthcare managers’ ability to manage improvement work based on Lean.

As clarified by the research purpose, the focus of research has been to contribute to knowledge about and an understanding of the conditions that influence first-line healthcare managers’ abilities to drive improvement work based on Lean through investigating, as in the hermeneutic sciences (Wedin & Sandell, 2004). For instance, data were collected about how first-line managers view their relationship with their own managers and then investigated (analyzed and interpreted) in relation to previous theory in order to reach understanding. This was in line with the hermeneutic approach, where human behavior and people’s perceptions about the world are not seen as measurable (Hartman, 2004). Instead, with a hermeneutic perspective, understanding is achieved through the interpretation of data (perceptions), where preunderstanding is used and seen as a necessary and important part of the research (Backman, 2008; Hartman, 2004; Wedin & Sandell, 2004). Therefore, my background has not only affected the discussions and conclusions drawn from this research, but also contributed to the outcomes from it. Since the preunderstanding is individual and subjective, with a hermeneutic approach to research, the outcomes depend on who the researcher is (ibid).

The interpretation process within the hermeneutic paradigm, often described as an alternation between the parts and the whole, is illustrated in a constant hermeneutical circle (or spiral) showing the development of understanding and knowledge (Patel & Davidsson, 2011). The circle clarifies that hermeneutic interpretation should not be a repetition of theory but instead contributes to further understanding as it continually develops (ibid). It illustrates that theory developed along my research process, through repeatedly reading and reflecting upon the readings about the conditions that affect first-line managers’ abilities to drive improvement work based on Lean. In a learning cycle, knowledge was gained, and text was written and used to interpret and understand data. Then, through new readings, more knowledge was added to the research, data were interpreted again and now with deeper preunderstanding and new insights, and so on (Wedin & Sandell, 2004), to ultimately be presented in this thesis.
The hermeneutic circle involves building understanding by moving from the whole to the parts and back to the whole, etc. The parts can be understood only through the whole, and the whole can be understood only through its parts. (Illustration inspired by Heidegger, 1996 and Gadamer, 2008).

**Deduction or induction**

Traditionally there is a distinction between the approaches of induction and deduction in research (Alvesson & Sköldberg, 2008). The inductive approach aims at building and developing theories, and the deductive approach aims at testing and verifying theories (Hartman, 2004).

The deductive researcher follows the road of evidence, and the inductive researcher follows the road of discovery (Patel & Davidsson, 2011). The deductive approach is primarily used within the positivist scientific area (Wedin & Sandell, 2004), the methodology is very structured, and data are measured quantitatively (Saunders et al., 2000). Logic conclusions are drawn and considered valid if they are logically connected (Alvesson & Sköldberg, 2008). The inductive approach is in principle the opposite of the deductive and primary the approach used within the hermeneutic scientific area, where data first are collected and interpretation emerges during the research process (Wedin & Sandell, 2004). The inductive approach is used when data are explored (in explorative studies) and developed into theories that are subsequently related to the literature (Arbnor & Bjerke, 2009).

The study performed in this research followed not only a hermeneutic approach but also an inductive approach, as these two are used together. As illustrated in the hermeneutic circle (fig. 3.3), my intention was to develop
theory following the road of discovery in which data were first collected and then interpreted and understood by the use of previous theory. As in the inductive approach, theory from this research subsequently developed from the literature. It is noted that general conclusions drawn from the inductive approach are characterized by uncertainty and should be viewed as probability statements (Alvesson & Sköldberg, 2008).

**Quantitative or qualitative**

There are two main research methodologies and approaches, quantitative and qualitative (Creswell, 2014). The quantitative research approach originates from the positivistic philosophy and is often regarded as the positivistic approach to developing new knowledge (ibid). It can be described as a systematic collection of empirical and quantifiable data that often yields statistical results (ibid). The view within this approach is that reality can be measured objectively, independently of the researcher (ibid). This research can be conducted through experiments and surveys (ibid). The qualitative research approach originates from anthropology, sociology, humanities and evolution (ibid). Its assumption is that reality is constructed by the individuals involved in the research situation: the researcher, the participants of the study and the reader or audience who is interpreting the study (ibid). Common qualitative research methods are interviews, observations, analysis of texts and audiovisual material (ibid).

To address the purpose of this thesis, a qualitative study was suitable, a choice that is motivated and clarified through the purpose of this thesis. Thus, the research approach used for collecting data was qualitative. When the aim is to investigate, interpret and describe how a certain group of people perceive the world, a qualitative approach is suitable (Denscombe, 2010). When investigating the social reality, there are always elements of uncertainty, whereby a qualitative analysis permits tolerance of ambiguity and contradictions (ibid). For instance, views are a phenomenon not suitable to be quantified, making a qualitative data collection method suitable (Creswell, 2007).

Within a qualitative approach, my biases, values and judgements based upon my experiences are viewed as useful when analyzing data and made explicit in my report (Creswell, 2014). Therefore, I as a researcher become the key instrument within the qualitative research approach (Creswell 2007). As noted by Denscombe (2010), with the qualitative analytic approach, this methodology in this research opened up the possibility of more than one explanation being valid, as it uses my interpretive skills as a researcher. The
starting point of this research was the first-line managers’ perspective, for which a qualitative research approach was appropriate (Alvesson & Sköldberg, 2008), unlike quantitative studies that tend to start from the researchers’ own idea of what factors are to be studied. This research also aimed to study the context and the whole, which characterizes the qualitative approach (ibid).

3.4 Quality in research

3.4.1 Reliability and validity in this research

To claim that the findings from a study are based on practices acknowledged as good research, the study must be conducted in a certain manner (Denscombe, 2010). Therefore, the reliability, validity and generalizability must be demonstrated as part of the research process (ibid). Reliability and validity are different ways of judging research (Yin, 1994), and indicate whether a study is scientifically justified and credible (Wedin & Sandell, 2004). Lincoln and Guba (1995) claim that in a qualitative research approach, it is impossible to claim the research as verified; rather than validity, the term credibility may be appropriate to use. In this research, the concept validity was though decided to be used discussed, supported by Denscombe (2010).

The communicative validity has been considered throughout the whole research process, which is a concept within internal validity (Bryman, 2011). Some define it as internal reliability (Eljertsson, 2014; Wedin & Sandell, 2004). The intention has been to provide the reader with an abundant description of the theory behind this research and a clear, honest description about the research methodology. Thereby the readers’ understanding can be facilitated, the readability and the communicative validity of research increased (Patel & Davidsson, 2011). By clarifying how my own preunderstanding influenced my perceptions and interpretations during the collection and analysis of data the communicative validity increases (ibid). To increase the communicative validity, the final thesis has been read and commented on by specialists within the studied field and by those less familiar with it. Those who provided their feedback are within the expected audience of this thesis, for instance, researchers and healthcare managers and other professions within healthcare.

