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## What The Health Went Wrong?

A narrative analysis of the implementation of a new electronic health record (EHR) in Norway

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## **What The Health Went Wrong?**

*A narrative analysis of the implementation of a new electronic health record (EHR) in Norway*

By Erlend Frøland, MD, M.Sc.

## **Preface**

The author **Erlend Frøland** is currently working as a medical doctor at the Hospital Levanger in Trøndelag, Norway - but was previously working at St. Olavs Hospital, attending the training program prior to the implementation of the Health Platform, which is the theme of this thesis. Also holding a M.Sc. in Entrepreneurship from NTNUs School of Entrepreneurship (2022) in Trondheim, Norway, titled: “How to enter the Public Healthcare Sector? - A qualitative multi-case study using semi-structured interviews to investigate how software-based Health Tech companies tackle the barriers of public healthcare market entry in Norway.”

To the reader of this thesis I state that I have had an open mind to this project. I try to present this study as unbiased as I am able to be. I must admit that during this thesis, and after receiving training in the EHR both at hospitals of St. Olavs and Levanger respectively, I am increasingly skeptical of how a near-future rollout of the EHR to my current workplace might negatively affect the progress of my residency specialization, because of drastically reduced effectiveness in production during and after implementation.

I would like to extend my sincere gratitude to my supervisor Associate Professor **Jan Ole Similä** at The Business School of Nord University, Trøndelag, Norway. His great patience, and competent guidance, has been greatly appreciated. His help improved the quality of the work, and assessments, in all stages of the project, including the keeping of an unbiased presentation of the narratives.

## **Abstract**

The purpose of this thesis is to understand the narration of, and the implementation of the vision of a new electronic health record (EHR) “One patient – one journal” at St. Olavs Hospital in Norway. The new EHR seeks to improve effectiveness along with increased patient safety at all levels of the Health Care Sector in Mid-Norway if the system can deliver on one health journal per person. Understanding how the dynamics of managerial narratives can foster support or create barriers in change processes can be of importance when planning for change. Through a qualitative study, interviewing workers’ representatives from the physician association, the study aims to describe a user perspective of the implementation of the new EHR. The Kotter model of change management guided the development of the interview instrument, as well as the presentation of the empirical findings. When analyzing the data four different narratives emerged: The Castle in the air – the visionary narrative put forward by leading figures responsible for the new EHR-system. The Emperor’s New Clothes – the narrative of the company responsible for the EHR-system and Divide and conquer – the narrative of the implementation project, both developed when the critical problems with the new EHR-system surfaced and the management kept repeating the visionary narratives even if the narrative was highly disputed. Finally, there was the missing narrative of the innovative project – Chinese Whispers. A finding worth mentioning is the managerial need to further develop a visionary narrative into a dynamic implementation narrative to avoid the sense-making process in the organization going astray, unnecessary conflicts to arise, or to keep an exit-strategy available. Another finding is that great considerations should be invested in choosing the right initial narrative. When knowing that the organization is going to, not just implement but also help develop new critical ICT-infrastructure, perhaps a narrative of innovation might be more appropriate in order to balance expectations.

## Sammendrag

Formålet med denne avhandlingen er å forstå narrativet om, og implementeringen av visjonen om en ny elektronisk pasientjournal (EPJ) "Én pasient - én journal" ved St. Olavs Hospital i Norge. Den nye EPJ-en søker å forbedre effektiviteten sammen med økt pasientsikkerhet på alle nivåer av helsetjenesten i Midt-Norge, dersom systemet kan levere én helsejournal per person. Å forstå hvordan dynamikken i ledelsens narrativer kan fremme støtte eller skape barrierer i endringsprosesser kan være viktig når man planlegger for endring. Gjennom en kvalitativ studie, der man intervjuet representanter fra legenes forening, tar studien sikte på å beskrive en brukerperspektiv av implementeringen av den nye EPJ-en. Kotter-modellen for endringsledelse veiledet utviklingen av intervjuguiden, samt presentasjonen av de empiriske funnene. Ved analyse av dataene kom det frem fire forskjellige narrativ: Slottet i luften - det visjonære narrativet fremmet av ledende skikkelser ansvarlige for det nye EPJ-systemet. Keiserens nye klær - narrativet fra selskapet ansvarlig for EPJ-systemet og Splitt og hersk - narrativet fra implementeringsprosjektet, begge disse to utviklet seg når de kritiske problemene med det nye EPJ-systemet dukket opp og ledelsen gjentok de visjonære narrativene selv om narrativet var sterkt omdiskutert. Til slutt var det det manglende narrativet om det innovative prosjektet - Hviskeleken - som omhandler behovet for at ledelsen videreutvikler et visjonær narrativ til et dynamisk implementerings-narrativ for å unngå at meningsdannings-prosessen i organisasjonen går i feil retning, at unødvendige konflikter oppstår, eller for å ha en utgangsstrategi tilgjengelig. En annen oppdagelse er at det bør investeres grundig i valg av riktig innledende narrativ. Når man vet at organisasjonen ikke bare skal implementere, men også bidra til å utvikle ny kritisk IKT-infrastruktur, kan kanskje et innovasjons-narrativ være mer passende for å balansere forventningene.

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## **List of abbreviations**

PCP - Primary Care Physician

UC - Urgent Care (“Legevakt”)

EHR - Electronic Health Record\*

EPJ - Electronic Patient Journal\*

EPR - Electronic Patient Record\*

HP - The Health Platform/”Helseplattformen”

ICU - Intensive Care Unit

ER - Emergency Room\*

ED - Emergency Department\*

GP - General Practitioner

RHF - Regional Health Trust

HF - Health Trust/Hospital

HMN - Health Middle Norway (a Regional Health Trust)

HMR - Health Møre & Romsdal (a Health Trust/Hospitals)

HNT - Health North Trøndelag (a Health Trust/Hospitals)

IKT/ICT - Information communication technologies

IT - Information technology

*\* Some of the abbreviations might be used interchangeably despite efforts in ambiguous use. This is due to how different abbreviations and terminology is used across different scientific societies.*

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## **1. Introduction**

The introduction chapter will set the context for this thesis, briefly explaining some overall concepts within the current Norwegian health care sector.

### ***1.1 Global trends and challenges in the Health sector***

The world's population is now three times larger than it was in the mid-20th century. On November 15, 2022, the world's population reached 8 billion people, and the population is expected to increase by nearly 2 billion people in the next 30 years (UN.org, 2023). Part of this growth is due to increased life expectancy. The United Nations (UN) estimates that global life expectancy will increase from 72.8 years in 2019 to 77.2 years in 2050. In the context that the development is slower in developing countries, with an average lag in life expectancy of 7 years difference, this means that the development for industrialized countries is even higher than the average (UN.org, 2023). At the same time, there is a decline in global fertility. The decline is estimated globally to go from 2.3 children per woman in 2021 to 2.1 children per woman in 2050 (UN.org, 2023). In western countries, this trend is even more dramatic. In Norway, fertility has fallen every year since 2009, with the exception of 2021, and in 2022 it is at a record low of 1.41 children per woman (ssb.no, 2023).

This global megatrend represents a threat to several of the UN's sustainable development goals, among others this especially applies to goal no. 3; "ensure healthy lives and promote well-being for all" (Sdgs.un.org, 2023). The challenge lies in the relative scarcity of resources that arise in relation to the disparity between an increasingly aging and growing population in need of health services, while the available workforce within the healthcare industry is reduced due to a relative decrease in the proportion of workers. This mismatch will also have an impact on economic resources since the proportion of tax contributors will decrease.

The task can also be seen in relation to sustainable development goal no. 9, "build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation", and how technology investments can be used as a means to streamline healthcare services, precisely with the aim of ensuring good health for all. (Sdgs.un.org, 2023)

## ***1.2 The Digital Challenge for the Norwegian Public Health Sector***

Stortingsmelding 9 (Norwegian Government White Paper) (2012-2013) “Én innbygger - én journal” (“One Citizen - One Journal”) set clear goals for the digitization of the Norwegian health and care sector. The strategy was based on the premise that it will lead to safer and better patient care, as well as a simpler workday for healthcare professionals.

The Norwegian Directorate of eHealth provides a summary of their perspective on the issues of today’s electronic health record systems:

*"Large groups of healthcare professionals and municipalities do not have good enough work tools. Information documented in a patient's medical record in a hospital is often not available to healthcare professionals at other hospitals or in community healthcare, such as general practitioners, nursing homes, and health stations. Often, the information is also not available to us as users of healthcare and care services. When healthcare professionals do not have access to updated and relevant information, it can affect patient safety and the possibilities of providing good treatment. And when we as citizens do not have this access, it becomes more difficult to take an active role in our own health." (Ehelse.no, 2021)*

There seems to be consensus that there is a need for new technological solutions. An important limitation for our task is that we are not supposed to take a stance on whether the solutions are good or not - rather, we will examine the implementation work from a change management perspective and assess whether the process management was good or not, according to a specific framework.

## ***1.3 “HP” - The Health Platform (Helseplattformen)***

Helseplattformen (HP), in English “The Health Platform”, refers to both a vision, a series of projects and the company that is charged with managing these projects. The word is also incorrectly used to refer to the EHR company that provides HP with its ICT-solutions.

Helseplattformen AS (AS is the Norwegian equivalent to the English Ltd.) is a company that was established on March 1, 2019. The company is primarily (60%) owned by Helse Midt-Norge Regional Health Authority (RHF) and 23 municipalities, with Trondheim municipality being the largest. As of January 2023, there are a total of 24 shareholders. The

company is responsible for the implementation and management of a shared electronic health record system (EHR). The company's main office is based in Trondheim and the company has approximately 320 employees as of November 2023. Most of whom have a background in healthcare in Mid-Norway. Helseplattformen AS has entered into a contract with Epic Systems Corporation and IBM Norway as suppliers of a shared EHR in Mid-Norway. HP is thus both a company with owners, its own board and management. HP is also an idea or concept that deals with the vision of a shared EHR. HP can also be seen as a project according to the company's own website, specifically referring to the Joint Implementation Project that formally began on April 1, 2019, when the contract with Epic Systems was signed. In addition, they refer to the training work as a "project within the project," and before contract signing, project-based work was done on investigation and procurement of suppliers. (Helseplattformen.no, 2019)

Helseplattformen is often compared to, or confused with, the company Epic Systems, but this is a misconception, and the two companies and their services and goals must be viewed separately. In this assignment, we will look at Helseplattformen as an implementation project and evaluate the implementation from a change project perspective within the field of change management.

#### ***1.4 Research Questions and Aim***

The aim of this study is to investigate and understand the user perspective on the change management aspect of the implementation of the new EHR provided by Epic System in the Health Platform project at St. Olavs hospital in Trondheim, Norway. This will be done by describing the findings from semi-structured interviews by workers' representatives within the physician communities at the hospital.

The possible research questions are plentiful and fall into different domains. Following below is a list of the research questions that seems most relevant to this study:

***User Experience and Adoption:***

- How do end-users perceive and experience the transition from traditional health record systems to the new EHR system?
- What factors influence the acceptance and adoption of the EHR system?

***Change Management Strategies:***

- What change management strategies were employed during the implementation of the EHR system, and how effective were they in addressing resistance and facilitating a smooth transition?
- To what extent did communication strategies contribute to creating awareness and understanding of the EHR system among hospital staff?

***Organizational Culture and Readiness:***

- How does the existing organizational culture within the hospital impact the successful implementation of the EHR system?
- What level of organizational readiness exists for managing technological innovations, particularly in the context of healthcare records?

***User Involvement and Feedback:***

- To what extent were end-users involved in the decision-making processes related to the EHR implementation, and how did this influence their perceptions and acceptance?
- What feedback mechanisms were in place for users to express concerns, provide input, and suggest improvements during the implementation process?

***Integration Challenges:***

- What challenges and opportunities arise in integrating the new EHR system with existing hospital systems and workflows?
- How do technical and interoperability issues impact the overall success of the EHR implementation?

## **2. Background**

This chapter explores the background and theory for the study's investigations.

### ***2.1 Other EHR implementation projects***

Several studies have been conducted to understand the different aspects of implementing a new EHR, and the change effect on workers and organization. Some of these will be presented in this subsection:

A review of 117 studies, by Preistman (2018), on EHR implementation showed that good leadership and management was an important criteria to implementation success, as well as infrastructure support, staff stating and focus on workflow and usability. The study also pointed out that EHR implementations in general improved documentation, screening performance and reduced prescribing errors, but there was minimal data on how the EHR implementations actually improved clinical patient outcomes. The most important findings are the factors that facilitate a good implementation process. The aim of a new EHR is often to improve documentation quality, and to increase possibilities for measuring parameters that are important to either management or research. Surprisingly, the review offers no insight into which effect it has on workers, productivity or patient outcome - which are often used as arguments for EHR implementations.

One article points out that EHR innovations are often triggered by an intention of improving patient care, while little focus has been given to the effect such implementations have on health care providers. The study by Veenstra et al (2022) investigates how an implementation of a new EHR system affects the employees. They found in their study that implementation of a new EHR increased interdependence among different providers and professions, and decreased job autonomy. Both these effects could have a negative effect on motivation, but the increased interdependence actually had a positive impact on the motivation - what they called the 'autonomous work motivation' remained unchanged. However these findings could vary a lot depending on the projects, the EHR system in itself, and of course how everything is managed.

Implementing a new EHR can be challenging. A systematic literature review by Boonstra et al (2014) investigated the implementation of EHRs in hospitals. The review describes the



complexities and pitfalls of EHR implementations, and presents nineteen possible interventions to such an implementation project that could help facilitate the implementation. They present these nineteen findings as a framework consisting of three categories that could guide the preparations of a EHR implementations project. These categories (A, B and C) are the context (A), content (B) and process (C) of the implementation. Some of the findings are more relevant to how this master thesis is delimited. E.g. the Boonstra review found that implementation success was higher when organizational culture supported collaboration, teamwork and fostered trust (A), "HR implementation requires a vendor who is willing to adapt its product to hospital work processes" (B) and "Resistance of clinical staff, in particular of physicians, is a major barrier to EHR implementation, but can be reduced by addressing their concerns" (C).

