



BI Norwegian Business School - campus Oslo

GRA 19703

Master Thesis

Thesis Master of Science

Important mechanisms to succeed with facilitating a continuous learning culture and change processes within hospitals

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Start: 15.01.2019 09.00

Finish: 01.07.2019 12.00

Acknowledgment

This master thesis marks the ending of two years at the Master and Science program in Leadership and Organizational Psychology at Norwegian Business School (BI). The two years has been filled with new knowledge, good friends and inspiring experiences at BI. The motivation and inspiration behind the thesis and the topic, is based upon our fascination and passion about change management, and especially towards how to succeed in large complex organizations. It has been a fantastic learning experience, were we among other things got to join Ahus from the start in 2018. Combined with new knowledge about change management, we have learned to be critical and reflecting over existing research as well as our results from the interviews. Working close together in a pair for such a long time has naturally been filled with ups and downs, but mostly it has been educational and rewarding.

First, we would like to thank our supervisor Jon Erland Bonde Lervik for guidance and support during the writing of the paper. You have been encouraging throughout the process, in addition to patient and available when needed. Thank you! Further, we would like to thank Nina Karlsen and Øyvind Antonsen for invaluable support during our time at Akershus Universitetssykehus. We would also like to thank all participants that has been interviewed in our study. Lastly, we would like to thank our families for their patience and motivational nurturing during the thesis.

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Abstract

This paper examines the implementation of new initiatives within the healthcare sector. Our motivation for the study is the positive impact a successful new initiative can have on patient treatment and thereby affect people's lives. Within Akershus universitetssykehus (Ahus) we have looked at which factors and mechanisms that has affected the change process within two departments. Furthermore, if the quality improvement program has affected the routines and thereby caused a continuous learning culture. The paper examines two departments within Ahus that has implemented new initiatives, and our data was collected through semi-structured interviews and observations. After transcribing and analyzing our collected data, we found that the structural changes made was an important mechanism to successfully achieve improved patient treatment. Further, we found that the support from the Development-unit staff, and their improvement-knowledge, was important to successfully implement the new initiatives and thereby facilitate a continuous learning culture within the department.

1.0 Introduction

“I had a job, did what I was supposed to, and did not consider the entire patient pathway”

Employee at Ahus, 2019.

The citation from the interview describes the heart of the potential resistance and attitude one can meet when attempting to understand change in organizations. The phrase explains the previous patient treatment process at Akershus universitetssykehus (Ahus) as fragmented without standardized procedures. The process was characterized as ad-hoc, where each patient was often handled hands-on, with no plan, no common responsibility or understanding of the patient treatment process. Hence, it illustrates the importance of implementing careful and systematic change in large complex organizations to influence the employees in the desired direction.

The Norwegian healthcare system helps countless of people every day. There are, however, several aspects within all of the hospitals that could, with improvement, affect the lives of many of them in a positive manner. To improve, organizations need to adapt or innovate their processes to match the needs of the users. Changing the knowledge, processes and skills within an organization requires commitment and effort from the management and the employees. Harigopal (2006) defines planned organizational change as deliberate activities that move an organization towards a desired future state from its present state. Change management is often conceptualized as a managerial skill, and in contemporary executive surveys it has been touted as a critical competency (Stouten, Rousseau & Cremer, 2018). The health service will continue to change and improve, and the health system want to ensure safe and good healthcare to patients and relatives. Because of the importance of correct and fast treatment of people suffering from illness, The Norwegian Medical Association (2017a) outlined new requirements to ensure that the hospitals systematically work on continuously improving patient quality.

In this study, we have chosen to look into Ahus and its change management process when implementing its quality improvement program. The program focuses on “being best at improvement” and varies from the different departments because of their various work tasks. Hence, the program and its goals

are specified towards each department's needs. Given the variation in the quality improvement programs the departments that are looked into were chosen based on predefined criteria's: (a) the departments have similar functions, and (b) their quality patient program has similar measures. The chosen departments were The Lung Medical department and The Gastro Surgical department. Both departments' quality improvement programs focused on the patient pathway, which is the chronological treatment a patient receives from first contact until the treatment is ended. By looking into these two departments, it is interesting to analyze which factors that caused the results of the implementation. To enlighten Ahus about the process and research about change in large organization, the research questions are as follow: *(a) Which factors and mechanisms has affected the change process within the two departments? (b) Has the quality improvement program affected the routines within the department and caused a continuous learning culture?*

Carnall (2007) argues that change involves moving into the unknown, away from the current comfortable known situation. By proposing, designing and subsequently executing effective interventions at organizational, environmental, group and individual levels, change management seeks to create readiness for, and overcome resistance against, change (Carnall, 2007). The interventions seek to assist in improving the productivity and the quality of its specific focus area. Quality improvement is the result of long-term, continuous and systematic work. It is defined as "the combined and unceasing efforts of everyone: healthcare professionals, patients and their families, researchers, payers, planners and educationers, to make the change that will lead to better patient outcomes (health), better system performance (care), and better professional development" (Batalden & Davidoff, 2007, p. 2). Quality measurements must be used actively and therefore it is important that the implementation of quality improvement programs is based on best practice to achieve the desired outcomes. To be able to succeed with quality improvement it is vital that the way from current state and till the wanted state is managed properly. Hence, our interest is in change management and all its aspects.

The motivation behind our study is to improve the quality of the patient treatment, and thereby improving peoples experience in a vulnerable period in their lives. Our study is relevant for improving the implementation of future patient treatment quality improvement programs within other, or even the same,

departments. Hence, the study does not only seek to improve the current patient treatment program, but also of future initiatives to improve the quality of healthcare received by patients. To investigate the research questions, relevant theory is applied to analyze which factors and mechanisms that has affected the change process within the two departments. Further, the paper seeks to explore to which degree the quality improvement program has affected the routines within the department, if it has caused a continuous learning culture, and which factors that affects the learning culture.

2.0 Theoretical background

In this chapter we will look at theory relevant to analyze and understand our research questions, starting with the analysis of the big picture of an organization. Further, we will look at important theories within the history of change management starting with phase theories, through non-linear change and ending with change as a continuous process. Lastly, we will look at how the continuous process of change management can cause an ongoing positive spiral of improvement, which is the goal within Ahus' improvement program.

Our focus is on the organizational development, where the patient quality improvement program is implemented within the different departments in Ahus to enhance individual- and organizational performance. Change has been implemented in different ways throughout the history, both successfully and unsuccessfully. However, it is common to see change as a process, something dynamic and fluent, that move an organization from its present to a desired future state (Weick & Quinn, 1999; Stouten et al., 2018). Organizational change can be a root to stress for the workers, therefore the process an organization choose when changing is of importance (Stouten et al., 2018). Nevertheless, the literature regarding change process lacks consensus, and practitioners find making meaningful and sustainable change as a challenge (Bamford & Daniel, 2005; Pettigrew, Woodman & Cameron, 2001). There are several different approaches to organizational change, and it is a general agreement within the field that the two dominant ones are the planned and the emergent approach (Burnes, 2004; Cummings & Worley, 2001).

With several different change management perspectives, the essence is the ability to understand and interpret the big picture and to analyze different aspects with different views. We have chosen to apply relevant theory to understand the

dynamics behind the change process within the two departments at Ahus. By using Bolman and Deal's (2017) frames, we try to sort out important aspects of the process based on different views and to get an overview of the big picture. Further, based on the findings by the different frames we analyze the process and results with the basis of theory on psychological safety, motivation and mastery climate. To combine Ahus' Plan-Do-Study-Act model of learning we have also chosen Hennestad and Revang (2012) and Worley and Mohrman (2014) to look at continuous learning, and how the departments have tried to implement a continuous learning culture. We also apply the continuous change models to understand how complex organizations in today's rapidly changing society, compared to before, requires new approaches to change.

2.1 Understanding the big picture

To understand and interpret the big picture and to analyze different aspects with different views Bolman and Deal (2017) developed a four-framed approach based on research and practice, consisting of the structural, political, human resource and symbolic frame. By using these four different frames, Bolman and Deal (2017) argues that people will be able to get an insight to both the surface and the hidden in an organization. In this way, management can gain an understanding of the organization. Further, they point out that the human resource frame and the structural frame are represented as the surface, while the political and symbolic are the hidden structure frames. These hidden frames are the relationship in the organization that not necessarily are easy to see but affects the organization to a high degree (Bolman & Deal, 2017). In leadership, especially when it comes to change management, it is important to understand that the organization can be viewed using the different frames (Bolman & Deal, 2017).

2.1.1 The Structural Frame

The Structural Frame focuses on the structure within the organization, this implies the design of the units and subunits, rules, roles, goals and policies (Uzarski & Broome, 2018). When it comes to the structuring of an organization, two central questions are: How should the work be divided, and how should the individual's effort be coordinated after dividing the different responsibilities. Who should do what, when should it be done and how should each individuals effort be united and secure harmony? Successful organizations use several different

methods to coordinate efforts within it, mainly by vertical communication through the commando-line and horizontally through meetings, committees, coordination-roles or network structures. The challenge for organizations and their leaders can involve designing, maintaining, and aligning structural forms, when these structures are not working, problem will arise (Bolman & Deal, 2017). There is not only one way to organize an organization, the best way to structure the organization is dependent of its strategies, goals, technology and environment (Bolman & Deal, 2017).

2.1.2 The Human Resource Frame

The Human Resource frame emphasizes understanding people – their strength and weaknesses, reason and emotion, desire and fears (Uzarski & Broome, 2018). The organization needs the employer's energy, power and abilities, and the employers needs the perks that the organization can give them (Bolman & Deal, 2017). If the organizational needs and the employer's needs are similar, it can contribute to satisfactory, and the organization can retrieve the skills and effort needed for progress. This frame is built on Abraham Maslow hierarchy of needs and McGregor's X and Y theory - what the organizations and humans do with and for each other (Bolman & Deal, 2017). Further, it is built on the starting point that people want to realize themselves and that they have an inner power which indicates that punishment and control is not the best motivational approach (Bolman & Deal, 2017). Autonomy and satisfaction at the workplace are essential elements in the human resource frame, alongside with psychological theories about how people perceive themselves and their surroundings (Bolman & Deal, 2017).

2.1.3 The Political Frame

The Political Frame addresses organizations as competitive areas of resources, competing interests, and struggles for power and advantage (Bolman & Deal, 2017). Hence, this frame focus on the problem of conflicting agendas between individuals and interest groups. For instance, in times where an organization have to make difficult choices due to limited budgets. This frame can be very central in e.g. a situation of confusion around priorities and responsibilities. It also looks at the term power, and the sources of power in an organization (Uzarski & Broome, 2018). Hence, groups need power to reach their goals. According to Linda Lai (2014), sources of power are: decision-making

power, punishment-power, expert power, information-power, argumentation-power, priming and personality, including persuasion techniques. The most efficient techniques for persuasion can be divided into six main categories; reflection, consistence, social proof, sympathy, authority and scarcity. Each of these techniques is controlled by a fundamental psychological principal which has a strong effect on our relations and actions, which can make us fascinated and seduced, to understand what actually persuades us, and why, is important (Petrova & Cialdini, 2011). People who are politically skilled are effective and will contribute with value to an organization (Uzarski & Broome, 2018).

2.1.4 The Symbolic Frame

The Symbolic Frame emphasizes issues of meaning and faith (Bolman & Deal, 2017). This frame addresses the employers needs for a sense of meaning and purpose in their work, focusing on inspiring people by making the organization's direction feel significant and distinctive (Bolman & Deal, 2017). Employers with open doors into their offices can be seen as a sign of openness and availability. Hence, uniforms can symbolize power and unity. The frame also includes creating a motivating vision, analyzing the organization both from the inside and the outside. In this Frame, Bolman and Deal (2017) argue that the essence in good performance is within team spirit, created through a community of people which are united to one common belief and culture. Central ceremonies in an organization are; meetings, planning, evaluations, collective negotiations and management (Bolman & Deal, 2017).

2.2 Phase theories

The field of organizational change were dominated by the planned approach from 1950 to 1980, which was originated with Kurt Lewin's Three-Phase model to change (Burnes, 2004). Kurt Lewin (1948) developed one of the most prominent models of the implementation of change. His model, the Three-Phase Process, is based on the three steps: (1) unfreezing, (2) transitioning to a new stage, (3) refreeze. The first step consists of establishing a change vision and developing a change plan. The object here is to get the employees to realize and understand the need for change. It is not an end in itself, but rather a process with intention to motivate and learn (Burners, 2004). According to Lewin, unfreeze prepare an organization for the transition to new systems, structures, or

procedures.

Phase two, transitioning to a new stage involves putting the change in place, hence this is the phase where the change occurs. Followed up by phase three, refreeze, where the new change gets established in practice. In this phase, the change becomes implanted in the organization rather than being a separate unit. However, Lewin's theory has gotten a lot of criticism, especially because it assumes that organizations are stable structures and that it is not suitable for large changes (Burnes, 2004). Nevertheless, Burnes (2004) argues that even though Lewin's theory has been criticized for failure of implementation, it still remains as an important theory within the field.