The validity of the research procedure and of the conclusions drawn from it has several meanings, where the most basic refers to the methodological appropriateness; A valid measurement tool measures what it is supposed to measure, and a valid research design tests what it is supposed to test (Graziano & Raulin, 2004). The validity therefore answers the question of
whether data have been measured correctly (Denscombe, 2010). Therefore, the degree of probability with which the tool measures what it claims to measure is indicated by the validity (Wedin & Sandell, 2004). As clarified by the research purpose, the instrument was constructed to collect data and then investigate it in relation to previous literature. It was not a measuring tool. Thereby it is more relevant to ask whether data were investigated correctly by the use of this research design. The intention was to investigate data correctly by addressing the validity at different phases of the research process.

The first intention was to formulate a clear purpose of research, as it guides the development and content of the questionnaire (explained in 3.2.2). In the early stages, care was therefor given to ensure that the content of the questionnaire clearly was constructed for the purpose and to answer the research questions, emphasized by Somekh and Lewin (2005). Validity is the term used to claim that the research results have carefully and exactly addressed the research questions (ibid).

Then, the intention was to construct a questionnaire easy to understand and to respond to, as the interpretation of data in the analysis completely depended on the design of the questions (Henricsson, 2014; Eljertsson, 2014). Precise questions and clear statements within the Likert-type questions, that are interpreted as intended to, are critical for the design of valid questions, and next to obtaining reliable answers (ibid). With other words; The intention was to collect accurate data that investigated what the research aimed to study, meaning that valid responses were ensured (Saunders, 2000). Time and effort with carefully considerations of the wording was required. The risk that structured questions reflect on own opinions and preconceptions and not necessarily those of the respondents was considered (Trost, 2012; Draper 2004). Therefore, an extensive literature review was conducted, and the intention was a well-conducted pilot study. With structured questions, the risk of misunderstandings decreases, as these produce standardized answers (Eljertsson, 2014; Denscombe, 2010). The intention was also to obtain a large number of participants, which supported the choice of mainly Likert-based questions.

The questionnaire layout also affects the reliability and validity but was not in the hands of the researcher. It followed a standard layout within the studied organization. The order of the questions was arranged logically. The feedback on the first version of the questionnaire, received both from the expert panel and from the pilot, was used to improve the readability before its distribution. Collaboration and well-planned pilot testing increase the validity and reliability of research (Saunders et al., 2000).
In the phase of collecting data, the reliability of the responses was ensured within the study by allowing a relatively short time to complete the questionnaire, in line with Thiel (2014). It is important to ensure that recent events do not impact the answers within a study and that an unbiased population of respondents is selected (ibid).

During the analytic phase, the reliability and validity of the findings were ensured by involving other researchers in the analysis. The cowriter of the articles and mentors were closely involved in the research process. The internal reliability increases if more than one researcher is involved in the construction of a questionnaire and in interpreting and analyzing data (Bryman, 2011). Generally, there is a tendency for socially accepted answers in questionnaires and an overreporting of positive responses agreeing with the statements in Likert-type questions (Eljertsson, 2014). In the analytic phase there was awareness about that this phenomenon may have affected the internal reliability of the responses.

The reliability of a study demonstrates that the data collection procedure can be repeated with the same results (Bryman, 2011). Some define this as external reliability to distinguish it from internal reliability (Bryman, 2011, Patel & Davidsson, 2011). If a study has been conducted in a replicable manner, the reliability is high (Bryman, 2011). Considering the outcomes of this research, two questions were asked to assess the reliability (Saunders et al., 2000): Would similar observations be made by different researchers on different occasions, and would the instrument yield the same results on different occasions? The answer to these questions is, probably not. Another researcher having a different preunderstanding, other paradigms and other circumstances would most certainly come to different results. If the same questionnaire was used today, there would be other participants and circumstances, whereby the results and conclusions would differ. Therefore, this research does not have high external reliability. With a qualitative, inductive hermeneutic approach where preunderstandings are used as an important part of the research process, the reliability of the study is always lower (Wedin & Sandell, 2004). To be emphasized, the contribution from this research is not only its results, but most importantly the understandings and development process that may be achieved from a dialogue about it, which is further discussed in the ARQ (chapter 4). With this argument in mind, the concept of external reliability receives less focus in this research.

Within a qualitative research approach, triangulation or respondent validation can increase the validity research, since such steps can support the collected data and conclusions drawn as reasonable (Denscombe, 2010). Since
these steps were not taken, the validity can be seen as lowered. For instance, because the answers were not investigated more in depth, the level of truth of the answers may be questioned because of the tendency of high scores in the Likert-type questions. The results from this research, however, can be presented and discussed within the studied organization, in line with Yin (2007), who supports discussions with the respondents about the degree of internal validity of research, considering whether the results are reasonable and considered to be correct. Considering this research, it is important to highlight that the validity of a study not only refers to methodological appropriateness but also describes that what is studied is relevant to the study in the context, making the study meaningful (Denscombe, 2010). With this explanation in mind, this study can be considered as valid since the collection of data was based on a rigorous study of the literature, the construction of the questionnaire was a thorough process, the instrument was carefully tested, and the research process is described as clearly as possible. In the end, the validity of this research is judged by the readers of this thesis, who will draw their own conclusions about it.

3.4.2 Generalizability in this research

The focus of this qualitative study was to contribute to knowledge and understanding rather than generalization, in accordance with Saunders et al. (2000), who point out that hermeneutists argue that generalizability is not crucial, as the circumstances of today may not apply at another time. This research took place at a certain time in a Lean process in a particular organization, whereby certain results were received. Other answers may have been received if the same participants were asked the same questions today, and other participants in the same study may have responded differently. Marshall (1996) argues that improved understanding of complex human issues is more important than the generalizability of results, for instance, of soft parameters and issues such as the needs for support and the clarification of roles and responsibilities, investigated in this research.

To be noted though, to some extent, there was an idea that the research would be seen as general and not only organizational specific. Some (Denscombe, 2010; Yin, 2008) note; The goal of research most often is to find some general principles that apply to other situations, at least to some extent, if claimed to be useful knowledge. Bryman (2011) indicates, however, that it is difficult to generalize (create high external validity) from qualitative studies and Creswell (2014) states that generalizability does not carry the same
connotation in qualitative research as in quantitative. Conclusions drawn from the inductive approach should be viewed as probability statements (Alvesson & Sköldberg, 2008).

Generalizability of management and organizational research can in general be questioned, Saunders et al., (2000) argues, since organizations are both complex and unique, with a particular group of individuals and circumstances when a study takes place. Instead, most often, such studies aim to capture the rich complexity of social situations (ibid), as in the contribution from this research. Important considering this research is the arguments by Patel and Davidsson (2011): Results and conclusion drawn from qualitative studies can be generalizable if they create an understanding and recognition by the readers and audience who will listen to the presentations of this work.

3.5 Ethics in this research

Social researchers are expected to conduct their investigations in a way that protects the interests of the participants (Thiel, 2014; Denscombe, 2010). Thereby the introductory letter was used to inform and ensure the participants about; The confidentiality of information provided, the anonymity, that participation was voluntary and based on informed consent and that the investigation operated with scientific integrity (ibid). There is always a right to obtain information about research in a way that enables understanding of the research’s goal and how the data will be used and stored to guarantee anonymity (Denscombe, 2010). Thereby, it was described why data were to be collected and how data were to be handled.