A study by Hertzum et al (2022) investigated the large-scale implementation of the Epic Systems EHR in Denmark and Finland - a study setting which more closely resembles the setting for this study, as the health care sector in Denmark and Finland is similar to the Norwegian model, and the EHR is the same for the two study scenarios. The findings in this study should therefore be generalizable to our setting. Concerningly, the result section starts by emphasizing that the implementation is still troublesome five and three years after implementation, respectively, describing that "the implementing organizations and their users have predominantly found themselves in a reactive mode of fending off problems rather than a proactive mode of realizing benefits." The description of the two countries' projects bear a striking resemblance to the Norwegian one, with great pre-implementation expectations, and dissatisfying post-implementation experiences. Another study did a comparison of the Norwegian implementation with the implementation in the United Kingdom (UK) and Denmark, back in 2019. (Hertzum & Ellingsen, 2019). This study pointed out the troublesome start of the projects in both the UK and Denmark, but found that Denmark was a more relevant comparison to the Norwegian model, identifying a lot of relevant experiences. "However, these experiences identify more challenges than solutions and the preparations for the Norwegian implementation of Epic is therefore currently in a state of considerable uncertainty", the study stated.

## ***2.2 Change management***

Change management is the process of preparing, supporting, and helping individuals, teams, and organizations to make a change. Change management typically involves a series of steps, including identifying the need for change, developing a change management plan, communicating the change to stakeholders, implementing the change, and monitoring and evaluating the change to ensure its effectiveness (Kotter, 1996)

Effective change management requires a deep understanding of the organizational culture, communication strategies, and leadership styles. The role of leaders in the change management process is critical, as they need to guide their teams through the process of change while ensuring that everyone understands the need for the change, what is expected of them, and how they will be supported throughout the process (Cameron & Green, 2015).

One important aspect of change management is involving stakeholders in the change process. This can include employees, customers, suppliers, and other key stakeholders. By involving stakeholders, leaders can gain their buy-in and commitment to the change, which is critical for the success of any change initiative (Jick, 2011).

Another critical factor in change management is the ability to manage resistance to change. Change can be difficult for many people, and some may resist the change, which can impede the success of the initiative. Effective change management requires identifying potential sources of resistance and developing strategies to address them. If not it can be difficult to actually implement the change as planned (Hiatt, 2006).

Overall, change management is a complex and challenging process that requires careful planning, communication, and leadership. By understanding the key principles of change management - and monitoring and evaluating the parameters which governs the process of change - organizations can increase their chances of success when implementing a change initiative (Beer & Nohria, 2000).

### ***2.3 Models and frameworks***

There is a wide array of different models and frameworks for planning or evaluating change processes and change management. Models will never give a perfect representation of reality, but can be used to explain or understand important concepts. As such the different models have dissimilar strengths and weaknesses which work differently in different contexts. Therefore it is important to choose the right framework to apply when researching a certain theme. Listed in the table below, the most common models within the field of change management are presented.

**Table 1: Change management models and frameworks**

ADKAR model
Developed by Jeff Hiatt and first introduced in 1998. The Model is a goal-oriented framework for change management that focuses on five steps; Awareness, Desire, Knowledge, Ability and Reinforcement (Hiatt, 2006).
Proscis Process for change management
First used in the 1990s. A holistic approach to change management that emphasizes the importance of understanding the impact of change on individuals and groups, and provides a structured model of understanding the human aspects of change processes (Prosci, 2019).
Lewin's model for change management
Developed by Kurt Lewin and used since the 1950s, but to a lesser degree in more recent times. A three step approach to change that involves the unfreezing of the present state, change to the wanted state, and refreezing of the new state. (Lewin, 1951).
Bridges' Transition Model
Developed by William Bridges. The Model focuses on emotional and psychological transitions that individuals and organizations go through as a part of a change process.(Bridges, 1991).
McKinsey's 7S framework
McKinsey's model focuses on seven equally dependent factors that compliments each other to achieve a successful change. These factors are, in short; strategy, structure, systems, shared values, style, staff and skills. (Waterman, Peters, & Phillips, 1980).
Kotter's model
Kotter's model for change management is a framework developed by John Kotter, Professor at Harvard Business School. The Model suggests 8 sequential steps that an organization should apply for effective completion of a change process within an organization. (Kotter, 1996).

## ***2.4 The Kotter Model***

For this study we will base our background and theory mainly on the framework of the Kotter Model. In the smaller subsections the why, how and what of the Kotter model will be explained.

### ***2.4.1 Why use Kotter's Model?***

By comparing the most commonly known and used models within change management, it would seem that Kotter's Model is the best suited for this thesis. Firstly, it is one of the most known and acclaimed models of change management. Whereas the other models might provide a framework for a broad and descriptive assessment without prioritizing or weighing importance - which is also important; Kotter's model prioritizes the steps in a sequential chronology and tells us more about what needs to be done to achieve a desirable change. It is therefore easy to conclude on the basis of the data that is being gathered during the study to say that the change management was done in accordance or deviating from the Kotter Model. Using another model could provide better insight into other research questions on the same topic.

### ***2.4.2 How do the 8 steps of Kotter work?***

The Kotter Model has eight sequential steps that are suggested to follow when aiming to achieve a desired change. The model is a general framework for managing change and it is not specific to any particular type of change, industry or organizational structure. Its function is to help leaders navigate the challenges of leading change regardless of the context.

The eight steps are presented in table 2.

**Table 2: The 8 steps of the Kotter model**

1. Establish a sense of urgency.
Communicate the need for change and why it's important to act quickly.
2. Form a strong coalition.
Build a team of influential individuals who can help drive the change and support progress. And gain support from stakeholders that can help drive the change.
3. Create a vision for change.
Develop a clear and compelling vision for the future that can serve as a guide for the change process.
4. Communicate the vision.
Use various channels to communicate the vision and gain support from stakeholders.
5. Empower others to act on the vision.
Make resources available and support individuals and teams in their efforts to work towards the vision. Provide training and support to help individuals and teams to implement the changes effectively.
6. Create short-term wins.
Celebrate and communicate small victories along the way to maintain momentum.
7. Consolidate gains and produce more change.
Use the momentum from the short-term wins to continue driving change towards the vision.
8. Anchor new approaches in the organization's culture.
The new work methods and processes that arise during the change process must be integrated into the organization's culture to ensure their longevity.

### *2.4.3 What does Kotter's model do and where does it help?*

The model has been successful in a range of different change efforts, from large-scale organizational transformations to smaller, more incremental changes. examples include mergers and acquisitions, technology implementations, process improvements, culture changes and leadership transitions. It is thus a flexible and adaptable framework to be customized to meet the needs of different change processes (Kotter, 1995; Kotter 1996). It emphasizes the importance of communication, engagement and leadership in driving successful change.

Relevant to this study, Marquis and Huston (2015) mentioned the use of the Kotter model in implementing electronic health records (EHR) in healthcare organizations. Gurlay (2016) also discusses the use of the Kotter Model in technology implementation, specifically in the context of introducing a new electronic patient record (EPR) in a hospital. Another example, from teaching practices, found that the Kotter model provided a useful framework for managing the complex and multifaceted changes involved in the integration and implementation of new technology into a network teaching reform (Li & Zhao, 2016).

### **3. Methods**

This chapter describes the method used for investigating the research questions and gives a short explanation on the choice of method based on existing academic literature.

#### ***3.1 Research design***

The research design for this study is a descriptive qualitative case study. The investigation is cross-sectional using empirical data gathered in semi-structured interviews and analyzed using the method of Narrative analysis, which delivers an inductive approach to the research question. Drawing from the experience of the Interviewees the design will inevitably also carry with it a somewhat retrospective view that stretches back to the start of the implementation project.

The following subsections will comment on the details of different aspects of nuances in the study design.

##### ***3.1.1 Qualitative Research***

In alignment with Blumer's (1954) distinction between "definitive" and sensitizing" concepts, and his recognition that social research cannot always be measured in the same way as for natural sciences - this study therefore takes a qualitative approach. It should be well suited to address the intricate and somewhat social nature of the case and research question.

The design follows Prasad's (1993) main steps for qualitative research, as also presented in the Book Business Research Methods by Bryman & Bell (2011:389):

1. General research questions
2. Selecting relevant site(s) and subjects
3. Collecting relevant data
4. Interpretation of data
5. Conceptual and theoretical work
  - a) Tighter specification of the research question(s)
  - b) Collection of further data
6. Writing up findings/conclusions



### ***3.1.2 Empirical approach***

Empiri can be defined as data that is supported or grounded in experience, and systematically collected and analyzed (Store Norske Leksikon). The systematic approach in research delineated empiricism from personal experience, which is defined as anecdotal evidence.

The term 'empiricism' is defined by Bryman & Bell (2011:10) in two ways:

*“First, it is used to denote a general approach to the study of reality that suggests that only knowledge gained through experience and the senses is acceptable. In other words, this position means that ideas must be subjected to the rigorous of testing before they can be considered knowledge. The second meaning of the term is related to this and refers to a belief that the accumulation of ‘facts’ is a legitimate goal in its own right. It is this second meaning that is sometimes referred to as ‘naive empiricism’.”*

### ***3.1.3 Descriptive perspective***

In this study the data can be analyzed and presented in a descriptive manner. This is a result of the study design, as the case and research question is not available for an experimental design

### ***3.1.4 Analytic induction***

Generally speaking, induction aims to find patterns to either support or disprove a general conclusion or theory, based on an original observation. Induction is therefore somewhat the opposite direction of deduction which starts with a theory, and then tries to test the theory. A conclusion based on induction can never be fully proven, but it can be easily disproved. The strategy is good for generating hypothetical theories for further deductive testing.

Analytic induction begins with a rough definition of a research question and then proceeds with a hypothetical explanation to that same research question. After collecting data and examining the cases. Cases that are inconsistent with the hypothesis results in either a redefinition of the hypothesis, or exclusion of the deviant case - or - a reformulation of the hypothesis that includes the deviant case; resulting in the need of further data collection to test the hypothesis. (Bryman & Bell, 2011, p. 574)

### *3.1.5 Case study design*

The case study research design is a popular and much applied method in business and management research (Eisenhardt and Braebner, 2007). If it is designed well, such a design offers particular insight into the complexity and nature of the given case (Stake, 1995).

There is seldom a clear cut defined or standardized case study design. This case will be in the meeting point of the event of the implementation project and of management as an organization within the organization. Because of the study project duration a cross-sectional design is applied which leads to an inductive analytic approach (Stake, 1995). Using Yin's (2003) distinction of cases based on the issue of external validity this case study could also be categorized as a revelatory case (Yin, 1984:44).

### *3.1.6 Semi-structured qualitative interviews*

Qualitative interviews differ from structured interviews in that the style of interview is more open to digressions from the interviewee and encourages the interview object to give elaborations on the questions (Bryman & Bell, 2011:466).

For this case study it is not suitable to conduct fully unstructured interviews. This is because the theme of "Helseplattformen" is quite large. To keep the interview concerning the research question, and also to get answers on themes that the interviewees do not necessarily think of themselves, e.g. change management. A semi-structures approach is therefore applied, giving a balance between focus and flexibility. (Bruman & Bell, 2011:467)

The project has been registered and approved by Norwegian Agency for Shared Services in

Education and Research (Sikt) together with the full account of the interview guide, which is also attached to the appendix of this thesis. Please see the subsection for data handling.

### ***3.2 Scope, sample size and selection criteria***

The sample size for interviewees will be 4-6 persons. This is a small sample size, but comparable in size to other master thesis with similar aim and designs. Less than four interviewees would risk giving a one-sided disproportionate perspective without the possibility of identifying opposite views - and too many interviews will not be doable with regards to the amount of work that would have needed to be done in a restricted amount of time.

With such a small sample size it is important to choose the interviewees that are best suited to give a broad and representative view on the research questions. Good selection criteria is paramount.

Because of the small sample size, the recruitment process will aim for some diversity across gender, age, profession and level of union representative work.

The advantage of using union representatives is that they are charged with the responsibility of collecting and presenting the views and perspectives from the workers they represent, in favor of their own personal views. They are also often presented with complaints from workers concerning work rights related themes. A disclaimer must be made in case there are hidden and coordinated agendas from the workers to affect the on-going and continuing implementation process. Such claims have been implied in mainstream media by leaders of Helseplattformen AS. As a researcher there does not seem to be any evidence of this, but the reader should be notified of the sometimes tense relations between the different actors.

#### ***3.2.1 Selection criteria***

- Professional medical doctor
- Working at St. Olavs Hospital HF between 1st January 2022 -- 1st June 2023.
- Workers' union representative

### ***3.3 Data capture***

Data was collected through semi-structured interviews. Personal data on the interviewees was registered as part of the interview process. All interviews were conducted using a telephone call which was recorded on a computer. The audio file was later played back and transcribed manually by the principal investigator. Data was gathered using a semi-structured interview guide. The original guide is attached as an appendix.

### ***3.4 Data handling***

The data was handled in accordance with the project's approval by Norwegian Agency for Shared Services in Education and Research (Sikt) where it is registered under the reference number 833525. Please see the Ethics subchapter for more information about Sikt.

The Sikt approval regulates which data can be collected, and for what use, as well as how to store the data, and for how long. The interviewees will be informed of the approval and registration number so they themselves can look into the application and approval process, and what legal rights they have with regards to data handling. If interviewees wish to withdraw from the study they are free to do so at any time - upon which time all data about their participation will be deleted and the data will no longer be applicable for research use.

### ***3.5 Data analysis***

Analytic induction is the main strategic approach to qualitative research. A common critique of the often used coding approach to qualitative data analysis is the possibility of losing the context, and that it fragments the data - risking that the significance of the data gets lost when taken out of context thus losing out on knowledge (Coffey & Atkinson, 1996; Riessman, 1993). The aim and focus of narrative analysis is best described with these two quotes:

*“The aim of narrative interviews is to elicit interviewees’ reconstructed accounts of connections between events and between events and Narrative analysis contexts. A narrative analysis will then entail a seeking-out of the forms and functions of narrative.”*

(Coffey & Atkinson, 1996).