Another contributing phase model regarding change is Kotter's Eight Step Model. Kotter (1995) studied companies over several years and developed a model that explains why most changes often end in failure. Every change process goes through eight phases, presented as "change errors", which each phase requires a considerable length of time (Kotter, 1995). Hence, any mistake in these phases can lead to failure in the implementation (Kotter, 1995). The first four phases: (1) Establishing a Sense of Urgency, (2) Forming a Powerful Guiding Coalition, (3) Creating a Vision, (4) Communicating the Vision, entails making the organization ready for change and what they can expect. Phase (5) Empowering others to Act on the Vision, (6) Planning for and Creating Short-Term Wins, and (7) Consolidating Improvements and Producing Still More Change, constitutes of the introduction of the new practices and the implementation. Lastly, phase (8) Institutionalizing New Approaches, includes integrating and anchoring the new practice within the organizational structure, system and culture (Stouten et al, 2018). Kotter's framework is still used, but it has gotten criticism concerning the lack of rigorous fundamentals (Stouten et al, 2018).

Stouten and his colleagues (2018) looked into seven different prescriptive change models, including the aforementioned John Kotter and Kurt Lewin. They compared the different steps with each other, thereafter, analyzed them using empirical theories. All these theories show considerable overlap and can be combined together as change steps or a check list that should be done correctly to achieve change within an organization (Stouten et al, 2018). Referring to the past, these implementation theories were appropriate to use, because they fit with the organizational nature and environment at that time (Worley & Mohrman, 2014).

The implementation theories described above represent clear boundaries, scope, and focus. Hence, they are characterized by high degree of control and are theories that help people understand change processes (Worley & Mohrman, 2014). However, they work effectively when it is a clear arrangement to a strategy that is known but decline when it comes to meet the complexed and interdependent organizations today. Therefore, because Ahus is a complex profession organization, we have chosen to look further into dynamic and descriptive theories.

2.3 Understanding change in complex organizations

Managing change in large organizations is difficult (Worley & Mohrman, 2014). The complexity, connectivity, interdependency and speed today, compared to before, requires new approaches to change. Many large-scale organizations are dependent on multi-disciplinary work in order to draw on, and use their expertise and knowledge, in a desired way. Multi-disciplinary and collaboration is two important keywords for change management (Klein & Falk-Krzesinski, 2017). Research emphasize that multi-disciplinary collaboration is considered as highly important when addressing complex problems, that are dependent on expertise from more than one discipline (Klein & Falk-Krzesinski, 2017). Coordination between roles in an multi-disciplinary organization is essential for managing a good structure and provide high quality (Barley & Kunda, 2001). Having clear role structures or team structures enables employees on how they shall coordinate and handle complex tasks (Valentine & Edmondson, 2015).

According to Griffin, Neal and Parker (2007), roles outline responsibility and expertise, hence it delineates individual responsibility. On the other side, team-based work, which means work that requires multiple specialties to work together, offers a richer and more diverse knowledge, efficiency, learning, satisfaction and synergistic processes (Cummings, 2004; Edmondson, 1999). To learn from each other, it is important that the employees feel safe for interpersonal risk taking, Edmondson (1999) argues that when there is a shared belief that the work environment is safe, you have accomplished psychological safety. Psychological safety is associated with learning behavior (Edmondson, 1999), and as a change process can mean learning new things it is fair to assume that psychological safety within the organization can positively affect the outcome. If people in the organization perceive psychological safety, and low

career and interpersonal threat, they discuss problems, admit errors and ask for help (Edmondson, 1999). A mastery climate values cooperation, effort, learning, and trying out new things. It is recognized by employees that are encouraged to cooperate and exchange thoughts and ideas mutually, thereby focusing on building competence and self-development (Nerstad, Roberts & Richardsen, 2013).

While a performance climate values intrateam competition and social comparison, nurturing a climate where it is important for the members of the climate to perform better than the others (Nerstad et al., 2013). Further, the performance climate is recognized by a competitive rivalry among employees, where only the best achievers are highlighted. Some describes a performance climate as “forced social comparison”, as work performance is measured and compared to the performance of ones colleagues (Nerstad et al., 2013). In a performance climate individuals hiding knowledge are enhanced, while it is attenuated in a mastery climate (Černe, Nerstad, Dysvik & Škerlavaj, 2014). Hence, to have a successful arena for knowledge-sharing it is important for the personnel to experience psychological safety. Further, it is important to provide a mastery climate that emphasizes the learning and development of each individual while encouraging employees to try new solution methods throughout the work process.

The concepts boundedness, stability of membership and interdependence have been identified as important elements of stable work teams (Wageman, Hackman & Lehman, 2005; Hackman, 2002). Bounded can be explained as a clear structure of which team individuals belong to. Stable refers to the same group of people composing the team over time. Lastly, interdependent means that people in the same team have collective responsibility and need to work together (Valentine & Edmondson, 2015). Research emphasize that these dimensions of team structure contribute to help a group to coordinate effectively, because they get to know each other and discuss strengths and weaknesses with the work at hand (Valentine & Edmondson, 2015). Hence, by enabling team effectiveness through multi-disciplinary work, there is a higher possibility for organizations to achieve collective responsibility, which provide employees with motivation to think and act in the wanted way (Valentine & Edmondson, 2015).

2.4 Change is not a linear process

Hennestad and Revang (2012) developed a theory named: The journey through the “endringsrommet”. While Hennestad and Revang (2012) support the phase theories to some degree, it is argued that they do not take account for all procedures being contextual, nor that it is possible to copy success criteria step by step. Hennestad and Revang (2012) specifies that the gap between the current- and future state is called “endringsrommet”. To be able to move through the “endringsrom” it requires a lot of energy, effort and change management. As the change process begin the organization move into the “endringsrom”, where the point is to change the organization's direction, frame and assumptions. To complete the process it requires both a practical and discursive understanding of the wanted situation (Hennestad & Revang, 2012).

Hennestad and Revang (2012) argues that change management happens “on the way”, which makes the understanding of the current situation important during the entire change process. Without competent change management and an understanding of the current situation, no plan can ensure that the process will be successful. Hennestad and Revang (2012) also points out that development and change does not happen linearly, it happens in cycles or waves, it might also move backwards and forwards. Looking at the phase models, Hennestad and revang (2012) suggest that one should see them as functions, or problems that must be handled, rather than delimited phases. Based on observation of Norwegian organizations, Hennestad and Revang propose four central functions that one should hold on to: (a) anchoring, (b) organizational accept, (c) new action, and (d) stabilization.

Anchoring: It is a clear prerequisite that a new or wanted situation is anchored within top management for it to be accepted. The employees must experience that the top management is leading the organization in the wanted direction (Hennestad & Revang, 2012). Spector and Beer (1994) views total quality management (TQM) as enhancing the organizations ability to deliver high-quality products or services in a cost-effective manner by the continuous improvement of work processes. Beer (2003) states that the top-down TQM programs often fail to create a sustained change within the organization, and since the patient quality improvement program is a top-down initiative, it is an important function to deal with.

Research on change has showed great attention to two essential theories: Theory E and Theory O (Beer & Nohria, 2000). The former, Theory E can be

explained by change that is based on economic value, while Theory O is change based on organizational capability (Beer & Nohria, 2000). It is argued that theory E is change that involves use of economic incentives, layoff, restructuring or downsizing (Beer & Nohria, 2000). This change is led from the top-down and is a programmatic approach to change (Kippenberger, 2000). On the other side, Theory O focuses on change that develop corporate culture and human capability through learning (Beer & Nohria, 2000). This approach encourage participation from the bottom-up to build up employees' behavior and attitudes in the desired way. When large organization are restructuring, there is a need of a plan and established programs in order to succeed with the change. Therefore, theory E is more suitable, where there is a clear approach that if an organization are to succeed a common plan of action which encourage, motivate and inspires confidence among the employees (Beer & Nohria, 2000). However, research has argued that in order to manage rapid improvements and ensure economic value as well as motivated employees, the combination of Theory E and Theory O has been seen as a source to sustainable competitive advantage (Beer & Nohria, 2000; Kippenberger, 2000).

Organizational accept: Organizational accept presuppose that a critical mass of the organization's employees understands and supports the new and wanted direction for the organization (Hennestad & Revang, 2012). In the article «The silent killers of strategy implementation and learning» from 2000 by Beer and Eisenstat they identify six reasons that changes fall through. They point to consequences of an “top down attitude”, or a “happy go lucky” attitude from top management. Also, when the management forms an ineffective team with poor vertical communication and bad coordination between the different functions in the department or organization. Furthermore, they mention the negative consequences of an unclear strategy and of priorities that stands in conflict with each other. For a change process to be successful these six causes must be made visible and reformed into possibilities (Beer & Eisenstat, 2000).

New action: This “phase” refers to when new actions and changes are set in motion. To set a change in motion one needs to be able to understand and discuss the wanted change, which is called a discursive awareness (Hennestad & Revang, 2012). Hence, the clue is to develop the discursive awareness into a practical understanding of the wanted situation. Batalden and Stoltz (1993) specifies that it is important with a combination of improvement knowledge and

professional knowledge to succeed with a continuous improvement within the healthcare sector. Furthermore, Batalden and Stoltz (1993) claim that a profession organization does not necessarily have improvement knowledge. Erichsen (1996) says that a hospital is a profession organization on a microlevel, and that the public control systems is the core at the macro level.

Stabilization: In this “phase” the new changes are stabilized into the organizations systems and structures. Hennestad and Revang (2012) also points out that for the changes to become incorporated into the organization, and not fall back into old patterns of behavior, the organization need to work actively on several hierarchical levels. Technological and structural changes must be implemented to support the change processes, but it is also important to remember the social processes involved in organizational changes. The employee’s opportunity to be heard and to have a voice, and how they experience this is therefore essential for a successful change process. It is also important to see how the employees talk about the changes, this is significant both for development and knowledge sharing (Hennestad & Revang, 2012).

2.5 Change as a continuous learning process

To effectively adapt in the rapidly changing environment of today, one could argue that organizational changes are a never-ending cascade of new challenges (Worley & Mohrman, 2014). Edmondson defines organizational learning as “the process of improving organization actions through better knowledge and understanding” (Edmondson, 2002, p. 128). Edmondson’s (2002) definition emphasizes that learning is a process of improving work practices. While organizations today are being told to drive their performance and at the same time as changing their business for tomorrow, build new capabilities, optimize their current service and offer customized solutions, while still adopting sustainable solutions (Worley & Mohrman, 2014).

It can be argued that organizations today are more dependent on dynamic and descriptive models which can guide them through a process consisting of learning and engagement (Worley & Mohrman, 2014). Organizations should address simple and complex, incremental and fundamental, shallow and deep, and transformational change simultaneously and repeatedly (Worley & Mohrman, 2014). Therefore, Worley and Mohrman (2014) developed a new theory of change, “The Engage and Learn Model”. The Engage and Learn Model is a

descriptive model of change, which implies less control over the change process than previous implementation theory has (Worley & Mohrman, 2014). The model focus on a set of organizational change routines, where the object is allowing the organization to change itself continuously (Worley & Mohrman, 2014).

The model consists of four change routines which has originated from the understanding of the requirements for an organization effectiveness, uncertain and disruptive environment. Ahus' use of the model Plan-Do-Study-Act (PSDA) in the implementation can relate to Worley & Mohrman's (2014) Engage and Learn model, where both focuses on the continuous work and process of changing and eliminate previous traditional models as Kotter and Lewin. The four routines within the Learning and Engage model are: (a) awareness, (b) design, (c) tailor, and (d) monitor.

Firstly, Worley & Mohrman (2014) demonstrate the importance for members in the organization to be aware of the issues, challenges, and history of the organization. It is essential for organizations to be able to perceive environmental trends and be "pre-adapted" for interruption. Because of the increasing environmental changes and disruption, it is important for organizations to spend a lot of time and energy in being observant (Worley & Mohrman, 2014).

Secondly, design is becoming more and more valued for an organization. Worley & Mohrman (2014) argued the importance for design in shaping behavior. To meet the rapid changes, it requires that one operates quickly, and sometimes even independently of the organizations core logic (Worley & Mohrman, 2014). Further, the loosely connected and dynamic portfolio of recurring and emergent collaborations among stakeholders are the focus of design activities, more precisely focusing on flexibly managing them (Worley & Mohrman, 2014).

Thirdly, tailoring, emphasize the importance of creating targeted, specific, and high impact interventions, and set the circumstances for self-organizing. Lastly, monitoring concerns the impact of organizational change, development, the desired outcome, understand how to achieve the new strategy, and how to make rapid decisions and adjustment based on what is learned (Worley & Mohrman, 2014). This part of the process is essential regarding the organization capacity to recognize and understand error and learn from success in today's environment (Worley & Mohrman, 2014).