When formulating the questions, no question was considered to harm psychologically and the participants’ privacy was kept in mind, in line with Denscombe (2010). All that was known was that the respondents were first-line healthcare managers. Neither do the published results reveal any personal identities of those who contributed to the findings (ibid). Participation in research is always voluntary (ibid), and in accordance with this ethical requirement, the respondents could choose whether they wished to participate or not. The respondent could also at any time unconditionally refuse to answer a question and decide not to participate during the data collection (Bryman,2011). The offer to participate was based on professional status, not the individual.

All three papers have been or will be reviewed by external researchers before publication, emphasized by Denzin and Lincoln (2005), who recommend involving reviewers to help extend the protective system. The overall
assessment is that the information requirement, the consent requirement, the confidentiality requirement and the usage requirement, noted by Bryman (2011) and Denscombe (2010), were fulfilled in this thesis.
4 Summaries of appended papers

4.1 Paper 1

Background
In recent years, there has been an increase in the use of Lean principles and methods in healthcare with the aim to improve and shorten care processes (Radnor & Waley, 2008). Organizations need to have a clear Lean strategy (Liker, 2004; Womack & Jones, 2003) in order to reach sustainable change. Instead of having a quick win, tool-based approach researchers emphasize the importance of developing people and creating a continuous improvement culture as well as the leadership competence to introduce an effective Lean implementation in healthcare (Al-Balushi et al., 2014). First-line managers and their role in improvement work have not to date attracted much interest in research although these managers often are considered to be the owners of change and in general given the responsibility to integrate improvement concepts into the daily work (Lundqvist, 2014).

Purpose
The purpose of this article is to present the results from a survey concerning first-line managers’ assuredness about the effects of Lean after two years of Lean implementation in a Swedish healthcare organization. The purpose is also to reflect about assuredness as a driving force for sustainable change

Main findings and discussion
An important role of a leader is to explain why change is essential and persuade key people in the organization about the need for change to gain their support. In this article the word persuade is not used but instead it is expressed that leaders need the ability to assure others that change is necessary. Considering Rogers’s theory, “the diffusion of innovations theory”, the majority of the managers need to be early adopters or at least early majority if the Lean implementation is going to spread at a desirable rate (Rogers, 1962).
The results show that certain effects these managers are assured about might create a basis for further steps on the Lean road. For instance, the assuredness that Lean contributes to a higher patient focus is quite high (77%) and also to develop an improvement culture supported by useful tools and methods. At the same time some results analyzed raise questions about the basic understanding of Lean, for instance 75% indicate that Lean contributes to an improvement culture but only 51% to problems being solved to a higher degree. This raises questions about if there is a view of Lean as a system where problems are used to develop an improvement culture. Also, there is quite high assuredness (75%) that Lean supports first-line managers with useful tools and methods which might send a signal that Lean is essentially perceived as a set of tools and techniques for improving processes.

59% of the managers are assured that Lean contributes to reduced waiting times and 52% of lowered costs which are desired effects and often main reasons for implementing Lean Healthcare. These two effects are most commonly reported in research and often the main reasons to implement Lean healthcare and it is surprising that more managers are not assured about these. A high level of assuredness that cooperation will improve is important if the aim is to decrease waiting times and costs in the whole system, but only 51% of the respondents are assured that Lean can improve cooperation between different departments and between professionals. This signalizes that it may not be possible to succeed on a deeper level than just reaching some improvements on department level.

It can be stated that assuredness creates an important basis for further learning and development and the result sends a signal to the executives that there is an interest to understand and learn more about Lean. Also, it is important to highlight that this interest should to be taken care of and discussed while it is still there. The level of assuredness can increase as the improvement work gets started if positive consequences are experienced. Naturally, if the Lean process slows down or stops, assuredness also will decrease.
4.2 Paper 2

**Background**
During the twenty-first century, Lean has become a commonly used strategy to meet challenges in the healthcare sector. It is currently widely applied (Deblois and Lepanto, 2016) to increase efficiency and the quality of care (van Rossum et al., 2016). One challenge when implementing Lean is the need for the development of an organizational culture and many claim that the main factor in it is leadership (van Rossum et al., 2016; Schein 2010; Mann, 2009). First-line managers often become responsible for initiating improvement work, where they are given a role as the owners of change (Emiliani and Stec, 2005). The work role requirements for these managers are complex and often unclear (Björk, 2013). Their work conditions have so far not received much attention (Lundqvist, 2014). Lean implementations must be understood from the organization’s point of view, where research should investigate first-line managers role and their dependence on supportive work conditions when leading and developing organizations (Mazzocato et al., 2010).

**Purpose**
The purpose of this article is to present the results from a study that investigates first-line healthcare managers’ views on their role and on the conditions that influence their ability to drive improvement work based on Lean.

**Main findings and discussion**
The first-line managers claim that their role is crucial, but when they defined their work tasks, words that related to improvement work was not frequently described. Although time for improvement work was the factor that most first-line managers identify as one of the three important factors for their ability to drive improvement work, quite few indicate that Lean provides them with released time. This result stands out as the research, clearly emphasizes that one consequence and reason to apply Lean is to release time. To create the motivation for Lean, it may be important to clarify the gains from and the motives behind it, such as releasing time by removing different types
of waste in a longer perspective. Time can then be invested into meeting with patients and into improvement work or other value-adding activities.

Because support from coworkers was one of the three most important factors, it may be important to emphasize the connection between leadership commitment to change and coworker support in a practical setting, as noted by Fryer et al., (2018). Leaders who personally participate and get involved in improvement activities send messages about their importance (Spear, 2004). The result that a clear vision and clear goals are among the three most important factors implies the important role of executive management in communicating with first-line manages where goals can be translated into practice (Convay and Monks, 2011). Few managers marked support from their own managers as one of the three and even fewer managers considered that Lean provided them with this support. This is important to discuss in practice since a supportive, participating executive management is extremely important to attain a successful Lean implementation (Emiliani, 2012; Berntsson et al., 2012).

The managers consider a clear structure with tools and methods to be another important factor, and it is also one of the three factors that they expect Lean to provide. This finding gives an idea that the tools and methods that Lean provides may be desired by these leaders. Managers often have knowledge about improvement needs in the organization but feel insecure about how to implement improvements in practice (Vårdenalys, 2016). Simultaneously Radnor and Boaden (2010) indicate that many public managers primarily use a set of tools and techniques and attempt to apply Lean without fully understanding its underlying principles, which impedes working towards a cultural shift. According to Snyder et al. (2017), structure is an important factor when applying Lean, but it need to be addressed together with the dimensions of identity and culture.