*“Proponents of narrative analysis argue that most approaches to the collection and analysis of data neglect the fact that people perceive their lives in terms of continuity and process, and that attempts to understand social life that are not attuned to this feature neglect the perspective of those being studied.”*

(Bryman & Bell, 2011: 588; 531).

An example that supports the choice of applying this method of analysis to our study is Brown’s (1998) examination of the competing narratives surrounding the implementation of a new IT support system at a British hospital trust. The 1998 study carries some similarities to the case of this thesis, and is therefore well suited to draw inspiration from when designing the research methodology for the HP case. A 2019 article in International Journal of Qualitative Methods reviews and demonstrates the “fluidity of narrative analysis and emphasizes that there is no single procedure to be followed in attempting to create stories from interview transcripts.” (Nasheeda et al., 2019). Still they recommend more researchers to apply this method as it can be as rewarding as it is challenging.

### **3.6 Validity and reliability, generalizability**

Validity, reliability and generalizability are important criteria to assess the quality of research. The perspective of these terms differs in quantitative and qualitative research.

Validity can be expressed as how well the results from the study represent the findings in a control setting outside of the study.

Reliability refers to the consistency of the method of measuring.

Both terms carry connotations to measurements that are the focus of quantitative methods. The understanding of these terms therefore needs to be redefined and adapted to the qualitative method. (Bryman & Bell, 2011: 394). Mason (1996) gives a definition of validity that is more practically understood in relation to a qualitative method:

*“Validity refers to whether you are observing, identifying, or ‘measuring’ what you say you are”*

LeCompte and Goetz (1982) gives an alternate understanding:

- External reliability means the degree to which a study can be replicated. This is a common challenge with qualitative studies, as is generalizability - addressed further in the limitation sub-section.
- Internal reliability means whether or not (in instances with more than one observer) there is an inter-observer consistency in the observations.
- Internal validity means whether or not there is a good match between researchers' observations and the theories they develop.
- External validity, refers to the degree to which findings can be generalized across settings.

These four summarizations are paraphrased from Bryman & Bell (2011:395)

This understanding is employed in the study design to try and limit the effects of the inherent limitation of the overall research design. These limitations are problematized in the following subsection to raise critical awareness among the readers of this thesis so that the knowledge content of the thesis is correctly understood. Guba and Lincoln (1994) uses the terms dependability (for reliability), credibility (for internal validity), transferability (for external validity) and Confirmability (for objectivity). These terms are more intuitively understood.

### ***3.7 Limitations***

All research methods carry some limitations to their design in general, but also in the context of the specific study. This subchapter provides some general limitations when designing and conducting a qualitative descriptive case study with semi-structured interviews, and some specific limitations to the research design of this thesis and its context, as well as how to address them through appropriate sampling, data collection, and analysis techniques. Generally the critique of qualitative research is related to that it is inherently too subjective.

#### ***3.7.1 Limited Generalizability***

Qualitative studies typically involve small samples, which may not be representative of the larger population or in another context - such as another case. As a result, the findings may not be generalizable beyond the specific context of the study (Bryman & bell, 2011: 408). Still, this case builds on the methodology of the Brown (1994) study, and the setting of implementing a new IT-system in a hospital will be a case repeating itself elsewhere in the future.

#### ***3.7.2 Limited objectivity and researcher's subjectivity***

Qualitative research relies heavily on the subjective interpretation of data, which may be influenced by the researcher's biases, assumptions, and preconceptions. This can make it challenging to establish the reliability and validity of the findings. The principal investigator of this study will try to counter that by adhering to the interview guide, limiting pro-activity in questioning, and otherwise keep in mind the aspects of the subsection on ethics and the researcher's role.

#### ***3.7.3 Time-Intensive***

Qualitative research can be time-intensive, particularly when conducting semi-structured interviews, which can be lengthy and require significant preparation and analysis. The study is also conducted within a short and limited time frame which will provide a retrospective glimpse from the present perspective. The design is not able to follow the case evolution over time.

### ***3.7.4 Potential for Social Desirability Bias***

Participants may provide socially desirable responses or may be hesitant to disclose sensitive information, which can impact the accuracy and validity of the findings. Using union representatives the hesitancy will be limited, as they can speak on behalf of whom they are representing. This however carries the possibility of enhancing the potential for socially desirable responses on the workers behalf and may give an exaggerated depiction - if there is a hidden agenda outside of the scope of the study, that may affect the interpretation of the interviews. E.g. if the union representatives have a plan to influence the on-going implementation by painting a bleaker picture than reality. However - as will be discussed in the discussion chapter - the union representatives have been criticized for the opposite. So one should also keep in mind that social desirability biases might pull in several directions, also towards defense of the management.

### ***3.7.5 Potential for Sampling Bias***

The researcher may select participants based on convenience or accessibility, which can introduce sampling bias and limit the generalizability of the findings. This is one of the main reasons that this study is recruiting union representatives, as they are charged with representing a broad spectrum of the workers. This carries the risks as mentioned above; but the alternative; interviewing a handful of more or less randomly picked workers from a hospital that employs nearly eleven thousand workers (St.Olavs.no, 2023) would represent an unacceptable degree of sampling bias.

### ***3.7.6 Limited Quantification***

Qualitative research typically involves the collection of non-numerical data, which can make it challenging to quantify or measure the findings. This is not a huge limitation in this particular study as it does not aspire to quantify the findings.



### ***3.8 Ethics***

The ethics subchapter will address and access the author's role as a researcher in relation to the project. The subchapter will also describe necessary measures to ensure the integrity of the project, the study subjects and data handling in proper accordance with the ruling ethical framework for research.

#### ***3.8.1 The researcher role and reflections***

The author of this thesis, and the principal investigator of the study, is working as a medical doctor. In a small country like Norway, that has a relatively close-knit physicians society - where “everyone knows everyone”, it is not possible to be fully without any subjective thought concerning the Helseplattformen. This is also due to the broad media coverage of, and accessible ongoing discussions in different online societies for physicians.

Further-more the author has worked at St. Olavs Hospital HF most of his professional life, and completed his medical training at the Norwegian University of Science and Technology (NTNU) which is co-located in an integrated campus with St. Olavs Hospital HF. The author worked at St. Olavs hospital HF when Helseplattformen was first scheduled to “go-live”. The 1st September 2022 the author started a new job as a physician at Hospital Levanger, which after the delays and postponements, is (as of 1. April 2023) planned to “go-live” in November 2023. These facts are important to disclose for the reader, as it might affect the author unknowingly or unwillingly to impart his own hypothetical biases in the thesis. Such biases might work through mechanisms such as a sense of loyalty to previous co-workers, or through a hypothetical fear of Helseplattformen being implemented in his current workplace.

Contemplating my own role as a researcher is therefore an important exercise to limit bias and increase objectivity. As a physician with previous research experience this should be quite possible, as both the physician and researcher role are trained in objectivity.

#### ***3.8.2 Personal Data handling***

Generally speaking personal data is every data that can be linked to a person. This includes data such as names, addresses and phone numbers.

Sensitive personal data are a category of especially personal data such as e.g. health records, biometrics or political views. These data are sensitive both in their nature and for their potential for mis-use by a potentially malicious third party.

Data can also be indirectly identifiable. Examples of this could be a quote or an interview that is so specific that it could only apply to one person, which would be easily identified if either anyone or “the wrong person” read it.

Bearing this in mind, handling personal data carries a high ethical responsibility. Since the consequences can be great this responsibility is regulated by law. The General Data Protection Regulation (GDPR) from the European Union (EU 2026/679) has been integrated in Norwegian Law (Personvernsforordningen).

For practical purposes these considerations should be correctly handled if approved after registering the project in the Norwegian Agency for Shared Services in Education and Research, “Sikt” for short. The agency is a relatively newly formed agency (1st January 2022) as a result of the merger between The Norwegian Center for Research Data (NSD), Uninett AS and The Directorate for IKT and joint services in higher education and research. The approval is dependent on a good plan for correctly handling personal data. Interviewees were informed of the plan and the approval from Sikt. Informed consent was recorded as part of the interview. Registration number pending.

### *3.8.3 Other ethical considerations*

Though the Sikt approval and method should ensure adequate personal data handling which normally includes confidentiality, anonymity, etc. - it is important to take into consideration that the data in some contexts, unknown to the researcher, might unintentionally still be somewhat identifiable. A proper informed consent is therefore very important also to provide the potential interviewee with enough information to question aspects of the data handling.

We must also keep in mind how the investigation, results, discussion or conclusion might affect the on-going implementation of Helseplattformen, or affect the people working with or for Helseplattformen.

## **4. Results**

The results of the interviews will be presented in this chapter according to suggested methods of presenting results from qualitative interviews (Anderson, 2010; Bryman & Bell, 2011). The results are summarized in subsections that follow the framework of the Kotter Model, and illustrative quotes are presented.

Six respondents were included according to the selection criteria and completed the interviews. No one withdrew, but one prospect declined to participate because of fear that the study could rationalize or defend the HP project, or management, in a way the prospect considered as potentially harmful to the future handling of the project. This is interesting in itself because it underlines the polarization that has developed between some employees and management in the wake of the project, that would be unrecognizable to the work environment prior to the implementation.

### ***4.1 Establishing a sense of urgency***

The first step of the Kotter Model is communicating the need for change and why it's important to act quickly. In the interview guide we asked "How acutely was the need for change perceived to be among the employees/users?"

The overall opinion seemed to be that there was no immediate need to change the preexisting EHR system. Even though they had understood that there might be more effective software available, or that their own software was a bit old or outdated - it still functioned quite effectively. Only one respondent replied that the need for change was precarious.

"When taking into account that we were the last and only Health Trust Region to use paper based records for administration of medicine, you could say that we needed a change" (Respondent 2)

#### ***4.1.1 Wanting it more than needing it***

This comment still does not attest to a critical need for change, but is perceived as a more sincere change wish. The difference between wanting change and needing change is important for the willingness to change - since every change also comes with a cost. Change

can be painful, even if it is needed. The other respondents too articulated that the situation was more a case of wanting a change or an update, more than a need for change.

“We wanted more functionality” (respondent 1) and “What we wanted was one system. To gather everything in one platform instead of having the functions dispersed in different computer programs” (respondent 5). These wishes are very much aligned with the goal of HP. The preexisting EHR delivered some integration of several different programs, but you were still dependent on opening other programs depending on which task you wanted to perform. E.g. There was one program for the planning of operating theaters, one for the Intensive Care Unit (ICU) and anesthesia journals, one for the overview of the Emergency Department (ED), and another for the radiological department. In one way or another all or most of the reports from these systems were integrated into the EHR, so that you could access previous data if needed - although not structured. But all respondents underlined that there was not immediate need for change, as it was still working quite effectively, and most important “did not pose a threat to patient security” (respondent 3) - although they could all see that there might be more effective ways of working, knowing that there has been huge developments in software technologies in other sectors or industries.

Some respondents also mentioned that other actors might see things differently. The management e.g. might have a bigger need of mapping progress or production through gathering numbers or structured data. Or that “the municipalities and GP might see it differently” (Respondent 6). They were previously dependent on the information sent to them by the hospital physicians after their patient had received treatment in the specialist health care services - or they had to send a request for more information if needed. The Emergency room (legevakt) had their own EHR resulting in that they sometimes worked “blind” without any previous medical history, but could then call the hospital for information, if needed.

To summarize; there was no perceived need for change, but a loose and less important wish for more effectiveness in the EHR.

## ***4.2 Form a strong coalition***

The second step of the Kotter model is to build a team of influential individuals who can help drive the change and support progress, as well as gain support from stakeholders that can help drive the change.

In the interview guide we asked “Do you know whether employees/users were included in the procurement process?” and “How were the employees/users included in the different phases of development and implementation - also through e.g. employing users in the project?”

Three of six respondents briefly answered that they did not know whether users were included or represented in the procurement process at any stage. The other three respondents replied with a varying degree of certainty whether users were included or not. The degree of certainty seemed to correspond with representation on higher levels in the organization's management chain - meaning that respondents that were represented in higher levels of the chain of management had a more clearly defined view on to which degree users were represented or not. Between the three respondents it was difficult to assess how well the representation actually was. One respondent knew about some workers' representatives in a leader group for digitalization in the Mid-Norway Health Trust Region, and another respondent raised the question whether the clinicians that were employed in the HP as medical professional experts still could be viewed as user representatives - as many of them advanced to leader positions in the project themselves. Respondent 1 had the most clear answer: “There were users represented in the team that worked out the procurement specifications, but they told me that the leader of the group (from upper management) was running the show” and went further in explaining how the user representatives felt that there were invited just as a “paper maneuver”, as an alibi for requirements of user involvement. These user representatives also explained that they were invited to an event to showcase the new solution, but that they were not impressed. Although “the solution stayed formally true to the procurement specifications” (Respondent 1).

### ***4.2.1 A conglomerate of collaborative constellations***

In the following phases the user involvement can be understood from two different users perspectives. The true end-users that were employed at the hospital, and the employers at the

hospital that were recruited as a medical professional expert into the project. These experts were themselves potential end-users after the implementations.

The “End-user” terminology is in this thesis limited to the physicians (and/or other health personnel) that use the EHR solution as a tool during their work day. For the end-users there was little inclusion other than some information after the Epic solution had been chosen. One respondent said that the inclusion from the perspective of the hospital was good, if by inclusion means that they answered questions by workers’ representatives. But in reality there wasn't any real involvement. “The project was so vast and complicated, with decisions made at a much higher level than at the hospital level, that actual involvement seemed to be difficult. The hospital was only a small piece in the puzzle”. (Respondent 3). This would be quite a surprising statement for many users. The St. Olavs Hospital is such a huge institution that it is difficult to accept that they too are just a subject of a higher power - and that they have no say in what to do, or indeed that the hospital too might have been deprived of insight and involvement.