This model has no “arrows”, which indicates that there is no prescribed starting point, it is a model which can be entered anywhere. In other words, it means that these four steps can happen at once in various departments in an organization (Worley & Mohrman, 2014). For instance, change could begin with tailoring and monitoring, as well as awareness and design. The Engage and Learn Model has a center which represent two continuous individual models of operating and motivating people throughout the organization to change routines and help them implement and make the change: engagement and learning (Worley & Mohrman, 2014). Engagement is important because, whether this comes from the manager, a change agent or other influential employees, the first engagement create motivation among the workers. Further, these agents need to be all updated on the design, tailor, monitor and awareness. Learning is the other motivation in the center, which includes the outcome of intentional engagement (Worley & Mohrman, 2014).

During repeated attendance in monitoring, designing, awareness and tailoring activities, employees learn. For instance, tests are carried out during implementation of change to address challenges, what works and what does not. These test focuses not only on individual’s knowledge, but also core routines of how the organization operates. Learning allows each individual to be more efficient and effective as employees in the organization becomes good at changing (Worley & Mohrman, 2014). Regarding the fast and rapid changing environment today, there are few organizations that has gone through as much upheaval and public scrutiny the past decades as the healthcare industry (Worley & Mohrman, 2014).

3.0 Method

In this section we will further explain the context of the paper and describe the design applied to best understand and explore the research questions. We will also go through how we chose our sampling of both the departments and further the interview objects, and the way we collected the data. Finally, we will explain how we analyzed the collected data, and discuss some ethical considerations for the paper.

3.1 Context

Akershus universitetssykehus is under the authority of The Norwegian

Medical Association, which went through a reform in 2016. The reform has several consequences for hospitals in the entire nation, including Ahus. One of the main points in the reform was an increased focus on the quality and safety within patient treatment within each hospital. The focus on improving patient treatment quality and safety does not limit itself to specific departments, seeing as each hospital has different challenges. It is up to each hospital to decide the specific goals of improvement, they are just required to work with improvement across the organization in varied forms. We followed the improvement program implemented in 2017, narrowing it down to two departments, Gastro Surgical and Lung Medical. We followed their process from examining their problems, deciding initiatives to solve them, the implementation process and finally the status after completing the implementation.

The first of January in 2017, The Norwegian Medical Association carried out their regulation of leadership and quality improvement within healthcare. As stated in §1 the regulation, amongst other goals, aims to contribute to quality improvement for patients and that the hospitals achieve the requirements set by The Norwegian Medical Association (2017a). It is a prerequisite that Ahus establishes a common systematic approach towards quality improvement, which is known in the entire organization, to succeed with achieving the requirements from The Norwegian Medical Association. Ahus is a large organization with 9078 employees (Proff.no, 2019), it is therefore also important for Ahus to create a common arena where the different departments can share experiences and knowledge to create a culture for improvement.

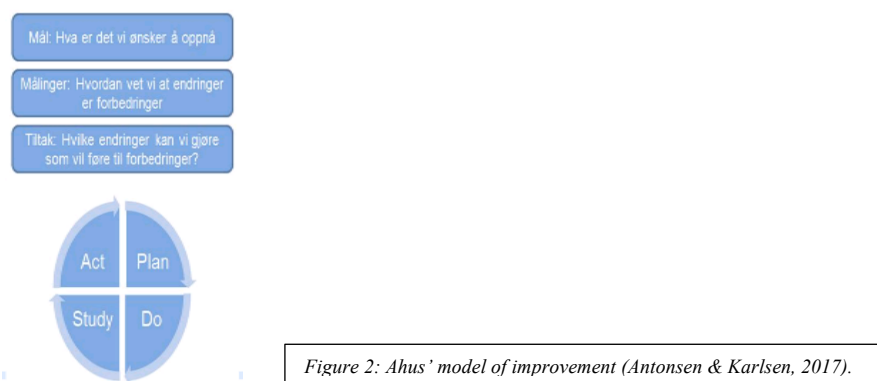
To respond to the new regulations Ahus, at the 10.10.2017, applied several prescripts aiming to achieve an improvement culture. The prescript contains six different parts as seen in figure 1 the: (a) improvement day, (b) patient quality improvement program, (c) learning network with supervisors, (d) method and tools, (e) leadership improvement, and (f) basic courses.

Sentrale opplæringsstiltak og støtte
Vedtatt i sykehusledelsen 10.10.2017



Figure 1: Central prescripts for improvement and support (Antonsen & Karlsen, 2017).

Ahus started with a basic course in improvement with 30 places, the places were divided between the different departments, to ensure that the knowledge were spread throughout the organization. The course was meant to give some basic knowledge about planning, implementing and following up on measures for improvement. After the course a total of 30 departments signed up to participate in the patient quality improvement program, aiming to improve a specific part of their department. Several steps were made available for the departments to ensure that the patient quality improvement program was to succeed, the network for sharing knowledge, leadership courses, an annual day to discuss improvement across departments and so on. The departments were also given methods and tools, the Plan-Do-Study-Act (PDSA) model (figure 2) where a main tool to succeed with the implementation of the quality improvement program. The model is intended as a clear simple visual description of theory.



The model of improvement contains three core questions asking what must be done to create an improvement, while the PDSA explains how it is to be executed. In December 2018 the results of the patient quality improvement program, of the 30 departments that registered, 15 were still active in the process, and of those 15, 12 had completed the implementation.

The hospital is, according to §8 within the “forskrift om ledelse og kvalitetsforbedring i helse- og omsorgstjenesten”, obligated to follow-up and evaluate the measures implemented within the organization to reach the requirements set by The Norwegian Medical Association. It is important that the departments, after the completion of the implementation of the patient quality improvement program, does not forget to follow up and keep a continuous improvement culture within each department. It is the leader’s responsibility to evaluate implemented measures according to §8c. Hence, to ensure that routines and measures implemented within the organization works as assumed, the

leader(s) must apply systematical evaluation. According to §8c the evaluation can be done in several different ways, by (a) continuous measures, (b) controls within the departments, (c) inspection by random tests, or (d) management asking for feedback from subordinates about the measures and their effect. Therefore, this case study is of practical importance, providing an in-depth follow-up and evaluation on the measures implemented within the departments.

3.2 Design

Our study seeks to get an insight into how the change process has been experienced and handled within different levels in the organization. We aim to get as close as possible to the concrete process, to identify some of the premises for a successful change process, and to answer the “why” question (Yin, 2009). A case study seeks to investigate few cases thoroughly, it is recognized by its gathering of a lot of information and going in-depth into the research question (Bryman & Bell, 2015). Because of the aim to investigate our research questions in-depth, we have chosen a case study and a qualitative method for our study. Even if the case study only focuses on a small number of cases, the method can be used to shed a light upon other similar phenomenon by giving a thorough and precise description of each single case (Johannessen, Tufte & Christoffersen, 2010).

By choosing two departments and going in-depth into them by a case study, it opens the possibility to make analytical generalizations about the change process (Yin, 2009). To select which departments that are to participate in our field experiment we have outlined two criteria (a) the departments has a similar function and (b) their quality patient program has similar measures. By looking into two departments that matches these criteria, it will be interesting to analyze which factors that caused the results. As both Lung medical and Gastro surgical focused on improving the patient pathway, they were chosen to participate in this case study.

Before moving on to the analysis it is important to give an account for the choice of method. There are two different approaches, or strategies, when it comes to the relationship between theory and research, inductive- and deductive theory. An inductive strategy is considered typical for qualitative studies where you use your own data to provide general statements and theories (Askheim & Grenness, 2008). Deductive strategy on the other hand is considered typical for quantitative studies, which is hypothesis-testing to confirm, or disconfirm,

assumptions on areas where there are a lot of foreknowledge (Askheim & Grenness, 2008). However, deduction often entails elements of induction, and vice versa, when weaving back and forth between theory and data it is called an iterative strategy (Bryman & Bell, 2015). This study is a case analysis which aims to attain new information from few sources, but with several variables, going in-depth to find details. Hence, the qualitative method and inductive strategy is applied to answer the research questions.

3.3 Data collection

Qualitative research are often concerned with words, rather than numbers, generating theory from research by using an inductive strategy (Bryman & Bell, 2015). Further, qualitative research is concerned with investigating the meaning that different individuals put into their experiences, trying to understand how people think and what motivates them (Askheim & Grenness, 2008). Applying the inductive strategy, qualitative research method does not seek to test already known theories, but to gain firsthand knowledge about the current samples feelings and meanings towards their experience. By using the qualitative method, the study does not provide the possibility to generalize, but to answer the research question based on connections and common features in the data gathered by semi structural interviews (Askheim & Grenness, 2008).

3.3.1 Semi-structured Interview

In qualitative research the interview is probably the most widely employed method, it provides a lot of flexibility and low degree of sustained absence(s) required from family life and/or work (Bryman & Bell, 2015). To achieve our goal in the qualitative study, to investigate how the individuals have experienced the situation/process, a qualitative interview is preferred. As the quantitative interview reflects the researchers concern, the qualitative interview focuses on the interviewee's point of view, allowing "rambling" to get insight into what the interviewee sees as important, and being flexible to provide rich and detailed answers (Bryman & Bell, 2015). Within qualitative interviews there are two major types, the unstructured interview and the semi-structured interview. The unstructured interview tends to look a lot like a conversation, simply allowing the interviewee to respond freely, being followed up on points that seem extra interesting (Bryman & Bell, 2015). The unstructured interview can be seen as a

series of broken and incomplete conversations, not following the patterns of the common understanding of an interview.

The semi-structured interview also allows the interviewee a great deal of leeway in how to reply, but it has an interview guide that contains fairly specific topics that the interview should cover (Bryman & Bell, 2015). In this case study the semi-structured is chosen because it focuses on covering specific topics, while still allowing to ask some follow-up questions on specific cues that are picked up during the interview (Bryman & Bell, 2015). The semi-structured interview also ensures that the different interviewees are given all of the pre-set questions with the same wording.

3.3.2 Sampling

In qualitative research most sampling entails some kind of purposive sampling, which is recognized by the sampling being conducted with reference to the goals of the research (Bryman & Bell, 2015). The units of analysis are chosen in terms of criteria made to allow the research questions to be answered. The purposive sampling is a non-probability sampling, and will not allow generalization towards a population, however it does allow us to ensure a good deal of variety in our sample (Bryman & Bell, 2015). The number of interview objects varies: *“In general, sample sizes in qualitative research should not be so small as to make it difficult to achieve data saturation, theoretical saturation, or informational redundancy. At the same time, the sample should not be so large that it is difficult to undertake a deep, case-oriented analysis”* (Onwuegbuzie & Collins, 2007. p. 289). To be able to answer the research question with a deep, case-oriented analysis, we have chosen to interview representatives from the organizations level 1-4, including three individuals at the floor in both departments.

We interviewed the Chief Executive Officer (level 1) of Ahus to get an impression of his participation in the process, as well as how top-down / bottom-up goal-setting affects the degree of anchoring within top management. Lastly the two division directors (level 2) will be interviewed. The total sample counting 13 (represented in table 1) ; (a) level 1: 1, (b) level 2: 2, (c) level 3: 2, and (d) level 4: 8. By conducting interviews at all levels of the organization we ensure that we are provided with rich and detailed information from all organizational levels at Ahus. Further, we ensure the possibility to look at the individual thinking of

different decision-makers and contributors to the change process.

Organizational Level	Administrative	Gastro Surgical	Lung Medical
1	CEO		
2	2 Divisional Directors		
3		Department leader	Department leader
4		Nurse, Doctor, staff-representative, nurse	Nurse, Doctor, Nurse, Staff-representative,

Table 1: Personnel interviewed at the different organizational levels

3.5 Analysis

During the participation in the different improvement days we collected independent data based on individual observations. As each improvement day were single cases of abundant information, Langley (1999) especially recommends narrative analysis. To be able to connect the two recordings together we thoroughly went through their observations and thereby underlined and recorded data interesting for the organizations change management process. The data should be analytical enough to be interesting but also empirical enough to be credible. Hence, it was of high importance for the authors to ensure inter observer agreement (IOA) and thereby ensuring the highlighted data to be reliable.

Arena	Observations relevant for the change management process	Mentioned in interviews
Improvement network day 1	CEO presentation (support from management). Magnus Lord (one of the top experts within modern and Lean Healthcare) with several important lectures laying a basis for continuous improvement, improved patient treatment plan, measuring and change management knowledge.	Yes Yes
Improvement network day 2	Presentation by top management – “How management contributes to an	Yes

	improvement culture”. Development-unit staff supports and guides each group. Mastery climate and psychological safety – the groups share information and learn from each other.	Yes Yes
Improvement network day 3	Presentation from staff unit Director – motivating to be best at improving (creating improvement knowledge). Mastery climate and psychological safety – the groups share information and learn from each other. Support by the Development-unit staff, advising on the improvement plan and current status for each department.	Yes Yes Yes
The final improvement day	CEO present the entire day – also awarding the departments with the best results (support from management). Several representatives (different professions) from Lung Medical and Gastro Surgical department presenting their results.	Yes Yes

Table 2: Observations during improvement networks.