Many listed increased inspiration and their own interest in improvement work as one of the three things that Lean provides. This finding might indicate that these managers appreciate Lean and are motivated to apply it at the beginning of a Lean implementation.
4.3 Paper 3

Background
Healthcare systems face the challenge of improving the quality of patient care to increase the numbers of patients served and to reduce waiting times while keeping costs in check (Fine et al., 2009). Liker (2004) notes that often organizational transformation based on the Lean principles is needed and Lewis and Lewis, (2000) state that Lean is more of a complex nature than to simply implement tools and techniques. Eriksson et al. (2013) note that the debate about management concepts has a somewhat singular focus on their effects, instead of on the process behind the results and the conditions needed for their success. Lean implementations need to be better understood from the organization’s point of view, and studies should focus on aspects such as the role and the responsibility of management to improve implementation and sustainability (Mazzocato et al., 2010). First-line managers have an essential role in Lean implementations, as they are the link between the management system and the coworkers (Ericsson and Augustinsson, 2015). The first-line managers’ needs for supportive work conditions and requirements when leading and developing organizations must be understood to raise their ability (Lundqvist, 2014). They receive the task of engaging coworkers, however simultaneously they need support from their own managers (Larsson, 2008).

Purpose
The purpose is to present the supportive conditions that first-line healthcare managers claim that they need from their own managers and what they experience as their own roles and responsibilities in relation to their coworkers when applying Lean.

Main findings and discussion
When focusing on the percentage that answered 4 or 5 on the Likert scale, the result shows that a clear majority (76%) of the first-line managers agree that a condition to initiate improvement work based on Lean is that their own manager is sure about Lean as the organizational improvement philosophy. The second most agreed upon statement concerns discussing improvement
work based on Lean with their own managers (76%). 68% of them agree that their manager should ask for follow-ups and results from improvement work based on Lean. Almost the same percentage agrees that their own manager needs to have good knowledge about Lean (67.5%).

95.5% of the first-line managers agree with that they are responsible for leading towards creating a culture, where problems and mistakes are viewed as possibilities to improve. A clear majority (95.5%) of the first-line managers view it as their responsibility to encourage new work procedures to be tested. A total of 92.5% agree that they are responsible for creating commitment to improvement work based on Lean as well as inspiration for improvement work based. A total of 91% agree that they are responsible for creating an understanding about improvement work based on Lean.

The results from the two questions from the survey indicate that these first-line managers agree to a higher extent with the statements regarding their own responsibilities to their coworkers than to the statements about what they claim as supportive conditions from their own managers to get improvement work started. This study might indicate that these first-line managers experience and may also take responsibility that is somewhat singlehanded, that could to a higher extent be shared with their own managers. Thereby a common understanding, commitment and inspiration about the chosen improvement concept could be created. By abandoning the hierarchic view of organizations and instead choosing a more holistic approach, it is evident that, in the end, everybody depends on each other and needs to cooperate and support each other to reach common goals.
5 Main findings

In this chapter, the purpose is addressed by answering RQ 1 and RQ 2. After that the ARQ (applied research question) is answered.

Reconnection to the purpose, RQ 1, RQ 2 and ARQ

The purpose of this thesis was to contribute to knowledge and understanding of the conditions that influence healthcare first-line managers’ abilities to drive improvement work based on Lean. The purpose was further elaborated in two research questions and in an applied research question answered by the theoretical and empirical studies presented in three independent papers.

RQ1. How can an instrument be developed that investigates first-line managers’ views on their role, conditions and ability to drive improvement work based on Lean?

A web-based questionnaire was constructed for the purpose of the thesis, based upon previous literature and research. A stepwise, simple and systematic working procedure called “operationalizing” was used in the construction.

After the construction it was tested. First, an expert panel of five reviewed it and next, it was tested in a pilot study, which consisted of five first-line healthcare managers. After the questionnaire was tested, there was a phone-discussion meeting with each of the managers to determine whether the questions were relevant in the practical setting and how the questions were comprehended considering the wording. The development can further be read about in section 3.2 about the research process.

The content of the questionnaire has been translated to English from Swedish (Appendix 1).

RQ 2. What can be learned from using the instrument that investigates first-line managers’ views on their role, conditions and ability to drive improvement work based on Lean?

When answering RQ 2, the learnings are described under three headings, which are in line with the three question areas (categories) described in 3.2.2. The results are presented in detail in the three papers, included at the end of this thesis.
Learnings about the view of the role and responsibility

A clear majority of the first-line managers considered themselves having a crucial role, to a high or very high extent, in improvement work based on Lean. Concerning the work-tasks, they spent most time on, a clear majority of the answers were associated with coworker-related issues such as staff administration, workforce planning and supporting employees. Fewer answers were connected to time spent on development and improvement work.

Considering the managers role and responsibility in relation to their coworkers, a clear majority of them agreed with being responsible for leading in creating a culture where problems and mistakes are viewed as opportunities to improve. Just as many viewed it as their responsibility to encourage the testing of new work procedures. Additionally, a majority of the managers agreed that they were responsible for creating commitment to improvement work based on Lean. The same percentage agreed that they were responsible for creating inspiration for improvement work. Many of them agreed to being responsible for creating an understanding about improvement work, for creating conditions for participating, and for releasing time for improvement work based on Lean.

Learnings about the view of the conditions and needs

The three conditions that the first-line managers considered to be most important for their ability to drive improvement work based on Lean were time, support from their coworkers and a clear vision and clear goals. The fourth most important condition was a clear structure with tools and methods. Few first-line managers marked support from their own managers as one of the three most important conditions.

Considering the relationship with their own manager, a clear majority agreed that a condition to initiate improvement work based on Lean was that their own manager was assured about Lean as the organizational improvement philosophy. The second most agreed-upon statement concerned the discussion of improvement work with their own managers. Almost the same percentage agreed to the statements that their manager should ask for follow-ups and results from improvement work based on Lean and that their own manager needed good knowledge about Lean. Fewer, but still many, agreed with the statement that their own manager needed to inspire improvement work based upon Lean. Almost as many of them agreed that they wanted to be included in the strategic work. Fewer than half of the managers agreed
with that their own manager had clearly described their role and even fewer agreed that they needed a written work description.

By asking about what three conditions that best described what Lean provided to the first-line managers learnings were received about their view and understanding of Lean. First of all, Lean provided them with, a clear structure with tools and methods. Secondly, Lean provided them with increased inspiration for improvement work and with increased interest of one’s own in improvement work. Thirdly, Lean provided them with increased support in improvement work among coworkers. Very few managers considered that Lean provided them with support from their own managers.

The level of assurance that Lean contributes to greater patient focus was quite high. There were also quite high levels of assurance that Lean supports first-line managers with useful tools and methods and that Lean contributes to an improvement culture. Not as many managers were assured that problems were being solved to a higher degree and that Lean contributes to problems to a higher degree surfacing. Quite a few managers were assured that Lean contributes to a change in leadership. Fewer indicated that Lean contributes to a change in coworkership. The level of assuredness was not considerably high considering that Lean contributes to shorter waiting times, to lower costs, and to better cooperation between different departments.