The experts were recruited to help with the design of the solution after Epic had been signed on as the EHR provider. These experts were originally employees in the hospital, but their time was bought free to assist the project with helping to design the different modulus across the different clinics and departments. In all there were around 400 people that had some kind of expert function, but this number is believed to also include the so-called super-users, that was an intermediate expert, that still mainly worked with patients in the clinics. The involvement linked to these two different roles could be summarized with a quote from one of the respondents:

“The experts sometimes visited the department to ask those that happened to be at work that day, what they believed could be smart ways to tackle a certain task. But as for user involvement I would not say there was any real involvement before the training started” (respondent 2).

To which degree these experts functioned well as a link to the user's interests varied from department to department, depending on the interest, insight and motivation the experts had with getting involved. So as far as the Kotter model goes, how strong the coalition was as a whole could be questioned. It is beyond doubt that the project had a plan of forming good

teams to help with the design. Recruiting users for this task could both deliver important user insight into the design - and also serve as a good connective link to the end-users when the solutions would be ready for implementation. But according to the respondent the arrangement's efficacy varied a lot, and was not necessarily as functional as intended.

“I remember we experienced difficulty with recruiting experts from the departments. No one knew what it was they were getting involved with. Sooner or later we succeeded with recruiting the needed amount of experts - but their engagement or motivation for getting involved varied a lot. Not everyone was passionate about the project, or good at communicating back to the departments” (respondent 6).

It was kind of implied, also by other respondents, that some of the experts might have accepted offers by the project because it fitted better with the experts current life situation. Working as a doctor is demanding. Sometimes, e.g. if the family life requires more presence at home, this could convince clinicians to accept a period of better regulated working hours and opportunities for planning and flexible work hours. In other words - not all of the experts entered into the project because they had skills or interests in software engineering. This is an interesting insight into the Kotter concept of “building strong coalitions”.

Another quote would describe how the project worked with creating such teams, and to which degree they succeeded or not:

“This was a process over several years. I remember there were the so-called expert councils that helped with translating words - which was difficult because we did not have the context in which these words were meant to be used. But it was this way Epic worked. Tasks were distributed on different departments and clinics and then the decisions were made in consensus groups at a regional level. The constellations of these and the function varied. But there were both clinicians and administrators. There was also something called the implementation team that worked with the so-called HP-drips (information videos). Super-users and experts were recruited. And subject clusters. There were more and more different constellations. Most of the experts were at one time quite dissatisfied that their comments were overlooked, because there were always other considerations that took precedence”. (respondent 6)

The elaborations of this respondent together with the answers from the rest paints a picture of a very complex ecosystem of different teams where the management, ownership and hierarchy of prioritized considerations are difficult to understand. This led to frustration among the experts that were employed to help with user-friendly design of the solution - because their requests were often denied, but they were not given a good reason why, or indeed who was blocking the suggestions. The impression of the end-users involvement could be summed up with one quote:

“For the real end-user, the involvement before training started was virtually non-existing”  
(Respondent 1)

#### *4.2.2 Power of influence*

And this theme was covered by another question in the interview guide: “to which degree did the more involved users (e.g. experts) have real power of influence?”

It seems that the actual power of the experts were limited to the right to suggest changes or implementations. And the only valid argument against implementations were patient safety arguments.

“No doubt the experts had an important role, but it seems that it was more a question of finding ways to adapt *us* to the platform, rather than adapting the *platform* to us. There were a lot of barriers to implement work flows or functions that the experts wanted, and a continuous uphill challenge”. (respondent 2)

“The experts came with their suggestions, but there was often someone ‘on the other side’ that told them that ‘this was not possible’. So if the only changes possible were the ones that the project management agreed with in the first place - what kind of impact did these experts really have?” (respondent 3).

These quotes exemplifies the overall impression from all respondents that the experts had no real influence on the process, or executive power in regard to which implementations should be built into the program. Another quote exemplifies this challenge.



“My experience with Epic shows that it is a quite rigid system. When the EHR system was presented the default was a split system with different modules for in-patient and out-patient work. The switch between these two modi was not straightforward, so it was important for us that this would be changed - and we were assured that it would be an easy change to make. But when it came to the actual design of our solution we were suddenly told that it was impossible, but that they could circumvent the challenge by making a way of a “express admission” of the patient from one module to the other module. This does not make sense to me, and should be completely unnecessary” (respondent 6).

The respondent explains the challenge with a comparison of the preexisting EHR where the patient records only existed in ‘one space’, so that the only thing required for an emergency admission from the out-patient clinic was making the medical decision that an admission was required - whereas the Epic system is more complex and divided into different modules and subsystems that work differently because the economical aspects are different according to whether the patient is in an out-patient or in-patient setting. So the focus is more on the administrative side of patient handling, rather than what makes sense from the perspective of medical patient treatment.

“I heard from the expert in our department that it was mostly uphill. The system is fitted for another health service model than the Norwegian model, and this could not be changed” (Respondent 2)

Respondent 4 expressed that the respondent did not know to which degree the experts had any power of influence, but knew that a lot of work was done on gathering information on what the experts wanted. The rest of the respondents were aligned in the view that the experts had limited to no influence in decisions where experts and administrators had different opinions.

### ***4.3 Create a sense of change***

The third step of the Kotter model is to develop a clear and compelling vision for the future that can serve as a guide for the change process. The respondents were asked “What vision was communicated to the employees/users?” and if there “Was [there] a perceived need for change?”. The question about perception of the need for change has some relation also to the

first step of the Kotter model, concerned with the urgency of change, and the question about “what vision” has some relevance for the next step, and following subsection, about communicating the vision.

#### *4.3.1 One patient - one journal*

All of the respondents promptly answered the question about which vision was communicated. The vision “one patient - one journal” or “one inhabitant - one journal” is a mantra that seems to be very well communicated. The respondents also elaborated on what this mantra contains of visionary content. More on this vision can also be read in the introduction chapter.

The vision is that all of the patient's medical records should be gathered in one patient journal. This would be a change from previous when the UC and GPs/PCPs had their own EHR systems. But the hospitals in the region already had insight into the patient records from all the regional hospitals.

The HP project in Mid-Norway was to be a trail site for the national strategy/vision - “one patient, one journal”. The vision was indeed a guiding light for the project, but the project itself had not developed a clear vision for its own implementation. It rather depended on the superior governmental vision, accepting the risk that it might be a bit too broad or specific for their use. More on this in the subsection below about communicating the vision.

Following we surmise a number of respondent quotes that explains what their impression of the vision’s practical implications were meant to be:

“We understood the goal of this [vision] was to limit unnecessary double work by automated registration, structured data and reduced errors in e.g. pharmaceutical work. In other words less extra work” (Respondent 1)

“We were told it would be a big change. Also in making our workload less or easier. But also that everyone would use the same system, making it easier to collaborate and communicate” (Respondent 3)

“We were to be a trail site for the national strategy. Everyone would use the same system. It was more than a EHR, it was supposed to be a tool for effective collaboration” (Repondent 4)

“It was supposed to give better documentation and be easier to work with, aiming for the overall goal of increased patient safety. Also increasing user involvement making, e.g. increasing patient’s ownership to their own medical data” (Respondent 6)

“It is a vision I believe most employees agree with. It was just that the solution for this vision was a bit unrealistic” (Respondent 2)

#### *4.3.2 Wishing for more efficiency*

It seems that most employees, e.g. the users in this project setting, had a clear sense of the overall vision from the government, and that they shared the ideal for this vision, and the goals for it - limiting extra and/or unnecessary work while increasing patient safety. This subsection will summarize the findings pertaining to the sense of need for change.

“Many have seen the need for modernizing, and that there are technological opportunities available that are probably not sufficiently utilized in the health sector. So many dreamt of a better journal system, but there were no pressing need - especially not when seeing that the options were no better than we already had” (Respondent 1)

Several respondents addressed that there was in fact a common opinion that the preexisting EHR seemed a bit outdated in comparison with the general technological advances of modern society. But there was still not a need for change.

“The preexisting EHR could feel a bit outdated or unnecessary with a large degree of repetitive writing, so I believe many were motivated for something new - and in that sense had a wish for change” (Respondent 2)

This statement is pointing to how the doctors traditionally work e.g. with admitting patients. They do a complete survey of the patient asking about family and medical history, and then they write it down in an often extensive admission note. The writing of this note has in later

years been done more effectively by e.g. speech recognition and automated dictation - but still a lot of seemingly unnecessary copy/paste was done, which took up a bit of space.

“Some of the more extensive patient cases could appear visually less manageable, so many were positive in welcoming a new system. But there was never a sense of needing to change ‘now’, or that the preexisting EHR was a bad system that needed to be switched out” (Respondent 3)

Another respondent that also affirms this wishful thinking that there might be a better solution available in the future also comments on some of the benefits of the preexisting EHR, which has been heavily criticized in the new solution from Epic.

“It [the preexisting EHR] was very easy to understand, and to work with. You didn’t need any training. So, maybe we wished for change, but there was no need” (Respondent 5)

The theme of training has been a recurring discussion concerning the new solution. The training in the Epic solution was extensive, though faulty, but not adequate. This poses a threat to recruiting other healthcare personnel from other regions. All the other regions use the same EHR, except Mid-Norway. The preexisting EHR at St. Olavs Hospital did in fact not require any training, something the author of this thesis also can attest to; as he, as well as all of his colleagues over several years have been able to just “pick it up” from scratch, from day one of working. Another respondent also mentioned that the preexisting EHR also gave doctors the opportunity to look into medical records from other hospitals in the region - which was very useful in treatment of diseases that were regionally centralized, e.g. some cancer surgery. This was a function that was in the center of the HP vision, and a feature not available for the EHRs of the rest of Norway at that moment.

“I have worked with many different systems over the decades. The preexisting EHR was a good tool in that it gave me access and insight in patient records of relevant local hospitals. Me and my colleagues thought we had a great system. We didn’t need any change” (Respondent 6)

At the end of this section I would also like to share a quote from one of the respondents that explains an important aspect of implementing and driving change in fields of ”knowledge

management” - where the goal is to lead or manage people that are very knowledgeable. Traditionally, the Health Care Sector is also described in business management as “conglomerate”, “mastodon” and “conservative” - which translates to big, slow and difficult to understand.

“There is seldom a call for change unless you need to change something that is actually bad. As doctors we employ research as a driver for change, and try to only implement change once the change has been validated as both better and safer for the patient. Change can therefore be slow in the health sector, but it is still happening, all the time. But we are not ready to risk the patient’s safety on revolutionizing change that hasn’t been tested” (respondent 4)

#### ***4.4 Communicating the vision***

The fourth step of the Kotter model is using various channels to communicate the vision, and gain support from stakeholders. The stakeholders we will focus on in this thesis are the physician end-users. We have already addressed what vision the project had, as formulated in the sections above. The questions from the interview guide that relates to this step of the Kotter Model are “To which degree did the common user have a clear sense of this vision?” and “Which channels were used to communicate the vision - and did you experience the communication as effective, with regards to the amount of information, quality and medium/channels?”

##### ***4.4.1 Message received?***

Two of the six expressed that most employees had a clearer sense of this vision (one patient - one journal) and what it meant in practice, and they mostly agreed with the vision and goal, but that the solutions that were eventually presented seemed a bit naive.

“I believe the common employee had a clear comprehension of this. It is a vision that is quite easy to agree with for a health worker, because we all wish for a safe patient treatment” (Respondent 6)

“We had a clear image of the vision. It’s not difficult to understand the arguments for why the vision is good, and I think It aligns with what many employees wished for. But after viewing the solution that were presented the vision didn’t seem realistic any more” (respondent 2)

Two of the four respondents that proclaimed that users had a clear sense of the vision quickly focused on the disillusion that respondent 2 mentioned in the last quote:

“We were told this [the vision], in a less concrete manner. Sooner or later we realized that the vision corresponded badly with the reality presented by the product [the Epic EHR]. We felt the vision had been set aside in disadvantage to the product” (Respondent 1).

“We were told this [the HP project] would be larger than life. A project to set all other IT-projects in the shadows, and revolutionize our workflow. What we got was in reality something completely else and different from the vision. We were led astray” (Respondent 4)

The two last respondents answered that they did not have the sense that visions were all that important for the users/employees, but that the focus on this changed a bit after starting the training in the system. The view before this was casually summarized as such:

“Most employees just want to do a good job. They don’t care about visions” (respondent 3)

“Big words and visions aren't necessarily what occupies the mind of the workers. They are mainly focused on doing good work and trusting that the management of norwegian hospitals will do what is best and right” (respondent 4)

#### *4.4.2 The flow of information*

The headline for this subsection is indicative of the modi for communication during the project, especially in the first phases, leading up to the point of training and eventually implementation - when the users demanded more information, and also started giving feedback.

There seemed to be different levels where the amount of information was different. All respondents answered that the main source of information was the hospital intranet. This was

the starting web page whenever a user logged on and opened a web browser. This intranet was called “Kilden” (The Source). Some emails were also sent out, and users were sent videos from HP called “HP-drypp” (Drips of HP), which were short information videos. Other than these channels the flow of information varied a lot from clinic to clinic and department to department depending on how much information was forwarded down the changing from either middle-management or the workers representatives. Nearer to the implementation and training it was also arranged assemblies by the representatives from the Norwegian medical association, where management were invited, to try to get more information out. One respondent reported that they used the time that was meant to recess medical expertise and keep the staff updated on medical knowledge to inform about the HP instead.

“As a so-called super-user I believe I received more information than the common user. Also as a workers representative I received more information. And of course the experts and management received their share of information. The information seemed to trickle down the chain of management, and not so much directly to the user. I am not sure how much of the information ended up with the user. I think that varied a lot” (respondent 2).

“The information passed down was not good enough. We invited HP to the assemblies, but they did not show. They were working for the RHF, not the hospital. It is a huge and complex organization with a lot of different levels of management. You do not know what information is passed down, or filtered or edited.” (Respondent 3).