The authors reviewed all 13 interview transcripts alone, color coding sentences related to different aspects of the change management process and the improvement work within the two departments. After finishing all interviews separately, we compared findings. By comparing findings, we identified by discussion, and a second review of important findings, which factors that were important for the change management process. After concluding on findings, the authors looked into specific quotations relevant for the discussion regarding each factor.

3.6 Ethical considerations

First off, it is important to make it clear for the interviewees that it is completely voluntary to be interviewed (Vogt, Gardner & Haeffele, 2012). To ensure this, we phrased us clearly before giving out the consent form for the interviewees, ensuring that the interview is voluntary. Further, it is important to be honest with the handling of the data collected, informing about destroying

recordings after the transcription is finished and how it is intended to keep the interviewees anonymous, if at all (Vogt et al., 2012). Research questions probing sensitive information from the interviewee might cause psychological distress for the interviewee (Vogt et al., 2012). As Vogt and colleagues (2012) recommend, we therefore conduct a well-informed consent discussion with the interviewees followed by a clear consent form, to e.g. alert potential psychological distress. Hence, to prevent recognition of the interviewee the paper will not describe the title nor name from which the citations origin. Lastly, we seek to adopt a neutral role, even while probing, to not force the interviewee into unwanted topics, while still trying to acquire the wanted information.

4.0 Results and findings

In this section we will chronologically go through the previous patient treatment, new initiatives, results, and finally the outcomes of the new initiatives. To organize the results and findings as systematic as possible, all of the phases described is divided between the two departments Gastro Surgical and Lung Medical.

4.1 Previous patient treatment

4.1.1 Gastro Surgical department

"The patient treatment process in 2014 was unpredictable". Before implementing the new initiatives, the Gastro Surgical department did not operate with specific treatment plans for each patient. A treatment plan is an electronic or paper document for each patient with an overview of their diagnosis, needs, treatment interventions etc. As the situation is described, the personnel did not feel that they had an overview of the entire patient treatment process. The patient treatment, as described by the personnel in the interview, started with the arrival of a patient with an acute condition into an entrance pool, then went through surgery, were sent back to the department and then sent home. This was described as best-case scenario during the previous patient treatment process. However, due to the lack of holistic, there were no superior responsibility for the patient, meaning that unwanted incidents that occurred would be handled by the personnel present at the time. The interviewees stated that the lack of holistic was unfortunate, and that accidents were treated continuously based on who were at work at that time. Further, they mentioned that the reporting of accidents varied

due to the limited time available combined with the work load. This lack of holistic did not only cause poorer and random patient treatment, it also resulted in few reported accidents. The personnel were often in a hurry and didn't take time to report, another contributor to the poor culture of reporting accidents were the lack of a specific arena to report in.

Incidents were dealt with continuously by the personnel present at the given time, hence the treatment varied between cases. Without a clear guideline for each case, the personnel naturally had some variations in how they solve problems, and thereby affecting the treatment. As the responsibility shifted between different personnel based on the different doctors and nurses that were at work and responsible for the patient, the treatment varied as well. The patients arrived with acute conditions into the entrance pool, without a holistic and a concrete plan for each patient it resulted in the hands-on treatment, where the personnel present took responsibility for a given case. As the personnel varied between each shift it also provided the patient with several different contacts during the stay. The employees describe the patient treatment process: "*The patient treatment process was fragmented*", as fragmented due to the different contacts during the patient's stay.

Ahus operates with round-the-clock staffing and shifts, providing difficulties when there is a lack of concrete and standardized routines for communication and information flow. Which is another contributor to the treatment varying from day to day based on the healthcare personnel available during the specific shift. Further, there were no clear plan for when the patient left the hospital. Patients should be invited to controls after their stay, but again due to no clear routines for who's responsible and no systematic overview of whom and when, this was often forgotten. Round-the-clock staffing also provides difficulties if the patients arrive as the shift changes. With no standardized procedures the personnel did not necessarily know what was done before they arrived, nor the next step in the process, which is recognized in the interviews as the treatment is described as fragmented. Accidents during the patient treatment were handled consecutively, in the interviews several personnel mentions the patients falling and hurting themselves as a problem in the previous patient treatment. As the department did not have tools to report, measure and observe accidents and their frequency, the previous patient treatment process did not have a clear overview of the number of patients falling.

Poor information from the previous steps in the treatment process also caused the department to use high amounts of antibiotic intravenous fluids, and the cooperation between professions were difficult without a clear overview of each patient's treatment. Hence, the lack of planning, with no concrete patient treatment plan for each patient, provided difficulties both due to different shifts, personnel, and contributed to a lack of holistic. Several interviewees mentions this as a weak spot in the previous patient treatment process, and as a frustrating factor preventing them to complete their job with as high patient treatment quality and safety as possible.

4.1.2 Lung Medical department

“The patient treatment process was a fragmented process and to a low degree standardized”. The department did not have a clear tool to monitor the patient's treatment and thereby did not provide high quality treatment. The treatment was characterized by poor information flow between the doctors and nurses. Hence, there were no common communication platform. Consequently, the personnel took each patient and day as it came. When a patient arrived at the hospital, they would meet an assistant doctor and a chief doctor, which handled everything possible at the present time. However, when a nurse or another doctor arrived later to check on the patient, there were no information or plan regarding the previous treatment. In the interview the personnel described that they lacked a standard module describing how, when and where things should be done. This resulted in lack of a holistic culture, were the personnel did not manage to see the complete picture and the necessary treatment for the patient. The ineffective corporation and the poor systematic work resulted in poor quality for the patient. As the different doctors and nurses had different information, there were no common patient treatment plan, and thereby variation in the treatment given.

The department suffered from a large number of patients, long waiting lists, and not enough resources to handle them. One of the biggest challenges was to get personnel at any time. Due to the round-the-clock-staffing (day, evening and night), personnel come and goes, which influence the quality in a negative manner. The department especially struggled with the evening and night shifts. During the interview the personnel describes this as one of the most important causes that influence the quality. For the patient this resulted in difficulties to get an appointment on time, especially control appointments, resulting in higher risk

for the security and quality of the patient. Today, the prevalence increases, and there is a larger number of people that need treatment over time. This is due to new medicine, which has resulted in longer survival for patient with lung disorder. Therefore, the department need sufficient and new methods on how to work to handle the increase in patient.

The former way of working was characterized by not managing to send the patient home in reasonable time before the new shift came to work. This caused chaos and poor structure. Due to no standardized procedures regarding the patient, the personnel were not updated when they switched shifts. Subsequently, there were a lot of patient lying in the hall, when doctors were taking visits in the evening. These patients should have been sent home or picked up by relatives or sent to nursing home. The problem until know have been that the majority of patient leaves closer to 15pm or latter, which is when the shift in personnel are. This creates a lot of confused patient, some that are supposed to leave and others that are arriving. Consequently, this led to higher risk regarding patient safety, and gave more possibilities to make mistakes.

The department also struggled with cooperation between professions. They are dependent on working across departments in addition to working across roles, which has not worked at a desired level. For instance, the department are very dependent on the x-ray department, often experiencing a delay, which influences the patients at the Lung Medical department. Moreover, the nurses and doctors are not aware of what happens due to poor information between the professionals. Further, because of the lack of cooperation between professionals and the poor information between employees, they struggled with double bookings. This is consistent with several of the interviews held, were the objects states that the employees are confused and not informed during the wait for the x-ray results.

4.2 New initiatives

Porras and Robertson (1992) defines change interventions as: *“a set of behavioral science-based theories, values, strategies, and techniques aimed at the planned change of the organizational work setting for the purpose of enhancing individual development and improving organizational performance, through the alteration of organizational members’ on-the-job behaviors”* (p. 723). The regulations made by The Norwegian Medical Association in January 2017 towards quality improvement within the healthcare sector provided an opportunity

for the department to participate in Ahus' improvement program. To respond to this both departments went through a process before the implementation, to ensure that the new initiatives were wanted from several organizational levels. Further, ensuring that the new initiatives serve the purpose of both enhancing individual development and improving organizational performance.

4.2.1 Gastro Surgical department

The quality improvement program provided support from development-staff unit, and an arena for sharing experiences and learning from other departments and their change process. The Gastro Surgical department introduced their measures to improve patient quality and safety in the fall of 2017 and participated in the improvement network gatherings three times in 2018. The department had already had the measures in the management, deciding which initiatives to be implemented. The first meeting in January 2018 gave the department guidelines for measuring improvement, as well as essential improvement knowledge. The department implemented the use of whiteboard meetings by actively informing the employees within the department and physically organizing the meetings. The whiteboard meeting is a meeting where each patient is discussed, and an arena to share information and to make sure that everyone is up-to-date regarding their patient.

Whiteboard meetings provides a clear possibility for all employees, no matter which profession they represent, to comment on the patients. It is clear that the personnel at the department were aware of its previous use and success, during the interviews they mention that it was used at Sykehuset Vestfold. Whiteboard meetings is a tool implemented in several other healthcare institutions, already proven to be effective. Sykehuset Vestfold had 20 representatives on a study trip to Hillerød Hospital in Denmark where they learned about whiteboard meetings as a tool to improve patient treatment quality and safety. The personnel at Sykehuset Vestfold states that it is an effective measure, and that they recommend other hospitals to implement it as well (Tavlemøte ved Sykehuset Vestfold, 2013).

The results shown at Sykehuset Vestfold was a trigger for its implementation at Ahus. The decision was made by the leader of the department, hence a top-down decision. During the implementation process representatives from Sykehuset Vestfold visited and demonstrated how to use it, and its potential

value. By inviting the representatives to show its success it helped to visualize for the employees how successful the tool could be if used properly. To smoothen the implementation, and to show its anchoring within the management, department leaders participated in whiteboard meetings, an important signal towards the employees.

Further, the department has implemented the Green Cross (Figure 3), which is described by the personnel as “*It includes discovering and looking at incidents and accidents the last 24 hours, and classifies the incidents after color codes based on the severity*”.

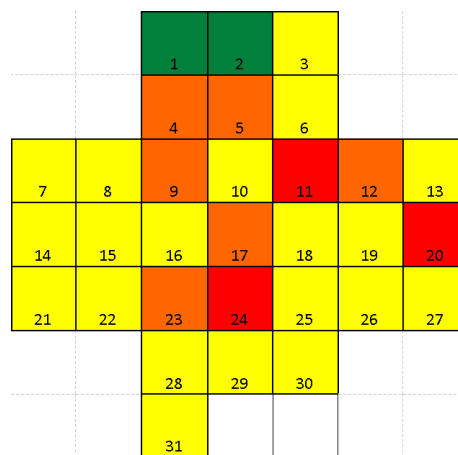


Figure 3: The Green Cross

The Green Cross represents a calendar month and is a systematic tool to report day-to-day accidents. If a minor incident happens during a work day that date is marked with yellow in the green cross, while a severe accident is marked in red. If there are no unwanted incidents during a workday, the date is marked green in the Green Cross as seen exemplified in Figure 3. The Green Cross was awarded in 2015 with the European Quality Innovation of the Year, several years before implementing it in the Gastro Surgical department. It is clear based on the interviews that the personnel at the department were aware of its previous use and success. In the interviews it is mentioned from lower organizational levels that the leaders were informed about the Green Cross in an improvement conference, and that it was successfully applied in Sweden. This indicates that the leader of the department has been thorough in visualizing and explaining the measure before implementing it in the department.

Another tool to improve patient treatment quality and safety is the improvement board (figure 4). which visualizes and tracks focus areas. When

accidents and areas of improvement are discussed during whiteboard meetings and based on the Green Cross, the improvement board provides all the employees an overlook of measures, results, responsibility and focus areas for a given period.

Fokusområde 2018	Mål	Tiltak	Måluppnåelse
TRYGG UTSKRIVNING	<ul style="list-style-type: none"> Pasientene føler seg trygge når de skal ut Forre tilgjengelighet for pasienter og familie når utskrivning Sjette retningslinjer Pas og kommune bruker felles forberedelse Utskrivningsplaner Pas får med seg viktig info og utstyr hjem 	<ul style="list-style-type: none"> Sjette planlegging av utskrivning utarbeide og gjennomføre Formale uttrykk informasjon Utskrivningsplaner Utskrivningsplaner Utskrivningsplaner Informere pasientene om utskrivning Oppdatert informasjon Utskrivningsplaner Pas får utskrivningsplaner Legger uttrykk Utskrivningsplaner Utskrivningsplaner Utskrivningsplaner Oppdatert informasjon 	<ul style="list-style-type: none"> Vi har blitt funnet til 2 planlagte Pas føler ikke de blir overrasket på utskrivning Vi legger utskrivningsplaner på utskrivningsplaner SPT bruke utskrivningsplaner

Figure 4: The improvement board

Because round-the-clock staffing might cause difficulties with the information flow, the time for releasing the patients is an important part of the patient treatment plan. Therefore “safe release” was introduced as a focus area in 2018, with the improvement board showing a clear overview of the specific goal, how to reach it, and when it is reached. The personnel describes situations where the patients were meant to be released in the middle of changing shifts, which lead to confusion about responsibility as there where a lot of personnel present. Further, this resulted in a low degree of responsibility when it came to reporting and control over calling patients in to controls.