**Learnings about the view of the ability**

There was one question about the view of the ability; “To what extent do you consider yourself to have sufficient competence to drive improvement work based on Lean within this healthcare organization”? This question was analyzed but not presented and discussed in the papers. Thereby the managers view of their ability to drive improvement is not presented in this thesis.

**ARQ: How can the use of the instrument contribute to developing first-line managers’ role, conditions, and ability to manage improvement work based on Lean?**

As described in the theory section, employee surveys are frequently used by organizations. Critical voices, however, note that as long as the results are not addressed adequately, they do not help organizations to improve in a sustainable manner. To present a description of this study is therefore not seen as enough; instead, time must be spent working with the results in the organization. Therefore, it is important to reflect upon how the use of this
instrument can contribute to the development of first-line managers’ role, conditions and ability to drive improvement work based on Lean. When reflecting upon the use of and possible value created from this questionnaire in practice, six implications for the use are seen. Finally, the idea of dialogue forums is explained.

The instrument indicates the complexity of healthcare development.

It has been noted that, often neither the complexity of healthcare nor the needed conditions for change are understood (Andersson, 2013), which must be considered when initiating Lean (Radnor & Walley, 2008). The use of this instrument indicates, to those making decisions about Lean initiations, that it is not a quick or easy solution to the challenges of healthcare. Instead, the containing questions of this instrument signals that hard work is required to develop the appropriate conditions, roles and abilities within management as a whole. As explained, healthcare organizations are complex, which affects their development. Within the complexity is for instance the need for continuously developing relationships, cooperation and communication between different management functions and levels (Marte et al., 2015). In complex organizations there is not necessarily a single best solution (Eriksson et al., 2013). Instead, different perspectives must be listened to and balanced (ibid), where this instrument can be used, providing insight about the first-line managers’ views.

The instrument sets focus on the people and the work processes behind the results.

The aim of Lean is to develop and improve organizational processes to reach the desired effects and goals (Sörqvist, 2014). Lean can thus be viewed as a support and a means in improvement work and not only a goal in itself, an idea that clearly guided the development of the instrument. Since the instrument investigates the first-line managers’ role, conditions and ability to drive improvement work, it establishes a focus on the people in the processes necessary for development, in contrast to the expected and desired hard effects from Lean, commonly focused on in research and reports. The need for such instruments is supported by Mann (2009), who states that since change depends on adjustments in human behavior, attention must continuously be set on the Lean process. Deming (1994), indicates that to reach development managers should focus on and learn about the organization’s processes rather than on its results. Managers need knowledge in psychology to understand
people, interaction between people and the conditions needed for improvements (ibid).

The instrument sets focus on the soft parameters.

Often, there is a lack of insight in management, politics and overall society that improved economic results, new work procedures including the use of technical innovations depend on the development of soft parameters (conditions) such as convictions, commitment and well-functioning relationships (Eriksson et al., 2013). Instead, the hard parameters such as the economy, the technique and the structure most often dominate discussions (ibid). Since the soft parameters, within the organization, have a decisive influence on the hard areas, those must be identified and focused on (De Waal, 2014; Baesu & Benjinaru, 2014; Ericsson et al., 2013).

To cooperate, is another soft parameter and crucial skill among managers and part of the new style of management as noted by Deming (1994). Further understanding of the important soft dimension of interaction between organizational members commonly needs work in Lean implementations, Parand et al., (2014) note. Tengblad and Andersson (2016) state that it is rarely reflected upon what support this interaction. However, it is suspected that it is more convenient to discuss concrete hard areas compared to soft areas. Therefore, an instrument that provides opportunity and structure to investigate and talk about the soft parameters can be seen as a contribution to the development of first-line managers’ role, conditions and ability. This idea is supported by De Waal (2014), who claims that instruments can support dialogue and interaction in organizations and next contribute to development.

The instrument can provide first-line managers with insights and understandings.

The analyzed results can, if used, contribute to dialogue, self-reflection and understanding among the first-line managers, such as about what must be done to promote change. The challenge in healthcare improvements may not be people’s ability to find ideas and solutions but rather changing existing practices, which include people’s ability and willingness to translate their ideas into practice, Eriksson et al., (2013) note. With this idea in mind, self-reflection becomes important. As noted by Hutchinson and Purcell, (2010) self-reflection is developed with proximity and frequent interaction between people. Through regularly asking first-line managers, for instance about how they view their role insights may develop. Addressing their assuredness on a
regular basis could be one way to follow the improvement process based on Lean from their perspective and, by doing so, perhaps increase their assuredness as a driving force for sustainable change.

**The instrument can provide executives with insights and understandings.**

The entire questionnaire or parts of it can be used by executives before initiating Lean and along the improvement process. Thereby they may obtain a better picture of the first-line managers’ perspective. As learnt through the readings; Executive leaders and politicians need to understand these managers’ context and conditions in order to support and empower them in their key roles in leading change. A greater interest in first-line managers’ conditions and work situation from their side may be needed. For instance, the results regarding first-line managers’ assuredness can encourage discussions about the Lean process among executives and politicians. This particular question (nr. 10 in appendix 1) may also be of interest to answer by the top managers themselves.

Additionally, all statements about the relationship between first-line managers and their own managers (question nr. 8) are connected to the commitment to and knowledge of Lean among executive leadership, noted as crucial conditions for sustainable improvement work (Fine et al. 2009; Bagley & Lewis 2008). Through reflection upon these among executives, clarity can be gained regarding what implementing Lean means in practice. Also, such reflections may raise questions about whether executives are prepared for Lean implementations and what they must develop within their own leadership. Olsson (2005), argues that in order to understand more about how effects are achieved from change initiatives, top managers must create arenas for reflection upon and learning from these initiatives and use this understanding in relation to their own management actions.

Through carefully analyzing and using survey data, decisions and actions made by executives and politicians can to a higher degree be based on facts, support their decision about improvement actions. Additionally, it is seen that their ability to drive change can be enhanced, which in turn affects the first-line managers within the system. Surveys can thereby help managers identify issues that help the organization develop towards high performance, which also may concern their own role and leadership (De Waal 2014).
The instrument calls on a system view.

It is agreed with Mann (2009) who state that, in its essence, Lean is concerned with improving a system. A practical implication for the use of the instrument concerns its focus on relationships between organizational members, whereby it sets focus on the system. This is important if developing the first-line managers’ role, conditions and ability, since it cannot be conducted by these managers alone. Leaders at different organizational levels play complementary roles and all management levels are equally important, (Mann 2009). The responsibility for one management level must continuously be set in relation to another, when putting the pieces together in the “improvement puzzle”.

When using the instrument, it may become evident that, aiming to identify on which management level improvement efforts particularly fail, giving one management level a heavy and perhaps unreasonable responsibility in improving healthcare and trying to find one key solution to the development of healthcare are not fruitful approaches. Instead, a stronger system view in healthcare may be needed, based on Deming’s description (1994): Each organization is a system where people must agree on a common direction towards the vision and goals and obtain consensus to jointly step forward and constantly strive to do better together. This certainly becomes a challenge in large and complex healthcare organizations. It is up to management to establish the objectives for the system and to make the components of the system interact, whereby it becomes most efficient (ibid). In the initial phase of Deming’s learning cycle; understanding the problem and plan, the questionnaire developed for this study can be used, keeping in mind what Deming (1994) indicates; The use of surveys can support improvements and systems thinking, with a holistic perspective on the organization and consideration of the system’s complexity.

The analyzed results can be used in forums for dialogue

Commonly there is a need to improve communication and dialogue in organizations in order to counteract confusion and resistance to change, Tengblad and Andersson, (2009) state. They emphasize that the most important tool for healthcare development is dialogue, which is a form of communication where participants openly express their perspectives and listen to each other without judging. In dialogue, understandings and insights are reached, which can contribute to changes in people’s views and actions (ibid).
Larsson (2008) further states that in dialogue understanding can be reached about how to change. As important as communication about how to change is frequent reminders about what to change and why (Dahlgaard et al., 2011). With this in mind, it is seen that different forums for dialogue can create value from this survey. Dialogue can be part of education for managers, where findings can be used to reflect upon leadership. Establishment of regular dialogue forums is one way seen to clarify everyone’s important roles and responsibilities in improving the whole system. In dialogue forums improvement work can be reflected upon and learned from together. When presenting and dialoging upon the analyzed results from this study the model (see illustration in section 1.2), “Prerequisites for middle managers to drive a sustainable development effort”, by Larsson (2008) can be used.
6 Analysis and discussion

This chapter includes an analysis of the main findings in relation to theory and a general discussion of the purpose of this thesis. The practical implications are included in the analysis and discussion. At the end the methodology is discussed.

This research showed that a clear majority of the managers considered their role to be crucial for driving improvement work based on Lean, which by itself can be seen as a fundamental condition for their ability. This result agreed with the findings of researchers who emphasize first-line managers’ key role in improvement work due to the strategic position (Deblois & Lepanto, 2016; Ericsson & Augustinsson, 2015). When analyzing this result together with what they listed as their work tasks, there seemed to be a mismatch, as few managers wrote words that related to improvement work. It is suspected that although these managers view their role as crucial, they do not act in line with their own view in practice. From the readings it is seen that if these managers are lacking in their professional identity, they may end up in a role conflict. It is also seen that being a manager but also “managed” together with their often clinician identities make the role complex.

The finding that one of the three most important conditions for the managers’ ability to drive improvement work was time may indicate a need for time. Although it was not investigated whether the managers lacked time in practice, it is a common explanation for why improvement work is not prioritized and also for why quality initiatives fail (Andersson, 2013). Many demands at work that make setting aside time for development issues difficult have been reported before (Socialstyrelsen, 2017; Stenfors-Hayes, 2015; Lundqvist, 2013; Conway & Monks, 2011). Often these managers end up as performers implementing directives rather than as leaders taking their own initiatives and decisions (Kumah et al., 2016; Larsson; 2008). Thereby it can be asked; Do these managers have empowerment, meaning that they have the experience of controlling their own work-situation?

The most evident connection between the conditions the first-line managers considered to be important for their ability and those that best described what Lean provides was a clear structure with tools and methods. This finding suggests that such may be desired. First-line managers often have knowledge about improvement needs but feel insecure about how to handle them in practice, so a clear structure of how to lead improvement work is often requested (Swedish Agency for Health and Care Services Analysis, 2016).
This research does not indicate if these managers have an unreasonable workload, if they struggle with setting aside time for improvement work or if they lack in having a structure with tools and methods. If that is the case though, it becomes of interest to discuss; What guides people’s actions and choices, such as the extent to which they drive improvement work? If plenty of time is provided and if managers have a box full of tools, will it then be prioritized? As learned through the studies of literature, the leadership identity is crucial for a sustainable improvement work. March (1994), states that generally, people’s identity has a major impact on people’s actions. Andersson (2005), adds that commonly, a change in leadership identity is needed to make improvement concepts sustainable. It is also noted that the development of culture and identity go hand in hand (ibid), whereby cultural development can be regarded as a condition influencing first-line managers’ ability. In a culture with a shared attitude that taking responsibility for and initiative to improvements is part of the job, this identity is everyone’s and not only the first-line managers’. Time and structure with tools and methods are certainly essential for receiving skills and raising ability but may not be enough. Because first-line managers are part of a larger system that affects them, their ability must develop in a “supportive system”. Receiving support from coworkers was another of the three most important conditions for their ability, which indicates the importance of a supportive system. Leaders must be supported by their coworkers because leadership cannot exist without them (Yukl & Kaulio, 2011). Therefore an implication to practice is the need for knowledge about Lean among everyone.

Additionally, the result showed that the managers not only identified time as one of the three most important conditions for their own ability; but, also viewed it as within their role and responsibility to release time for improvement work in relation to their coworkers. With the concept of co-creation in mind, a noteworthy finding was that few managers reported support from their own manager as one of the three most important conditions. Even fewer considered that Lean provided them with this support. Thus, it is relevant to ask; Can first-line managers support their coworkers in implementing improvements if they have difficulties prioritizing improvements themselves? Will they give priority to it if they do not receive support from their own manager? It may be of concern to managers at all levels to be aware of the connection between leadership commitment to change and coworker support, as noted by Fryer et al. (2018).

As commitment is shown in leadership behavior, leaders must personally participate and become involved in improvement activities, which sends
messages about the importance of improvements and the chosen concept, as stated by Kumah et al., (2016) and Spear, (2004). Lean leadership is often “the missing link”, Mann (2009) states, one that systematically engages everyone and aligns the Lean philosophy and tools with the organization’s strategic goals, vision and values, (Aij & Rapsaniotis, 2017). Accordingly, a practical implication is that first-line managers can, through their behavior produce more supportive and development-oriented coworkers. Based on the same argument, executives can produce more supportive and development-oriented first-line managers.

The first-line managers viewed their responsibility towards their coworkers in improvement work as extensive. Additionally, the results indicated that the managers agreed with all the statements regarding their own responsibilities to their coworkers to a greater extent than with those about what they identified as supportive conditions from their own managers. This is an imbalance that could lead to incompatible demands at work and, as Lundqvist (2013) states, could prevent managers from seeing the bigger picture in improvement work. Taking an extensive responsibility for improvement work is certainly important, in line with Deming (1994), who suggests that 94% of opportunities for improvement are within the responsibilities of management, but who also notes that the responsibilities need to be shared within all of management. This study indicates that the first-line managers experience, and may also take responsibility somewhat singlehandedly, which could be shared more with other managers.