Even if there is no malice, management may filter out information that they, from their perspective, believe to be unnecessary or obvious. Or edit it to be more understandable, or edible. This might also be done by workers representatives. Both with good intentions. But when the layers of filtration are so plentiful, the user might end up receiving no real information at all, or pieces of information that are so altered that they bear little resemblance to the original message. This was something addressed by several of the respondents, and viewed as a weakness. It was also clear that the communication was informative rather than a dialog.

“For the most parts it was all about one-way communication” (respondent 5)

#### ***4.5 Empower others to act on the vision***

The fifth step of the Kotter model is to make resources available and support individuals and teams in their efforts to work toward the vision. Providing training and support to help individuals and teams to implement the changes effectively. The respondents were asked “Which resources were made available for the users previous to, and during, the implementation of the new EHR”. They were also asked whether this resource management seemed like a rational use of resources.

##### ***4.5.1 Too little, too late***

The questions were to a large extent understood, or at least answered with regards to the resources put into the training of staff. In that regard, they freed up resources to attend the training sessions. You could say that training the users is part of empowering the users to act on the vision - but that would be a restrictive or conservative view. But during the actual implementation of the new system, the so-called “go live”, some support and personnel were available to help with the actual launch.

“Through actions in the budget, they allowed a reduced production to 50% the first two weeks, and 75% the next two weeks. This was of course too little, and the latter had to distribute additional funds.” (Respondent 1)

This statement, as an answer to what resources were made available could be viewed as a testament to how low expectations the staff had with getting support, and what they experienced was given. This respondent explains that it was mostly economical support that was given with the aim of tackling the situation. When it was clear that they needed more resources to help with the implementation, the management mapped the needs of the different clinics and departments by getting the department heads report on their needs. They were assigned much less, but it amounted in total to 120 MNOK distributed on three pots, where one was for miscellaneous and the other for new clinical staff positions, either temporary, or permanent, one pot per each.

Other than this all of the respondents point to the training program. All were given a one-day course. After this the users were left to train themselves during ordinary work days, when



and where they had time. This was problematic because doctors and nurses seldom have a lot of spare time during their shift to sit down and practice. Some departments tried to put this into a collective system, of their own initiative.

“We had small lectures on different HP functionality during the morning as part of our shift report. Closer to go-live we also arranged an evening colloquium with the super-users available to guide us through the case cards in plenum. We got paid overtime for this, which was good”. (respondent 5)

The training was mostly based around instruction videos and case cards that were meant to guide the user through different and relevant scenarios. But all of the respondents comment that the learning material was faulty and did not serve its purpose. Both due to the quality itself, but also that it was outdated when the training started, because the system had already been changed many times. Some super-users tried to make their own ad hoc case cards to help their colleagues navigate the difficulties in the system.

“The videos showed work flows in a system we did not recognise when we arrived at the one-day course because the system had been changed. The change was even greater when we finally launched the system” (respondent 2)

“During the implementation there was an implementation team, later called the eHealth Team. And also the experts and super-users. They were all a great help, and walked around explaining things and teaching us as we went along.” (Respondent 3)

The respondent explained that the hospital did a good job preparing for the implementation with this implementation team that was composed of clinicians, administrative staff and mercantile staff. During the implementation there were experts, expert coordinators, and they had plans for directing resources. But even though they did a good job, it was still a question of extinguishing fires, without knowing where the fires would start.

#### *4.5.2 Money well spent?*

On the questions about whether the respondents believed that the use of resources was spent wisely, they all elaborated on the problems with both the quality and timing of the learning material. The quality was inherently bad, but made worse by the fact that the system was

continuously changing. This meant that the learning material was outdated when the users were supported to have their one-day course, but also the time between the course and the actual and final implementation attempt was too long, and many felt they had already forgotten some of the training, unable to keep themselves updated on the changes, even though the hospital had tried to reimburse for these faults.

“It didn’t help much with the confidence [in regards to what management told employees about the training and the readiness of the system], but you could ask yourself whether it is a good use of resources to train in a system that didn’t work” (respondent 2)

The respondents seem to be split in half in theorizing possible amendments to the bumpy road of implementation. Half of the respondents thought that if they had gotten more, better and earlier training, the implementation would have gone smoother, while the other half was adamant that the only thing that provided any reasonable help was manning up and making sure that they had enough staff to compensate for trouble.

“Staffing up I would say was more important to us, because it gave us the possibility to compensate for a bad training” (respondent 1)

“It was a bad use of resources to train in a system that was never ready for use. After the one-day course we were left pretty much to our own devices, but it is hard to learn anything parallel to normal work with continuous interruptions. It was only another task on the pile of work overload” (respondent 5)

A response, given to another question also addresses something about the training that is worth mentioning. The training that was given was supposedly very limited, compared with what was initially intended.

“I remember we were told in a meeting with the directors how exciting this training would be; utilizing gamification and making it fun to learn. In a way you could say that it was lucky that this information never was forwarded to the end-users that had to endure the terrible training material that was actually used, based around pdf files. But they should have been more open about the problems in our neighboring countries. Holding back information only created mistrust.” (Respondent 4)

#### ***4.6 Create short-term wins***

The sixth step of the Kotter model is to celebrate and communicate small victories along the way to maintain momentum in the change process. The respondents were asked “What milestones or short-term goals were presented and communicated to the users?” and “Was there any celebrations or other way of signifying such short-term wins?”.

All in all, little information was publicly communicated to the users. The workers' representatives were informed of the different milestones in the project, and when the deadlines were breached or disregarded. But it was not until after the implementation that users had a sense of these milestones. The relevance of the milestones is questionable, since the HP management always approved moving forward to the next stage regardless of whether the goals of the milestone were reached or not.

“I felt it was meaningless to define further milestones with the intention to secure patient safety during implementation when all of the deadlines were disregarded anyway” (Respondent 3)

Before the implementation a formal rehearsal was conducted to finally establish that the system was good to go. This was a mark that could have been celebrated.

“The results of the rehearsal were never published because they were so bad. In fact, the in the cases we tried to manage we didn't even get ‘the patient’ into the ‘hospital’ in the system” (Respondent 6)

For the users there was no celebration or communication on short-term wins or achievements, other than just after go-live when management had concluded that the systems did not crash. On whether there was any celebrations before:

“On the contrary. The relationship with these milestones were pretty tense. I think management to a large degree wanted to pass by this in silence” (respondent 4)

It was on the other hand served pizza and cake during go-live.

“We were attempted ‘poisoned’ [humoristically] with old chocolate that had been bought in vast amounts for the original go-live. I have colleagues that to this day don’t want to see that brand of chocolate ever again”. (respondent 6)

#### ***4.7 Consolidate gains and prejudice more change***

The seventh step of the Kotter model is to use the momentum from the short-term wins to continue driving change towards the vision. Since there was no short-term wins during the first phases this is a step that might be difficult to explore - but the project did experience a slight upwind during go-live and the first following weeks.

The respondents were asked four questions that could be related to this step of the Kotter Model. “Did users need to change their workflow during implementation?”, “Was there any arising needs to change the system?”, “To what degree were changes made, and were there resources available to help with facilitating the change?” and lastly “Was these changes implemented across departments etc. or on smaller or individual levels?”.

The respondents are very coherent in that the system was riddled with faulty functions and errors. Which resulted in ad hoc guerilla training by super-users and their likes, on a more or less voluntary capacity. One of the respondents was involved in this work:

“We had to find new ways of working around the faults in the systems parallel to identifying them, at least those that we were lucky enough to identify” (Respondent 2)

Other respondents describe how the communication with other departments or doctors outside of the hospital was negatively affected, and they had to make a lot of calls to ensure that information was received. Or that administering medication was way more tedious with a series of clicks that needed to be in correct order, but was so complicatedly designed that it took a very long time. The respondents also point out that a lot of these faults and errors still exist today, and affect their workdays.

“For instance, the journal locks itself when one user is logged into a patient record. So others can’t use it simultaneously. This is really bad when you take into account that patients sometimes need emergency multidisciplinary aid, e.g. in traumas - but no one in the hospital

can log on to the patient because a GP at the UC has locked the records to write a referral. Therefore, we now have a person on-call 24/7 to evict people from patient records in case of emergency. But when it is not an emergency, it is still not very effective, or safe for patients. The work flows are so much more difficult and demanding now, and it is hard to work in a multi disciplinary way” (respondent 6).

Changing workflows was therefore common, both due to errors, and due to the bad - but intended - functionality. Though some of this functionality was intended, there was also the need for making changes to the system design itself. But this was problematic due to two main causes.

#### *4.7.1 The Mille Feuille of Management*

The resources made available during implementation and the weeks after were mainly increased staff. There were even hundreds of IT developers from the US. The super-users and experts could sometimes help, but most times only assist with forwarding error messages and feedback. Indeed, regular users weren't allowed to forward feedback directly for several weeks, because HP could not handle the sheer amount. Very few changes were actually done after problems were reported. Those that were corrected most speedily were those that were minor, or less important. This might seem counter intuitive when patient safety is involved, but as the respondents explain - it has to do with how management and the administration of the project were designed.

“Making changes was hard because there were so many different stakeholders involved in the decision making. It is the same reason that the functionality is so bad - we have different interests, and work differently. I know this frustrated a lot of semi-decision makers, and it made the distance between clinicians and system developers greater.” (respondent 1)

The respondent explains how e.g. the ICU department could not get HP to change things that they needed before all the other stakeholders in that particular module also had their saying. For medications it was very difficult since it goes across the whole of the sector. So if the ICU needed something to change, they would have to wait for approval by, for instance Trondheim Municipality. There were too many layers of stakeholders, and there was no clear management or real decision makers. Another quote underlined the risk this problem holds:

“Using such a rigid and counter-intuitive solution holds a risk to patient safety itself. The only thing that is easy in the new system is doing something wrong” (Respondent 4)

#### ***4.7.2 The Second Labour of Hercules***

The second challenge was that everytime HP tried to amend something, it always seemed to set off another problem, or setting earlier changes back to default. When changes were made - new challenges arose. The respondents describe it as a game of “whack-a-mole”. Another metaphor could be the mythical beast Hydra, where two new heads grew out immediately once Hercules chopped off one of its original nine heads. One respondent summarizes this effect with a quote:

“So even after changes were made, there was no impression of improvement on the total experience” (Respondent 3).

#### ***4.8. Anchor new approaches in the organization's structure***

The eighth and final step of the Kotter model is to integrate the new work methods and processes that arise during the change process into the organization’s culture to ensure their longevity. For most parts this step will report on the communication between the different groups of actors, because communication is the only relevant aspect to this step of the Kotter model, as there were no structural changes done after the implementation, from the perspective of the users. So for all practical purposes - this section will address communication during the project, and not necessarily how the project anchors the new work flows in the organization.

The respondents were asked: “How was the communication between HP, the Hospital, and the users?”

##### ***4.8.1 What communication?***

Communication is a big part of the Kotter model, and aspects of it before the implementation has been presented earlier in the result chapter. The heading for this subsection is an actual quote from one of the respondents.

“Until the change of the HP director [the first change] the communication was very bad. The management has existed in a separate silo. So there has been a lot of frustration among users - a reason might be that it has been so unclear who’s in charge. HMN that owns both HP and St. Olavs have been completely quiet and just let the children fight it out. Between users and HP it has been no direct communication” (respondent 1)

This statement corresponds well with the experience that the other respondents also had of the previous HP leadership. The term silo was used by several respondents, also silo-thinking. They explained it as being separate and isolated from all the rest - both as a result of how the project and EHR system is designed, but also as a means of describing the difference between management and their philosophy or narrative, compared with the users. Respondents also address how they saw and reported on issues with the system that would directly harm patient safety concepts, but we’re ignored and hushed by management, ensuring that everything would be fine in the end.

“There was a one-way communication. We had no opportunity to address them with our concerns. Even the error sheets were difficult. They did not want to hear from us” (respondent 5)

The respondents differ a bit in their opinion on the communication with the management and leadership of the hospital. There is a tendency across the respondents that those that represent users further away from the management have a less positive view on the hospital director, and it seems to be a bit related to the fact that it was difficult to know who was actually in charge, or who were empowered to make changes or improvements. Regardless, it seems that everyone can report that the distance between employers and the hospital management have increased due to the strain of the situation.

“The relationship between employees and hospital management has been characterized by loyalty and trust, but after this project the distance has certainly increased.” (respondent 3)

“I think the hospital director did a good job in the end, after they understood that the employees were dependent on realistic information” (respondent 6)

The more senior, or higher-level workers' representatives, have a better appreciation of the role of the hospital director, and that she in fact was caught in a squeeze between HMN that owns the hospital, and HP that was tasked with implementing a new EHR on behalf of their common owner, HMN. One respondent hypothesizes that the problems with this organization were not apparent as long as everyone in the leadership got along, but once there were problems - the organization did not function. Another respondent pointed out that some of the difficulties in the communication could come from the different perspectives of management compared with the users.

“There were huge challenges with trust, because while management focused on their goals, they were blind to the additional perspectives of the doctors that had responsibilities for preserving their patients' safety, and saw the direct effect without being listened to” (respondent 4)

#### ***4.9 General remarks and findings***

To conclude, the interview guide included questions on whether there was anything especially good or bad with the implementation of the project, or any thing they would otherwise like to add with regards to the interview.

“We have learnt a lot on how one should go forth with implementing a new EHR. And for some, this project has led to more unity” (respondent 1)

“We have been taken for a fool by a big corporation. So it is easier to blame the lack of success on your own employees, than admitting to something bad and embarrassing” (respondent 2)

“The communication ruined the well established trust between employees and management - which is such an important core of Norwegian work society. At the end they wanted to make us the villain” (Respondent 2)

The general remarks on what was especially good, and what was especially bad, tend to concentrate on communication, and even when specifically asked about what was good - some respondents only had bad things to say. Concerning communication, this was also a



problem highlighted in the system, as the electronic messages that promised collaboration with other professionals, did not function. The system was poorly tested, and the training was faulty. One respondent pointed out that the worst was when management called out everyone who had been critical after the first few days following go-live, and criticized them - using words such as “ecco chambers of hate”. It was really destructive, said the respondent.