4.2.2 Lung medical department

The underlying rational for changing practices and new working methods, was because of low quality and high potential of risks for the patients. Furthermore, research evidence that patient treatment could be improved by integrating new tools to use during the work day. The new desired practice requires the employees (e.g. nurses, doctors) to change from their own way of working and their own habits to a more common and team approach, where new tools provides the appropriate services.

The department initiated to implement patient treatment plans (modules seen in figure 5), in order to create better flow for the patient, a better workday for nurses and doctors, better quality and more predictability for everyone. Several of the interview’s states that the new initiatives have contribute to better flow, better

structure and a more standardized process. Hence, the information flow has increased. The success shown in other hospitals, like Sykehuset Vestfold, promoted the Lung medical department to implement it into their department. The treatment plans provide a descriptive plan for how the department should work multidisciplinary with the patient during their time at the hospital. Additionally, these plans aim to make it clearer for everyone on: Who does what? What shall be done? And When should it be done? This requires that providers work collaboratively to deliver appropriate treatment. Hence, this shall contribute to get the patient in to the right time and out at desired time. The overall goal is to increase the patient safety and ensure effective treatment for all patients. In order to achieve the desired goal, they implemented electronic whiteboard meetings.

Modulene i forløpsplanen:



Figure 5: Modules in the patient treatment plan

Whiteboard meetings can be seen as a tool to follow up on the treatment plan, and to improve patient quality and safety. The main goal is to decrease number of unwanted incidents and reduce injuries on patients, by ensuring follow-up of measures that reduce risk and create a common understanding of the risk in the department. These whiteboard meetings are held each day and are usually done during the pre-visit according to the interview objects. On the whiteboards, every patient is listed, which give an overview and helps to hold the focus on what is important for each patient. Additionally, the personnel follow the patients more closely and are observant in case of risks for the patient. As the interviews shows, it is easier for the personnel to have an overview of the information on the whiteboard: *“The whiteboard meetings provides us with the opportunity to work systematically and to do risk analysis of every single patient”*. These initiatives are intended to reduce variety within the patient treatment by creating more

standardized processes, ensuring that any doctor or nurse can step into any situation and carry out standardized role responsibilities.

In addition, whiteboard meetings should ensure attention and implementation of the patient quality improvement program package. It is an initiative which influence the multidisciplinary work better, enhance communication and corporation, and improve the patient treatment plans. Due to the use of electronic whiteboard meeting, The Lung medical department seek to increase their efficiency. The whiteboard meetings seek to motivate employees and provide structure in a department with a high workload and tempo. Both treatment plans and whiteboard meetings where seen as two approaches to improve the healthcare efficiency and strengthen the quality and security for the patient.

4.3 Outcomes of new initiatives

4.3.1 Gastro Surgical Department

As a result of the new initiatives within the department 80% of the patients now has a treatment plan, an increase from 0% in the previous patient treatment process. The treatment is no longer fragmented, and the treatment you receive is not as dependent on the personnel available, because there is a clear arena to communicate and inform personnel about the state of the patients. Further, the clear overview of each treatment and the steps already completed in the process, the department has decreased its use of Antibiotic Intravenous Fluids by 50%.

“Patient quality and safety has been improved drastically with the green cross. We can talk about how things work and don’t work, facilitating several good discussions around important themes and risks”, due to the new initiatives the department were able to precisely measure the number of accidents, more specifically number of patients falling. They found that several intravenous support racks had one or more wheels missing, and because the patients used them as support when going to the toilet at night, it caused a lot of fall accidents. By measuring and reporting this, they were able to buy new equipment, resulting in a solid decrease in patients falling. As a high amount of the falls happened at night, they were also allowed to purchase night lights beside each bed, further preventing patients from tripping into objects. Re-operations after complications has also decreased alongside with infections in the patients operated.

The previous problem with patient being released in the middle of

changing shifts, or at the same time as new patients arrive has dropped after the “safe release” plan. 80% of the patients now has tentative release dates and time, it provides “safe release” both for the patient and the personnel responsible. The use of a tentative release date has also nearly eliminated the problem with patients not being called back for controls.

4.3.2 Lung Medical Department

The implementation has provided the department with more effective and precise day to day routines. Before the implementation of the measures 67% of all patients had treatment plans, now 100% of all patients have a treatment plan dedicated to the individual. In addition, this has increased the number of patients leaving the hospital at a set hour, which is highly valued and preferable for the department. Moreover, it has developed a good overview, which shows the essential information about a patient. It has made it easier when employees have their shift and is less risks than earlier. Hence, it can be seen as a “time-schedule” of how and when the patient need treatment. The department successfully managed to have 100 more control appointment in 2018 than the year before. Thus, they accomplished to decrease the delay in appointments by 50% due to treatments plan and whiteboard meetings. Whiteboard meetings has provided better communication within the management group. In addition, they have meetings every Wednesday where they go through each patient on the control panel and their treatments plan and discuss the patient whether it is difficulties or just go through the information and what is happening with the patient. Hence, it has provided a better communication and information platform between employees.

The measures have provided structure and systematic planning for each day, increasing the quality and the safety for the patient. Going from sending most patient home around 15/16, in the middle of the shift, the majority leaves now around 13 o`clock. This has enabled the department to have a better system in addition to a better flow in the workdays. However, it is still not perfectly implemented. It is evident from the interviews that approximately 30 % still leave after four. Hence, it is still a way to go.

The Gastro Surgical department

Initiative	Change	Changed results
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Whiteboard meetings	Arena for sharing	<ul style="list-style-type: none"> • Better information flow • Better communication between professions • Standardized processes • Higher quality for the patient • See potential risks
The Green Cross	Better culture for talking about deviation	<ul style="list-style-type: none"> • Decrease in injury/fall • Better tools
Patient Treatment Plan	Better holistic picture of each patient	<ul style="list-style-type: none"> • Patient leaves at a given hour • Patients are called into controls • Structure and specific plans for each patient • Better communication between employees • Better communication between personnel and patient

Table 3: Outcomes of Gastro Surgical departments initiatives

The Lung Medical department

Initiative	Change	Changed results
Electronic Whiteboard Meetings	Arena for sharing	<ul style="list-style-type: none"> • Better routines • Better communication and information • Standardized processes • Sees potential risks
Patient Treatment Plan	Better holistic picture of each patient	<ul style="list-style-type: none"> • Structure and specific plans for each patient • Decreased waiting list • Better overview • Better communication between employees • Better communication between personnel and patient

Table 4: Outcomes of Lung Medical Departments initiatives

The new initiatives met resistance from the doctors in both departments. *“The doctors view it as extra work. It is difficult to have control over all employees due to large personnel groups», «some professions see it as extra work», «Another administrative task we have to deal with»,* this was dealt with by the department leader. When the manager did not participate and overview the whiteboard meetings, it was problematic because the doctors did not participate as well. This was reported to the manager by the nurses and dealt with by one-to-one conversations with the respective employee. *“It was clearly anchored within the management, they were present during whiteboard meetings”*, the leader also kept a closer view on the whiteboard meetings after the one-to-one follow up to ensure that the doctors were present and hence, the meetings were beneficial to the entire department.

5.0 Discussion and Analysis

This chapter will analyze the findings from both the interviews and observations during the improvement network days and the final improvement day. The main findings that will be discussed are: (a) initiatives with a demonstrated success has an effect on the employees reception of the new initiatives, (b) experienced resistance due to different professions, (c) the importance of improvement-knowledge by support from the development-unit staff, (d) how psychological safety and mastery climate contributes to a continuous learning culture, (e) the new routines has an effect on cooperation between professions and (f) the importance of better cooperation because of round-the-clock staffing. Finally, we will look at the reciprocity between effective multidisciplinary work, psychological safety and mastery climate, and new routines. Additionally, how the reciprocity between the factors facilitates a continuous learning culture.

To further understand both the hidden and visible improvements within Ahus, we also apply the four-framed approach by Bolman and Deal (2017). Which is applied because the approach was developed to understand, interpret and analyze different aspects of the big picture. Bolman and Deal (2017) argue that it is, especially in change management, important to view the organization using different frames. They support this by claiming that there is no right or wrong

perspective within change management, it is therefore vital to shift perspectives and see things in different ways.

The effort and resources dedicated to the quality improvement program works as a strong symbol that Ahus took the requirements from The Norwegian Medical Association seriously. The development-unit staff was responsible for the entire development program across the entire organization, planning the entire program from start till end. The precise planning done for the entire program further symbolizes the effort made by Ahus to both meet the requirements and to succeed with the quality improvement program. Furthermore, to inspire people and to make the organizations direction to feel significant, victories during the process has been celebrated. It all ended in the final improvement day when the best department across the entire organization was awarded with cake and a prize. Several appearances by top management during the improvement network gatherings and the final improvement day also symbolizes the effort and investment from the organization as a whole.

The structure of an organization can be organized in many different ways, changes within it are demanding, not necessarily positive and may bring forth both confusion and resistance (Bolman & Deal, 2017). The Structural Frame focuses on the structure within the organization, this implies the design of the units and subunits, rules, routines, roles, goals and policies (Uzarski & Broome, 2018). In the Lung Medical department they hired a new head of medicine within the department to further strengthen their ability to cope with change. With its 9078 employees Ahus is a large hospital with a flat decentralized structure and the organizations core business is handled by highly educated professionals. Ahus as an organization has different specialties divided into divisions, which again has limited fields of responsibility and their own support staff. Therefore, Ahus is a very complex organization.

Within the political frame Bolman and Deal (2017) are especially focused on limited resources, decision-making regarding the resources and how power is one of the most important resources within an organization with limited resources. Doctors have expert power due to their long education and the title's status it can be a source for resistance, because they feel that the decision-making regarding resources (their time) should be their responsibility. The political frame also focuses on coalitions and different goals regarding resources. Within the process of deciding new initiatives informants from lower organizational levels

were allowed to participate in management meetings. This strengthened the alliance between the different organizational levels. Furthermore, the department leaders participated in whiteboard meetings, supporting and following through on the new initiatives. This indicates that in spite of capacity- and economic challenges the management were still able to prioritize and signal the importance of the quality improvement program.

The patient treatment quality and safety program is a vision where the patient is in focus. *“We create value through patient treatment, not by making profit”*, there are no focus on the economic aspect as in economic profit, the value within Ahus is created by patient treatment. As the HR frame is built on the starting point that people want to realize themselves and that they have an inner power, indicating that punishment and control is not the best motivational approach (Bolman & Deal, 2017). As several personnel express in the interviews, they found work motivation, and value, in delivering high quality patient treatment. This contributes to explain the warm welcome given by the personnel towards the quality improvement program. Further, personnel expressed that they were motivated when they saw results from the new initiatives. Indicating that lecturing in improvement-knowledge and measuring has contributed to the personnel’s feeling of work satisfaction and meaningfulness.

Perspectives	Observations	Important findings
The structural frame	Ahus is a complex organization, and the communication from the management has contributed to a smooth implementation. The new initiatives has caused changes within the horizontal structure by implementing new routines in the day-to-day work (green cross, whiteboard meetings and the improvement board).	Communication New formal routines to improve patient treatment
The Human Resource frame	The personnel expressed a clear engagement, being motivated to succeed on the vision to ensure high quality and safety within the patient treatment. Further, the personnel expressed motivation towards better coordination	Psychological safety Mastery climate Developing new knowledge and learning

	<p>during the patient treatment process.</p> <p>The personnel were informed properly before the new initiative, and experience their work as meaningful because of its importance towards the patients.</p>	
<p>The Political frame</p>	<p>The personnel expressed satisfaction towards the engagement from both top management during the improvement network, but also the management within the two departments.</p> <p>The management within the department participated in whiteboard meetings to ensure that they were completed successfully and as planned.</p> <p>The inclusion of nurses within presentations of the new initiatives before implementing them contributed to building alliances between the organizational levels. Furthermore, both top management and the lower organizational levels wanted to succeed with the initiatives.</p>	<p>Facilitating arenas to create coalitions and improved multidisciplinary cooperation.</p> <p>Different power and status as a source for resistance</p> <p>Inclusion and involvement</p>
<p>The Symbolical frame</p>	<p>Meetings within the management group, including some nurses and staff units within the department, symbolized the want to follow up on the project on several organizational levels.</p> <p>The visualization tools provided by the green cross, improvement board and whiteboard meetings that helps keep track of the progress within the process and map out important incidents.</p> <p>The CEO visiting the improvement network gatherings and the final improvement day was a strong symbol that the development program is important for the organization. Further, celebrating and awarding small</p>	<p>Involvement and support from the Development-unit staff</p> <p>Demonstrated success</p> <p>Visualization during the process</p>

	victories along the way also contributes to underline the importance of the initiatives.	
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Table 5: Overview of findings within the different frames

By looking at the process through Bolman and Deal’s (2017) four-framed approach, we have gained different perspectives and an understanding of both hidden and visible happenings. Based on the observations we found several interesting findings to be discussed and analyzed further to be able to understand the successful change management process completed by the quality improvement program.