In this thesis, assuredness was approached as a condition that influenced first-line healthcare managers’ ability to drive improvement work based on Lean. Assuredness is clearly related to human motivation, as it is the driving force for our behavior (Passer & Smith, 2001). Assuredness about Lean as the organizational improvement philosophy was the most important condition that the first-line managers claimed they needed from their own managers. Through actions and experiences assuredness can be acquired (Shook, 2010; Liker, 2004). Thereby to acquire assuredness understanding about that Lean is learning by doing and has to be lived by everyone becomes important. Having own managers who ask for follow-ups and results from improvement work were also important. This is in line with researchers (Emiliani, 2012; Larsson 2008) who claim that first-line managers commonly ask for clarity about the expected outcome from executives. Being held accountable for results is a key driver to these managers’ commitment to change (Fryer et al., 2018). This commitment, together with encouraging enthusiastic participation and supporting to continuous improvement is driven by human motivation,
Feigenbaum (1991) explains. He notes that this is a field of knowledge that leaders must be aware of. A practical implication is that first-line managers need feedback on the job they are performing, to raise their motivation and assuredness that they then can use to assure others.

Many managers listed increased inspiration and their own interest as one of the three things that Lean provided. This result indicates that they appreciated Lean when the survey was conducted and were motivated to implement it. Lean often creates inspiration and functions as a mechanism of hope when initiated (Brunsson, 2006). Additionally, that many agreed to that their own manager must inspire them to perform improvement work, and that they want their own manager to include them in the strategic work and discuss Lean with them raises the question; How can executives take care of and further stimulate the first-line managers’ inspiration and interest at early stages of a Lean process?

One way to take care of their interest and raise their commitment is involving them on a higher level in the development of the strategic work, which is another practical implication. Bergman and Klefsjö (2010), state that a top management who delegates responsibility and authority with confidence will achieve motivated, participating and committed employees, in this case, the first-line managers, as is illustrated in figure 6.1.

![Fig. 6.1. A good circle linked to the effect of delegating responsibility and authority. Creating opportunities for participation for all involved means to work actively at removing all obstacles to commitment, which often exist in organizations. It also means that all individuals have to take responsibility (Bergman & Klefsjö, 2010, p. 47).](image)
High interaction between executive managers and their coworkers, when setting the improvement strategy is linked to quality outcomes Vaughn et al., (2006) note. Most often there is a need for communication and supportive dialogue between different management layers (Halling & Renström, 2011; Bergman & Klefsjö, 2007). Also, the idea of involving the first-line managers in the development of the strategic work is supported by Liker’s principle 13; Make decisions slowly by consensus, thoroughly considering all options and then implementing decisions rapidly (Liker, 2004).

In practice, it may be important to discuss whether there is an improvement strategy, or if it is useful. Researchers (Kohlbacher 2013; Radnor, 2010; Zheng et al. 2010) claim that often a documented change and communication strategy is needed. Having a clear strategy and implementation plan together with obtaining top managers support, are key drivers to first-line managers’ commitment to change (Fryer et al., 2018). Within the continuous work of developing a supportive strategy, the conditions and abilities for driving improvements can systematically be investigated, dialogued and clarified. Examples include; how to release time for improvement work, how support can be achieved, how inspiration and interest can be stimulated and how roles can be clarified. A better implementation strategy than through commands is involving people in a self-assessment process, where critical conditions (success factors) are assessed and discussed in relation to the overall goal of the organization (ibid). With this in mind, the instrument can be used as a tool for self-assessment, needed for the self-development noted by Liker and Convis (2011), which has been discussed in chapter 5, when answering the ARQ of this thesis.
Different steps or activities must be accomplished to ensure that organizations work towards the set goals. A strategy is a combination of activities in a long-time perspective (Bergman and Klefsjö, 2010, p. 442). In the model, the word conditions, is used instead of SuccessFactors.

A clear vision and clear goals were among the three most important conditions, but few marked it as one of the three conditions that Lean provided. This indicated that executives may not have communicated the vision and goals frequently enough, although together with conviction they are extremely important (Kotter, 2007). This in turn may indicate a need for developing a strategy.

If making the decision to implement Lean, an executive management, who is active and persistent is undoubtedly required. Additionally, executives must have endurance and be genuinely interested to learn about the organization (the system) and about Lean. A thorough understanding is reached through a hands-on leadership behavior. This behavior is emphasized by Liker’s principle 12; Go and see the workplace for themselves, speak and include the first-line managers in dialogues about their conditions (Liker, 2004). The hands-on behavior in turn increases the executives’ ability to support the first-line managers in their work environment, with the larger goal to increase the first-line managers’ ability to drive improvements. Through an active role with walk arounds executives can include and involve the first-line managers, and simultaneously provide feedback on their crucial role. Insights can be gained that are useful in a continuous work of developing the improvement strategy. This is an example of how Lean is a way of thinking, which motivates behaviors such as the walk arounds. The Swedish Agency for Health and Care Services Analysis, (2017) and Larsson, (2008), conclude; The creation of conditions for change requires an active role by top managers, based on their
genuine interest in understanding the driving forces behind improvements in a practical setting.

Since the result indicated that Lean may be essentially perceived as a set of tools and techniques for improving processes, there may be a lack of understanding of Lean as an entirely new way of thinking and working (Radnor et al., 2011; De Souza, 2009). This finding may be an implication for the practical setting of the approach to Lean as a broad system-wide improvement philosophy, where the knowledge of the underlying principles of Lean are emphasized. A focus on the visible elements (tools and techniques) in healthcare and not on strategic elements and enabling conditions connected to leadership is noted by Radnor (2010) and Hines et al. (2008). Spear (2004) states that the imitation of tools and not Lean principles leads to the essence of Lean is being lost, which is a potential risk when Lean is adapted to suit the particular organization. The argument by those who promote Lean, includes that there is nothing wrong with Lean itself, but rather the fault lies in how it is locally adopted, (Mc Cann et al., 2015). Generally, it is stated that the Lean concept must be adapted to each organization. A risk may be that Lean is adapted to how it is understood and not necessarily to the needs of the organization. Kollberg and Elg (2006), emphasize that the tools and techniques must be related to the overall strategy and principles of Lean in order to be successful.

The findings from this research indicated a need for a deeper understanding of Lean, as an inconsistency of the answers was identified. Dahlgaard and Dahlgaard-Park (2006) state that the term Lean often is misunderstood. The results from this research indicated a lack of understanding that clarifying, handling and solving problems in a structured way is part of creating a continuous improvement culture and an effective Lean implementation. Another example was that many of the managers were assured that Lean contributes to a change in leadership, but fewer indicated that Lean contributes to a change in coworkership. Culturally Lean is about competent, reflective and committed leaders who address people’s willingness to improve and develop a coworkership (Sörqvist, 2014; Bergman & Klefsjö, 2010). The focus must be on both the development of leadership and coworkership. The first-line managers also agreed that their own manager needed good knowledge about Lean. Liker’s principle nine explains; Organizations must grow leaders who thoroughly understand the work, live the philosophy, and teach it to others (ibid). Without a thorough knowledge of the chosen concept by decision-makers, organizational development will
not be supported; thus, in general, a more in-depth understanding needed (Emiliani, 2012).

This research proposes a strong focus on the creation of conditions for leading change in healthcare. During the research process my own understanding of Lean has emerged from an approach to organizational development towards Lean as a whole-system change, the organizational strategy and alignment to change a culture. It is seen that viewing Lean as a whole-system change, includes developing all managers’ conditions and abilities to drive improvement work. Liker (2009) emphasizes the importance of viewing Lean as a strategy, to achieve long-term changes. Corbett (2007) explains that with time Lean can be aligned with the organizational strategy and thus becomes part of the way of thinking and working. That means that Liker’s 14 principles are used as fundamental rules in all decisions and activities, to support a cultural change. Thereby the developed conditions can also be seen as results from the use of a Lean strategy.

Awareness about what Dahlgaard and Dahlgaard-Park (2006) state is seen as important; Healthcare organizations commonly initiate Lean without understanding that there is a need for a culture change, where first the current culture, including the conditions for change must be understood, and agreements reached in that a change is needed. A cultural change requires people who understand what to change and why, and “the why” is commonly forgotten (ibid). They further explain that such change includes the development of softer cultural conditions like leadership which Hines et al. (2008) places under the waterline in the ‘iceberg’ model.
The sustainable iceberg; Lean implementations can be understood in terms of an iceberg. It is as much about what you do not see as about what is visible. The route an organization takes depends on its characteristics such as the strategy, structure, culture, learning abilities, goals and condition of it. The route through the ‘iceberg’ is not always smooth. Original model illustrated by Peter Hines et al. (2008).

It is seen that people and teams in an organization must stand on a common platform (have a common view of why change). From the platform a common road in improving the organization (how to change) is needed. Obviously, it is also an advantage to speak the same language to reach the understanding of what to change. The understanding of Lean can be illustrated as the platform, the common language and the road, which all are important if unifying healthcare on their improvement journeys.

Methodology discussion
Next it will be discussed; What choices made are of interest to explain the reader? What was learned from this approach to research and what limitations are seen with this study?

Concerning the choices made, it has been explained (in 3.2.2) why a survey design was considered a suitable research strategy to achieve the purpose of this research. Additionally, it was a feasible strategy, which commonly affects the choice as noted by Eljertsson, (2014) and Denscombe, (2010). The access to data influenced the choice, as the organization offered its support in distributing the survey questionnaire. A survey with a web-based questionnaire provided an efficient way of collecting responses from a larger
group (112 managers) located within a large area, as suggested by Eljertsson, (2014) and Saunders, (2000). Notably, the political initiative that included the research study created expectations of a study to take place soon after the research was initiated. Thereby a survey was feasible as it lends itself to fairly tight time planning. The choice was to some extent also influenced by the fact that the healthcare organization where the research took place also financed it. The research community and discipline may to some extent have affected the choice of strategy, which also is common Denscombe (2010) explains. An advantage with a mainly structured questionnaire, was that it yields data easy to handle and analyze, including possibly being quantified and compared.

I am aware that he chosen research methodology affects the results obtained (Morgan, 2014). My background, my identity, my previous knowledge and beliefs had a role in the results gained of this study. The intention has been, to be self-aware and adopt a cautious approach to the findings, which is important within a qualitative research approach (Denscombe, 2010). Obviously, my own knowledge and view has expanded along the research process. If the questionnaire was created today, the extent may have been limited, which might have made it easier to handle all data and affected the response rate. The analyzing process may also have differed; For instance, data from all questions could have been in included, which could have contributed to interesting knowledge.

After the analysis, it was learned that the managers’ view of Lean can be regarded as another condition for the ability to drive change as it indicates their understanding. There is awareness of that since the respondents could not express their views in detail, a deeper understanding would not be obtained through the given answers. For instance, it is unknown to what extent the respondents practice Lean. Some may have answered to how they view improvement work in general. Neither is it known how they interpret the concept improvement work. Nonstructural (open) questions was an option to obtain nuanced answers, but those would have been more time-consuming to answer, with a risk of major loss in the study (Trost, 2012). The findings can next be validated within an intervention that permit face-to-face interaction with the participants.

Since a questionnaire is a self-report instrument, the results from this study and the conclusions drawn from it do not reveal actual behavior in practice, as noted by Rossi (2013). That would have required another kind of intervention.
7 Conclusions and future research

In this chapter, the conclusions from the research are presented. Finally, avenues for future research are suggested.

Organizational development requires that opportunities for participation for all involved are created, as was illustrated in the model, a good circle (fig. 6.1). Achieving participation requires an active work with creating adequate and supportive conditions for commitment to improvement work. In this thesis focus was set on the first-line managers’ perspective and their conditions, of which many can be placed below the waterline in the sustainable iceberg model (fig 6.3). Some of those investigated or found in the analysis in the study were; receiving support from my own manager, having own interest and feeling joy in improvement work, being assured about effects, receiving recognition and developing a leadership identity.

The first conclusion is that these soft conditions, that we do not necessarily talk about in organizations need be brought up above the water line, since they affect the first-line managers’ ability. They must be focused on, clarified and developed, just like the structure with tools and methods and the vision and goals.

Secondly, from this study, supported by the readings it is concluded that a thorough understanding of Lean is a main condition for the first-line managers’ ability to drive improvement work based on the approach. Developing a common view of Lean takes time, which is important to emphasize in the practical setting to motivate for a long-term perspective.

Thirdly it is concluded that, a condition that can influence first-line healthcare managers’ abilities is that the findings are used in dialogue. The practice of Lean requires changes in attitudes, new habits, new skills in the whole system, meaning in each individual from the executive managers to the front-line workers. Thereby self-reflection becomes important. In dialogue, self-awareness can develop as attitudes and convictions are made visible. In dialogue it is also seen that supportive relations can develop, and courage can grow, whereby people become more comfortable trying new ways of working.

Finally, it is seen that developing a common knowledge and understanding of Lean takes highly motivated, assured and persistent leaders with a continuous improvement attitude and a mission to improve healthcare together. Lean is not simply implemented, neither is it something that is applied or used every once in a while. Rather an understanding of Lean is developed through hard work, experience, studies and reflection in regular
dialogue with others. To reach a common view of Lean and to avoid misunderstandings and confusion, it must be learned by doing in combination with time for reflection. Likers’ principle 14 states; become a learning organization through relentless reflection and continuous improvement.

**Future research**

A more in-depth intervention is needed to investigate if the managers experience that the conditions that they consider to be important for driving improvement work actually exist and if there are other conditions of importance than those asked about in this study. The results from this study could be further investigated, for instance in focus groups.

In addition to this research that investigated the managers’ views, it would be interesting to observe actual behavior and investigate what actions they undertake to improve in practice.

To complement the understandings, it could be investigated how the managers take initiative for improvements and how they are supported by executives and coworkers.

Another question generated from this research is how first-line managers as a management group can support each other in developing leadership identities and how such intervention could be organized.

Future research could also investigate how the executives view their role and responsibilities in relation to their coworkers (the first-line managers) and how they view their own needs for support in improving the system. Their level of assuredness about the effects of Lean would also be interesting to investigate.
8 References


The Swedish Healthcare act (HSL), paragraph 31.