Another respondent pointed out that it was very positive how the employees have demonstrated a will to change and adapt. Other than this, summarizing more of the answers would only repeat the points that have already been made.

## **5. Analysis**

The Kotter Model is a set of sequential steps that suggests how to plan or implement change in an organization. This makes the Kotter approach chronological - the early steps are important to the latter.. This chapter will view the whole process from a cross section - aiming for a narrative analysis of the change management process and describe which narratives appear from the results of the interview.

### ***5.1 HP - What is it? And what is it not?***

There are a lot of different opinions on what HP is. Indeed HP itself has a lot of different definitions on what HP is. Formally and undeniably HP is a company, owned by HMN and Trondheim municipality, along with a lot of other municipalities as minor shareholders. HP is also an organization that encompasses the national vision “one inhabitant - one journal”. HP is also a project conglomerate consisting of a lot of smaller projects. These projects have different objectives, and should also be managed differently. The two projects that have gotten the most attention are the implementation project and the staff training project. Early on there was also a procurement project that has almost been forgotten. HP of course is also a huge digital innovation project, and an organization development project (OD project). This has not been communicated as well.

HP is not an EHR in itself. It is not the same as Epic Systems or any of the other subcontractors. HP is the customer of these companies, and their products and services. Nevertheless HP has been so interlinked with Epic that in everyday speech HP is used to describe the EHR. HP is therefore also a word and expression that is sometimes used as a negative word to describe things outside of what HP itself actually is.

To summarize, HP is a vision, a company, an implementation project, and an innovation project. Four different domains that have, at least, four different narratives. These are presented in the subsections below.

## ***5.2 The Castle in the air (HP The Vision)***

A ‘Castle in the air’ is an idiom of “plans that have a very little chance of happening” according to the Cambridge dictionary. It is used in this subsection as a headline for describing the discrepancies between the initial dream and goals, and the actualities of the project, that are revealed as the implementation phase starts. In this section we will focus on the first three steps in the Kotter model. These steps are concerned with establishing a sense of urgency, a sense of change and building a strong coalition. To achieve this it is important with a strong and compelling vision.

From the results it seems that the vision of “One inhabitant - one journal” was very well communicated and understood. It was a vision the users agreed with. They also agreed with the strategic goals linked with the vision - such as increased functionality, standardizing and structuring of data - with the aim of increased effectiveness, and reduced labor and time spent on documentation - structured data was also said to benefit research. Another goal was increased patient safety, and increased patient involvement and health record ownership. A third main domain of strategic goal was increased interprofessional communication. A lot of these goals were presented as interlinked and generating synergies. So both the vision and the goals were welcomed by staff.

It seems that there was no sense of urgency surrounding the status quo among the users. They expressed wishes for better EHR systems, but denied the need for new or better systems. These wishes were mainly linked to the strategic goal of increasing effectiveness. The previous EHR was perceived as a bit cumbersome and old. E.g. employees were still dependent on prescribing medication on paper, and some of the documentation in the EHR seemed a bit excessive. Patient safety, communication and collaboration was not a concern at all. Even though there was no sense of urgency - many were still open-minded, and even positive, to change. The reasons for this were mainly based on the combination of general technology optimism, and trust in that the goals of management were aligned with the interests employees have. And indeed - as already established, the employees agreed with these strategic goals. Looking back one could perhaps use the phrase; “grass is greener on the other side”-mentality.

So management succeeded in presenting a compelling vision - but did not succeed in establishing a sense of urgency. That is problematic because management continued the project with a speed and drive that was indicative of a state of great urgency. Advancing with a dissonant situational awareness between management and staff creates potential pitfalls.

E.g. in the next step - building a strong coalition.

The urgency can be an important part of what makes a vision compelling. As an example, in a thought experiment - the sun will explode and destroy all life in the solar system. But, it's not until 5 billion years. So no one really cares. No one is willing to devote their life to tackle this problem because there is no urgency - even though it is very important when you look at the potential consequences.

For the HP project, there is a great vision - but the lack of urgency makes the vision less compelling in contemporary time. And therefore, the impact of the vision as the most important selling point when recruiting staff for the construction of strong teams, is reduced compared to how well it would sell if the users also had the same experience of urgency that seems to be present at management.

Underperforming on this message might have resulted in the difficulties that HP experienced in recruiting experts to their development teams, according to the interviewees. The respondents also attested that there was little user involvement in the early phases. Early user involvement and ownership to the project might in itself leads to a reconciled situational awareness - and if it does not lead to this directly, project might recruit early stage advocates that can increase the appeal of the vision by conveying a understanding of the project through the eyes of a employee, using language that are more compelling to the end-user than what management might be able to communicate using their lofty words

As these deviating perceptions increased during the first phases of the project - a difference in opinion manifested in the user group and management group respectively - creating the impression of a castle in the air. The respondents explained how one of the experts, together with the leadership, had visioned a big and beautiful castle, built on the founding vision of "one inhabitant - one journal" - but later felt that they were now building a runned down shed. In a 2022 news chronicle signed by 36 consulting physicians this point was also made, titled "The vision of a common journal is a castle in the air". They pointed out that they have

a common goal in effectivizing the health care sector, but were skeptical that one system would be beneficial (Adressa.no, 2022).

To summarize, the vision narrative seemed to lack some important aspects that might have led to differences with subsequent challenges continuing throughout the next phases of the project.

### ***5.3 The Emperor's New Clothes (HP The Company)***

The literal folklore “The Emperor’s New Clothes” by Danish author Hans Christian Andersen is a story about an emperor that employs two swindlers that pose as weavers, and promises the emperor fine clothes that are invisible to those that are stupid or incompetent. Thus, when the emperor proceeds through his city, no one dares to point out that the emperor is in fact dressed in nothing at all - until a child speaks out and everybody realizes that they have been fooled. The allegory of the emperor’s new clothes was also recently used by a local politician in a local newspaper article. The politician is part of the municipal council of Orkland that has voted to postpone the implementation of the HP solution, pending more information. In his chronicle he writes that they await the national audit’s investigation into how much clothing the emperor is really wearing. The main theme of the chronicle though is pointing out the negative effects of the HP solution (Avisa-st.no, 2023).

This section will describe the relations between the different actors within the project, and address the notification culture, and thresholds for speaking up, or being listened to, during the change process. The narrative is based around the status of HP as a company and addresses the interactions between the different groups of actors.

HP is a consortium conundrum. It is a company where HMN is the principal shareholder. The other shareholders are municipalities in Middle Norway, where Trondheim is the largest one. HP is charged with implementing the new EHR at St. Olavs Hospital (and several other hospitals planned). Meaning that the municipalities have a stake in the implementation of the EHR in the hospitals. The hospitals are owned by HMN.

The respondents explained the different layers of involvement in the project. The experts, originally working as clinicians, were bought free from clinic work to get involved with development, and later implementation. To a lesser degree, so were the super-users. Respondents also report that there were a multitude of different teams with different constellations - and that it was difficult to know who was in charge. Even though the HMN was owning both HP and St. Olavs - the respondents attest that they were more or less silent and invisible for most part.

Using the allegory from the subsections' introduction, it seemed, according to the respondents, that the emperor represents management, dressed in the "castle in the air" invisible vision sold by Epic and HP. And then - even though users start to see through the vision - they don't speak out. Not necessarily in fear of being judged, at this stage at least, but more perhaps because there is no system for gathering user's opinions. There is no clear chain of command, and users do not know who is in charge, or accountable. The fear culture and distrust developing next will be addressed in the following subsection.

The RHF HMN was not focused on very much in the interview guide, which could be critiqued. This was a result of the way HP presented the project on their website and through their communication. The author, as a previous potential end-user, did not have the notion that HMN was an important part of this project. It seemed that the project was kind of isolated to involve HP, Epic, St. Olavs and other actors involved in the specific implementations. This was problematized without solicitation by the respondents, asking the rhetorical question "But where was HMN?". After all, when you look at ownership structures they should have been much more present, especially once the disagreements started. Trying to eliminate themselves from the equation, according to respondents, and isolating the implementation to the HP project management - resulted in confusion, frustration and distrust among users - not only limited to HP and HMN, but also the hospital management - that in retrospect seems to have preformed above and beyond, compared with what they were originally tasked with assisting with during the implementation.

To summarize this subsection. HMN as the hospital owner, principal stakeholder of HP and ultimate decision maker, should have been much more present and driven the narrative. This could have both been beneficial in carving out a clear overview of the hierarchy of decision making and accountability - leading to less confusion and frustration - as well as potentially

alleviating the hospital management from the building mistrust from users; ensuring that the hospital, at least, could remain as a united team, making it more able to face the challenges. Instead the prevailing state of matter was more characterized by pulverization of responsibility. This has also been addressed in the report by Boston Consulting Group (2023).

#### ***5.4 Divide And Conquer (HP The Implementation Project)***

The fear of speaking out, in risk for being judged as stupid by management, is developing during the implementation phases - as a result of the ever increasing dissonance in the vision narrative - which management seem adamant to try keep selling - and the narrative of a organizational structure that does not enable efficient forwarding of users' concerns.

The situation was starting to breed dissatisfaction and mistrust towards management - and this might have given them a feeling of losing the grip on the situation, and creating the need for grasping control. The maxime "divide and conquer" has been attributed to Philip II of Macedonia, the father of Alexander the Great. It is a machiavellian technique used in power struggles.

The respondents tell a story of decreasing discernment among the leadership - and their response to concern and criticism with discrediting and dividing statements aimed to reduce the influence of disagreeing users. The responses are portrayed as disproportionate, and it is during the implementation phases that the local, regional and national media are recruited as a tool for both constructive and poisonous discourse. While simultaneously openly criticizing the skeptics through medi responses - management opted for rewarding those that adhered to their vision narrative by referring to them as representing the intelligent and reasonable. The respondents describe this practice as very divisive and polarizing.

The stark fronts that developed seemed to also pivot the hospital management towards defending their employees. It was more clear to the users that there was an actual separation between e.g. the hospital management, and both HP and HMN, even though for some they still felt betrayed and held on to the mistrust.

The implementation phase, from the start of training, to the first weeks after the go-live date, is a period that is deeply colored by the trust challenges between the different actors. This was also pointed out by the Boston Consulting Group (2023) in their external evaluation report.

The polarization is still present to this day. In a news report by Adressa.no, they visited St. Olavs Hospital to interview staff one year after go-live. In the article they interview two young nurses that criticized doctors for being reluctant and reactionary. (Adressa.no, n.d.) The respondents said that it was difficult to speak up, both in defense and criticism of the EHR. And that employees could not openly support HP because they feared being shunned by the popular majority. Over time this took its toll on user motivation, and consolidated the mistrust that had built. Reconciliation will be challenging. But respondents say that communication was improved once the first HP director quit, and was replaced. Regaining trust in the system might be dependent on removing the individuals that need to take responsibility for the destruction of the trust in the first place. This might be the prize for the polarizing strategy that management chose.

### ***5.5 Chinese Whisper (HP The Innovation Project)***

The communication during the project has been described by the respondents, on behalf of the users, as non-existing, one-way and condescending. In accordance with the last subsection respondents have described the communication as untrustworthy, destructive, and down-right lying. This subsection will focus on the narrative of HP as an innovation project, and what was perhaps lacking in the communication.

Communication is key in the Kotter model. As previously mentioned during the analysis there have been states of mistrust, division, difficulties in reporting back, unclear management structures, and so on. Arguably communication, or the lack of it, is a part of all of these concepts.

The respondents describe the communication from an overall and retrospective view when answering the direct question about how the communication was between the different actors



- but it is also easy to deduce how communication was during the different phases. It seems that communication was different throughout the different phases.

Respondents imply that during the first phases there was a one-way information campaign forwarding the vision narrative. When the project moved on to the development phases information decreased, as there was little to no information about the development. The communication was still one-way. According to the respondents the quality and quantity of information to the end-users varied a lot, depending on how well the experts, super-users, middle-management and the workers' representatives forwarded the information at the different stages, and through their respective channels. The description by the respondents leave an image where information flows down from the top, through different streams, down to the users. What information actually reaches down to a specific user depends on what fell into the information river upstream, and if it got filtered out or altered on the way down. It is imaginable that information across the end-user population would therefore vary a lot, and the risk of receiving contradictory information would also be present. A visualizing terminology of this phenomena could be "trickle-down communication"; small and random pieces of information, casually filtered and distributed to whomever happens to be at the right place at the right time.

Respondents also explain that there was some information that was sent out in writing and videos through official in-house channels such as the intranet and email. But it seemed like communication in the sense of discourse, where two parties exchange information with each other, did not seem to be very present in the organization. The communication directly between HP and the end-user seemed to be non-existing throughout the project. Information from HP went via the hospital.

Of all the lacking communication, what lacked the most could arguably be the narrative of HP as a digital innovation project and an organization development project. Narratives focused around such types of projects would necessarily need to address the challenges and overall structural changes, then needed to be implemented. Telling employees that this would be more than just a new EHR. Some of the respondents testified that management told them that it would be more than just a new EHR - but the narrative they presented was a visionary one. Telling them it would be a magnificent tool for collaboration, and it would positively revolutionize and effectivize the whole hospital, making everything easier and better. This

was the vision they sold. Management could have been more focused on the challenges that presents with digital innovation projects, flagging the high possibilities that this would be very demanding and challenging for both users and the organization - even painful. Such a strategy might be better in the long run, than a non-binding vision narrative approach (Jalonen, 2012). But it entails accepting more risk of receiving a stronger push-back in the acceptance phase. The reward is having a more realistic approach to the challenges that such projects have, during the development and implementation phases - so that the employees are not left with the sense that they were being led astray, or lied to.

## **6. Discussion**

HP is continuously being discussed both in the associated organizations, and in media. The discussions can sometimes be emotional, and it can therefore be difficult to delimit the discussions to specific themes without dragging in other topics. Partly, this may also be an effect because of the complexities of HP, naturally interweaving the topics.

This chapter will present discussions on what can be learnt from the HP projects' EHR implementation, some aspects of the mechanisms governing the current managerial situation, and lastly, some thoughts on the road ahead for HP. The functionality, effectiveness and patient safety of HP will not be discussed.