5.1 Transforming new ideas into practice by visualizing demonstrated success

In order to ensure transformation of new ideas into practice, transition from the current work to the desired state of work, Ahus need the right tools and resources. The personnel expressed knowledge about the new initiatives within both departments, showing that the management along with the development-unit staff has successfully communicated the demonstrated success of the new initiatives before implementation. Hence, based on the interviews, the level of knowledge around the new initiatives did not vary between profession or organizational level. It is vital to change the discursive awareness into a practical understanding of how to make the idea work in the departments (Hennestad & Revang, 2012). Researchers has argued that visualization can have a positive impact on the employees and contribute to guide them in the desired direction when institutionalizing new practices. The core is to visualize the demonstrated success of the change, so it appears credible and legitimate for the employees, as well as trustworthy, reasonable and sensible. In addition, to create new norms and patterns is a key component in institutionalization. Ahus has successfully managed to show the demonstrated success, and thereby the importance, of whiteboard meetings and patient treatment plans. Several of the interviews held suggested that the demonstrated success of the new initiatives utility value had given the employees motivation to work in the new desired ways. The following quotation provides further illustration:

“In the beginning it was difficult to see the gain of the new initiatives, however as they were described and shown with examples from other hospitals that had succeeded with the same initiatives, it contributed for us to see the possible positive outcomes“

“Sykehuset Vestfold had implemented patient treatment plans and whiteboard meetings, thats how we were introduced to it. We saw the results and effect that the initiatives had given them. The results shown was a contributing factor to why we applied it within our department. Sykehuset Vestfold sent representatives to present the initiatives”

To visualize the utility value for the employees helps to highlight the important, and highly preferable, connection between action and meaning that can be argued to be at the heart of institutionalized practice (Zilber, 2002). «*We visualized specific results to ensure knowledge of the effect that the change has caused*», Ahus has successfully managed to transform ideas at the organizational level into new day-to-day work practices. Managers and Development-staff unit at Ahus accomplished moving the macro-level theorizing of treatment plans and whiteboard meetings to micro level, front line practice. The personnel explained that the use of visualizing demonstrated success contributed to frame the desired new practice in a way that encouraged the employees and successfully explained the desirability of adopting the new practice. Hence, by facilitating collective meaning-making across professions, they were able to show the utility value of reshaping the new practice (Reay et al., 2013).

5.2 Consequences of the structural changes

“Doctors see it as extra work”, even if the new routines are established, it is clear that other professions feel that the doctors were not as invested as the rest of the department. It was expressed that the doctors saw it as extra-work to attend whiteboard meetings. However, new routines are established, which represents changes within the horizontal structure in the department, while the vertical structure has remained the same. Multidisciplinary work has high information process capability and enable interaction between professionals in a work process and are effective under conditions of high uncertainty (Hartgerink et al., 2014). However, although multidisciplinary teamwork creates an increase interdependence across professionals, communication and coordination does not

automatically lead to better cooperation between professions. This can be explained by differences between the professionals, as experienced during the interviews, some doctors' states that the new initiatives are a job for nurses and not them. *"There were most resistance among the doctors, they meant that this was some kind of "nurse-stuff", it was evident that doctors thought of themselves as higher in hierarchy and had more work to do. Hence, their job was more important. This was identified as the strongest source for resistance. Therefore, by incorporating and foster multidisciplinary work, Ahus can enable the development of a common platform to include everyone. Nevertheless, this might have a positive impact on resistance to change.*

5.2.1 Resistance

"Doctors did not participate in the whiteboard meetings because they did not see the value of them. They are important for the patient safety, but some doctors did not see if they were important for the nurses or the patients"

During the implementation of treatment plan, whiteboard meetings and the green cross, Ahus met resistance among their employees. The resistance behavior was perceived very similar within the same department, and also between the two. *"An administrative task without any extra resources or time dedicated to deal with it"*, during the interviews the new way of work was seen as additional work and taken for granted by the doctors. When change initiatives are ongoing, each individual act differently, some are more negative than others. Thus, organizational changes can fail because of resistance by employees (Krügel & Traub, 2018). Moreover, it is highly essential for manager to have a clear plan on how they should cope with the resistance among the employees. *"The whiteboard meetings is incorporated in the pre-visit in the beginning of the shifts, it is not meant as extra work, just a new routine"*. Hence, the whiteboard meetings did not offer extra work, but it is important for the doctors to understand that it is not an initiative to please the nurses but to improve the patient treatment quality and safety.

In order to cope with the resistance, the chief doctor at both departments took a prominent role in communicating the new practice with the employees that did not see the utility value. This was done through the described one-to-one meetings, and participating by management in the meetings in the common area.

This helped the doctors that did not immediately see the value the new initiatives had for quality patient treatment and safety to understand their importance. In addition, when employees showed dissatisfaction at whiteboard meetings the leader talked directly with the employee about the utility these activities had. During the one-to-one meeting, the department manager invested significantly time and value to explain and justify the importance of treatment plans and whiteboard meetings.

“There is always resistance. Always someone who has experienced that we’ve done this earlier and that it is not going to improve anything”.

Resistance to change can stem from several aspects. It was evident from the interviews that in the healthcare sector, it has been several changes both successfully and unsuccessfully, and the healthcare providers often associates change as inconvenience and time-consuming. Implementation of change is a long-term and strategic process (Lines, Suvillivan, Smithwick & Mischung, 2015). Hence, to overcome resistance, an organization need to know that there is no “quick-fix”. According to research, resistance from change can stem from ineffective, problematic and unsuccessfully initiatives (Ford & Ford, 2009). To manage resistance among the employees has been a critical factor for Ahus to successfully implement the new working methods, and to ensure better quality for the patient. Moreover, it will also create a better work environment for the employees. From the interviews it is evident that early career members where more prone to the change than mid- and late-career personnel. This could be explained by the greater experienced personnel with established habits, beliefs and values which are difficult to break up (Cummings, Bridgman & Brown, 2016). For instance, the leaders and Development-staff unit at Ahus used artifacts to demonstrate the short-term wins, which highlighted the beneficial consequences of the change.

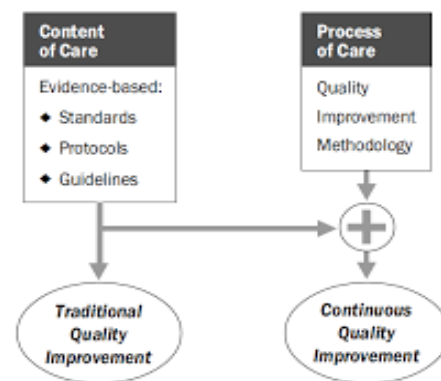
“To see numbers, and that there is a proven improvement along the way is important. It is important to have celebrations and “carrots” to yell hurray for during the change period”.

«To see the successfully acquired results increases your passion to keep going»

These “wins” are essential and can help build momentum and support for the change, in addition to expand the effort within the organization (Kotter, 1995). Hennestad and Revang (2012) points out that organizational acceptance is when a critical mass of the organizations employees understands and supports the new, wanted direction.

5.2.2 Support from Development-staff unit

As specified by Batalden and Stoltz (1993) it is important with a combination of improvement knowledge and professional knowledge to succeed with continuous improvement within the healthcare sector (See figure 8). *“It is stimulating, at least for the people working in this kind of process, to get feedback on the process and experience that it is moving in the right direction”*, during the interviews, several of the employees mention that the support they got from the development-staff unit was important to succeed with the implementation and completion of the measures to improve patient quality and safety. *“We have acknowledged leadership as a profession in itself”*, when transforming organizations, leadership is essential. For an organization to change their operations, it is evident that the need for change agents who are responsible for the leading and implementing the change is important (Lines et al., 2015). Personnel at the Gastro Surgical Department mentioned the fact that the department has recognized leadership as an profession in itself has been an important factor for the successful change process.



Adapted from Batalden and Stoltz (1993)

Figure 6: The importance of improvement-knowledge (Batalden & Stoltz, 1993).

According to Lines and colleagues (2015), organizations that does not have change agents or support from development-staff unit, are more prone to experience four times more resistance than those organizations that do identify leading agents. Batalden and Stoltz (1993) claim that a profession organization does not necessarily have improvement knowledge. By organizing different improvement days, the development-staff unit has not only provided an arena to share experiences, but they also started the first improvement day by lecturing about measuring and goal setting theory. Personnel stated that it is “ *It is difficult to have control over all employees due to large personnel groups. Difficult to provide information to that many people at the same time*». The support from the development-staff unit and their improvement days, alongside their availability to answer questions per e-mail or phone during the entire period, contributed with the information flow and advices on how to communicate the same message to the entire department. Hence, they provided the departments with knowledge about improvement, and how to monitor it, early in the change process before implementing the new initiatives.

It is a basic condition that a new or wanted situation is anchored within top management for it to be successful (Hennestad & Revang, 2012). The employees must experience that the top management is leading the organization in the wanted direction (Hennestad & Revang, 2012). We observed full day seminars, where the Chief Executive Officer made several appearances. Ensuring that the employees knew about the significance of the quality improvement program. When directors and managers transfer their emotional commitment to the desired change, the people involved in the transformation engage more and get a more ownership to the implementation (Etheredge & Beyer, 2011). Hence, the appearances made by top management in the improvement network gatherings and the final improvement day symbolizes the support given from top management. Based on both findings and theory the quality improvement program, anchoring within top management combined with continuous support from the Development-staff unit responsible for improvement, cannot be underestimated as important factors for the successful results within both departments.

«It is anchored within the top management. The improvement work that we have started with is important for the hospital, it is important that it is anchored within top management and all the way down in the organization».

It is interesting to look at and understand how ideas adopted at the organizational level (top-management) are transformed into front-line practice and implemented with a small amount of bottom up. When organizations are going to make rapid and fundamental changes in their strategy and structure, it needs top-down change (Cummings & Cummings, 2014). At Ahus, it started with overall initiative from The Norwegian Medical Association. Thereafter the work was spread out to the director, the different leaders and Development-staff unit at Ahus, which together outlined the plan for the change with contribution from the department manager at each department. Hence, the different sections leader, specialist nurses and chief doctor. This was evident in the interviews held:

“It was the management group that decided the initiative. Some of us employees were included and consulted before the initiative were decided, and were given the opportunity to participate in the discussion. Therefore, there was a common creation of the initiative with a group of nurses, doctors and leaders – even though the initiative finally were decided by management”.

“Anchored from the top, but they have succeeded with acquiring opinions from nurses, doctors and leaders in the creation of the new initiatives. It created a team-feeling, when you sit together and discuss and plan, instead of just being handed a new rule or routine to follow”.

According to Cummings and Cummings (2014), planned change can provide overall direction for organizational change, hence it is formalized and organized. Moreover, this can contribute to capture members attention in the desired way. On the other side, emergent change is more informal and localized, and more driven by bottom up. Although, the change at Ahus had inclusion and thereby some bottom-up influence, the transformation is a top-down approach. By integrating the employees in the outline of the transformation, ahus enabled the

personnel to develop ownership and motivate them, despite of the top-down decision.

5.2.3 Psychological Safety and Motivation

Psychological safety occurs when there is a shared belief that the work environment is safe for interpersonal risk taking (Edmondson, 1999). In the previous patient treatment process, the employees did not report incidents systematically, it was random due to several reasons like who saw the accident, which superiors were at work, how much they had to do etc. Top management mentions that “*All departments should work with a work-climate where everyone can say their opinion and have respect for each other*”. However, they did not facilitate a arena were employees were recommended to both talk about accidents and make suggestions for improvement, nor providing personnel with a systematic tool for accident reporting.

Psychological safety is associated with learning behavior (Edmondson, 1999), and because learning is central in change it is fair to assume that psychological safety within the organization can positively affect the outcome of the process. If people in the organization perceive psychological safety, and low career and interpersonal threat, they discuss problems, admit errors and ask for help (Edmondson, 1999). For the employees at the departments to learn from previous mistakes, it is important to promote both discussions and suggestions for improvement. Facilitating an arena with psychological safety ensure that employees can talk freely without feeling any pressure, promoting all the employees across professions to make suggestions, not only representatives from the “most powerful” professions.

The structural change with whiteboard meetings includes all the personnel in the department, across professions, allowing everyone to have a voice in the same forum. This is essential for both knowledge-sharing and for development (Hennestad & Revang, 2012). Furthermore, the employees reported in the interviews that they felt more comfortable not only bringing up suggestions, but also reporting accidents or errors without any interpersonal or career threats. The reports specifically helped the department to buy new equipment, reducing the number of accidents for the patients.

The psychological safety therefore promotes motivation by allowing the employees to feel inclusion and that their voice is heard within the organization.

Therefore, the experienced psychological safety promotes learning, which is important for improving the patient treatment. If the nurses do not feel safe enough to tell their manager about the doctors not participating in the whiteboard meetings, the resistance might not be discovered, and then handled, by the management. Further, it is important for the multidisciplinary cooperation, because if only one profession (e.g. doctors with “status”) feels that their opinion matter, the departments might miss important information and knowledge held by personnel with different professional backgrounds (e.g. nurses).

5.3 The organizations ability to deliver effective patient treatment

5.3.1 Cooperation between professions

In the interviews the cooperation between professions were mentioned several times, patient treatment *«demands cooperation between professionals»* and it is seen as a challenge.

«It was challenging to engage everyone across professions in the change process, and to see the importance of each other’s tasks. The new change was seen as extra work, and it was difficult to coordinate nurses, students, doctors and help-nurses”.

«It is important to participate in the whiteboard meetings to ease the cooperation between nurses and doctors. Making a better plan for the patients together helps all professions to work towards the same goals, like a specific release date for the patient. That these things are not in order were not a unknown incident in the previous patient treatment”.

“Patient treatment plans were used as a measure to work more effectively across professions”

Hence, based on our observations and interviews we found that cooperation between professions is an important factor in both departments before – during – and after the implementation process. With a flexible and varied team set-up, team effectiveness is naturally a critical success factor for Ahus. In team effectiveness research, effective coordination has been a priority, especially in temporary role-based groups (Hackman, 1987, 2002). Valentine and Edmondson

(2015) consider key tenets from team effectiveness research to look at their effect on temporary role-based groups, and how they affect effective coordination within them. Key tenets for effective coordination within stable work teams are interdependence, boundedness and stability of membership (Hackman, 2002; Wageman, Hackman & Lehman, 2005). Within a temporary role-based group, as in Ahus, stability of membership is difficult to fulfil, however, the other two tenets associated with team effectiveness are relevant also for temporary groups (Valentine & Edmondson, 2015).

Interdependence means that the members of the work team are bearing a collective responsibility for a common purpose they work for together. Before implementing whiteboard meetings and patient treatment plans, the personnel responsible for the patient varied from day to day and shift to shift, without a clear communication platform in between. By implementing arenas for sharing experiences and information about the specific patient, the feeling of collective responsibility for the patient increased. The treatment are not as dependent on the current personnel responsible for the patient in that shift, because the treatment already completed is well documented, and the next step is covered in the treatment plan.

Boundedness refers to the members of the team being explicitly clear about who's on, and not on, the team (Valentine & Edmondson, 2015). By implementing the treatment plan for all patients, and whiteboard meetings, it provides the employees with clear guidelines for each shift as well as a clear overview of the entire patient stay. Providing the personnel both with long-term (the entire stay) and short-term (the shift) information about the team members for each patient's team. Hence, fulfilling two of the three tenets to have team effectiveness within role-based groups where you have different professions within the team as in Ahus.

Wageman (1995) supported this by his research which showed that groups function as teams when the consequences of their work is experienced collectively. When the dimensions of the tenets for team effectiveness work together it allows the group members to coordinate effectively by seeing itself as an intact social entity (Valentine & Edmondson, 2015). As the new treatment plan contributes to the members of employee group to feel boundedness and interdependence towards the treatment of the patient it also enables them to anticipate each other's moves and adjust to each other's weaknesses and

strengths.

Role structures does not necessarily support effective coordination (Valentine & Edmondson, 2015). However, in the two departments it is clear by the interviews that the employees feel that they have a much better overview of the process for each patient. Further, they express that it is much easier to both be heard when reporting accidents, but also that the reports is actually dealt with and solved, like when the department were able to buy the new equipment to reduce patients falling. The employees also express that it is easier to have a less fragmented patient treatment due to both the patient treatment plan and better communication and information flow.

5.3.2 Round-the-clock staffing

Barley and Kunda (2001) described organizational structures as templates and descriptions of ongoing patterns of action, which enables coordination in organizations. Ahus has round-the-clock staffing which provides flexibility and a considerable flux in personnel, which means that the professionals may vary greatly from one day to the next, or even one shift to the next (Valentine & Edmondson, 2015). In the previous patient treatment process, without the patient treatment plan, the personnel interviewed described the patient treatment in both departments as fragmented, and as a day-to-day focus. i.e. it is described as a process without a clear overview of the total picture, with no specific plan for the entire patient stay.

Within healthcare, as within all other organizations, there are different levels of competence in the personnel, both across professions but also within each profession. Several studies are done on the effect of higher registered nurses per patient (Frith et.al., 2010). With the patient treatment plan alongside the whiteboard meetings that provides an overview of the patient's entire stay at the hospital, it has become easier to place the right expertise at the right person to the right time. Higher percentages of registered nurses, and licensed practical nurse hours per equivalent patient day, in the skill mix of a team has proven to lower number of adverse events – and shorten the patient's length of stay (Frith et.al., 2010).

5.4 Continuous learning culture

“Improvement work is something that we continually need to work on. People forget fast if we do not frequently work with it”. When large organizations are changing the way they work (e.g. their routines), learning is essential. The goal is to create a continuous learning culture which focuses on improvement, reducing risks, and use new knowledge to change and develop (Worley & Mohrman, 2014). Ahus has worked away from the traditional linear theories about change, and rather focused on the quality improvement program as a non-linear flow of learning with focus on gaining awareness, designing, tailoring and monitoring. In order to have a successful change process, it is necessary for Ahus to be aware of what is expected and what is the desired object with new initiatives and new routines.

The quality improvement program has been clearly communicated from the start, both from the top-management, development-unit staff and department managers. In addition, there has been available learning resources and personnel that the departments can use if they experience uncertainty during the process. Hence, the improvement network days has worked as learning days, where the development unit staff has guided the personnel through the knowledge required and needed for the new initiatives. Ahus has established the model of improvement (PSDA), which can be seen as a “learning loop” to motivate, guide and contribute to new knowledge among the personnel. The improvement model has similar characteristics with the important components in Worley & Mohrman’s (2014) model. Both models do not emphasize change as a strict process, but rather a descriptive process which changes along with new initiatives and routines within the organization. In both models learning is a central factor, further emphasizing that this will lead to mastery among the personnel (Heat & Heat, 2010; Langley et al., 2009; Batalden & Davidoff, 2007).

The prototypes applied are already used in other institutions, and are implemented as a tangible system, promoting those involved in the transformation to discuss and evolve the design along the way. Developing and using prototypes, as Ahus has done with the green cross, can give creativity and the ability to see associations, which again will have a positive influence on learning (Langley et al., 2009). Research also emphasize the importance of design, and how that contributes to shape behavior, hence it also concerns the capabilities that will differentiate organizations in the market (Worley & Mohrman, 2014; Coughlan,

Suri & Canales, 2007). After the new laws and regulation from The Norwegian Medical Association, Ahus had to straighten the coordination and collaboration to make the quality patient treatment better. By changing their routines, Ahus successfully managed to anchor the importance of more standardized work processes and focusing on multidisciplinary cooperation.

Organizations that are large and have a hierarchical structure, can have negative consequences for organizational learning (Worley & Mohrman, 2014). The importance of building an improvement culture within Ahus is because it builds the foundation, and also guides the action of the personnel (Langley et al., 2009). Ahus, which is a large and complex organization has a top-down approach in the implementation of the patient quality improvement program, but they have decreased resistance by including personnel at all organizational levels. Therefore, it can be assumed that Ahus manage to control the change as top-down, and at the same time unfold a learning culture: *“We are promoting and building a culture that highlights the importance of learning”*.

The model highlights the importance of monitoring, which involves understanding the impact of the organizational change and developing the desired outcomes (Worley & Mohrman, 2014). Ahus overall goal is to provide the best treatment possible to their patients, making it crucial to ensure that the personnel has learned the desired behavior. Thereby, to be aware of the organizations development capacity and to identify possible knowledge gaps or potential risks and use it for future learning. *“The ability to learn from the experiences and mistakes we do”*, the new routines have created an arena to share experiences – both failures and success – allowing all employees to learn from each other and to be aware of potential knowledge gaps.

5.4.1 The quality improvement process

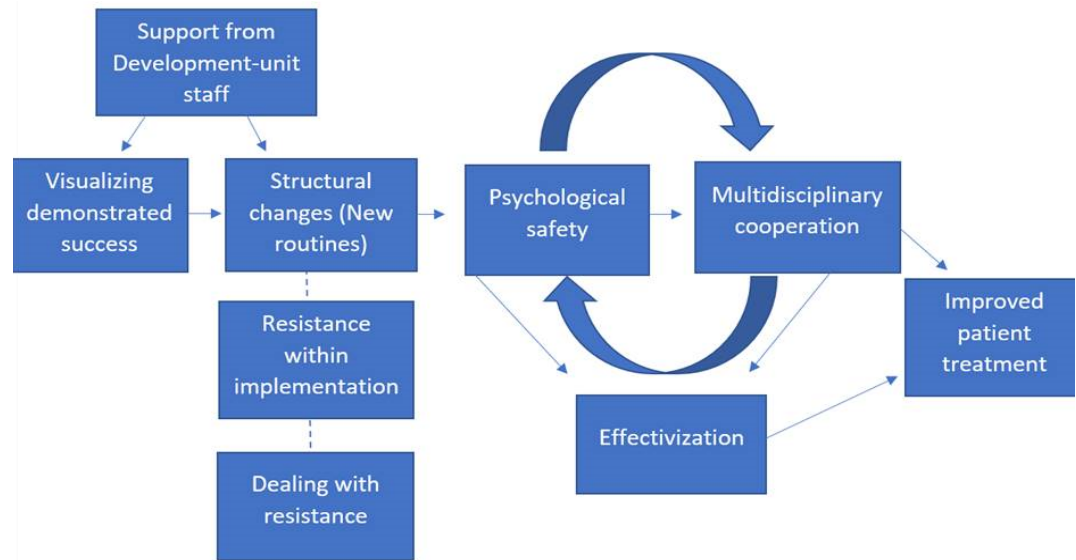


Figure 7: The quality improvement process

To get an overview of the implementation process, and how the different parts affect each other, we have chosen to illustrate it by a model (figure 7). As the visualizing of demonstrated success of the new initiatives were presented for the departments, it was an early intervention to minimize the risk of resistance. Minimizing the risk of resistance by trying to convince the employees and keep a coalition where the organization, management and personnel are all working in the same way. However, as the new initiatives were implemented in the day-to-day work there were some resistance from the doctors.

The Development-unit staff was supportive during the entire process by providing the improvement-knowledge needed to have a successful change process. With different measures the resistance was dealt with by management, causing the doctors to participate in the whiteboard meetings. By dealing with their resistance, the management created an arena with all the professions were everyone were allowed to speak their mind. As the managers at the departments were present at the meetings, and specifically promoted everyone to contribute and share, they facilitated for psychological safety for the personnel. Experienced psychological safety allowed all employees, across professions, to share knowledge. Hence, the psychological safety along with the new structural changes lead to increased multidisciplinary cooperation.

The multidisciplinary cooperation happened by increased knowledge-sharing and common information about each patient, combined with coordinated

treatment for each specific case. With the increased cooperation, it leads to increased psychological safety, as the different professions felt that they were heard and listened to, safely monitored and supported by the managers at the departments. This mutual relationship between psychological safety and multidisciplinary cooperation has resulted in a positive spiral for both departments, showing reciprocity between the factors. Further, the positive spiral provides inclusion straight away to new personnel from all professions entering the department. Within healthcare institutions with round-the-clock staffing, this is important because new personnel work with each other varying from day to day and week to week. This was mentioned in the interview from one employee that arrived after the new initiatives were implemented, he felt included straight away and able to cooperate well with the entire staff at the department. This is also generalizable to new employees, which might be a problem in some healthcare institutions that have high turnover rate.

Psychological safety and the multidisciplinary cooperation increase together, resulting in a continuous learning culture, where different professions openly discuss patients and cases, and thereby learn from each other to cause best overall practice. *"There is no quick-fix, you have to focus on it forever"*, as the personnel describes it in the interviews they support the new structural changes as a continuous change, because it gives them an arena to learn and share. Furthermore, increased multidisciplinary cooperation by improved psychological safety causes the patient treatment plan to run smoothly, affecting the effectiveness of the patient treatment process, hence both factors affect effectivization. Finally, this results in the overall goal, which is improved quality and safety within the patient treatment and best practice treatment across personnel within both departments.