### ***6.1 What Can We Learn?***

In response to questions about whether HP had any positive consequences, one respondent pointed out that “we have learnt a lot about implementing a new EHR”. And the director of HMN himself also stated in a news article that “If we had to start over, we would have done a lot of things differently” (Adressa.no, n.d).

This subsection will discuss three narratives that are important to understand in the context of this study. Lastly, we will also discuss the Kotter Model as a framework for change management, and ask if there exists a recipe for change?

#### ***6.1.1 The Vision narrative***

All aboard! (The great philosopher Ozzy Osborne shouted in “Crazy Train”). A vision narrative can be an efficient tool in getting acceptance for change, and recruiting change agents and teams that can help facilitate change. In other words, one of the goals with a vision is getting everyone aboard with the project. Selling the project, so to speak. This subsection will problematize some of the aspects of the vision narrative.

The article “We’re Changing - Or Are We?” by Sonenshein (2010) aims to untangle the role of progressive, regressive and stability narratives during strategic change implementation. He explains that “strategic change involves altering employees’ construction of meaning by using a discourse that sets a new direction for a firm, yet [he] also found that strategic change involved the creation of a discourse of stability”. This translates to an understanding that the way management narrates the change process is important to how the employees perceive their role in the process, and the goal of the process - but also underlining the importance that management therefore must also change the narrative along the course of the implementation process to adhere to the emergence of a new daily operations situation - and that these narratives should be interwoven in a way that facilitates a smoother transition.

E.g. “flagging” the fact that somewhere in the future the employees will be back to daily business as usual, but in a completely new situation. Sonenhein illustrated this in his thesis by comparing the same change process in two different groups. Within one group the narrative was that the change would be a complete alteration of the business, and in the other group the narrative was that it was more or less only name change, or a question of branding. The results are explained in full, but it is easy to imagine that the two narratives will imprint a very dissimilar understanding in the two groups - as his results also showed. - The group that got information about “a complete change” was more mentally prepared to change and meet the difficulties of change - than the other group.

In the HP project management has always been very clear on the vision. All the users, and all inhabitants knew the motto. The vision was not difficult to sell, as it seemed that the users were inherently aligned with the vision, and the strategic goals of the HP project. Users both agreed with the goals, and understood the gains.

As the project moved forward, pushing the users into new phases - the users developed concerns parallel to the increased exposure to the actual EHR. The users were entering a new narrative. The findings in this study suggests that leadership responded by repeating the message from the vision narrative. A state of operating within different narratives can give rise to dissent. And the respondents do paint a picture of growing dissent during these phases. It seemed like the leadership was stuck in the vision narrative - exclaiming the future potential benefits of the change as an answer to the concerns that users had regarding the [then] current challenges that users were facing - trying to adapt to the implementation, and

later, new daily operations. This discrepancy in situational awareness could be one of the sources of the tense relationship that has developed between employees and the leadership because they are talking past each other when their narratives are not aligned. Making collaboration more difficult, and gradually crumbling trust.

### *6.1.2 Implementation narrative*

For users, the implementation phase hit like a wave. Ease of use, reduced productivity, increased time use, errors with patient safety risks, click fatigue. According to the respondents the users had been assured that everything would be fine. When the challenges presented, users did not experience being listened to. Media quickly filled the front pages with accounts from concerned staff.

Stuck in the vision narrative, management opted for the divide and conquer strategy narrative, using force to implement, instead of understanding. This might be because management did not have a sufficiently well prepared implementation narrative strategy, or that they had a strategy but were bewildered by the resistance and chose a more defensive strategy. This is speculation.

This thesis will not suggest a fitting retrospective implementation narrative for the HP implementation project - for that the project is too easy compared with the scope of this study. The following paragraphs will present a discussion on considerations associated with an implementation narrative in the context of HP.

The benefit of an implementation narrative is facing the process without being obtuse to the challenges of an implementation project. As presented earlier in this thesis, especially the introduction and background chapter - EHR implementations are prone to cause challenges that sometimes surpass prior expectations.

After the challenges were communicated, questions have been raised on whether it was beneficial to implement the EHR in the whole hospital simultaneously, or whether they should have tried it out in one department or clinic before launching it completely. Testing as a whole has been criticized, as confirmed by the respondents. Discussion on whether the EHR should have been firstly implemented on a smaller hospital in the region have also been

raised. In a live panel discussion in November 2023 at Adresseavisa, Director HMN Stig Slørdahl, said that the decision to start the implementation with St. Olavs was partly because the daily operations at St. Olavs encompassed all of the functions they needed to develop - so preparing for implementation at St. Olavs would facilitate a quick progression of further implementation in the other hospitals of the region. (Adresseavisa. (2023, November 15) This strategy was hanging on “if” the implementation would be successful at St. Olavs - which they believed it would be.

Starting the implementation in a smaller hospital could have benefits in trying out the EHR in a smaller environment that is easier to manage, also making iterations and pivoting easier. Keeping up the production levels at the biggest hospital in the region would also provide a more efficient buffer if production and efficiency fell in a smaller hospital - rather than having all the smaller hospitals compensate for reduced productivity in Norway’s fourth largest hospital. Starting the implementation on a smaller hospital, such as Levanger, also has risks.

At Levanger hospital, situated just over an hour's drive away from St. Olavs hospital, there are concerns with recruitment, and losing candidates to the bigger cities and hospitals. This challenge is proportionally documented, compared with how much it is discussed at the hospital. The concern about recruiting and stabilization of health care workers in the district is, nevertheless, described in general reports and used as a basis for governmental strategies (Abelsen et al, 2020). Taking into account the response of doctors in the assessment polls from the Norwegian Physicians' Association - it could have been a feasible possibility that an implementation at Levanger could have caused a massive flow of staff applying for jobs and transfers to Trondheim or other hospitals in the region. An implementation at an institution such as St. Olavs could be better equipped to tackle a problem with quitting and recruiting.

A colleague of the author formulated the concern as such: “Actually, it was good luck that they didn’t first implement HP at Levanger, the hospital would have been closed down by now”. To summarize the argument, even though an implementation at St. Olavs could have entailed possibilities for more or greater challenges, it also has a greater base to buffer these challenges.

The key dividend of the implementation narrative is understanding and giving information to all actors about the possible challenges during an implementation process, and giving them

realistic expectations so that they may better prepare both mentally and technically for change. A prerequisite for this is understanding implementation and correctly defining the project through e.g. studying and drawing experience from previous comparable projects - and then communicate that understanding in a tailored narrative to all actors.

### *6.1.3 Daily operations narrative*

The natural progression of change is the transition from one state to another. The vision narrative, and the implementation narrative have already been discussed as tools to initiate change, and facilitate change, respectively - but a separate narrative needs to be on the receiving end of the transition - consolidating the changes and anchoring the new approaches to the organizations' structure.

Some of the challenges presented by users, such as click fatigue, might be part of the new normal. The new EHR, according to the respondents, does entail more clicking and less writing. It is an inherent part of the software. There might be ways of reducing the amount of clicking to the bare minimum - but the fact of the matter seems to be that there will be more clicking. This is one of the changes that the employees have to come to terms with.

Is the clicking mostly annoying during the transition? If the frustration persists, workflow could need adaptations to alleviate the situation. A daily operations narrative might help an organization to relapse to the pre-implementation state.

A poll conducted by the Norwegian Physicians Association (DNLF) in September 2023, among physicians at St. Olavs Hospital, nearly one year after the implementation - paints a picture of the current daily operations, and which challenges an adapted narrative should address. There were 763 respondents, distributed across all departments. Almost 50% answered that they were either "to a small degree" or "not at all" comfortable with executing important tasks in the EHR. 97,1% describe the system as unmanageable, and 88,2% as time-consuming. 30% feel they have not gotten adequate training, or that it is problematic that there is no agreed-upon procedure on how to perform such tasks. 50% is "to a large degree" worried that the EHR is threatening patient safety, and increasing risk of mistreatment. The EHR is perceived as cumbersome, time and labor consuming, that it is difficult to report errors, and that many have given up reporting these. Over 80% think it is a

good tool, and 70% believe that it will never be a good tool. The full 44 page long poll gives interesting insight in how the daily operations are perceived by staff.

#### ***6.1.4 Recipe For Change***

This thesis does not provide an answer to the question on whether there exists a recipe for change management, or not. However, as presented in the background chapter, and as discussed on the basis of the analysis in this thesis - there might be a need for customizing the narratives for change implementation, not only to the theme of the change, but also to the specific organization. ICT projects are different from construction projects. And EHR implementations are different from other ICT implementations. The Norwegian health sector, and its workers, are potentially different from some of the health sectors in other countries. Change management also differs between non-academic laborers and knowledge based management. And doctors may have other perspectives and concerns, that for instance nurses. So speculation on the answer to the question of what is the correct recipe for implementation of a new EHR system at St. Olavs hospital would be somewhere along the scale of “nobody knows” to “at least it needs to be a tailored solution”.

##### ***6.1.4.1 Comments on Kotter***

The Kotter Model was chosen as the academic framework. The model is permeated by communication as an important principle, and has a sequential design where the next step builds on the previous. It served well to investigate the research questions in this study, and well suited to the design. However, it is not likely that the Kotter Model in and of itself is sufficient to build an entire change process around. At least not for the EHR-implementation at a large hospital.

#### ***6.2 The Sunken Treasure - Why Does The Project Persist?***

Adding to the play on the wave comparison in subsection 6.1.2 and the watery allegory of the title of this subsection - the discussion is introduced with a quote from St. Olavs Director Grete Aasved in a live panel discussion in november 2023: “This is a tsunami that we’re pushing ahead of us. This is not sustainable economics. To compensate for all the things HP causes, we need to hire more staff. It’s not sustainable.” (Adresseavisa. 2023, november 15).



This subsection will briefly discuss some of the aspects of the sunken cost fallacy for IT projects. The title is an allegorical joining between the terms “sunken cost” and a “sinking ship”. Both terms that have been regularly used to describe the HP situation and project.

The sunken cost fallacy is widely described in business and finance as the tendency to chase after projects with greater sunken cost, both by means of time use and financing, because the cost is already so big that it pains to admit loss, even though cutting loss by exiting the project greatly outweighs the potential benefits of ensuing the endeavor.

A 2009 article titled “Survival of the unfittest: Why the worst infrastructure gets built - and what we can do about it” by Flyvbjerg, presents a graph (figure 4, p. 363, in the oxford article collection) where accelerated costs of IT-projects are compared with construction projects. In the article he makes the point that even though construction projects are renowned for overshooting costs, IT-projects in general are far worse in that the cost acceleration multiplies with the size of the budget, making the overall cost run out of hand. Flyvbjerg presents examples from airport construction projects in Hong Kong and London, which ended up affecting the national economy - not because of construction costs, but because IT expenditures within the project as a whole were accelerated. Flyvbjerg quotes an infrastructure planner “We know how to build large, expensive tunnels by now, but we don't know how to build the ICT safety systems that go into the tunnels; ICT busts us every time”.

Up to 2013, when the last new building of St. Olavs Hospital was finished, it was the largest hospital construction project in Norway. Its total cost was 12,5 BNOK, and now fills a city district. (bygg.no, n.d.) The HP project is now at an approximately 5 BNOK cost, a third of the cost of the new hospital, and still the costs are scheduled to rise - and it hasn't even been implemented in the remaining two thirds of the mid-Norway region. The director of St. Olavs hospital has stated that the situation is critical, and that they will run out of money in 2024 and need financial help from the government. Halting projects are not enough, and they need to let staff go. This will further affect production levels. (DagensMedisin.no, n.d.)

In a Harvard Business Review article a discussion around why IT projects are riskier than they seem revealed data which suggest that management stay latched on to two thirds of unsuccessful projects that should have been terminated. The article suggests that companies should do a stress test to see if they are able to absorb a 400% increase in cost, simultaneously with just receiving 15-20% of benefit from IT projects before getting into

them. (Flyvbjerg & Budzier, 2011). The message of the article is that we underestimate how risky and costly IT projects are.

The real cost, and the risk of cost acceleration in projects such as the HP should be much better mapped and communicated. The understanding of these principles are important not only to management, but also staff. Since HP is a publicly funded project, it is also important to taxpayers in general.

### ***6.3 Moving Forward - The Road Ahead***

Poetically phrased, the road ahead is illuminated by users organized torchlight processions outside the hospitals across the region, demonstrating against HP. In all, seven hospital locations.(NRK.no, 2023) The demonstrators are adamant that the project must stop. What are the options for HP going forward?

This subsection will mainly present discussions on the project in regards to the other hospitals in the region. It is worth mentioning though, that a large proportion of the value proposition for the hospitals, hinged on including all GPs and municipalities in the region. It was this universal inclusion of all health care providers that would deliver complete interprofessional insight and communication. Now that the GPs of Trondheim have stated that they will never use the new EHR (Nidaros.no, n.d.), many argue that the whole vision falls apart and the reason for implementation does not exist anymore.

Another question that has been increasingly debated in the media, both by users, leaders and politicians, is whether the projects should be aborted. It seems there is either no exit strategy, or management is not communicating it out as long as they are working to make plan A succeed. The Office of the Auditor General of Norway (Riksrevisjonen) published a report in november 2023 saying that of all the EHR systems in Norway, HP was by far the worst. (NRK.no) Their investigations continue and they will publish a new report in the summer of 2024.

With regards to the performance of the EHR, it begs a discussion concerned with whether or not HP has received what they were promised in the contract with the EHR provider. In broad strokes there are three main options going forward. In broad strokes there are three main

options going forward for HP. One option is to continue according to the current plan, implementing HP first in HMR, during the spring of 2024, and then HNT in November 2024. The second option is to pause the implementation plan, and use all available resources to make HP work at St. Olavs, before considering further implementation. The third option is to opt for a terminating or canceling of the contract. The questions concerned with terminating versus canceling/nullifying a contract are complex legal issues, depending on the degrees of contract default, that are being increasingly discussed in the media, but expedient to discuss in this thesis. The first abovementioned option will be discussed briefly in the section below.

### ***6.3.1 Thank you, Next!***

Currently, in November 2023, the HMN and HP leadership, is still planning to go forward with their implementation plan in HMR during spring 2024 and HNT in november 2024. The director of HMN stated in a live debate that the board of HMN would decide on these plans desember 2024 at the latest. But the HMN-director Stig Slørdahl has also previously stated that slowing down or reversing the implementation is “no option” (DagensMedisin.no, 2023).

### ***Concurrent conflicts***

Moving on with implementation can be difficult. HMR consists of four hospitals across the Norwegian county of Møre & Romsdal. Two of the hospitals, in Molde and Kristiansund, are being merged and physically moved to Hjelset. This is a huge project. The first departments are scheduled to move into the new hospital during the spring 2024, simultaneously with the suggested EHR-implementation - and then more departments will gradually move in until it officially opens in the spring 2025. Knowing how difficult the EHR implementation was at St. Olavs - begs the question if EHR-implementation at the same time as realization of a major hospital merger and construction project are being carried out?

### ***Recruiting and staff stabilizing buffers***

As previously discussed there were also some possible benefits in initiating the implementation at St. Olavs hospital. It is Norway’s fourth largest hospital, situated in Norway’s third largest city - a popular place to live. The other hospitals in the region are much smaller, and have more rural locations. The effect on recruiting and stabilizing a sufficient workforce is therefore something that should be assessed properly. Buffering for reduced productivity during learning and implementation will also likely be more

challenging, including learning new recruits and substitutes. The suggested narratives applied for an implementation at these hospitals are not necessarily the same that would succeed at St. Olavs hospital.

### ***Resistance to change***

A third point to be made is that our findings suggest that the staff at St. Olavs Hospital was initially quite positive to change. A small portion was negative before training and implementation phases started, and then there was a third group of staff that were more or less indifferent. Since then, there has been a lot of negative coverage and debate concerning HP and the implementation - like for example the above mentioned torchlight processions. It is therefore possible that resistance to implementation will be greater at the remaining hospitals. When differences in situational awareness and narratives within the organization develops, upper management loses the control over the processes, if they are not able to connect to the contemporary and developing contexts of their organizations (Schuler et al 2023).

An October 2023 poll, conducted by the Norwegian Physicians Association, investigated the attitude towards HP among physicians working in HMR and HNT - the HFs that are scheduled to implement HP next. The poll gives some insight into the current resistance to HP among staff. In all 735 physicians answered. Over three quarters do not believe that HP will deliver on the vision statement. And over 90% does not believe that their workday will get easier with HP, or that HP will make it easier to recruit and/or keep staff, or trust that it will be implemented according to the quality requirements of the milestone plan - and just below 90% believe that HP will not give better patient treatment, and that it is unethical to continue with the implementation. (DNLF, 2023)

### ***Unchanged narratives***

Einstein said: “Insanity is doing the same thing over and over, and expecting different results.” Following the public debates, it does not seem like the narratives of management have been changed compared with what was found during this study. Knowing how much resistance has developed - not changing the strategy of narratives going forward is in itself a potential risk. Although perfection is not likely to be achieved, a split quote from Winston Churchill can also be illuminating; “To improve is to change...”.

### ***6.5 Limitations and disclaimers***

This study was limited to investigating the implementation process of the new EHR in St. Olavs hospital, by means of conducting semi-structured interviews with workers' representatives from the Norwegian Physicians' association. The study does not investigate the functionality, efficiency or patient safety of the EH.

Understanding the complete process of implementing a new EHR at the hospital should also include investigations of other user professions, and management. This was not possible due to time and resources during this master thesis. The HP project was also interlinked with the already implemented EHR in work at the Trondheim municipality. The sheer complexity of the project requires the reader, as well as the author, to take great care in the assessment of what can actually be concluded on the basis of the study.

Other than the intended limitations of the study, there are also limitations to the study design. The aim was to map the process from the user perspective, but interviewing all users in a hospital with more than eleven thousand employees is not feasible. Workers' representatives therefore appeared as the most functional choice to get an as accurate description of the situation as possible. But the sample size was still only six representatives. There might be other points of view that have not come to light - and also the representative could hypothetically have their own agenda towards management. This last argument is, in the context of the Norwegian public health sector, very unlikely - and nothing in the findings suggests this. As expected they share balanced assessments and realistic accounts.

## 7. Conclusion

The aim of this thesis was to understand the narration of, and the implementation of, the vision of a new electronic health record (EHR) at St. Olavs Hospital in Norway - according to the vision "One patient – one journal". This thesis applied the Kotter model for change management as an academic framework.

By narrative analysis of the user-perspective, through semi-structured interviews, four different narratives emerged: The Castle in the air – the visionary narrative put forward by leading figures responsible for the new EHR-system. The Emperor's New Clothes – the narrative of the company responsible for the EHR-system and Divide and conquer – the narrative of the implementation project, both developed when the critical problems with the new EHR-system surfaced and the management kept repeating the visionary narratives even if the narrative was highly disputed. Finally, there was the missing narrative of the innovative project – Chinese Whispers. A narrative of the difficulties with ICT-implementation, and the challenges it ensues for organization development.

A finding worth mentioning is the managerial need to further develop a visionary narrative into a dynamic implementation narrative to avoid the sense-making process in the organization going astray, unnecessary conflicts to arise, or to keep an exit-strategy available. Another finding is that great considerations should be invested in choosing the right initial narrative. When knowing that the organization is going to, not just implement but also help develop new critical ICT-infrastructure, perhaps a narrative of innovation might be more appropriate in order to balance expectations. The new EHR sought to improve effectiveness along with increased patient safety at all levels of the Health Care Sector in Mid-Norway. The success of which was depending on functionality, useability, and other parameters that has not been investigated as a part of this thesis.

Understanding how the dynamics of managerial narratives can foster support or create barriers in change processes can be of importance when planning for change. Implementing a new EHR is a complex project with huge effects on patients, staff, management and economy - all of great interest to the public. It is not yet understood what makes for a successful EHR implementation or not, or indeed how to define success in this context. Further investigation is needed.

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## **9. Appendix**

**9.1 “Intervjuguide (utkast)” (Interview guide (draft))**

**9.2 “Intervjuinvitasjon (utkast)” (Intervju invitation (draft))**

# Intervjuguide

## Til intervjuer

Dette dokumentet er ment for intervjueren tilknyttet prosjektet «A Qualitative Descriptive Study On The Implementation Project Of “Helseplattformen” From a Change Management Perspective Using Narrative Analysis.». Dokumentet skal hjelpe intervjueren til å stille planlagte spørsmål i forbindelse med prosjektet. Spørsmålene er forsøkt utformet for å kunne tolke utsagnene i et endringsledelses-perspektiv med utgangspunkt i Kotters modell.

## Til intervjuobjektet (avklarende informasjon før intervjuet)

Målet er å innhente representative beskrivelser av hvordan de ansatte opplevde prosjektet, også der disse betraktningene er forskjellig blant de ansatte. Vi ønsker også beskrivende eksempler for å poengtere fenomener ved implementeringsprosessen, og de er velkommen til å bruke egne personlige eksempler i de tilfellene de også er brukere av systemet. Fokuset er implementeringen av Helseplattformen som prosjekt, og Epic-systemet som del av dette prosjektet - men målet er ikke å vurdere Epics popularitet eller funksjonalitet.

## Spørsmål:

1. Vet du om ansatte/brukere var involvert i anskaffelsesprosjektet?
2. Hvordan ble ansatte/brukere involvert, også gjennom ansettelse, i de ulike fasene:
  - a) Forberedelsesfasen
  - b) Spesifikasjonsfasen
  - c) Utviklingsfasen
  - d) Akseptansfasen
  - e) Opplæringsfasen
  - f) Produksjonsfasen
3. I forkant av anskaffelsen, hvorvidt opplevde de ansatte at det var behov for endring av journalsystemet?
4. Hvor akutt ble dette behovet opplevd å være?
5. På hvilke måter var de ansatte involvert i teamene som sørget for utvikling og implementering av prosjektet?
6. I hvilken grad - altså hvor godt var de involvert, og med hvilken påvirkningskraft?
7. Hvordan var støtten for prosjektet i løpet av akseptfasen blant henholdsvis de som var en involvert del av prosjektet under utviklingen, og de som ikke hadde vært en del av utforming eller utviklingen?
8. Hvilken visjon for prosjektet var det som ble formidlet til de ansatte?
9. I hvilken grad mener du den gjengse ansatte hadde et klart bilde av denne visjonen?
10. Hvilke kanaler ble brukt for å kommunisere prosjektets visjon til de ansatte? Og opplever du denne kommunikasjonen som effektiv? («Riktige» kanaler, mengde informasjon, kvalitet på informasjon og formidlingen?)
11. I løpet av opplæringen og implementeringen, hvilke ressurser ble tilgjengeliggjort for at både individer og avdelinger kunne gjennomføre visjonen til prosjektet?
12. I relasjon til dette spørsmålet - hva ble opplevd som god ressursbruk, dårlig ressursbruk, og hva var det eventuelt som manglet? Grunngi svaret.  
(Ressurser under selve implementeringen gis det spørsmål om senere)
13. Hvilke delmål ble presentert og kommunisert underveis?

14. Hvilken opplevelse hadde de ansatte av at disse delmålene ble oppnådd? (Hvordan ble måloppnåelsen markert eller kommunisert fra ledelsen?)
15. I løpet av implementeringen - hvilke behov for å endre arbeidsflyt og metode oppstod?
16. Oppstod det behov for å gjøre endringer på systemet?
17. I hvilken grad ble disse endringene gjennomført, og hvilke ressurser var tilgjengelig for de ansatte i forbindelse med denne endringsprosessen av arbeidsflyt og metode?
18. Ble endringene implementert på tvers av avdelinger og gjeldende for alle - eller var det mest snakk om utbedring av et spesifikt og isolert tilfelle?
19. Hvordan opplevde du kommunikasjonen mellom prosjektledelse, sykehusledelse og brukerne?
20. Er det noe du synes har vært spesielt uheldig ved implementeringsprosjektet?
21. Har du noen beskrivende anekdoter som kan eksemplifisere dette?
22. Er det noe du synes har vært spesielt positivt ved implementeringsprosjektet?
23. Har du noen beskrivende anekdoter som kan eksemplifisere dette?

**Are you interested in taking part in the research project**  
***“A Qualitative Descriptive Study On The Implementation  
Project Of “Helseplattformen” From a Change  
Management Perspective Using Narrative Analysis.”***

**Purpose of the project**

You are invited to participate in a Master thesis research project where the main purpose is to describe the course of implementing “Helseplattformen” as a new Electronic Health Record (EHR) system at St. Olavs hospital HF in Trondheim, Norway from a change management perspective with the aim of identifying both success criteria and obstacles with the implementation.

**Which institution is responsible for the research project?**

The NORO University. (Data Controller).

**Why are you being asked to participate?**

The project is limited to mapping the perspective of physician staff. To ensure a broad coverage of sentiments and case specific accounts we have decided to interview union representatives.

**What does participation involve for you?**

Choosing to participate will involve an interview lasting approximately 45 minutes per phone or video link, and recorded on a computer. The session will be conducted in Norwegian. The interview will focus on the stages leading up to the actual implementation, and the first period when the new EHR was online. The questions are aimed to both get accurate descriptions of events during this timeline, also including specific incidents that exemplify certain phenomena in a representative way. We will also inquire about your own assessments as a user/staff and as a union representative.

**Participation is voluntary**

Participation in the project is voluntary. If you choose to participate, you can still withdraw your consent at any time without giving a reason, up to the point where the data is processed in such a way that it will be impossible to draw lines between your contribution and the contribution of others, and therefore untraceable. All information about you will be anonymous, and the data will be handled in an unidentifiable way.

**Your personal privacy – how we will store and use your personal data**

We will only use your personal data for the purpose(s) specified here and we will process your personal data in accordance with data protection legislation (the GDPR).

The student on this project (Erlend Frøland) will have access to the information. Data will be stored securely at a hard drive and deleted once the project is over. The project is approved at Sikt (Kunnskapssektorens tjenesteleverandør). Files of recordings will be deleted once they are transcribed and made unidentifiable. Ref.nr. 833525.

**What will happen to your personal data at the end of the research project?**



The planned end date of the project is 28<sup>th</sup> November 2023. At the ending point of the project all data will be deleted.

### **Your rights**

So long as the data gathered from you is still identifiable and possible to trace back, you have the right to:

- access the personal data that is being processed about you
- request that your personal data is deleted
- request that incorrect personal data about you is corrected/rectified
- receive a copy of your personal data (data portability), and
- send a complaint to the Norwegian Data Protection Authority regarding the processing of your personal data

### **What gives us the right to process your personal data?**

We will process your personal data based on your consent. Consent can be issued in writing or by consenting on the recording from the interview.

Based on an agreement with NORD University, Data Protection Services has assessed that the processing of personal data in this project meets requirements in data protection legislation.

### **Where can I find out more?**

If you have questions about the project, or want to exercise your rights, contact:

- Erlend Frøland, MD, M.Sc. (contact: +4799372723/erlend.froland@gmail.com)
- NORD Business School, Ass. professor Jan Ole Simlā, Phd. (contact: +4790475760)
- NORD's Data protection officer Toril Irene Kringen (personvernombud@nord.no)

If you have questions about how data protection has been assessed in this project, contact:

- Data Protection Services, by email: ([personverntjenester@sikt.no](mailto:personverntjenester@sikt.no)) or by telephone: +47 53 21 15 00.

Yours sincerely,  
Erlend Frøland, MD, M.Sc.  
Student

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## **Consent form**

I have received and understood information about the project “A Qualitative Descriptive Study On The Implementation Project Of “Helseplattformen” From a Change Management Perspective Using Narrative Analysis.” and have been given the opportunity to ask questions. I give consent:

- to participate in an interview.

I give consent for my personal data to be processed until the end of the project. (Consent can also be given orally with the recording)

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(Signed by participant, date)