6.0 Conclusion and future implications

Our aim with this master thesis was to investigate the implementation of Ahus quality improvement program and look at which factors and mechanisms that have affected the change process within the departments, and whether the quality improvement program has affected routines and caused a continuous learning culture. The previous patient treatment process was clearly characterized as fragmented, it did not focus on, nor successfully achieved, multidisciplinary cooperation and learning. This resulted in varied treatment, not necessarily best

practice, according to the personnel present at the given time. Further, incidents were not reported systematically, another factor depending on the personnel present on each occasion. Today, the patient treatment is streamlined, both departments has plans for each patient's treatment process, from arriving at the hospital until their release date. The current patient treatment process is systematic and standardized, with specific tools to focus best-practice treatment across all personnel, providing each patient with the best-practice treatment for their specific case. Furthermore, the departments have also improved their incidents-reporting by better tools and improved communication between professions and organizational levels, resulting in new equipment and less accidents.

The departments have successfully achieved these results by the quality improvement program. The program has provided arenas for sharing knowledge and learning between professions. Further, the information and communication between the professions is improved. Ahus has achieved this by avoiding trying a "quick-fix", but doing a thorough process, strictly monitored by the Development-unit staff. The Development-unit staff has contributed with several measures along the way that has ensured the success (e.g. demonstrating success, visualizing, celebrating small victories, providing improvement-knowledge). Lastly, the departments have been able to create a continuous learning culture by the established reciprocity between multidisciplinary cooperation and psychological safety within the departments.

This master thesis contributes to new and useful insights of successful implementation in the healthcare sector. It implies that for future implementation of new initiatives, it is important to include all organizational levels and to demonstrate the new initiatives' previous success to avoid possible resistance. Furthermore, it implies the importance of having a "Development-staff unit", with high competence in improvement knowledge, which is dedicated to the quality improvement program. We recommend that any future implementations of improvement programs are thoroughly planned by competent personnel with improvement-knowledge, especially in a profession organization like Ahus.

7.0 References

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8.0 Appendix

Appendix 1. Interview guide

Dato:	Navn på intervjuer 1:
Navn på intervjuer 2:	Navn på intervjuobjekt:

Intro. Intervjuet er en del av masteroppgaven når i ledelse og organisasjonspsykologi på BI. Vi vil ikke identifisere individer i oppgaven.	
Ditt navn, stilling og arbeidsoppgaver? Kan du fortelle om ditt profesjonelle liv her på Ahus? Hva er ditt ansvarsområde nå? Hvilke utfordringer innen kvalitet og pasientsikkerhet har avdelingen du leder? Hva er den største utfordringen? Hvordan jobber dere med kvalitetsforbedring og pasientsikkerhet i avdelingen din?	
Hvorfor startet avdelingen å jobbe med tiltak(ene)? Hvordan kom dere frem til tiltaket som et innsatsområde til Læringsnettverket for forbedringsarbeid? Tiltak for å forbedre dette gjennom forbedringsprogrammet?	
Kan du fortelle om pasientforløpet før implementering av tiltaket for bedre forløpsplaner? (Evtnt oppfølging – hva var vellykket / hvorfor?)	

<p>Hvordan var du involvert i prosessen? (Hva skjedde?)</p> <p>Hvordan opplever du at pasientforløpene på din avdeling fungerer?</p> <p>Har det blitt noen forbedringer? Hvordan vet dere det?</p> <p>Hvordan lærer dere av arbeidet som gjøres?</p> <p>Når og hvor ofte snakker dere om kvalitet, pasientsikkerhet og forbedringsarbeid?</p>	
<p>Se for deg at endringsprosessen gikk så godt som overhodet mulig, alle målene var vellykket, hvordan ser pasientforløpet ut da?</p>	
<p>Hvor langt på vei til denne ønskede fremtid er dere kommet?</p> <p>Hva mener du er årsaken til at dere har kommet dit?</p> <p>Evt hva mener du er årsaken til at dere ikke har kommet dit?</p> <p>Hvorfor har dere ikke nådd målet? Er det noen motstand, og hvorfor? Hos hvem (yrkesgrupper eller roller)?</p> <p>Hvordan er utfordringer håndtert?</p> <p>Hva må til for å lykkes?</p>	
<p>Hvilken rolle hadde du i implementering?</p>	
<p>Hvordan synes du implementeringen har gått?</p> <p>Hva har fremmet og hva har hemmet prosessen?</p>	
<p><i>Hva er Ahus sin visjon ift kvalitetsforbedring og pasientsikkerhet?</i></p> <p><i>Hvor er sykehuset og din avdeling om 5 år?</i></p>	
<p>No mer du har lyst å fortelle oss? Som kan være nyttig å vite?</p>	

Appendix 2. Approval from Norwegian Centre for Research Data (NSD)

NSD Personvern

01.02.2019 10:26

Tilbakemelding på meldeskjema med referansekode 524340:

FORENKLET VURDERING MED VILKÅR

Etter gjennomgang av opplysningene i meldeskjemaet med vedlegg, vurderer vi at prosjektet har lav personvernulempe fordi det ikke behandler særlige kategorier eller personopplysninger om straffedommer og lovovertridelser, eller inkluderer sårbare grupper. Prosjektet har rimelig varighet og er basert på samtykke. Vi gir derfor prosjektet en forenklet vurdering med vilkår.

Du har et selvstendig ansvar for å følge vilkårene og sette deg inn i veiledningen i denne vurderingen.

Dersom du følger vilkårene og prosjektet gjennomføres i tråd med det som er dokumentert i meldeskjemaet vil behandlingen av personopplysninger være i samsvar med personvernlovgivningen.

VILKÅR

Vår vurdering forutsetter:

1. At du gjennomfører prosjektet i tråd med kravene til informert samtykke
2. At du ikke innhenter særlige kategorier eller personopplysninger om straffedommer og lovovertridelser
3. At du følger behandlingsansvarlig institusjon (institusjonen du studerer/forsker ved) sine retningslinjer for datasikkerhet
4. At du laster opp revidert(e) informasjonsskriv på utvalgssiden(e) i meldeskjemaet og trykker «bekreft innsending», slik at du og behandlingsansvarlig institusjon får korrekt dokumentasjon. NSD foretar ikke en ny vurdering av det reviderte informasjonsskrivet.

1. KRAV TIL INFORMERT SAMTYKKE

De registrerte skal få skriftlig og/eller muntlig informasjon om prosjektet og samtykke til deltakelse. Du må påse at informasjonen minst omfatter:

- Prosjektets formål og hva opplysningene skal brukes til
- Hvilken institusjon som er behandlingsansvarlig
- Hvilke opplysninger som innhentes og hvordan opplysningene innhentes
- At det er frivillig å delta og at man kan trekke seg så lenge studien pågår uten at man må oppgi grunn
- Når prosjektet skal avsluttes og hva som skal skje med personopplysningene da: sletting, anonymisering eller videre lagring
- At du/dere behandler opplysninger om den registrerte basert på deres samtykke
- Retten til å be om innsyn, retting, sletting, begrensning og dataportabilitet (kopi)
- Retten til å klage til Datatilsynet
- Kontaktopplysninger til prosjektleder (evt. student og veileder)
- Kontaktopplysninger til institusjonens personvernombud

På nettsidene våre finner du mer informasjon og en veiledende mal for informasjonsskriv:

nsd.uib.no/personvernombud/hjelp/informasjon_samtykke/informere_om.html

Det er ditt ansvar at informasjonen du gir i informasjonsskrivet samstemmer med dokumentasjonen i meldeskjemaet.

2. TYPE OPPLYSNINGER OG VARIGHET

Prosjektet vil behandle alminnelige kategorier av personopplysninger frem til 01.07.2019.

3. FØLG DIN INSTITUSJONS RETNINGSLINJER

NSD legger til grunn at behandlingen oppfyller kravene i personvernforordningen om riktighet (art. 5.1 d), integritet og konfidensialitet (art. 5.1. f) og sikkerhet (art. 32).

Dersom du benytter en databehandler i prosjektet må behandlingen oppfylle kravene til bruk av databehandler, jf. art 28 og 29.

For å forsikre dere om at kravene oppfylles, må dere følge interne retningslinjer og/eller rådføre dere med behandlingsansvarlig institusjon.

NSD SIN VURDERING

NSDs vurdering av lovlig grunnlag, personvernprinsipper og de registrertes rettigheter følger under, men forutsetter at vilkårene nevnt over følges.

LOVLIG GRUNNLAG

Prosjektet vil innhente samtykke fra de registrerte til behandlingen av personopplysninger. Forutsatt at vilkår 1 og 4 følges er det NSD sin vurdering at prosjektet legger opp til et samtykke i samsvar med kravene i art. 4 og 7, ved at det er en frivillig, spesifikk, informert og utvetydig bekreftelse som kan dokumenteres, og som den registrerte kan trekke tilbake. Lovlig grunnlag for behandlingen vil dermed være den registrertes samtykke, jf. personvernforordningen art. 6 nr. 1 bokstav a.

PERSONVERNPRINSIPPER

Forutsatt at vilkår 1 til 4 følges vurderer NSD at den planlagte behandlingen av personopplysninger vil følge prinsippene i personvernforordningen om:

- lovlighet, rettferdighet og åpenhet (art. 5.1 a), ved at de registrerte får tilfredsstillende informasjon om og samtykker til behandlingen
- formålsbegrensning (art. 5.1 b), ved at personopplysninger samles inn for spesifikke, uttrykkelig angitte og berettigede formål, og ikke behandles til nye, uforenlige formål
- dataminimering (art. 5.1 c), ved at det kun behandles opplysninger som er adekvate, relevante og nødvendige for formålet med prosjektet
- lagringsbegrensning (art. 5.1 e), ved at personopplysningene ikke lagres lengre enn nødvendig for å oppfylle formålet

DE REGISTRERTES RETTIGHETER

Så lenge de registrerte kan identifiseres i datamaterialet vil de ha følgende rettigheter: åpenhet (art. 12), informasjon (art. 13), innsyn (art. 15), retting (art. 16), sletting (art. 17), begrensning (art. 18), underretning (art. 19) og dataportabilitet (art. 20).

Forutsatt at informasjonen oppfyller kravene i vilkår 1 vurderer NSD at informasjonen om behandlingen som de registrerte vil motta oppfyller lovens krav til form og innhold, jf. art. 12.1 og art. 13.

Vi minner om at hvis en registrert tar kontakt om sine rettigheter, har behandlingsansvarlig institusjon plikt til å svare innen en måned.

MELD ENDRINGER

Dersom den planlagte behandlingen av personopplysninger endrer seg, kan det være nødvendig å melde dette til NSD ved å oppdatere meldeskjemaet. På våre nettsider informerer vi om hvilke endringer som må meldes. Vent på svar før endringer gjennomføres.

OPPFØLGING AV PROSJEKTET

NSD vil følge opp ved planlagt avslutning for å avklare om behandlingen av personopplysningene er avsluttet.

Lykke til med prosjektet!

Tlf. Personverntjenester: 55 58 21 17 (tast 1)

Appendix 3. Consent form

Samtykkeerklæring forelagt informanter til signering

Samtykkeerklæring

Vi studerer Master of Science i Leadership and Organizational Psychology på Handelshøyskolen BI og skal skrive vår avsluttende masteroppgave. Temaet for vår oppgave er endringsprosessen ved implementering av pasientsikkerhetsprogrammet og andre forbedringsprosjekter. Oppgaven er ikke noe evaluering av prosessen, men vi vil plukke ut elementer av prosessen og se på disse i lys av eksisterende teori om endringsledelse.

Opplegget er godkjent av Ahus personvernombud.

Vi ønsker å belyse hva som har fremmet og hemmet mulighetene for innføring av forbedringstiltak, samt hvilke faktorer som har bidratt til en forbedret endringskultur i avdelingen.

Undersøkelsesspørsmål:

Hva var de største utfordringene i implementeringsprosessen?

Hvordan ble disse håndtert?

Har endringen vedvart i avdelingen?

Hvilke læringspunkter kan trekkes frem?

Vi vil utføre vår analyse med utgangspunkt i (kvalitative) intervjuer av ledere og ansatte i avdelingene, samt basere oss på noe faktabasert informasjon (tall).

Hvert intervju vil vare ca 1-1,5 timer og det er frivillig å delta. Opplysningene vil bli behandlet konfidensielt og data som tas med i oppgaven vil anonymiseres.

Med vennlig hilsen

Kristian Bekkevold Lillebo og Mathilde Østensen

Samtykkeerklæring:

Jeg bekræfter herved at jeg vil delta i studien.

Dato:

Sted:

Navn:

Signatur: