Introduction, adoption, and facilitation of standardized care plans in municipal healthcare services

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“The question is not what you look at, but what you see.”

Henry David Thoreau

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Summary

Introduction: Globally, healthcare is facing the challenges of an aging population, with a growing number of elderly patients having multiple chronic conditions. In Norway, these challenges have led municipal healthcare to assume the responsibility of many patients in need of complex care. To provide these patients with safe and high-quality care, nurses need access to sufficient and accurate information. While the nursing care plan within the electronic patient record (EPR) is the primary information source for nurses, its content quality has repeatedly been found insufficient. In an effort to enhance this quality, evidence-based standardized care plans (SCPs) have been implemented in the EPR in Norwegian municipalities. There was little prior knowledge in the literature regarding the information practice in which the SCPs have been implemented. Additionally, few studies describing SCPs like those implemented in the Norwegian municipalities were available, and of the few found, most had been conducted in hospitals. Hence, little was known about how nurses would adopt and use SCPs as part of their information practice in municipal healthcare.

Aims: This study aimed to develop knowledge on the information practice in which SCPs were introduced, discern how this introduction affected the practice in terms of how nurses adopted and used the SCPs, and identify facilitating factors for the SCPs to become routinely embedded in nurses' information practice. The aims were investigated through two sub-studies. Sub-study I explored nurses' information practice in the settings where SCPs were introduced and determined how the SCPs were adopted and used by nurses as a part of their information practice. Sub-study II focused on engaging participants in identifying which success criteria facilitated the adoption and integration of SCPs into nurses' information practice.

Methods: An exploratory, descriptive design with qualitative methods of data collection was chosen because it allowed for in-depth examination of the context in which SCPs were implemented, examination of how nurses and nursing leaders in this context experienced using the SCPs, and collection of their opinions about the SCPs. The study was conducted in nursing homes and home healthcare districts in three Norwegian municipalities. In sub-study I, the data were collected from 124 hours of participant observations, 17 individual interviews, and 319 pages of printouts from the care plans of 20 patients. In sub-study II, the data were collected from 2 workshops with a total of 11 participants, which included a mix of nurses and nursing leaders. The data were analyzed through qualitative content analysis using an inductive approach.

Results: The results of the study show that nurses' information practice in municipal healthcare is complex, with many information sources in use, such as paper, reminder notes, whiteboards, and oral communication. These information sources balance weaknesses in the EPR system, such as poor or non-existing accessibility at point of care, lack of functionality for immediate reminders, and lack of opportunities for real-time communication. Nurses routinely use the EPR to record provided care, but they do so to a much lesser extent as a guide for practice. Some nurses experience that the SCPs function as an aid for effective recording. Other nurses expressed that they know their patients well, which makes them perceive that reading the EPR content is redundant. Some nurses trust their own competence more than the SCPs' content and see few benefits of using them, which has implications for how much the SCPs are used. This study also revealed large discrepancies in how nurses use SCPs. While some nurses make short, unindividualized SCPs, others make long, comprehensive care plans that do not reflect an overview. The nurses experience that differing information needs and the skill mix in the healthcare workforce make it complicated to balance the amount of detail in the SCPs. Sub-study II revealed large variations between settings regarding how much the SCPs were used three years after implementation. The success criteria for SCPs to become embedded in information practice are identified as (a) providing system-level facilitation with well-functioning technology and functionality supporting nurses' workflow, (b) having engaged leaders and key individuals creating a culture for using SCPs, and (c) providing ongoing access to training and support, which can function as a safety net when key individuals move on.

Conclusions: The findings from this study revealed that municipal healthcare is a complex context in which to introduce SCPs in terms of having several information sources in use, poor access to the EPR system at the point of care, and large differences in individual knowledge and educational background within the healthcare workforce. The study revealed large variations in how nurses evaluate the usefulness of SCPs and in how they are used. These factors, combined with low use of the SCPs to guide practice, affect both the content of the SCPs and their possibilities for contributing to an evidence-based practice. To facilitate the increased use of SCPs, this study suggests that attention should be paid to providing the required technological equipment, engaging leaders in creating a culture for using SCPs, facilitating continued access to support and training for all, and involving end-users in the further development of SCPs to enhance their support of nurses' workflow.

Summary in Norwegian

Introduksjon: Over hele verden står helsevesenet overfor utfordringer knyttet til en aldrende befolkning med et økende antall pasienter med flere kroniske sykdommer. I Norge har disse utfordringene ført til at kommunehelsetjenesten har overtatt ansvaret for et stort antall pasienter med et komplekst pleiebehov. For å kunne gi disse pasientene sikker helsetjenester av høy kvalitet behøver sykepleiere tilgang til tilstrekkelig og korrekt informasjon. Pasientjournalen med planer for helsehjelpen er sykepleieres primære informasjonskilde, men kvaliteten på journalføringen har gjentatte ganger blitt funnet for dårlig. Som et tiltak for å øke kvaliteten har kunnskapsbaserte standardiserte veiledende planer (SVP) blitt implementert i den elektroniske pasientjournalen (EPJ) i norske kommuner. Det fantes lite tidligere kunnskap om hvilken informasjonspraksis SVP ble implementert i, og få studier som beskrev samme type SVP som de som ble implementert i norske kommuner. Av de få studiene man fant var de fleste utført i sykehus. Altså visste man lite om hvordan sykepleiere ville ta i bruk og vurdere nytten av SVP som en del av sin informasjonspraksis i kommunehelsetjenesten.

Mål: Det overordnede målet med denne studien var å utvikle kunnskap om den informasjonspraksisen SVP ble introdusert i, hvordan introduksjonen av SVP påvirket praksis i form av hvordan sykepleiere tok i bruk og vurderte nytten av SVP, samt å identifisere faktorer som tilrettelegger for at SVP blir en rutinemessig del av informasjonspraksisen. Målet ble utforsket gjennom to delstudier. Delstudie I utforsket sykepleiernes informasjonspraksis i de settingene der SVP ble introdusert, og utforsket hvordan sykepleierne vurderte nytteverdien av SVP og tok dem i bruk som en del av sin informasjonspraksis. Delstudie II hadde som mål å engasjere deltakere i å identifisere suksesskriterier for at SVP kunne bli en integrert del av sykepleiernes informasjonspraksis.

Metoder: Et utforskende, beskrivende design med kvalitative datainnsamlingsmetoder ble valgt fordi det ga mulighet for utdypende utforsking av konteksten SVP ble implementert i, samt utforsking av erfaringer og meninger om SVP fra sykepleiere og ledere som var en del av denne konteksten. Studien ble gjennomført på sykehjem og i hjemmesykepleien i tre norske kommuner. I delstudie I ble datamaterialet hentet fra 124 timer med deltagende observasjon, 17 individuelle intervjuer og 319 sider med utskrifter fra pleieplanene til 20 pasienter. I delstudie II, gjennomført 3 år etter implementasjon av SVP, ble datamaterialet hentet fra 2 workshops med totalt 11 deltakere som besto av en blanding av sykepleiere og sykepleieledere. Data ble analysert ved hjelp av kvalitativ innholdsanalyse med en induktiv tilnærming.

Resultater: Resultatene fra denne studien viser at sykepleieres informasjonspraksis i kommunehelsetjenesten er kompleks, med mange informasjonskilder i bruk i form av for eksempel papirer, huskelapper, informasjonstavler og muntlig kommunikasjon. Informasjonskildene veier opp for svakheter ved EPJ-systemet slik som dårlig eller ikke-eksisterende tilgang ved pasienten, manglende funksjonaliteter for umiddelbare påminnelser, og mangel på muligheter for kommunikasjon i sanntid. Sykepleierne bruker EPJ til å journalføre utført helsehjelp, men i mye mindre grad som en veileder for planlagt helsehjelp. Noen sykepleiere erfarer at SVP fungerer som et hjelpemiddel for effektiv dokumentasjon. Andre sykepleiere uttrykker at de kjenner pasientene sine godt, noe som gjør at de oppfatter det som unødvendig å lese innholdet i EPJ. Noen sykepleiere stoler mer på sin egen kompetanse enn på innholdet i SVP og ser liten faglig gevinst ved å bruke SVP, hvilket har betydning for hvor mye SVP blir brukt. Studien avdekket også store forskjeller på hvordan sykepleiere bruker SVP. Mens noen sykepleiere lager korte, ikke-individualiserte SVP, lager andre lange, omfattende pleieplaner som ikke gir mulighet for oversikt. Sykepleierne erfarer at ulike informasjonsbehov og ulikt utdanningsnivå i sammensetningen av personalet gjør det komplisert å balansere detaljeringsnivået i SVP. Delstudie II avdekket stor variasjon mellom ulike settinger med tanke på hvor mye SVP blir brukt tre år etter implementasjon. Identifiserte suksesskriterier for at SVP blir en integrert del av informasjonspraksisen er (a) tilrettelegging på systemnivå i form av velfungerende teknologi og funksjonalitet som understøtter sykepleiernes arbeidsflyt, (b) å ha engasjerte ledere og nøkkelpersoner som skaper en kultur for å bruke SVP, og (c) å tilby vedvarende tilgang til opplæring og støtte som fungerer som et sikkerhetsnett når nøkkelpersoner forsvinner.

Konklusjon: Studien avdekket at kommunehelsetjenesten er en kompleks kontekst for introduksjon av SVP i form av mange informasjonskilder i bruk, lav tilgang til EPJ-systemet ved pasienten, og i form av store individuelle forskjeller i kunnskap og utdanningsbakgrunn blant personalet. Studien fant store forskjeller i hvordan sykepleierne vurderte nytteverdien av SVP, samt store ulikheter i hvordan SVP ble brukt. Disse faktorene i kombinasjon med lav bruk av SVP som en veiledning for praksis, påvirket både innholdet i SVP og deres muligheter for å bidra til en kunnskapsbasert praksis. For å tilrettelegge for økt bruk av SVP antyder denne studien at oppmerksomhet bør vies mot å skaffe nødvendig teknologisk utstyr, å engasjere ledere i å skape en kultur for bruk av SVP, å tilrettelegge for vedvarende tilgang til støtte og opplæring, og å involvere sluttbrukere i videreutvikling av SVP for å forbedre deres understøttelse av sykepleieres arbeidsflyt.

Terms and abbreviations

EPR: Electronic Patient Record

SCPs: Standardized Care Plans

ICNP: International Classification for Nursing Practice

ICN: International Council of Nurses

RN: Registered Nurses

NNO: Norwegian Nurses Organization

ICD: International Classification of Diseases

WHO: World Health Organization

List of papers

This dissertation is based on the following papers:

Paper I:

Østensen, E., Bragstad, L. K., Hardiker, N. R., & Hellesø, R. (2019). Nurses' information practice in municipal health care—A web-like landscape. *Journal of Clinical Nursing*, *28*, 2706–2716. https://doi.org/ 10.1111/jocn.14873

Paper II:

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Paper III:

Østensen, E., Hardiker, N. R., & Hellesø, R. (2021). Facilitating the integration of standardized care plans in municipal healthcare. *CIN: Computers, Informatics, Nursing,* submitted March 2021.

Table of contents

List of tables

1. Introduction

The focus of this dissertation was on how standardized care plans (SCPs) implemented in the electronic patient record (EPR) system are introduced into nurses' information practice, how nurses adopt and use the SCPs, and how a sustained use of SCPs in Norwegian municipalities can be facilitated. SCPs are structured, evidence-based, nursing care plans in which a nursing diagnosis and its associated goals, resources, characteristics, and interventions are predefined and can be selected according to their relative applicability to the patient.

Globally, demographic changes due to longer life expectancy and lower fertility rates has led to a rapidly increasing elderly population in many countries. With an ageing population comes a growing number of patients with multiple chronic conditions requiring complex care (Kingston et al., 2018; OECD, 2019; World Health Organization, 2015). This represents a considerable challenge to the healthcare system, one which warrants new strategies to address. In Norway, one government solution has been to transfer responsibility for a large number of patients from hospitals to municipal healthcare, which includes nursing homes and home healthcare services (Ministry of Health and Care Services, 2008-2009). In municipal healthcare, the increasing number of patients with complex care needs has further intensified the demand for seamless information systems that can provide timely access to accurate patient information to support healthcare workers' decision-making processes and ensure patient safety and continuity of care (Glette et al., 2018; Saranto & Kinnunen, 2009; The Research Council of Norway, 2016; Urquhart et al., 2009; Voyer et al., 2014; Wang et al., 2011).

The EPR is a legally regulated information system on which patient information should be produced and shared (Ministry of Health and Care Services, 2001). To facilitate information handling by nurses in the EPR, the nursing care plan is especially important because it provides them with a framework for planning, recording and evaluating patient care (Hayrinen et al., 2008; Thoroddsen et al., 2013). Despite the importance of nurses' patient records, they have often been found to be of insufficient quality; and notwithstanding several improvement efforts, research has repeatedly concluded that the overall quality of the records remains variable (Gershater et al., 2011; Gjevjon & Hellesø, 2010; Instefjord et al., 2014; Stokke & Kalfoss, 1999; Tuinman et al., 2017; Wang et al., 2011). To ensure a high quality of patient records, it is therefore important to understand the reasons why so many continue to be of low quality.

This is not yet fully understood, but some studies have suggested that heavy workload, staffing shortages, competence issues, frequent disruptions, low motivation, ineffective procedures, insufficient supervision, inadequate training, and ineffective documentation systems could all be potential explanations (Cheevakasemsook et al., 2006; Voyer et al., 2014).

SCPs have been introduced with the aim of overcoming some of the described challenges by offering a systematic care-planning structure with predefined menus for nursing diagnosis, goals, and interventions constructed according to a standardized nursing language (Adereti & Olaogun, 2019; Castellà-Creus et al., 2019; Johnson et al., 2018; Lee & Chang, 2004; Monsen et al., 2011). According to a review by Saranto et al. (2014), the structuring of nursing records has been shown to enhance the completeness and comprehensiveness of the information needed to support nurses' workflow and care delivery (Saranto et al., 2014). The implementation of a standardized nursing language in the EPR was intended to enhance the quality of the content recorded in the system by facilitating unambiguous communication, comparability, control, and data reuse, as well as by contributing to the measurement, clarification, and understanding of nursing care (Jones et al., 2010; Rutherford, 2008; Strudwick & Hardiker, 2016; Törnvall & Jansson, 2017; Zhang et al., 2021). The International Council of Nurses (ICN) has made concerted efforts to develop a universal classification system for nurses to use when describing and reporting their practice. This work has resulted in the International Classification for Nursing Practice (ICNP®), which has been adopted as a Related Classification by the World Health Organization (WHO) as part of their Family of International Classifications, with the objective of making the nursing domain more visible (International Council of Nurses, 2021; World Health Organization, 2017).

As an effort to make care planning more efficient and at the same time enhance EPR content, the Norwegian Nurses Organization (NNO) initiated the development of SCPs constructed with ICNP terminology. In 2015, the first implementation of SCPs commenced in three Norwegian municipalities (Stensvold et al., 2017). The integration of SCPs in the EPR represented a novel approach to information handling in this setting, and therefore the implementation of SCPs is considered a *technological* implementation in this dissertation. The SCPs were incorporated into an already existing practice of handling information and using them called for some changes to this practice. Research has suggested that the conversion from one way of handling information to another can be facilitated by first understanding the patterns associated with the established means by which information is handled (Kelley et al., 2011). While a number of studies have addressed single aspects of nurses' information practice (Engen et al., 2020; Gjevjon & Hellesø, 2010; Lyngstad et al., 2014; Obstfelder & Moen, 2006; Törnvall et al., 2004), few studies have assessed information practice as a complex whole in Norwegian municipal healthcare. Hence, it was difficult to predict how the SCPs would fit into these practices.

There also seemed to be little prior knowledge on the use of SCPs in the municipal healthcare setting. Most previous research on nurses' use of SCPs had been conducted in the hospital setting. These studies identified both positive and negative impacts of SCPs and determined that how they were used was dependent on several individual, professional, and organizational factors (Castellà-Creus et al., 2019; Dahm & Wadensten, 2008; Jakobsson & Wann-Hansson, 2013; Jansson et al., 2010; Svensson et al., 2012). Knowledge from these studies is not directly transferrable to municipal healthcare due to the large differences between the settings in terms of, for instance, the density of RNs and the average time frame for patient care. In addition, several of the abovementioned studies from hospitals described SCPs as a trajectory of care for patients with a special diagnosis or who were undergoing a certain treatment. Consequently, these SCPs differ from those developed for municipal healthcare, which were developed in relation to nursing diagnosis. Hence, there was insufficient knowledge to predict how SCPs would be adopted and applied by nurses in the municipal healthcare setting as an embedded part of their information practice. It is therefore the purpose of this dissertation to contribute new knowledge about the ways in which nurses in municipal healthcare use SCPs in their information practice.

1.1 Aim and research questions

The overall aim of the study was to develop knowledge on the information practice in which SCPs were introduced, discern how this introduction affected the practice in terms of how nurses adopted and used the SCPs, and identify facilitating factors for the SCPs to become routinely embedded in nurses' information practice.

Research question 1: What characterizes nurses' information practice in municipal healthcare into which SCPs are being introduced?

Research question 2: How do nurses in municipal healthcare adopt and use SCPs as a new recording tool?

Research question 3: Which success criteria facilitate the integration of SCPs as part of nurses' information practice in municipal healthcare?

The dissertation is divided into two sub-studies from which the empirical data resulted in three scientific articles. Sub-study 1 was conducted in 2016, less than one year after the first SCPs were implemented. This study explored nurses' information practice in the settings where SCPs were introduced and determined how the SCPs were adopted and used by nurses as a part of their information practice. Sub-study 2 was conducted in 2019, three years after the initial implementation of SCPs. The objective of this study was to identify which success criteria facilitated the adoption and integration of SCPs into nurses' information practice.

1.2 Outline of the dissertation

Chapter 2 provides the background for the dissertation in terms of the setting of the study, an explanation of SCPs and nurses' information practice, the historical development of nurses' record keeping culminating in the implementation of SCPs, the purposes of implementing SCPs, findings from previous studies of SCPs, and the theoretical framework applied in this dissertation. In Chapter 3, a detailed description of the design and methods used in the sub-studies is provided. In Chapter 4, the results of the sub-studies are presented, which are discussed in Chapter 5 in addition to methodological considerations. In the final chapter, the conclusions of this dissertation are presented, as are the implications of the findings for clinical practice, followed by recommendations for further research.

2. Background

In this chapter, I will present the setting of the study and explain SCPs in more detail. I will also describe the development, trends, and regulations that have influenced the pathway towards the standardization of nurses' record keeping, the objectives for implementing SCPs, and the findings of previous research on the implementation, adoption, and facilitation of SCPs. Finally, I will discuss the theoretical background of my study. In line with societal shifts and political trends in recent years, the regulations and expectations of healthcare have correspondingly changed, and various topics have consequently been researched in light of these changes. The introduction of SCPs in the EPR in municipal healthcare services is the result of the continuous development of new knowledge affecting the patient record structure and content, and the increasing focus on informational continuity, standardization, and patient safety in healthcare.

2.1 Norwegian municipal healthcare

This study was situated in Norwegian municipal healthcare. In this section, I will describe the characteristics of this setting in terms of demographics, healthcare responsibility, and the composition of healthcare workers to provide an understanding of the context in which this study took place.

Norway is a relatively small country with 5.3 million inhabitants (Statistics Norway, 2020a). The country's healthcare services are divided into specialized hospital care, for which the state is responsible, and primary health and care services, for which the municipalities are responsible. Primary health and care services include general practice, public health centers, home care services, and long-term institutional care, mainly in nursing homes (World Health Organization. Regional Office for Europe, et al., 2020). The settings included in this study were restricted to home healthcare services and nursing homes. Norway is divided into 356 municipalities (as of January 1, 2020), and in these municipalities there are (in 2019) a total of 940 nursing homes, approximately 40,000 nursing home residents, and approximately 200,000 people receiving home healthcare services (Statistics Norway, 2020b). The number of nursing homes, nursing home residents, and people receiving home healthcare services vary in each municipality according to its size and population. The Norwegian healthcare system consists of many independent actors that are independently responsible for the priorities, procurement, and operation of their own EPR systems. This has resulted in many stand-alone and different solutions according to what best fits the needs and resources of particular settings (Norwegian Directorate for e-health, 2020). In Norwegian municipal healthcare, three different EPR-solutions are currently in use (The National Archives of Norway, 2017), but the municipalities included in this study all used the same EPR solution.

Norwegian municipal healthcare has changed over the last decade. The general increase in the elderly population, leading to a corresponding increase in the number of patients with chronic health conditions who are in need of complex care, represents a global challenge to healthcare. (World Health Organization, 2015). In Norway, national political strategies intended to handle this and related challenges has resulted in the Care Coordination Reform and the Norwegian Public Health Act, which mandates municipalities to assume more responsibility for the medical care of patients (Ministry of Health and Care Services, 2011). Despite increased responsibility and more medicalized and complex care, the proportion of registered nurses (RNs) among the healthcare workers in municipal healthcare is low (Gautun & Syse, 2017; Romøren, 2011), and the general competence of healthcare workers in this setting has been found to be insufficient to accommodate the complex care demands of the patients (Bing-Jonsson, Hofoss, Kirkevold, Bjørk, & Foss, 2016). The composition of professions in municipal healthcare in 2020 reportedly consisted of approximately 48% auxiliary nurses, 27% RNs, and 25% nursing assistants (excluding other professions such as social workers and occupational therapists) (Statistics Norway, 2020b). Auxiliary nurses (NO: hjelpepleiere/ helsefagarbeidere) are healthcare workers educated through practice apprenticeship training as part of their upper-secondary education, while nursing assistants (NO: pleieassistenter) refer to healthcare workers with no formal education in healthcare.

The Norwegian Directorate of Health has implemented policy initiatives with the objective of increasing competence in municipal healthcare through the recruitment of educated and competent healthcare workers and by increasing the competence of existing staff, with the ultimate goal of strengthening research, innovation, and evidence-based practice, thereby contributing to professional development and the dissemination of knowledge (The Norwegian Directorate of Health, 2019). This work is ongoing, with further initiatives focusing not only on the recruitment of qualified healthcare workers but also on increasing the competence of those without education in healthcare through various courses and qualifying means (The Norwegian Directorate of Health, 2020). It has proven difficult to recruit qualified RNs to municipal healthcare (Gautun, 2020; Gautun et al., 2016), and alongside the consequently increasing shortage of RNs (World Health Organization, 2020b) there is reason to believe that municipal healthcare will continue to include healthcare workers without healthcare education, which may pose a risk to patient safety. In addition, low caregiver continuity, meaning that patients are being cared for by a large number of different healthcare workers, constitutes an additional risk to patient safety in this setting (Gjevjon et al., 2013). Hence, it is imperative to develop measures that will contribute to ensuring patient safety and quality of care. One such measure is to standardize the content of the patient record in order to reduce its ambiguity and enhance its accessibility, readability, and quality, thereby providing healthcare workers with easier access to high-quality patient information (Saranto et al., 2014; Voyer et al., 2014; Wang et al., 2011).

2.2 Standardized care plans (SCPs)

SCPs were introduced as a measure to standardize the nursing care plan, a part of the content of the EPR that can support and demonstrate the achievement of desired patient outcomes (Wang et al., 2015). Standardization is defined as *"the process of making things of the same type all have the same basic features*" (Cambridge Dictionary, 2020, para.1). A more sociological definition of standardization is *"a process of constructing uniformities across time and space, through the generation of agreed-upon rules"* (Timmermans & Epstein, 2010. p. 71). Hence, standardization can be understood as the process of developing uniform standards. The nursing care plan is a logical and systematic approach to support nurses in the planning, provision, and evaluation of nursing care. It is commonly structured according to the different steps of the nursing process, namely assessing the patient, making a nursing diagnosis, planning interventions and setting a goal, implementing the interventions, and evaluating the interventions according to patient outcome. A complete nursing care plan should therefore include information from all of these steps (Karoliussen & Smebye, 1981; Moen et al., 2005; Thoroddsen et al., 2013). Traditionally, nursing care plans were constructed using free text. SCPs thus represent a novel way to construct nursing care plans, as they contain predefined menus of characteristics, resources, goals, and interventions that are related to the nursing diagnosis and can be selected according to their relative applicability to the patient (Thoroddsen et al., 2011).

The starting point of this study was when the NNO developed five SCPs and began to implement them in three Norwegian municipalities. The purpose of this implementation was *"to make it easier for healthcare workers to work evidence-based and systematically in order to achieve increased patient safety and quality in patient care. In addition, it should contribute to simplification and streamlining of documentation and information processes"* (Stensvold et al., 2017, p. 1). Hence, in addition to ease documentation processes, the SCPs were intended to support evidence-based practice, which is described as *"a practice requiring that decisions about health care are based on best available, current valid and relevant evidence. These decisions should be made by those receiving care, informed by the tacit and explicit knowledge of those providing care, within the context of available resources"* (Dawes et al., 2005, p. 4). The SCPs were designed to support evidence-based practice by incorporating empirical evidence and expert knowledge (Stensvold et al., 2017).

The SCPs were constructed with ICNP terminology, meaning that a nursing diagnosis and its associated goals, resources, characteristics, and interventions were formulated and coded based on the terminology and codes of the ICNP. The ICNP is an international standardized classification system developed by the ICN that consists of a large number of concepts that can be used to describe and record nursing diagnoses, interventions, and outcomes (Coenen et al., 2012; Coenen et al., 2015; International Council of Nurses, 2021). The ICNP has been translated into 19 languages, including Norwegian, and has been cross-mapped and harmonized with other classification systems in healthcare to facilitate interoperability in the EPR (Coenen et al., 2015; Hyun & Park, 2002; Kim, et al., 2014). The ICNP was considered appropriate for use in SCPs because it is designed to meet nurses' need for the documentation of healthcare (Stensvold et al., 2017). By coding the SCPs using the ICNP codes, data entries become searchable, which is a prerequisite for aggregating or extracting data for management or research purposes (Khokhar et al., 2017).

The piloting and implementation of the SCPs started in 2015. In 2016, when the data collection for this study commenced, the SCPs had already been implemented in the EPR system of three Norwegian municipalities. The five SCPs that were available at that point were as follows: "Risk of malnutrition," "Risk of pressure ulcers," "Risk of urinary tract infection," "Risk of falls," and "Impaired ability to manage medication regime." Although the SCPs provided selectable predefined elements, they also permitted the opportunity to individualize the care plan by using free text to describe the interventions in more detail. For instance, if the patient was at risk of pressure ulcers and a nurse chose "assessing nutritional status" as an intervention, she could individualize the intervention by explaining how and how often to assess nutritional status, as well as what nurses and other healthcare professionals should pay special attention to in this regard (Stensvold et al., 2017).

To summarize, the implementation of SCPs was expected to have implications for *the patient* by facilitating evidence-based care, patient safety, and continuity of care; for *the nurse* by easing documentation processes; and for *the manager/policymaker/researcher* by making data entries extractable.

2.2.1 Clarification of concepts

Throughout this dissertation, I have chosen to use the term *SCP* to describe the care plans that were implemented. In searching for literature regarding SCPs, I found that the term SCP has been used in different ways. While the SCPs described in this dissertation were designed to assist nurses in making evidence-based nursing care plans in the EPR and at the same time facilitating data extraction by using a coded nursing terminology, I found that, with a few exceptions (e.g. Monsen et al., 2011), most studies had described SCPs differently. The term had often been used to describe both multi and single professional clinical pathways developed as a standard line of treatment for patients with a certain diagnosis or who were undergoing a specific medical procedure (e.g. Jakobsson & Wann-Hansson, 2013; Nussbaum et al., 2015; Olsson et al., 2009; Pöder et al., 2015; Svensson et al., 2012). Although an SCP developed for "stroke care" is different from one designed for "risk of malnutrition," especially in specificity, they are both constructed with the aim of applying empirical evidence to practice and supporting the standardization of documentation practices.

The ICNP can be described as a *classification system*, a *terminology*, and a *standardized nursing language*. Hence, a clarification of these concepts is in order. A *terminology* is defined as a body of terms used within a specific field, such as nursing (Hardiker et al., 2002; Hardiker et al., 2000), whereas a *classification system* is a system that groups entries into a hierarchical structure (Bowker & Star, 2002). Hence, a terminology can be constructed as a classification system, as is the case with the ICNP. Whereas a *terminology* is a general concept that can be used for all professional languages, a *standardized nursing language* is a concept used to describe a terminology specifically developed for the nursing profession. A standardized nursing language is defined as *"a commonly-understood set of terms used to describe the* *clinical judgments involved in assessments (nursing diagnoses), along with the interventions, and outcomes related to the documentation of nursing care"* (NANDA International, 2021, para. 1). So, as we can see, the three concepts are interrelated, and they can all be used to describe the ICNP.

Two systems bearing a similarity to the guiding function of the SCPs are *clinical practice guidelines* and *clinical decision support systems*. Clinical practice guidelines are defined as *"specific practice recommendations grouped together that have been derived from a methodologically rigorous review of the best evidence on a specific topic"* (Grinspun et al., 2015, p. 182). A *clinical decision support system* is defined as *"the use of the computer to bring relevant knowledge to bear on the health care and well-being of the patient"* (Greenes, 2007, p. 6). Moreover, clinical decision support systems allow the implementation of clinical practice guidelines into the EPR and thereby provide recommendations of care to end-users based on their data entries (Fossum et al., 2013). The similarities of clinical practice guidelines and clinical decision support systems to SCPs are that they are all evidence-based and designed to guide healthcare practice. Where they differ is that clinical practice guidelines and clinical decision support systems provide more specific recommendations for practice and thereby have a much stronger guiding function than do the SCPs, which only offer a variety of evidence-based options. Hence, while they all have some similarities, they cannot be seen as synonymous. However, when it comes to empirical evidence regarding the implementation, adoption, and facilitation of clinical practice guidelines and clinical decision support systems, some parallels can be drawn to the implementation of SCPs.

2.2.2 Legal regulations of the SCPs

As the SCPs were implemented as an integrated part of the EPR, they are regulated by the Norwegian Law regarding patient records. The primary function of the EPR is as a communication tool between different caregivers that is meant to facilitate continuity of care and patient safety (Urquhart et al., 2009; Voutilainen et al., 2004). All authorized or licensed healthcare personnel (e.g., physicians, nurses, physiotherapists, or occupational therapists) share a common legal obligation to document their activities in the patient record (Ministry of Health and Care Services, 2001). According to Norwegian regulations, the patient record *"shall contain information that is relevant and necessary to provide healthcare to the individual patient, (...) and provide a clear and comprehensive presentation of the patient's health condition so that it is easy for health personnel to familiarize themselves with the patient's* *health condition and any plans for further care"* (Ministry of Health and Care Services, 2019, §4). Healthcare is here defined as actions that have a preventive, diagnostic, treating, rehabilitating, health preserving, nursing, or caring purpose (Ministry of Health and Care Services, 2001).

2.3 Nurses' information practice

In this section I will describe how I understand the concept of *information practice*, which is used as a main concept throughout this dissertation. The implementation of SCPs in municipal healthcare involved integration into an existing information practice. Information practice is a concept often used interchangeably with *information behavior*, and both concepts are umbrella terms that characterize how people handle information (Savolainen, 2007). However, while information behavior may focus on the actions of an individual, information practice places an emphasis on contextual factors affecting a social group (Savolainen, 2007). In this dissertation, I have chosen to use the concept of information practice. In different settings there are variations in the locally developed culture and management strategies that affect nurses' information practice and lead to variations across the settings (Jylha et al., 2017). Information practice is thus context specific, meaning that even though political and legal regulations are common for all, people belonging to the same setting will over time have developed a specific agreed-upon way of handling the information that differs from how it is handled in other settings (Tuominen et al., 2006).

This way of understanding information practice stems from social constructionism. In social constructionism, practice is understood to be socially developed through interactions of individuals belonging to that specific setting (Burr, 1995). While some actions are repeated habitually, others are of a more purposeful character. A practice involves a constant reproduction of some actions, which simultaneously leads to a production of certain results. People who share a practice will behave according to what the norms in that practice consider to be correct or incorrect, fair or unfair (Gheradi, 2008). Information practice is thus a socially constructed practice that determines how information is produced, organized, disseminated, distributed, reproduced, and circulated within that setting (Bonner & Lloyd, 2011). This means that information is never neutral but always colored by the social context within which it is produced (Berg & Goorman, 1999).

Previous research has described various ways in which information is handled in different healthcare settings. Although the EPR is the only legally regulated information source (Ministry of Health and Care Services, 2001, 2019), many other information sources are described in the literature. Oral communication is frequently reported and has been described as both a disadvantage, e.g., time consuming and misunderstood, and a benefit, e.g., facilitative of professional discussions and informal learning, a flexible way of customizing information for the recipient (Blouin, 2011; Buus et al., 2017; Engesmo & Tjora, 2006; Giske et al., 2018; Pedersen, 2012). In published research, whiteboards are described as an information tool used to provide a quick overview in acute care settings (Bost et al., 2012; Hertzum & Simonsen, 2013, 2015). Whiteboards are also described as a tool for facilitating communication with patients (Massaro & Murphy, 2013; Sehgal et al., 2010) and as an instrument used in nursing stations to gain an overview of all of the patients in the ward (Gum et al., 2012; Mackintosh et al., 2009). With the introduction of the EPR, the paper-based patient record became obsolete, and the anticipation was that healthcare would become paper-free. However, research has shown that paper is still largely used as a source of information in healthcare - for instance, through the use of patient lists (Bjerkan et al., 2020; Iversen et al., 2015) and as a workaround to avoid the use of the EPR (Saleem et al., 2009; Saleem et al., 2011).

Even though it can rightfully be argued that municipal healthcare settings are heterogeneous, with locally developed variations in information practice, they share many common attributes that are profoundly different from those in the hospital setting. It was therefore considered appropriate to see municipal healthcare as a unity in this research. At the time of this study, little was known about nurses' information practice as a whole in the municipal healthcare sector. Therefore, it was considered important to explore and describe this practice to understand how the SCPs would fit into the practice, which again could explain how the SCPs were adopted and used by the nurses.

To sum up, nurses' information practice describes how a group of nurses belonging to a specific context have a special, locally developed way of handling information. Prior to this study, little was known about the information practice of nurses in Norwegian municipal healthcare, and hence this study sought to explore and describe this practice. In the next section, I look more closely into how nurses' record keeping has evolved over time toward the implementation of SCPs.

2.4 Development toward SCPs

In order to understand the rationale for implementing SCPs, it is necessary to go back in time. In this section, I will describe how nurses' record keeping has evolved over time in line with changes in the nursing profession, in healthcare, and in the society. First, I will present the historical development of nursing records, from notes on paper outside of the patient record to the implementation of the EPR, after which I will detail the efforts taken to standardize the EPR leading up to the standardization of nurses' record keeping. Internationally, nurses' record keeping has been used interchangeably with the term *nursing documentation* and is defined as *"the record of care that is planned or given to individual patients and clients by qualified nurses or by other care givers (including nursing students) under the direction of a qualified nurse"* (Urquhart et al., 2009, p.2-3). Nurses have a long tradition of record keeping, but the structure and content of their records have varied over time.

2.4.1 From paper notes to the EPR

In this section, I will describe how nursing documentation has evolved from notes on paper, which were not included in the patient record, to the mandatory submission of records to the EPR. Florence Nightingale was a pioneer in the systematic recording of patients' healthcare status and causes of illness, disease, and death and was, in the middle of the 19th century, the first to put nursing documentation on the agenda (Moen et al., 2005). There were different views on the importance of nurses' recordings in the years to come, but in general they were given little attention and were not a part of the patient record (Moen et al., 2005). With the development of the nursing profession in the mid-20th century, documentation was again put on the agenda, and guidelines for its layout started to emerge. For instance, in a book for nursing students, it was explained that nurses were expected to write shift reports that included facts and precise observations of changes in the patients' status (Jervel, 1941; Moen et al., 2005). In the following years it was also stressed that nurses' recordings should be clearly precented, nicely written, and signed in the Kardex, a commonly used filing system for nursing records (Moen et al., 2005).

The nursing process and the first nursing care plan were both implemented in Norway in the beginning of the 1970s. Nursing documentation was then seen as the written expression of the nursing process (Karoliussen & Smebye, 1981; Moen et al., 2005). The nursing process contributed to making nursing documentation more uniform and was adopted and accepted as a way to describe nursing throughout the world (Fagermoen, 1980; Henderson, 1987; Moen et al., 2005). It was, however, criticized for being linear and one-dimensional and thereby failing to acknowledge the complexity of nursing (Henderson, 1987), for not providing sufficient guidance for nursing documentation content (Stokke & Kalfoss, 1999), and for making nursing documentation more confusing and time consuming (Ehrenberg & Birgersson, 2003).

In the following two decades, requirements for nurses' documentation were further refined on the basis of a formalization of patients' legal right to read their health records, NNO guidelines for the recording, use, and storage of patient information, as well as governmental recommendations for storage and systematization of nurses' recordings (Moen et al., 2005; The Norwegian Nurses Organization, 1986; Statens helsetilsyn, 1994). However, the practice of recording nursing care in the patient record varied greatly according to the setting (Moen et al., 2005). In 2001, record keeping became a legal obligation for nurses and was no longer optional (Ministry of Health and Care Services, 2001). Although not explicitly stated in the law, the legal demand for documentation that accompanied the "Health Personnel Act" represented a shift from the previous "medical record" and "nursing record" to a single patient record in which all records of care were kept (Duvaland, 2002).

The transition from paper records to an EPR was a means to enhance access to patient information and to facilitate communication regarding the patients. In Norway, the process of implementing EPR systems began in the early 1990s and steadily expanded to new parts of the healthcare system (The Norwegian Directorate of Health, 2014a, 2014b). Nurses' use of EPR systems started in hospitals but, by 2012, they were also commonly used in municipal healthcare (The Norwegian Directorate of Health, 2014a). Although implementing EPR systems in many ways enhanced the accessibility of patient information, the implementation in itself did not affect how nurses structured their recordings. Nurses' record keeping had traditionally consisted of comprehensive, unstructured narrative notes, and this way of recording continued even with the conversion to an EPR (Blair & Smith, 2012; Törnvall & Wilhelmsson, 2008). Hence, nursing documentation continued to be time consuming to read and important information remained hard to find.

Summing up, nurses' record keeping has evolved in line with the professionalism of nursing, societal changes, and governmental requirements, culminating in a legal obligation to submit records in the EPR. Although the EPR has enhanced accessibility, finding important information in the nurses' recordings has remained challenging. In the next section, I will describe the need for standardization that occurred after the implementation of the EPR.

2.4.2 Standardization of the EPR

In this section I will describe the need for standardization that followed the implementation of the EPR. With the implementation of the EPR, intra-organizational access to information increased, but it was still challenging to share information across settings. Different healthcare settings used different EPR solutions that did not communicate with each other, and consequently the patients ended up having multiple records (Norwegian Directorate for e-health, 2020; The Norwegian Directorate of Health, 2014a). Hence, the implementation of the EPR systems did not significantly contribute to enhancing inter-organizational communication in the beginning, and the transition of patients from one setting to another was identified as a crucial point where information often got lost (De Wit & Van Dam, 2001; Hellesø & Lorensen, 2005; Lim et al., 2015; Olsen et al., 2013; Preston et al., 1999). To enhance interoperability between the EPR systems, several technical standards to which vendors had to adhere were developed (The Norwegian Directorate of Health, 2015). In addition, it became a goal to develop one record that would follow the patient throughout the healthcare system (Ministry of Health and Care Services, 2012-2013). Although a common summary care record (NO: Kjernejournal) that contains the most critical information about a patient has been implemented, the process of consolidation between different EPR systems is still ongoing (The Directorate for e-Health, 2019).

Efforts taken to standardize the patient record have also been influenced by a general focus in society, both nationally and internationally, on the benefits of standards for achieving comparability, interoperability, and uniformity between independent systems. For instance, the WHO has defined and disseminated numerous standards for healthcare (e.g. Keighley & World Health Organization. Regional Office for Europe, 2009; World Health Organization, 2018; World Health Organization. Regional Office for Europe, 2018), including standards for the implementation and use of health data (Health Metrics Network & World Health Organization, 2008; World Health Organization, 2020a). The International Organization for Standardization (ISO) has also developed over 1,400 international health standards (International Organization for Standardization, 2019). In healthcare, standardization is seen as a way to contribute to seamless, well-working systems that increase uniformity, clarity, and predictability, and that decrease ambiguity and large variations (Rozich et al., 2004; Wears, 2015). An example of this is the considerable amount of work that has been done in Norwegian specialized care to develop standardized patient trajectories, which means that if a patient has a certain medical diagnosis, he or she will be treated according to a standardized treatment plan (Ministry of Health and Care Services, 2008-2009). This is a way to coordinate services better and thereby create predictability (Ministry of Health and Care Services, 2019-2020).

Furthermore, the Norwegian Ministry of Health and Care Services has described the need for common content standards, procedures, and coding systems in the EPR systems. By implementing standard terms and codes directly into the EPR system, the data can be reused for registers and thus facilitate access to statistics, results, and key figures (Ministry of Health and Care Services, 2014-2015). One way to implement such standard terms and codes is to use a classification system in recording. Physicians have used codes from the International Classification of Diseases (ICD) for decades to register patient diagnoses (Bowker & Star, 2002). Nurses, however, do not have the same tradition of using classification systems in their recording practice and have struggled internationally to adopt a uniform classification system (Conrad & Schneider, 2011; Schwirian, 2013; Thoroddsen et al., 2012).

To sum up, efforts to standardize the EPR have been justified by the need for interoperability between different EPR systems and by the acknowledgement of the benefits of standards for comparability, uniformity, and the reuse of data. Integration of a coding system into the EPR is desired, but for many nurses this is unfamiliar. In the next section, I will describe the extensive work that has been done internationally to standardize nurses' record keeping.

2.4.3 Standardization of nurses' record keeping

In this section, I will discuss some of the extensive work that has been done internationally to standardize nursing documentation. Efforts to standardize nurses' record keeping have been ongoing for several decades. The North American Nursing Diagnosis Association (NANDA – now NANDA International, Inc.) began developing a standardized nursing language for nursing diagnoses over 45 years ago, and the first conference on the classification of nursing diagnoses was held in 1973 (Gebbie & Lavin, 1975; Gordon, 1998). A standardized nursing language describes the judgments of nurses in making nursing diagnoses, as well as nursing interventions and outcomes (Barton et al., 2003; Rutherford, 2008). The development of a standardized nursing language was a way of concretizing what nursing is, visualizing the different parts of nurses' professional work, and thereby separating it from other professions (Bowker & Star, 2002; Daly et al., 2002; Keenan, 1999; Schwirian, 2013). This work was, however, not without obstacles. For instance, the term “diagnosis” used in this context was subject to discussion and disapproval, not least from physicians who considered diagnosing to be an act of medical judgment that may only be performed by a physician (Richards & Rathbun, 1993). Among nurses, there were also many who questioned whether nurses needed a standardized language, upon which one of the pioneers in standardized nursing languages, Norma Lang, in 1991 replied: *“If we cannot name it, we cannot control it, practice it, teach it, finance it, or put it into public policy”* (Clark & Lang, 1992, p. 109).

During the last six decades, several standardized nursing languages and classification systems have been developed for the documentation of nursing, including the ICNP, the Clinical Care Classification System, the Nursing Intervention Classification, the Nursing Outcome Classification, the Omaha System, the Perioperative Nursing Data Set, and NANDA International, Inc. (Strudwick & Hardiker, 2016). These can be referred to as interface terminologies, meaning that they comprise the actual terms that the end-user sees and uses to document patient care. Some reference terminologies have also been developed to act as the invisible glue to facilitate interoperability between the different terminologies (Kim et al., 2020; Westra et al., 2008). One of the most widely used reference terminologies is the Systematized Nomenclature of Medicine Clinical Terms (SNOMED CT), which has been cross-mapped to several terminologies, including the ICNP (Hardiker et al., 2006; Kim et al., 2014), and is on its way to becoming implemented in Norway (The Directorate for e-Health, 2021; The Norwegian Nurses Organization, 2021). The extensive work put into developing nursing terminologies was motivated by the general need to have systems in place to support nurses in their practice and to simultaneously make their contributions visible. Other motivational factors included the fast implementation of EPRs, the possibility of make nursing work visible, the possibility of contributing to developing time-saving systems, and the increasing focus on evidence-based practice (Hardiker, 2014). However, in spite of all the standardized nursing languages available and the documented benefits they provide to the quality of the nursing records, there has been a large discrepancy internationally in terms of how much they are used (Halverson et al., 2011; Müller-Staub et al., 2007; Olatubi, Oyediran, Faremi, & Salau, 2019; Thoroddsen et al., 2012). In the Norwegian municipalities in which this study took place, the implementation of SCPs constructed by the ICNP terminology represented the first attempt to introduce a standardize nursing language.

In sum, the work undertaken to standardize nurses' record keeping has been ongoing for decades, and several standardized nursing languages have been developed. However, the implementation of the SCPs about which this study was concerned represented the first introduction of standardized nursing languages in this setting. The purposes for this implementation are presented in the following section.

2.5 Objectives for implementing SCPs

In this section I will present the different objectives for implementing SCPs into the EPR. This knowledge is important to assess in relation to the findings concerning how SCPs were adopted and used by the nurses in their clinical practice. The objectives for implementing SCPs can be summarized as follows: (1) to enhance the quality of the record content, (2) to make recording more efficient, (3) to contribute to an evidence-based practice, and (4) to facilitate data aggregation.

2.5.1 Enhancing the quality of the record content

One objective for implementing SCPs is that they can contribute to enhancing the quality of the EPR content. It is internationally acknowledged that the quality of nursing documentation is important for communication, continuity of care, and patient safety (Saranto & Kinnunen, 2009). Even though there is no international gold standard for nursing documentation and quality, and therefore they have been operationalized differently, there has been a general tendency to define quality as accurate and complete recordings that adhere to the nursing process (Adereti & Olaogun, 2019; Björvell et al., 2000; Fossum et al., 2013; Müller-Staub et al., 2007; Paans et al., 2010; Wang et al., 2011). Accurate nursing documentation has been described as being coherent and relevant, in addition to being linguistically correct and unambiguous (Paans et al., 2010). Despite the international recognition of its importance, research studying the quality of nursing documentation has repeatedly found it to be insufficient (Cheevakasemsook et al., 2006; Ehnfors & Smedby, 1993; Ehrenberg & Birgersson, 2003; Gershater et al., 2011; Gjevjon & Hellesø, 2010; Instefjord et al., 2014; Stokke & Kalfoss, 1999; Thoroddsen et al., 2013; Tuinman et al., 2017; Wang et al., 2011). Reported reasons for documentation inadequacies are time constraints, ineffective nursing procedures, limited knowledge and competence, insufficient training, lack of supervision, personal attitude and disposition, and lack of clear guidelines for recording (Cheevakasemsook et al., 2006; Karkkainen et al., 2005; Olivares Bøgeskov & Grimshaw-Aagaard, 2018; Paans et al., 2011).

Use of a classification system, such as the ICNP, in recording is believed to enhance the quality of the record content (De Groot et al., 2019). Such a system can facilitate clear and precise communication between healthcare providers, both intra- and inter-organizationally, and thereby reduce ambiguity and misunderstanding (Axelsson et al., 2006; Gordon, 1998; Park & Lee, 2015; Rutherford, 2008; Saranto et al., 2014). Dense and compact coding of complex issues, such as using a standardized terminology to communicate patient care, can also make communication more efficient (Park & Lee, 2015; Wears, 2015). Hence, the SCPs using the ICNP were expected to positively affect the quality of nursing documentation.

2.5.2 Making recording more efficient

Time is a highly valued asset in healthcare. Hence, another objective of implementing SCPs was that they would contribute to making recording more efficient. A systematic review found that nurses may spend more than half of their time on administrative tasks, such as documentation, and other tasks that "steal" time from direct patient care (Lavander et al., 2016; Vabo et al., 2016). As mentioned above, time constraints have been reported as a reason for documentation inadequacies. This can be related to a mismatch between workload and allocated resources (Cheevakasemsook et al., 2006; Paans et al., 2011). It can also be related to nurses viewing documentation to be a less important task and thereby prioritizing direct patient care when experiencing time constraints (Olivares Bøgeskov & Grimshaw-Aagaard, 2018). Together, these problems have often resulted in hurried recordings at the end of the shift or nurses working overtime to submit records (Blair & Smith, 2012; Gugerty et al., 2007). Initiatives to reduce the time spent on recording would therefore be helpful. The implementation of SCPs has the potential to reduce documentation time by providing nurses with menus of predefined elements to put into a care plan. In this way, nurses do not have to use time on formulations or on identifying appropriate interventions when they make care plans. Hence, SCPs can also function as decision support for nurses in making decisions regarding nursing interventions. Previous studies on the implementation of similar recording aids have shown that predefined elements in the EPR reduce recording time as well as the amount of unnecessary documentation (Dahm & Wadensten, 2008; Lee & Chang, 2004). However, it was noted that predefined care plans were inflexible and therefore could be difficult to apply in clinical practice (Lee & Chang, 2004). By learning from past experiences of implementing EPR systems, other factors can be used to provide valuable insights when addressing the efficiency of new systems. For instance, one of the purposes of introducing digital recording in healthcare was that it would make recording more efficient, but studies found it hard to determine any significant changes in the time spent on documentation (Kossman & Scheidenhelm, 2008; Poissant et al., 2005). This was related to a number of factors, such as lack of computer experience, poorly functioning equipment, slow computer programs, low user friendliness, double recording of information, and systems not supporting nurses' workflow (De Groot et al., 2019; Huryk, 2010; Meissner & Schnepp, 2014; Stevenson & Nilsson, 2012). Thus, these factors should be considered in the implementation of new recording technology, like SCPs. Otherwise, it is possible that the implementation of SCPs will not reveal differences in recording time due to other factors, such as outdated technological equipment.

2.5.3 Contributing to an evidence-based practice

An important objective of implementing SCPs was that they would contribute to an evidence-based practice. Evidence-based practice represents the integration of research, clinical experience, and patient preferences in order to provide the patient with the best care possible, which can positively affect patient safety (Dawes et al., 2005). Although empirical evidence is increasingly available today, there is still a large discrepancy in the application of evidence into healthcare services (Grimshaw et al., 2012; Morris et al., 2011). Thus, measures to make research more easily available in clinical practice are desirable. One such measure is to integrate empirical evidence into clinical information systems (Bakken et al., 2008). An early paper showing how to make use of empirical evidence in practice presented an SCP in which the best available knowledge on managing Alzheimer patients' behavior was collected. The SCP had the objective of aiding decision making and avoiding unnecessary use of medication and restraint (Hall et al., 1995). When the contents of the SCPs are evidence-based, they can facilitate an evidence-based practice and serve as reminders of appropriate interventions (Monsen et al., 2011). There are, however, studies that have explained that nurses rely more on their clinical experience than on empirical evidence (Jakobsson & Wann-Hansson, 2013; Jansson et al., 2010; Svensson et al., 2012). This could mean that there can potentially be a difference between the content of the care plan and the care carried out in practice. Hence, using evidence-based SCPs will not necessarily lead to an evidence-based practice. While some have claimed that increased use of nursing diagnoses and specific interventions can lead to improvements of nursing-sensitive patient outcomes (Müller-Staub et al., 2007), others are uncertain about whether the content of EPR systems affects nursing practice and patient outcomes (Tastan et al., 2014; Urquhart et al., 2009).

2.5.4 Facilitating data aggregation

Finally, the last objective for implementing SCPs was that they would support the aggregation of data entries. Data aggregation was already 20 years ago perceived to be a way to build clinical knowledge from data on patient problems, care interventions, and outcomes (Ehrenberg et al., 2001). By coding data entries in the EPR, data can be extracted, which can in turn facilitate comparability and control and can thereby support managers and policy makers, for instance, in the allocation of resources, or be used for research purposes (Bowker & Star, 2002; Johnson et al., 2018; Rutherford, 2008; Saranto et al., 2014). Nursing documentation using free text in narrative notes has been found to contain a tremendous number of routine notes and redundant information that has made important information hard to find and data aggregation impossible (Blair & Smith, 2012; Törnvall & Wilhelmsson, 2008). By structuring nursing documentation— for example, through the use of SCPs and by applying a standardized, coded nursing terminology—one has the potential to reduce redundant information and facilitate data aggregation. However, the fact that so many terminologies are developed within the field of nursing undermines the purpose of consistency across settings and makes inter-organizational data aggregation difficult until the terminologies have been fully cross-mapped (Kieft et al., 2017; Schwirian, 2013; Tastan et al., 2014). In addition, for aggregated data to reliably depict the patient care provided, the SCPs have to be used consistently (Tastan et al., 2014). The latest government report on quality and patient safety underlines this by stating that the local variations of patient safety presented in the report can represent the recording practice rather than providing an actual picture of reality (Ministry of Health and Care Services, 2019-2020). Hence, caution should be taken when using aggregated data as long as SCP use is in its infancy in Norway.

Summing up, the implementation of SCPs has the potential for enhancing the quality of nursing documentation, for making recording more efficient, for contributing to an evidence-based practice, and for facilitating data aggregation. However, these enhancements may be impaired by factors like poor technological equipment, care plans not being used as a guide for care, and low adoption of SCPs. Thus, it is important to not only address the possible advantages of using SCPs but also what it takes for SCPs to become an embedded part of nurses' information practice. In the following section I will present findings from previous research on the introduction, adoption, and facilitation of new documentation structures in healthcare.

2.6 Findings from previous research on SCPs

In this section I will present what previous studies of SCPs have found regarding their introduction, adoption and use by nurses, and facilitating factors for their sustained use. As previously noted, few studies have been conducted on SCPs like those implemented in the Norwegian municipalities. Hence, it was necessary to look at results from studies describing the introduction, adoption, and facilitation of other, similar documentation structures, and to compare the results to general knowledge from technology implementation in healthcare. Another limiting factor was that most of the studies I found were conducted in the hospital setting (Adereti & Olaogun, 2019; Bjurling-Sjöberg et al., 2018; Castellà-Creus et al., 2019; Jakobsson & Wann-Hansson, 2013; Lee & Chang, 2004; Pöder et al., 2015; Svensson et al., 2012). Municipal healthcare is different from hospital care in many ways, but the most important differences in this regard are the number of RNs employed, the variations in the patient groups they care for, and the expected timeline for patient care. These variations could mean that results from one setting are not directly transferrable to another setting. Even so, some issues described are more general and can be expected to be found in all healthcare settings.

2.6.1 Introduction to the information practice

The introduction of SCPs represented a new documentation structure and a novel way of constructing care plans. The SCPs were introduced as an additional element in an already existing information practice. The implementation of a new technology will unavoidably threaten established routines, and whether the intended users are motivated to embrace such changes is dependent upon attributes of the individual, the context, and the new technology (Davis, 1989; Greenhalgh et al., 2017; Kumar et al., 2020; Venkatesh et al., 2012). As described in the classic *theory of change*, recognizing the need for change is a prerequisite for peoples' willingness to change (Lewin, 1951). Individual motivation to use a new technology can be connected to perceived usefulness (Gagnon et al., 2012; Li et al., 2013; Venkatesh et al. , 2003), and perceived effect on patient outcome (Huryk, 2010).

Previous studies have identified that some nurses have a general resistance to change and an unwillingness to use new technology for documentation (Castellà-Creus et al., 2019; Conrad et al., 2012; Wears, 2015). Resistance to change is a natural response to changes that people perceive as being forced upon them (André et al., 2008b). Different individuals can also have different values, experiences, and personality traits that affect their views on the usefulness of a new technology. Like a Norwegian study implementing an evidence-based guideline described, some saw the guideline as useful to provide patients with the best possible care, while others saw the guideline as too time consuming and unsuitable, and quickly went back to their old habits (Vabo et al., 2016). To counteract some of the individual differences and reduce insecurity regarding use, educational interventions and practical training were found to be necessary to increase the intended users' knowledge of the purpose and practical use of the new system (Adereti & Olaogun, 2019; Castellà-Creus et al., 2019; Patiraki et al., 2017; Saranto et al., 2014; Strudwick, 2015), and some have suggested that such training and support may be perennially needed (Adereti & Olaogun, 2019). The feeling of ownership is another factor identified as important for positive engagement in the new technology, and this can be achieved by involving nurses in the implementation process and allowing for collaboration with vendors (Askari et al., 2020; Jakobsson & Wann-Hansson, 2013; Patiraki et al., 2017; Sassen, 2009; Strudwick, 2015; Vabo et al., 2016; van Ginneken, 2002).

Furthermore, attributes of the context, such as the information practice or the department culture, is also known to affect an individual's motivation toward using the new technology and to impede or facilitate implementation work (Li et al., 2013; Ree et al., 2019; Vabo et al., 2016). Because it is known to be much harder to implement a technology in an organization where users are less motivated and feel that they ought to use it, more than they want to use it, it has been suggested to investigate an organization's readiness to change before implementing a new technology (Mogensen, 2019).

Lastly, but perhaps most importantly, the specific attributes of the new technology in itself will affect whether the new technology will be taken into use. Such attributes include whether the technology is feasible, meaning that it is easy to use and without technical bugs, whether it is fun to use, and whether using it represents a benefit to the user (Venkatesh et al., 2012). Studies of SCPs have reported that nurses found them easy to use (Jakobsson & Wann-Hansson, 2013; Jansson et al., 2010). In addition, it has been noted that for technological tools to be taken into use, it is important that they correspond to organizational norms, integrate well with existing routines, and support nurses' workflow in daily practice (André et al., 2008b; Bjurling-Sjöberg et al., 2018; Greenhalgh et al., 2017; Huryk, 2010; Jansson et al., 2010; Li et al., 2013; Saranto et al., 2014; Svensson et al., 2012). In this regard, it has been described that SCPs that were implemented in a setting without being adapted to the nurses' routines did not function according to their purpose and as such remained an element of the EPR that was seldomly consulted by the nurses (Castellà-Creus et al., 2019).

2.6.2 Adoption and use

There are several factors that can influence how nurses adopt and use SCPs. One study found that some nurses preferred to write narrative records instead of using standardized documentation structures (Castellà-Creus et al., 2019). Several other studies have described that nurses found the standardized structures to be both time saving and easy to use, but at the same time also restrictive in their recording, especially when a patient's situation did not quite fit into the model (Jakobsson & Wann-Hansson, 2013; Lee & Chang, 2004; Svensson et al., 2012). It has also been explained that some nurses have a fear of predefined suggestions for care, such as the interventions in the SCPs, replacing clinical judgement, and posing the risk of individual needs not being discovered (Colón-Emeric et al., 2007; Dahm & Wadensten, 2008). Others have noted that using prescriptive standards may make it harder to articulate and catch needs to adjust the standards, which is an issue that can commonly arise when working within the complex and uncertain environment of patient care (Nemeth, Wears, Woods, Hollnagel, & Cook, 2008). Given the complex nature of nursing, some studies have found that nurses still struggle to describe holistic, individualized, and culturally sensitive patient care within standardized recording structures (Hämäläinen & Hirvonen, 2020; Park & Lee, 2015). Nevertheless, SCPs have been found to function as a decision support for both planning and documentation of care, especially for lower educated nurses (Adereti & Olaogun, 2019).

Previous studies of nurses' use of SCPs have found that, as opposed to their intention, SCPs are not always used as a guide for care. While newly employed nurses used SCPs to inform patient care, more experienced nurses used them more as a recording aid. Confident, experienced nurses seemed to mostly rely on their own and their peers' clinical experience (Castellà-Creus et al., 2019; Dahm & Wadensten, 2008; Jakobsson & Wann-Hansson, 2013; Rycroft-Malone et al., 2009). If nurses do not use the EPR content as a guide for care, it is difficult to see how the content of a care plan can affect patient outcomes. However, it has been described that SCPs can help nurses to adhere to an evidence-based care (Pöder et al., 2015).

2.6.3 Facilitation

Multiple studies have described that facilitating factors are important for a successful technology implementation (Saranto et al., 2014; Strudwick, 2015; Venkatesh et al., 2012). The facilitation of the implementation, adoption, and sustained use of SCPs is connected to many factors that have already been mentioned. Commonly mentioned facilitators that have not been presented already are technological support, facilitators, and leadership. Technological support refers to both the importance of having someone to contact when one has a question or a problem arises, and the importance of having well-functioning computer system that supports the new technology (Jakobsson & Wann-Hansson, 2013).

Facilitators are described as important persons who affect a successful technology implementation (André et al., 2008a). Facilitators are typically nurses who are especially trained in using the new recording technology and who work to educate other nurses in how to use the SCPs, remind them to use the SCPs in their everyday practice, and advise them to use their time to provide feedback on use to others (Jansson et al., 2010). The facilitators have an important function in motivating the staff and getting everyone to use the new technology (Vabo et al., 2016). Instead of educating and supporting the nurses individually, it has been described that this can also be arranged in group sessions. One study explained that the organization of clinical care sessions, in which the correct use of SCPs were described and discussed, was a positive initiative, but was hard to attend during working hours (Castellà-Creus et al., 2019). Hence, the allocation of time and resources for such training seems to be important.

The leader has the responsibility to allocate the required time and resources needed for a successful implementation of SCPs (Jansson et al., 2010). Several studies have outlined the importance of strong leadership and managerial support in implementation processes (André et al., 2008a; Bjurling-Sjöberg et al., 2018; Saranto et al., 2014). The leader affects the culture in the department and helps the nurses understand the usefulness of the new technology (Vabo et al., 2016), which has also been described as important in studies of SCPs (Jakobsson & Wann-Hansson, 2013). Even though their responsibility and support has been demonstrated to be important, a Spanish study of SCPs found that the leaders had little knowledge on how SCPs should be used, and they did not consider the motivation of staff as their responsibility (Castellà-Creus et al., 2019).

Summing up, research on SCPs like the ones addressed in this study is scarce in general, and even fewer studies have been conducted in the municipal healthcare setting. Hence, prior to this study, little was known about how SCPs would be adopted and used by nurses in this setting, or how to facilitate a sustained use of SCPs as part of their information practice. However, the results from similar studies in other settings have shown that a successful implementation of

SCPs may be dependent on multiple factors, such as the attributes of the individual nurse, the context, the attributes of the SCPs, how the SCPs are adopted and used by the nurses in their daily practice, as well as facilitating factors such as adequate technological equipment and access to facilitators' and managers' support. In the next section I will describe the theoretical framework I applied in this dissertation.

2.7 Theoretical framework

In this section I will describe the theoretical framework I relied upon in this dissertation to understand the introduction, adoption, and facilitation of SCPs in municipal healthcare.

A theoretical framework can be defined as *"a graphical or narrative representation of the key factors, concepts, or variables to explain the phenomenon"* (Moullin et al., 2015, p. 3). In this dissertation, the phenomenon was the implementation of SCPs. The development and implementation of e-health initiatives for healthcare has not always been successful, and there is general agreement that this is a complex process (Greenhalgh et al., 2010; Mair et al., 2012; Ross et al., 2016). The SCPs represented a new type of use of the EPR system, and they are therefore viewed as a new technology in this dissertation. To be a success, new technologies depend on end-user acceptance and use (Ammenwerth et al., 2006; Courtney-Pratt et al., 2012). As little was known about the use of SCPs in municipal healthcare, sub-study I aimed to explore how the SCPs had been introduced as a new technology in nurses' information practice, as well as how the nurses had adopted and used them; sub-study II sought to identify success criteria to facilitate the integration of SCPs into the information practice. Numerous frameworks have been developed with the purpose of understanding technology implementation (Moullin et al., 2015). Hence, it was difficult to know which framework was best fitted to use in this dissertation—but one model stood out.

The technology acceptance model (TAM) is one of the most widely used models for understanding users' acceptance of a technology implementation, and it has been cited more than 57.000 times. TAM was developed by Fred Davis and Richard Bagozzi based on the "theory of reasoned action"—a psychological theory of human behavior (Fishbein & Ajzen, 1975; King & He, 2006)—and was published as early as 1989 (Davis, 1989). TAM is a framework to understand the cognitive processes of users and how they respond to and adapt to a new piece of technology. The model explains that people form attitudes toward a new technology in terms of ease of use and usefulness, prior to ever interacting with it (Davis, 1989).

The original TAM model illustrates how the authors conceptualized the path to actual use of a new technology. First, there are some external variables influencing each individual—for instance, prior use of a similar technology. These variables influence how the individual will perceive the usefulness and ease of use of the new technology. In addition, perceived ease of use will also influence how the individual perceives usefulness. Furthermore, perceived usefulness and perceived ease of use will determine whether the individual has a negative or a positive attitude toward the new technology. This attitude will in turn influence the individual's intention to use the technology. Regardless of attitude, perceived usefulness is also believed to be a predictor for intention to use. Lastly, the model shows that a positive intention to use will positively affect the likelihood of actual use (Davis, 1989).

Although it has been widely used, the original TAM model has also been criticized. For instance, it was criticized for only being concerned with attributes of the user and the technology in itself and for failing to appraise the importance of the clinical environment and supported clinical tasks in technology adoption (Ammenwerth et al., 2006). This was seen as a technologically deterministic approach, focusing on the technology and how it changes a practice without acknowledging how the interaction of technology, individuals, and organizations influence the outcome (Robey & Boudreau, 1999). A technologically deterministic approach has been perceived to be more appropriate to use for individuals' acceptance and use of a technology, and less appropriate when an institution or corporation implements new technology because organizational dynamics in this context will have a great influence on actual use (Ash et al., 2004; Legris et al., 2003). The criticism, along with the explosion of technology use over the last decades, has led to the ongoing development of the model. The model has been revised several times—for instance, TAM 2 (Venkatesh & Davis, 2000), The Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al., 2003), and UTAUT 2 (Venkatesh et al., 2012), which is the theoretical model used in this dissertation.

In UTAUT 2, alternative theories of technology acceptance are brought together and unified into a single theory. While the original UTAUT was developed for the prediction of intention to use a technology and technology use in organizational contexts (Venkatesh et al., 2003), UTAUT 2 was further developed to predict consumers' use of a new technology (Venkatesh et al., 2012). UTAUT 2 includes seven key constructs that predict behavioral intention. The seven constructs are as follows:

- *Performance expectancy* – how the technology provides benefits to the users in performing certain activities. With regard to the SCPs, this could, for instance, relate to how nurses expect them to aid in recording, save them time, or help them to have an evidence-based practice. Performance expectancy is moderated by age and gender.
- *Effort expectancy* – how easy the technology is to use. In this dissertation, this could relate to how easy the nurses expect it to be to take the SCPs into use, and how much effort they think they will have to put into learning how to use it. Effort expectancy is moderated by age, gender, and experience.
- *Social influence* – whether potential users believe that it is important to others that they use the technology. Social influence can describe the impact expectations from a leader or from the culture between the nurses in the department will have on whether or not nurses take the SCPs into use. Social influence is moderated by age, gender, and experience.
- *Facilitating conditions* – the resources and support available to the users of the technology. Regarding the implementation of SCPs, this can relate to how much training and support the nurses are offered when introduced to SCPs. The effect facilitating conditions have on *use behavior* is moderated by age and experience.
- *Hedonic motivation* – the fun or pleasure one experiences from using the technology. Using a new recording technology like SCPs is perhaps not commonly subject to hedonic motivation but can by some be influenced by the joy of using something new. Hedonic motivation is moderated by age, gender and experience.
- *Price value* – the tradeoff between the price of the technology and its perceived benefits. This is a construct that is applicable for consumers who pay for the technology themselves and is therefore not applicable in this study. Price value is moderated by age and gender.
- *Habit* – the extent to which users perform activities automatically as a result of learning and experience of using the technology. This construct can relate to how repeated use of SCPs can influence the behavior to become a normalized part of their information practice. Habit is moderated by age, gender and experience.

All seven constructs affect *behavioral intention,* meaning a person's intention to use the new technology. *Behavioral intention* will in turn affect *use behavior*, which refers to actual use of the technology. However, *facilitating conditions* and *habit* have been found to directly affect *use behavior* regardless of *behavioral intention* (Venkatesh et al., 2012). Translated to the implementation of SCPs, this could for example mean that poorly functional technological equipment, seen as poor *facilitating conditions*, can lead to a nurse not using SCPs even when other factors have led to a positive *behavioral intention*. It could also mean that when using SCPs has become a habit, the nurse will use the SCPs automatically without other factors influencing on behavioral intention.

In addition to the seven constructs, the user's age, gender, and experience are factors described to function as moderators. This could for example mean that a nurse's expectancy of how easy the SCPs were to use (effort expectancy) is moderated by her previous experience with computers and EPR systems. *Experience* is the only moderator that in the theory is described to affect the process from *behavioral intention* to *use behavior*. In relation to SCPs, this could mean that a nurse's previous experiences can affect how easy it is to go from wanting to use SCPs (behavioral intention) to actually using them (use behavior).

UTAUT 2 is a widely used theory in research on acceptance and use of new technologies (Tamilmani et al., 2017; Tamilmani et al., 2021). In healthcare-related studies, it has been used to, for example, study peoples' adoption of mobile health technologies (Dwivedi et al., 2016), nurses' acceptance of home tele-health technologies (van Houwelingen et al., 2015), and healthcare workers acceptance of EPR (Alazzam et al., 2015). As noted in a systematic review studying use of UTAUT 2 in research, many studies have used the theory in combination with other theories, and the theory has been extended further, adding new exogenous, endogenous, mediating, and outcome mechanisms (Tamilmani et al., 2021). These extensions were added after the completion of this study and are therefore not applied in the current study. However, I looked to other theories for further understanding of issues that I considered insufficiently covered by UTAUT 2.

In sum, UTAUT 2 is a widely used theory that can be applied to describe and understand the adoption and use of a new technology, such as the SCPs. The theory describes seven constructs that have been found to influence a person's intention to use a new technology. This theory was therefore considered suitable to use in this dissertation to understand different aspects concerning the introduction of SCPs into nurses' information practice, nurses' adoption and use of the SCPs, as well as factors shown to facilitate the application of SCPs on a long-term basis. In the next chapter I will describe the design and methods applied in this dissertation.

3. Methods

In this chapter I will first describe the philosophical underpinnings of my study. Then, I will present the design of the study, describe the setting and recruitment strategy I used, as well as the characteristics of the participants of the two studies. I will continue by presenting the data collection methods I used in my studies, in addition to how the collected data were analyzed. Finally, I will end the chapter with a presentation of the relevant ethical considerations in relation to the study.

3.1 Philosophical underpinnings

The philosophical underpinnings of this study stem from a relativist ontology acknowledging the existence of multiple realities according to the setting and subjective point of view (Guba & Lincoln, 1994; Scotland, 2012). Therefore, I considered it important to explore the information practice in municipal healthcare as a new context for implementation of SCPs, as I believed that individual perspectives as well as specific features of the context would influence how SCPs were used and adopted, and that findings from implementations in the hospital setting were not directly transferable to this setting (Scotland, 2012). Personally, my epistemological stance is pragmatic, as I believe it to be wise to choose the research methods best suited for answering a question (Kivunja & Kuyini, 2017). However, the studies included in this dissertation followed an interpretivist epistemology, and as such I employed qualitative methods of data collection and made concerted efforts to understand the viewpoints of the participants (Kivunja & Kuyini, 2017). The interpretivist epistemology also influenced the methodology used in the dissertation. As I have described earlier, my understanding of nurses' information practice was influenced by social constructionism, meaning that I viewed the practice as something created through interactions of people belonging to a social setting (Burr, 1995). In Paper II, I used a theoretical framework to explain technology implementation and to generate some of the interview questions on the use of SCPs, as well as a backdrop against which to discuss my results. As I view the specific features of the setting and its participants as important parts of knowledge creation, I did not use this framework in the analysis, but rather took an inductive and open approach (Patton, 2015; Thorne, 2016). In Paper III, I describe my understanding of the factors contributing to the normalization of SCPs as sociotechnical, which accounts for normalization as dependent on specific features of both the individual user and the specific technology, as well as the interplay between them (Greenhalgh et al., 2017). Together, my articles fall under the interpretive description design, as presented in the following section.

3.2 Study design

In this section I will present the design of this dissertation. This dissertation employed an exploratory and descriptive design. The purpose of this approach is to observe, describe, and document a situation or a process that previously has not been described or discussed in research, and therefore is not fully understood (Patton, 2015). This design was considered appropriate in this study because it could provide knowledge and understanding about how standardized structures for documentation fit within nurses' information practice in municipal healthcare, an area where there was little prior knowledge.

The dissertation was guided by interpretive description, which is an established qualitative research method (Sandelowski, 2000; Thorne, 2016): "*Interpretive description designs will, in various ways, search out and explore features or elements of a common issue, but will seek to render an understanding of them that honors their inherent complexity*" (Thorne, 2016, p.75). Thus, this design was considered suitable for this dissertation in order to understand the complexity concerning implementation and use of SCPs within an already established information practice.

Interpretive description was developed to provide a better understanding of clinical practices and issues of importance within the health domain. Even though the design draws upon the social science traditions of ethnography, grounded theory, and phenomenology, a study using this design will typically not conform to these original traditions (Thorne, 2016). Interpretive descriptions will often use multiple methods of data collection, involve an ongoing engagement with the data to confirm or test the conceptualizations, and approach the data in an inductive manner (Thorne, 2016). An inductive approach to data analysis involves viewing data openly without a defined set of particular elements to look for. This approach has been described as applicable when the existing body of knowledge on the subject or phenomenon of interest is insufficient or fragmented (Elo & Kyngäs, 2008), as was the case with the areas of interest in this dissertation.

Table 1 provides an overview of the aims, data collection methods, and sub-studies comprising this dissertation. The total body of empirical data in the dissertation consists of field notes from

124 hours of participant observations, individual interviews with 17 registered nurses, 319 pages of printouts from the EPRs of 20 patients, and 108 pages of transcriptions from two workshops.

Table 1: Overview of the aims and data collection methods of the sub-studies

	Aim	Methods of data collection
Study I (Paper I)	To uncover the characteristics of nurses' information practice in municipal healthcare and to address how, when, and why various pieces of information are produced, shared, and managed.	Participant observations of nurses, individual interviews with the observed nurses
(Paper II)	To explore how nurses use SCPs as a new recording tool in municipal healthcare, and to identify their thoughts and opinions.	Participant observations of nurses, individual interviews with the observed nurses, document analysis of care plans in patient records
Study II (Paper III)	To identify success criteria for the adoption and integration of SCPs into practice.	Workshops with nurses and nursing leaders

To sum up, this dissertation followed an exploratory, descriptive design, which is considered appropriate to use when studying a field for which there is little prior knowledge. The dissertation was guided by interpretive description, which seeks to render an understanding of the complexity of common issues. In the following section, I will present some characteristics of the setting of the study and the recruitment strategy used.

3.3 Setting and recruitment strategy

In this section, I will describe the setting in which this study was carried out and the recruitment strategies used in sub-study I and sub-study II, respectively.

3.3.1 Setting

The sub-studies of this dissertation were carried out in Norwegian municipal healthcare. General characteristics of the municipal healthcare setting are presented in section 2.1. For the sub-studies in this dissertation, data were collected in nursing homes and home healthcare districts in the three municipalities that had implemented SCPs when the PhD project commenced. Statistics Norway classifies municipalities as small (fewer than 5,000 inhabitants), medium-sized (5,000–19,999 inhabitants) or large (20,000 or more inhabitants) (Haugstveit & Otnes, 2019). The population of the three municipalities where this study took place ranged from approximately 10,000 to 60,000 inhabitants. Hence, they were classified as medium or large. During the course of the years that I worked on this PhD project, two of the municipalities were merged into one. Hence, for sub-study II, only two large municipalities were included.

3.3.2 Recruitment strategy

Sub-study I

Access to the field was obtained by first contacting leaders of healthcare services in the three municipalities, informing them about the study, and receiving their written consent. When initial permission was granted, I contacted the leaders of the nursing homes and home healthcare districts where ICNP-enabled SCPs were implemented. Permission to conduct the study in these specific locations was granted, and the leaders informed eligible RNs about the study and asked if they were willing to participate. In the two articles, I have described the sampling procedure of participants as *convenience sampling*, since participants from the three municipalities were included based on their availability, in addition to the inclusion criteria (Patton, 2015).

Sub-study II

In sub-study II, I wanted to share the previous results from sub-study I with RNs and nursing leaders and, through workshops, develop possible solutions to the identified challenges. It was thus important to go back to the same municipalities, which now were reduced to two. I contacted a resource person with an overview of contact persons in the municipalities and received name and e-mail addresses of contact persons. I e-mailed the contact persons, informed them about the study, and asked if they were willing to recruit RNs and nursing leaders from the municipality that volunteered to participate in the workshops. Both contact persons responded positively, recruited participants, and facilitated the workshops.

3.4 Participants

In this section, I will present the inclusion criteria for participation in the two sub-studies, as well as participant demographics.

Sub-study I

The inclusion criteria for sub-studies I and II were that the participants should be RNs who held from 75 percent to 100 percent positions, and that had been employed for over a year in the ward. This was to ensure that the participants had sufficient knowledge of the SCPs and the information practice in the ward. The nursing leaders in the particular healthcare setting identified RNs that met our inclusion criteria. The RNs received information about the study, and 17 agreed to participate. The RNs ranged from 27 to 60 years in age (Mean 40.9), and all but one RN were women. To protect the anonymity of the male participant, RNs are consequently described as female (she, her) in this dissertation. The participants worked in short-term wards (*n* = 4), intermediary wards (*n* = 3), long-term wards (*n* = 6), and home healthcare (*n* = 4). Participant demographics from sub-study I are presented in Table 2.

Table 2: Participant demographics sub-study I (*n* = 17)*

	Range	Mean
Age in years	27 – 60	40.9
Years as a nurse	2 – 36	13.6
Years on the ward	1 – 26	7.6

* Table from Paper I: Østensen, Bragstad, Hardiker, & Hellesø (2019, p. 2708)

Sub-study II

For the workshops in sub-study II, a mix of RNs and nursing leaders was preferred. I asked the facilitators to recruit three nursing leaders and three RNs for the workshops, as six is the ideal number of participants in a workshop (Sanders & Stappers, 2018). Both facilitators recruited three RNs and three nursing leaders. However, at the day of one of the workshops, two RNs had to decline attendance due to illness and shortness of staff in the ward. After careful consideration, we decided to proceed with the workshop anyway. One of the facilitators, who had a special interest in SCPs, was allowed to join the workshop. This resulted in one workshop with four participants, and one with seven participants. In total, 11 participants were included in sub-study II, of whom six were leaders and five were regular RNs. Nine participants were women, and two were men. However, all participants are described as female in this dissertation to protect the anonymity of the two men. Participant demographics are presented in Table 3.

Table 3: Participant demographics sub-study II (*n* =11)

	Range	Mean
Age in years	35 – 53	43.3
Years on the ward	0.25 – 30	9.8
	Yes	No
Are you educated as a registered nurse (RN)?	11	0
Do you hold a position as a leader?	6	5

Additional background information collected; only one of the 11 participants had been involved in the development of SCPs, and the participants' experience of using SCPs ranged from no experience to five years.

3.5 Data collection

In this section, I will present the different data collection methods that I used in my sub-studies. Data from participant observations, interviews, and patient records were collected simultaneously over the course of six months in 2016. These data were used in sub-study I, and are presented in Paper I and Paper II. For sub-study II, I collected data from two workshops in 2019, where solutions to the previously identified challenges were discussed with nurses and nursing leaders in the municipalities. These data are presented in Paper III.

3.5.1 Participant observations

Participant observation was chosen as method of data collection because it provided a first-hand opportunity to observe the information practice of RNs in municipal healthcare *in situ.* Participant observation gives the researcher the opportunity to directly observe how a practice unfolds and notice things that are taken for granted or that has escaped the awareness of those who are a part of the setting (Patton, 2015). As a researcher, my degree of participation in this study can be described as moderate (Spradley, 1980). By this, I mean that the participants were aware of my presence and the purpose of the study, I dressed like the healthcare workers and interacted with the people in the setting, but I did not interfere with or join in patient care. Participant observation has its origin in ethnography, a method often used in anthropological field work studies, a method that inspired my observational studies (Fangen, 2004).

I participated as an observer, following 17 RNs on a day shift, each lasting from seven to eight hours, adding up to a total of 124 hours of observations. All of the RNs had received information about the study in advance and accepted to participate. At the day of the observation, they received oral and written information about the study again and signed a consent form. On one occasion, the RN I was supposed to observe had called in sick, and so instead I observed another RN, who had spontaneously agreed to participate.

During the observations when I shadowed the RNs, they visited several patients. In respect to the principle of autonomy, the RNs asked all patients if they consented to my presence before I entered their room or home. When the patient was in an especially vulnerable situation, such as in the bathroom, I respectfully kept my distance and stayed outside to assure their privacy.

To guide my gaze during the observations, I had developed an observational guide in advance (Appendix II). The guide included questions such as the following: “Where can information be found in this setting?”, “How does the nurse receive and give information?”, and “When are the different information sources in use?”. The observational guide was used to narrow my scope and direct my attention but, as recommended in the literature, it was neither observationally structuring nor binding (Fangen, 2004). Field notes were written down as keywords or short sentences during the observations. Moreover, I wrote down questions or issues that I wanted to discuss with the RNs in the following interviews. As soon as possible after the observations, the field notes were written down in full sentences describing what I had observed. In addition, I wrote reflective notes for questions, feelings, reactions, or thoughts that arose during the observations.

3.5.2 Interviews

Following the participant observations, I interviewed each of the 17 RNs face to face individually at the end of the shift. The interviews took place in a room close to the ward. Each interview lasted for approximately 50 minutes. A digital voice recorder was used to audiotape the interviews, which later were transcribed verbatim using the software HyperTRANSCRIBE (ResearchWare Inc., 2021). The interviews were semi-structured, using an interview guide (Appendix I) that functioned as a reminder of the themes to be discussed. The interviews were, however, neither structured nor limited to the interview guide. This allowed the nurses to share their stories and speak about what engaged them.

The interview guide contained two parts. One part concerned the nurses’ information practice, where the questions mainly were developed based on a review of relevant research literature (e.g. Cheevakasemsook et al., 2006; Hellesø, 2006; Iversen et al., 2015; Meissner et al., 2007; Saranto & Kinnunen, 2009; Urquhart et al., 2009). The other part concerned questions regarding the implementation of SCPs. The questions and themes in this part were based on UTAUT 2 (Venkatesh et al., 2012). As I understand UTAUT2, use of a new technology, such as SCPs, is influenced by how the users view the benefit and purpose of using it, the training and support they have received to change their habits, and their personal experiences in using them. As a result, these themes were added to the interview guide.

In addition, I frequently added some questions related to observations I had made that day. The interview guide was dynamic and continually developed further to explore issues that emerged through the observations and interviews. During the interviews, I asked open-ended questions, listened actively to the participant, made notes of issues to explore further, and asked follow-up questions to go deeper into the participants' responses, as recommended in the literature (Patton, 2015). All interviews were ended with the question "Is there anything else you wish to tell me, or comment on, that I have not asked you about?". This question gave the participants the opportunity to highlight issues that they found relevant or important to address, which in turn could be added to the interview guide.

3.5.3 Patient records

In this study, data were collected from the EPR of 20 different patients without cognitive impairment who were living in nursing homes or receiving home healthcare. The nurse responsible for the care of the patients asked if they had consented to talking to me about participation in the study. If the patient consented, I then informed them, both orally and in writing, about the purpose of the study, how participation would affect them, and their right to withdraw their consent. Twenty patients gave their oral and written consent to participation in the study. The data collected from the EPR consisted of the patients' care plans, which included nurses' progress notes from the last 30 days, or as long as the patient had been receiving care, if less than a month. In total, 319 pages of printouts were collected from the EPR. Patient records were collected in all three municipalities.

3.5.4 Workshops

As data collection method for sub-study III, I chose to arrange two workshops in May and June 2019 with nurses and nursing leaders in the municipalities where I had previously done my data collection. Workshops are a way to take a *participatory approach* to data collection. A participatory approach means *"directly involving people in the co-design of the artefacts, processes and environments that shape their lives"* (Simonsen & Robertson, 2013, p. 2). The participatory approach has been used for decades in action research, and is an approach where researchers and participants actively participate in the construction of knowledge (MacDonald, 2012; McIntyre, 2008). The participatory approach has also frequently been used in design processes, where users and stakeholders engage in the process to ensure a good fit between the design and the use of a product or service (Sanders & Stappers, 2018). As in my research I was interested in finding solutions to the previously identified challenges with use of SCPs in municipal healthcare, I found the participatory approach suitable because the participants then could come up with solutions that fitted their practice.

I arranged two workshops, one in each municipality. Each workshop lasted for two hours, due to a careful consideration of available resources and eligible persons' motivation to participate. In addition to the participants and myself, my main supervisor was also present in the workshops. The workshops had three phases: *introduction*, *group work*, and *discussion*. These phases were developed as inspired by the phases described in generative research (Sanders & Stappers, 2018), but they were modified to fit the setting, participants, and available time.

The introduction phase: The participants were introduced, and the agenda for the workshop was set. I then gave a short presentation of my study and the previously identified challenges for the use of SCPs in municipal healthcare. Immediately after, the participants all joined in a roundtable discussion of the challenges and gave their initial feedback.

The group-work phase: The participants were divided into two smaller groups, intended to be a mix of nurses and leaders. The groups were presented with four predetermined topics (Table 4) developed from the previous findings (Paper I & II), and were then asked to discuss and reflect on them, after which they were asked to write down their groups' answers on sticky notes. The group discussions were audiotaped and lasted between 20 and 30 minutes. The groups were left to discuss freely without the researchers present in the room in order to avoid influence and contamination on these initial ideas.

Table 4: Topics for discussion in workshops (translated from Norwegian)*

1. Discuss your thoughts, opinions, and experiences with standardized care plans (An "ice-breaker" for the group work).
2. Discuss additional functionality that should be included in SCPs that you lack today to get accurate and sufficient information to guide your care.
3. Nurses in the municipalities use many information sources in addition to the SCP in the EPR system. Discuss what and how this information could be integrated into the EPR system in general and SCP in particular.
4. Suggestions for the SCPs to become the preferred way to handle information.

* Table from Paper III, Østensen, Hardiker, Hellesø (submitted)

The discussion phase: The two groups were reunited, and we joined them in a discussion where the groups presented their answers and ideas to each other for a general discussion. In this phase, we were able to pose questions to stimulate further elaboration so as to get a comprehensive understanding of their reflections and suggestions, and to clarify issues to make sure that we understood the participants correctly. This phase was also audiotaped.

The digital audiotapes were later transcribed verbatim, resulting in 108 pages of text, which together with the sticky notes made up the data material generated from the workshops. Ideally, the workshops should have been repeated after the participants had tried out their solutions in practice. Then they could have evaluated the solutions and developed them further. However, the participants respectfully declined the opportunity to discuss further, due to other obligations and a sense of having contributed with all that they could.

3.6 Data analysis

In this section, I will present how the collected data were analyzed. The process of data analysis was ongoing from the start of the data collection until the final themes were set and the article was published (Patton, 2015). During and after the data collection, I wrote down personal reflective notes and keywords that came to mind. While writing out the observational data and transcribing the audiotapes from the interviews and workshops, I discovered and noted new issues that I wanted to explore further. These reflections and notes can be seen as preliminary analysis (Green & Thorogood, 2014).

To analyze my data, I used techniques of qualitative content analysis, which is an interpretive way of analyzing data (Green & Thorogood, 2014; Hsieh & Shannon, 2005; Patton, 2015). In this dissertation, the qualitative content analysis was inductive, meaning that we openly approached the data to see what was there, as is the procedure in interpretive description (Thorne, 2016). This means that even though theory was used to develop questions in the interview guide, we did not deductively look for elements of the theory in the process of analysis. Initially, the data material was read as a whole by my Norwegian-speaking supervisors and myself to get a general overview of its content. During the coding procedure that followed, the software NVivo 11&12 was used to keep track of the codes and the associated text passages (QRS International, 2021). NVivo has built-in features that are similar to principles of content analysis and was therefore considered appropriate to use in this study (Elo & Kyngäs, 2008; Hsieh & Shannon, 2005). In NVivo, data are coded by marking parts of the text as *nodes*. A node is a code used for parts of the transcribed text that refer to similar descriptions. Several nodes were developed, and the different nodes were highlighted in the transcribed text with different colors. Hence, the different nodes were both visible and searchable, which made it easy to see all the text coded under the same node grouped together. The next step in the analysis was to cluster similar nodes in categories. The field notes from the observations and the transcripts from the interviews were first coded separately before I looked for similarities across the two datasets. The two datasets informed each other both ways, meaning that an issue noted in the observational field notes could be explained in the interviews, and a statement from an interview could be exemplified in the observational notes. By triangulating the two data collection methods in the analysis, a category from one dataset could be further informed or confirmed by the other dataset (Morse, 2015). After the transcripts were read several times, coded, and categorized, the research questions and purpose of the studies guided what was included in the further analysis (Green & Thorogood, 2014). The categories were discussed with my supervisors, and together we developed the categories into the final themes. Although often presented in a linear manner, the data analysis was an iterative process in which I constantly went back to the transcripts and re-read them to ensure that the themes were representative of the data. Table 5 is an example of how the main themes were developed through the analysis.

Table 5: Examples of codes, categories, and main themes from the analysis

Transcribed Text and Field Notes	Code	Category	Main Theme
The nurse looks at the whiteboard at the base to see today's Modified Early Warning Score (MEWS) values for the patients. She writes them down on her paper list of the patients and goes to the doctor to inform about this. In 20 minutes, there is going to be a meeting. (OBS no. 3)	To manage one piece of information, the nurses use a whiteboard, a paper list, and oral information	Several information sources	Web of information sources
"I do work almost full-time, so very often I was here the day before. But if I have been away for a while, I usually log into the EPR and read." (INT no. 16)	Working full-time gives *knowledge* about the patients; absence creates a need to read the EPR	Reading EPR is not always necessary	Knowing the patients and information redundancy
The nurse starts the day by finalizing old progress notes in the EPR. She explains that they are not finalized because the nurses write a little now and then during the shift. Once the note is finalized and approved, one is not able to write more on the same topic. Thus, the notes are often not finalized on the same shift as they are written. (OBS no. 8)	The nurses write notes in the EPR several times during the day. The EPR is not *designed* for this. Thus, notes are not finalized	Nurses have a need to record when situations occur	Asynchronous information practice

“Every shift you have to read from the Patient Controlled Analgesia (PCA) pump, how many boluses, how much medication that is given, and things like that. You have to do that in the patients’ room. So then we write it on a paper list. But we also have to write it in the EPR. Then you copy what the last person has written and just edit the numbers. […] There should have been a template in the EPR.” (INT no. 9)	The EPR is not *available* where the PCA is. The numbers are documented on paper before the EPR. In the absence of a template they copy text from the nurse before	Nurses have to document twice, but find solutions to do it quickly	Compensatory workarounds

*Table from Paper I: Østensen, Bragstad, Hardiker & Hellesø (2019, p. 2710).

As described in Paper II, the printouts from the patient records were not analyzed separately but were rather used to illustrate and get a more comprehensive understanding of the issues the nurses highlighted during the interviews. This gave valuable insights into issues that would have been very abstract and hard to comprehend without seeing examples of them.

In sub-study II, I used a participatory approach, and in generative research methods it is acknowledged that the participants themselves are a part of the preliminary analysis by immersion themselves in the present, writing down their thoughts, and, through discussion and reflection, generating ideas for future solutions (Sanders & Stappers, 2018). However, as the workshops were relatively short and not recurring, it is more correct to say that the participants contributed with the data for the study, as in other qualitative studies, instead of having a part in the analysis process. In the process of analysis, I used a qualitative content analysis as previously described. To get more background information on the issues discussed in the larger groups, I analyzed the data transcripts from the smaller group discussions. Furthermore, the areas prioritized by the participants on the sticky notes were compared to the group discussions to ensure a broader understanding of possible solutions to the challenges in todays’ practice. Through the analysis, the ideas for future changed practices were explored and expanded further into the final themes. This way, the raw data were transformed into information that provided understanding and knowledge.

3.7 Ethical considerations

The design of this study complied with the principles of ethics in research written in the Declaration of Helsinki. All participants, including nurses, nursing leaders, and patients, were informed that participation was voluntary and that they could withdraw their consent at any time without any negative consequences. All sub-studies were approved by the Norwegian Centre for Research Data (Sub-study I: project number 46503; Sub-study II: project number 859151). I signed a confidentiality form in all three municipalities where the study was conducted. The participating RNs decided which patients could be asked to share data from their EPRs based on their knowledge of the patients' cognitive abilities. No cognitively impaired patients were included. All data was anonymized before analysis.

To sum up, I have in this chapter described the philosophical underpinnings of the study, the study design, the setting and recruitment strategy, the study participants, the various data collection methods used, how data was analyzed, and the ethical considerations regarding this study. In the next chapter, I will present the results from the two sub-studies of this dissertation.

4. Results

In this chapter the results from the two sub-studies and three articles are summarized. To provide an initial overview, the titles, aims, and knowledge contributions of the articles are shown in Table 6. Then, I present the results from each article before I bring these results together and present a comprehensive understanding of the overall results of my dissertation.

Table 6: Overview of the articles and their knowledge contribution

Sub-study	*Original article*	*Aims*	*Knowledge contribution*
I	Nurses' information practice in municipal health care – A web-like landscape	To uncover the characteristics of nurses' information practice in municipal healthcare and to address how, when, and why various pieces of information are produced, shared, and managed.	An understanding of nurses' complex information practice. Identification of challenges with the current EPR solution. Understanding of how patient safety is ensured through interplay between EPR and other information sources.
	Introducing standardized care plans as a new recording tool in municipal healthcare	To explore how nurses use SCPs as a new recording tool in municipal healthcare, and to identify their thoughts and opinions.	An understanding of the complexities in the municipal healthcare setting that represent challenges to implementing SCPs. Identification of the challenges for defining the appropriate amount of information to be included in a care plan. An understanding of the problematic issues of partially implementing a new tool for recordkeeping.
II	Facilitating the implementation of standardized care plans in municipal healthcare	To identify success criteria for the adoption and integration of SCPs into practice.	Identification of factors contributing to a sustained use of SCPs as a part of nurses' information practice. An understanding of implementation as an ongoing process. An extended understanding of the role of nursing leaders in implementation and their need for support in this process.

4.1 Paper 1: Nurses' information practice in municipal health care – A web-like landscape

Nurses' information practice in municipal healthcare is complex. This complexity is reflected in the four themes identified in this study: *web of information sources*, *knowing the patient and information redundancy*, *asynchronous information practice*, and *compensatory workarounds*. Together these themes describe the context and information practice in which SCPs were implemented.

Web of information sources. The nurses used a variety of information sources interchangeably in their daily practice: electronic information, paper-based information, oral information, and information written on whiteboards. The information sources together resembled a spider's web, and the same information could be found in several places. The information that was shared was both of a health-related and of an organizational and coordinating character. Where and how to look for and share information among these choices were not necessarily comprehensible to an outsider. Despite this complexity, the nurses were familiar with the web of information sources and had no problem navigating them.

Knowing the patient and information redundancy. The nurses' information-seeking behavior was influenced by the nature of long-term care. The nurses expressed that they did not need to read the EPR every day to get an overview of their patients because they knew them well. The nurses had developed a practice that involved reading the EPR to update themselves when they had been away, but otherwise they did not find it necessary to start their shift by reading the EPR. They had multiple explanations as to why the EPR was not used that often: In addition to knowing the patients and accessibility at the point of care, lack of time was commonly mentioned.

Asynchronous information practice. The information practice did not follow a chronological timeline but happened when a need for information occurred or an available moment for documentation opened up. Nurses used the EPR to document occurrences of the past as well as messages for the future. When unexpected events happened, new information was produced and handled. Working with patients means that a continuous stream of potentially new information needs to be managed. Often, we saw that new information was first communicated orally and written in the EPR at a later time.

Compensatory workarounds. When the nurses met an obstacle or a shortcoming to the available information systems, they had developed workarounds to overcome this. For instance, they used their private cell phones for double-checking medicine. This non-formalized information practice was in response to issues that nurses evaluated as necessary or useful to overcome. The available resources of the workplace are not necessarily the only sources used in nurses' information practice. Where the specific type of information nurses need is not available, they use their creativity and develop workarounds to overcome this obstacle.

4.2 Paper 2: Introducing standardized care plans as a new recording tool in municipal healthcare

The nurses in this study experienced some challenges for adoption and use of SCPs. These challenges are reflected in the three themes identified in this study; *Balancing between the old and the new care planning system, Considering the usefulness of SCPs as a source of information, and Balancing between overview and detail.*

Balancing between the old and the new care planning system. The implementation of the SCPs was only partial, because they only existed for five problem areas. Thus, the old and the new system of writing care plans were operating at the same time. This gave opportunities for non-use of the SCP. Explanations of non-use were that SCPs were easily forgotten, insecurity and reluctance toward the new system, and the perception that SCPs did not contribute anything of additional value. Their evaluation of usefulness was an important factor in whether or not they chose to use the SCP.

Considering the usefulness of standardized care plans as a source of information. When deciding whether or not to use SCPs the nurses searched for a benefit of using them. Whether use was considered beneficial or not, was evaluated against the individual knowledge of the healthcare worker making the care plan. While the nurses considered the SCPs to be potentially useful for those with a lower level of education, less clinical experience, or less knowledge on a particular subject, they described the SCPs as less useful for themselves. The content of the SCPs was evaluated against their own knowledge, and if it conflicted, they placed higher trust in their individual knowledge.

Balancing between overview and detail. The nurses had different views of the level of detail the SCPs should contain. The SCPs should contain enough information, but at the same time be precise and provide an overview. This was complicated even more by the fact that different healthcare workers had different information needs. The nurses explained that formulating oneself in writing was difficult, and in this regard, they considered the SCP as a useful tool. The SCP gave opportunities for using a simplified method of recording by only ticking off the pre-formulated interventions without individualizing them to the patient. On the other hand, the SCP had many interventions to choose from, which were tempting to choose and therefore often resulted in overly long and detailed care plans. Some nurses therefore limited the interventions in the care plans to deal with what was specifically important at that point in time, and these were individualized. This lack of consensus on the amount of information needed in a care plan was related to how the care plans were used in practice.

4.3 Paper 3: Facilitating the implementation of standardized care plans in municipal healthcare

In this study, we included both nurses and nursing leaders from the municipalities. When discussing solutions to the previously identified challenges to SCP use, they identified several areas that needed to be addressed in order for SCPs to become embedded in their information practice. These areas are described in the following three themes representing success criteria for adoption and integration of SCPs; *Facilitating system-level support for nurses' workflow, Engaged individuals creating a culture for using standardized care plans, and Developing system-level safety nets.*

Facilitating system-level support for nurses' workflow. This success criterion described the importance of having an EPR system that supported nurses' workflow in terms of availability and accessibility when they needed to record or read information. This included access to computers at point of care, access to enough computers in the nursing station, a quick response EPR system, and a network that handled multiple persons logging on at the same time. When the technology was not available or did not function the way it was supposed to, nurses' information gathering and recording processes were hindered, and they either had to access the EPR at a different time or use other, more available information and communication sources. System-level support was also connected to the way information was presented in the EPR system in general and SCPs in particular. Constructing the user interface in a way that supported the overview of the patients and their needs was suggested as a way to increase SCP use. Due to time constraints, nurses often needed to get a quick overview of their patients, and the SCPs did not support this in their current form, which led to the use of other information sources instead. Hence, including nurses and their needs in practice in the further development of SCPs would potentially increase usability and use.

Engaged individuals creating a culture for using standardized care plans. When it came to actual use of SCPs in daily practice, there were large variations between the settings. Engaged individuals characterized the settings where SCPs were routinely used on a daily basis. Engagement of the leaders both in terms of a positive attitude toward SCPs and a clear expectation of their employees to use them seemed important for actual use. In addition, engaged nurses were important for encouragement and support for others in the department. To create a uniform understanding of how to use SCPs, it was suggested to create collaborative arenas in the department for meeting and discussing care plans, and to create care plans together with co-workers. Such initiatives would, together with the engaged individuals, create a culture for SCP use in the department.

Developing system-level safety nets. Another success criterion identified was to develop a system-level safety net for continuous support. Many participants had experienced that both internal and external support had disappeared after the initial implementation period of SCPs. Staff turnover continuously occurred in the municipalities, leading to new employees who had less knowledge of SCPs. Turnover was especially vulnerable when the engaged individuals left. New nurses were then without the engaged nurses to train them, and new leaders did not know who to contact or how to support their employees. For SCPs to become routinely embedded in the information practice, it was therefore wise to arrange for ongoing access to training and support for both nurses and nursing leaders.

4.4 Comprehensive understanding

In this section, the results from the three papers in this dissertation are brought together in order to present the overall findings of the study. The themes from the original papers, along with an explanation of what they are about, have been grouped together to provide a comprehensive understanding of how they have informed the main results of this dissertation. This is visualized in Table 7. Some themes that included several important aspects informed more than one of the main results and therefore appear several times in the table.

Table 7: Comprehensive understanding of the results

Themes from the original papers	What is it about?	Main results
Web of information sources	Multiple information sources in use compensating for weaknesses of the EPR system.	Municipal healthcare – a complex context for SCPs
Knowing the patient and information redundancy	Nurses who know their patients well experience that reading the EPR is redundant.	
Asynchronous information practice	Information exchange happened when a need occurred, or the nurses had the time to document. The EPR did not support real-time communication between nurses.	
Balancing between overview and detail	It was challenging to adjust the SCP content to its different users with different educational backgrounds.	
Balancing between overview and detail	Nurses had a need for smaller amounts of relevant information, while the legal requirements led to comprehensive care plans that were less useful in practice.	Tension between legal requirements and practical solutions for information handling
Web of information sources	Nurses used other information sources for some types of information—for example, information of a sensitive nature.	
Compensatory workarounds	Nurses developed workarounds to ensure patient safety when the functionalities of the EPR were considered insufficient.	Nurses' adoption and use affected SCPs' contribution to patient safety
Asynchronous information practice	Nurses use information sources other than the EPR for urgent information	
Web of information sources	Nurses use other information sources for reminders	
Knowing the patient and information redundancy	Nurses often know their patients and do not use the SCPs as a guide for care	
Considering the usefulness of standardized care plans as a source of information	Nurses consider their clinical experience to be of higher value than the SCP content. Considered useful for others with less knowledge.	
Balancing between overview and detail	Short, unindividualized SCPs as well as long, comprehensive SCPs are challenging to use as a guide for care	

Engaged individuals creating a culture for using standardized care plans	Engaged leaders and key individuals create a culture for using SCPs	Management and implementation strategies for normalization of SCPs
Facilitating system-level support for nurses' workflow	Updated technical equipment and functionalities supporting workflow facilitate SCP use	
Balancing between the old and the new care planning system	Partial implementation of SCPs leads to intentional and unintentional non-use	
Developing system-level safety nets	Ongoing access to support can facilitate routine use of SCPs	

As Table 7 shows, the main results of this study are (1) that municipal healthcare is a complex context for SCPs, (2) that there is a tension between legal requirements and practical solutions for information handling, (3) that nurses' adoption and use is affecting the contribution of SCPs to patient safety, and (4) that some management and implementation strategies for the normalization of SCPs are available.

The main results presented in this section will, together with some methodological considerations, be discussed further in the following chapter.

5. Discussion

The previous chapter provided an overview of the results of this dissertation. In this chapter, I will first discuss the main results from my research, which are that municipal healthcare is a complex context for SCPs, that there is a tension between practical solutions and legal requirements, that nurses' adoption and use is affecting the contribution of SCPs to patient safety, and that management and implementation strategies for the normalization of SCPs are available. Thereafter, I will discuss some methodological considerations concerning my PhD project in terms of my qualifications and pre-understanding, my role as a researcher, issues regarding the design of the studies, and the trustworthiness of my results.

5.1 Discussion of the main results

In this section I will discuss four main findings from this dissertation. The aim of this dissertation was to develop knowledge on the information practice in which SCPs were introduced, discern how this introduction affected the practice in terms of how nurses adopted and used the SCPs, and identify facilitating factors for the SCPs to become routinely embedded in nurses' information practice. The rationale for the dissertation was that municipal healthcare was a completely new context for using SCPs in Norway, and that most international studies on structuring the nursing record was conducted in hospitals. Together, the main findings from the three papers are that (1) municipal healthcare is a complex context in which to implement SCPs, (2) there exists a tension between legal requirements and practical solutions for information handling, (3) nurses' adoption and use affects the contribution of SCPs to patient safety, and finally (4) certain management and implementation strategies are important for the normalization of SCPs.

5.1.1 Municipal healthcare - a complex context for SCPs

It is well known that the specific information culture and values that exist within a context influence how information is shared and used by its members, and also how new tools and systems are used (Choo, 2013; Choo et al., 2006; Sundqvist & Svärd, 2016; Tuominen et al., 2006). Such cultures and values exist within the context of a nursing home department; this study found large variations in the use of SCPs between the different settings (Paper III). Even though this shows that municipal healthcare is far from a homogenous context, there are some general features characterizing the larger municipal healthcare setting. Several of the findings from my papers point toward municipal healthcare being a complex context for SCPs, such as multiple information sources and extensive knowledge of the patients reducing the use of care plans (Paper I), an asynchronous information practice affecting when the SCPs are accessed and used for information exchange (Paper I), and a mix of different users with different needs making it difficult to decide the appropriate detailing level of the SCPs (Paper II). In this section, I will specifically discuss how the complexity regarding the composition of the healthcare workforce in municipal healthcare had importance for the use, perceived usefulness, and adoption of SCPs. Two important characteristics of the workforce are that a large number of the healthcare workers have Norwegian as their second language, and that RNs account for just a third of the healthcare workers (Statistics Norway, 2018, 2020b).

One highlighted advantage of using a standardized nursing terminology in the EPR is to facilitate the use of a clear, precise, and unambiguous language (Axelsson et al., 2006; Gordon, 1998; Park & Lee, 2015; Rutherford, 2008; Saranto et al., 2014). In this regard, some of the nurses I interviewed reported that one of the positive features of the SCPs was in fact that they made it easier to create a care plan, because the nurses did not have to formulate everything themselves (Paper II). Seeing a personal benefit of using a new technology is described in UTAUT 2 as *performance expectancy*, and is a factor known to predict intention to use, and actual use of the technology (Venkatesh et al., 2012). Especially nurses with a mother tongue other than Norwegian saw the SCPs as a beneficial and time-saving tool. This group is increasing in the Norwegian healthcare context, and especially in municipal healthcare (Statistics Norway, 2018). A recent study of patient records in Norway found that nurses with Norwegian as their second language recorded less, had a smaller repertoire of words, and had a lower linguistic precision than those with Norwegian as their first language (Johannesen & Hellesø, 2019). Hence, the potential benefits for this group of using SCPs should not be overlooked, and as a recording support the SCPs can contribute to increased quality of the EPR content in terms of clarity, accurateness, and quality descriptions of care, which in turn can minimize errors and enhance continuity of care (Jones et al., 2010).

The mix of healthcare workers was also found to complicate the use of SCPs because it became difficult to decide the appropriate level of details and explanations to include in the care plan (Paper II). Previous studies have had similar results, showing that large variations in healthcare workers' educational background and competencies are complicating factors in nurses' record keeping (Cheevakasemsook et al., 2006; Paans et al., 2011). In the municipalities where my studies took place, all healthcare workers were expected to read the care plan and submit records in connection to the nursing diagnosis. The construction of the care plans was, however, a task restricted to RNs, and in some settings also auxiliary nurses. Norwegian legislation requires all authorized or licensed healthcare personnel to document healthcare in the patient record (Ministry of Health and Care Services, 2001), but this does not necessarily mean that they should use SCPs when they record. It has been described in earlier research that the boundaries between the different professions working in municipal healthcare and the tasks they perform are blurred, and that less educated healthcare workers act outside their scope of practice (McCloskey et al., 2015; Tuinman et al., 2020), and having all of them use the *nursing* care plan without distinguishing responsibility between the professions can further increase this blurriness. None of the 20 care plans collected in the first sub-study specified which profession should carry out the interventions. It was therefore an administrative task for the RN who planned the shift to distribute available resources, such as staff competence, among the tasks to be done. It has to be noted that staff competence is not only related to formal education. Knowing the patient is also described as a factor facilitating quality of care (Jenny & Logan, 1992; Murphy, 2007; Øfsti et al., 2020). Sund-Levander and Tingström (2013) found that auxiliary nurses who knew their patients and had previous experiences to build on were able to notice changes in behavior and deterioration of health with their patients, and passed their observations on to the RNs for them to decide further action. Hence, the RNs seem to have a special role in assessing the patients and initiating the appropriate interventions. Although the activities of RNs in municipal healthcare have been found to vary, especially in terms of how much time they spend directing patient care, an overall finding has been that they tend to have a more administrative and coordinating role (McCloskey et al., 2015; Montayre & Montayre, 2017). The organization of activities has also previously been described as an important part of nursing, particularly for care delivery (Allen, 2014). A nurse's role includes a responsibility for the planning and evaluation of care, but not necessarily for carrying out the care in practice. This means that the nurses carry a great responsibility for making sure that those who are carrying out the care know what to do. Thus, individualization of the interventions in the SCPs is required, along with descriptions of what the interventions entail.

Wears (2015) described standardization as an effort to reduce a complexity into smaller, manageable units. In line with this way of understanding, we can say that by introducing SCPs, one aims to reduce a patient's complex care needs into smaller, more manageable recipes for care. This is highly needed in practice where the patients' needs are increasingly becoming more complex (Glad et al., 2018). However, with the increased complexity of care needs, the care plans become more comprehensive, and an important question is then whether all aspects of complex patient care can be described in a care plan. The nurses participating in sub-study I had very different views on what level of granularity is feasible for a care plan, without it becoming too comprehensive (Paper II). It is difficult to know whether it is possible to describe nursing interventions in such detail that they can be performed by all professions, whether it is expedient to use the SCPs for such detailed descriptions, or if, as suggested by others, other information sources, such as oral handovers, are more suitable for educating other staff members (Giske et al., 2018). As described in the background, the Norwegian government is working to enhance the knowledge of nursing assistants in municipal healthcare through e.g., shorter courses (The Norwegian Directorate of Health, 2020). This represents a positive step but should be viewed with caution. While short courses can increase knowledge in a few areas, it can be difficult for these to replace healthcare education. Having a formal education in healthcare does not, however, guarantee ability to protect the patients' safety, as described in a study by Fossum et al. that found considerable variations in how RNs assessed a patient's needs and the interventions they decided appropriate (Fossum et al., 2011). In this regard, the SCPs could perhaps be a supporting tool contributing to a more uniform understanding of which interventions are appropriate for the patient, presuming that RNs see the interventions in the SCPs as the gold standard. However, the SCPs also require individual healthcare workers' deliberations regarding how the interventions should be individualized and carried out in practice, which means that the SCPs cannot standardize care.

To sum up, municipal healthcare is a complex setting in which to implement SCPs in terms of the existing information practice, the composition of healthcare workers, and the complexity of patient care. While it is important to manage expectations about the contribution that care plans might make in this setting, it appears that SCPs can be useful as a recording aid for those struggling to express themselves in writing and may contribute to enhanced quality of the record content.

5.1.2 Tension between legal requirements and practical solutions for information handling

In sub-study I, a challenge for the use of SCPs was identified. The nurses seemed to struggle to balance the amount of information to make them both manageable and at the same time fulfill legal requirements. A practical solution suggested by the study participants was to reduce the content of the SCPs by restricting the number of interventions to those who were considered most relevant (Paper II). This solution could potentially lead to a legal problem because some interventions, perhaps self-evident to the nurses, are then not documented in the EPR. In the case of an adverse event, the EPR is studied carefully to look for signs of malpractice or negligence of work. In Norway, there is a state administrator in each of the 11 counties who has a special responsibility for supervising the quality of healthcare services in that county. One of the tasks of the state administrator is to process individual cases with questions about service failures. Such cases can be created on the basis of for instance complaints from patients, relatives or other parts of the health service (Norwegian Board of Health Supervision, 2020) The use of the EPR as evidence in such situations supports the notion of "if you did not write it, you did not do it," and studies have described potential investigations of the EPR as an important consideration for nurses in their recording practices (Engesmo & Tjora, 2006; Olivares Bøgeskov & Grimshaw-Aagaard, 2018). Thus, there is a tension between practical solutions where SCPs provide nurses with the information they consider to be useful, and the requirements of complete SCPs to fulfill legal requirements. These multiple functions of the care plan are in this way pulling its users in different directions.

In contrast to the EPR being the only legally valid information source, the findings from this study indicate that all information regarding patient care is not necessarily found in the EPR (Paper I). This is consistent with the results of previous studies indicating that not all observations nurses make are recorded in the EPR but are rather handled in other ways (De Marinis et al., 2010; Jefferies et al., 2012; Voutilainen et al., 2004; Voyer et al., 2014). Other information sources were considered more suitable to use in daily practice, making up for the weaknesses of the EPR system (Paper I). For instance, it was considered more feasible to carry around a sheet of paper that provided an overview of the patients and small amounts of comprised information, instead of searching for the same information in the EPR system (Paper I). This is also described in other studies (Iversen et al., 2015; Saleem et al., 2011). This is related to *effort expectancy*, meaning that the amount of extra effort it takes a person to use the technology will influence actual use and intention to use (Venkatesh et al., 2012). One identified weakness of the EPR in general, and the SCPs in particular, was that information was easily lost in the large amounts of information it contained (Paper II & III). This is not a new problem. Previous research has described this to be the largest problem with narrative nursing notes (Törnvall & Wilhelmsson, 2008) and the reason why progress notes went from being stored in a chronological order in the EPR to being sorted under the relevant nursing diagnosis in the care plan (Naustdal & Netteland, 2012). The findings from this study indicate that this challenge of finding information in the EPR is still present today (Paper II & III).

There are several other reasons to handle information outside the EPR. One reason described in other studies is the fact that the patient has a legal right to read his/her EPR, which, for instance, puts a constraint on describing issues of a sensitive nature or issues of concern that have not been confirmed (Engesmo & Tjora, 2006; Hellesø & Sogstad, 2019; Wibe et al., 2015), something that I also witnessed in my observational studies. In addition, considerations of the patient as a reader of the EPR can be a challenge for the use of SCPs, as it has been described that the medical and "tribal" language used in the EPR may negatively affect understanding for the patient. Using lay language instead of a nursing terminology could therefore facilitate increased patient understanding of the care plans (Jefferies et al., 2011; Wibe, 2015). Such constraints on what is recorded can further reduce the value of the care plan as a working tool. Together, my findings suggest that the SCPs, as a part of the EPR, is a reporting system with legal and logging purposes that is not necessarily suitable to function as a practical tool and guide for practice. To separate the care plan as a working tool from the EPR as a legal document, would however potentially lead to a degree of double entry of information which in itself can lead to omission and pose a threat to patient safety. The identification of appropriate solutions to this challenge requires further study.

Summing up, the findings of my studies reveal a tension between legal requirements for EPR content and use, and the type, amount, and presentation of information needed to support nurses in their daily practice.

5.1.3 Nurses' adoption and use affect contribution of SCPs to patient safety

In sub-study I, I found that nurses considered their own clinical knowledge to be of higher value than the SCP content, and that several factors could lead to care plans not being used as a guide for care (Paper I & II). One of the highlighted advantages of improving nursing documentation is that it can enhance patient safety and quality of care (Jefferies et al., 2010; Paans et al., 2011; Urquhart et al., 2009; Wang et al., 2011). Using standardized terminologies and structures in recording, such as via SCPs, is an example of a means to enhance nursing documentation, which in turn is expected to have a positive effect on patient safety (Rutherford, 2008; Saranto et al., 2014); although it has been indicated that the contribution of structuring nursing documentation is perhaps larger in terms of usefulness than in terms of effect (Törnvall & Jansson, 2017). One of the ways that SCPs can contribute to enhanced patient safety is that they are evidence-based, meaning that their contents are based on the best available empirical evidence and the knowledge of experts (Dawes et al., 2005; Stensvold et al., 2017). In this way, the care plans only contain interventions that have been shown to make a positive impact on the nursing diagnosis, which can prevent the use of ineffective or outdated interventions. Despite this, my study revealed that some nurses placed higher trust in their own knowledge and competence than in the interventions of the SCPs when they constructed a care plan (Paper II). Similar results have also been found in other studies (Jakobsson & Wann-Hansson, 2013; Svensson et al., 2012). Why some nurses place higher trust in their own knowledge is unknown, but one explanation could be that they trust interventions that they know are effective based on their own clinical experience or that they knew would fit the patients' preferences based on their knowledge of him/her. Having an evidence-based practice means making healthcare-related decisions based on an integration of the best available research evidence, the caregivers' clinical experience, as well as the patients' preferences (Dawes et al., 2005). While researchers typically tend to focus on the use of research evidence as a part of evidence-based practice (e.g. Moe & Enmarker, 2020; Renolen et al., 2020; Williams et al., 2015), it could be that nurses in long-term care place higher value on the parts of evidence-based practice related to clinical experience and patient preferences. Therefore, it is possible that SCPs are experienced by some as counterproductive to the aims of evidence-based practice, as the standardization leaves less room for individual judgement and patient preferences, even though the SCPs *do* have room for descriptions of individualized care. Another explanation could be, as we found in this study, that some nurses considered how useful the SCPs were as an aid to themselves rather than whether or not the content of the SCPs was of higher quality. However, for others with less knowledge on a subject, the nurses thought the SCPs could be useful to teach them the relationship between a nursing diagnosis and its appropriate interventions. Hence, the participants believed that the SCPs could be a contribution to patient safety and quality of care in some situations. However, unless healthcare workers adhere to the SCPs in practice, the educational effect is limited to those who construct the care plan (Paper II).

Regarding adherence to the interventions described in the SCPs, this study revealed many obstacles that made it complicated to use the SCPs as a guide for patient care, and thus impaired their potential for having an impact on patient outcome. Although the care plans were usually read at the beginning of the shift when the nurses had been absent or the patient was new to them, the participating nurses described infrequent use of care plans as a guide for care in daily practice (Paper I). The reported reasons for this included insufficient access to the EPR, and SCP functionalities not supporting nurses' workflow (Paper III) many other, more available information systems in use, perceived redundancy of reading SCPs due to extensive knowledge of the patients (Paper I), and SCPs becoming so comprehensive and information-dense that important information was time consuming and hard to find (Paper II & III). Nurses' use of information sources other than the EPR should not be seen always as a threat to patient safety. This study found that the use of other information sources, such as oral communication, paper notes, and whiteboards, were used with a direct intention to enhance patient safety by functioning as reminders or ways to ensure that important information quickly reached other healthcare workers. This supported the asynchronous information practice, in which information exchange happened when and where a need for information occurred (Paper I). These findings are in line with results from other studies (Stevenson et al., 2018). Non-use of care plans in daily practice could explain why some nurses considered making care plans as merely an obligation and used the SCPs as a quick way to finish the task (Paper II). Based on these findings, there is reason to question if and how it can be possible for the SCPs to function as a tool to guide practice.

Another important benefit of using SCPs is that they aim to support data aggregation for research and management purposes (Saranto et al., 2014; Strudwick & Hardiker, 2016). These data can be used for e.g., research purposes, reimbursement purposes, allocation of resources, and statistics on nursing interventions' effect on patient outcome. However, this way of utilizing data from nursing records is in its infancy, and information is lacking on how the data is utilized to serve different users' needs (Vuokko et al., 2017). A relevant question in this regard is how reliable these data really are. As mentioned in the background, variations shown in aggregated data sometimes represent the reporting practice rather than the actual practice (Ministry of Health and Care Services, 2019-2020). In the context of this study, it is therefore relevant to ask if the SCPs can be said to reflect actual practice. To be able to reflect practice, i.e., the care that the patient receives, the SCPs have to be used as a guide for care. Another factor is that the SCPs have to be updated and evaluated according to patient outcome for the results of aggregated data to be trustworthy. As outcome evaluation was not an integrated part of the SCPs, and therefore not coded, these data were not available when this study took place. However, nurses in both sub-studies mentioned that it was a general problem that care plans were too seldomly evaluated. Hence, measures that promote active use of SCPs in planning, implementing, and evaluating care would subsequently support the meaningful use of aggregated data.

Summing up, these findings suggest that SCPs can contribute to patient safety in some areas, but until they are considered more useful, and thereby are used by all nurses both in terms of recording and adherence, their contribution to patient safety will remain minimal. As things stand, the standardized coding system of the SCPs may function more as a control system for managers than as a means to aggregate reliable data for research aiming towards enhancing patient safety.

5.1.4 Management and implementation strategies for normalization of SCPs

In sub-study II, which was conducted three years after the initial implementation of SCPs, I found that there were large differences between the nursing departments in terms of how far they had come with the use of SCPs. Thus, it was important to capture the differences between the settings in the identification of success criteria. Engaged leaders seemed to be a dominant feature in the departments where SCPs had been adopted and normalized as a part of the information practice (Paper III). This is in line with other studies that have found that leaders on a departmental level play an important role in successful implementation (André et al., 2008a; Birken et al., 2013; Bjurling-Sjöberg et al., 2018; Ingebrigtsen et al., 2014; Jansson et al., 2010). Furthermore, the impact of leadership on the use of and intention to use a new technology is acknowledged in UTAUT 2, where this is explained under the construct *social influence* which refers to how a person's intention to use a technology is influenced by whether or not people who influence their behavior, or whose opinions they value, believe they should use it (Venkatesh et al., 2012). Some leaders who participated in this study expressed a need themselves for training and support to be able to actively support their employees in using SCPs (Paper III). This insecurity related to leaders' role in technology implementation is also described in a related review (Laukka et al., 2020). Thus, it seems important to consider the leaders' needs for support when planning a technology implementation. This study also included some engaged leaders who encouraged and supported SCP use and were very clear about the expectations they had for their employees to use them. Some even said that they had previously removed other options to ensure that the employees used the documentation tools the leaders preferred (Paper III). This strategy actively removes the element of voluntariness.

When use of the new technology is voluntary, as it was with the SCPs, it is important that the potential users perceive the technology as useful, in that it provides an answer to a need and that it is easy to use, described as *performance expectancy* and *effort expectancy,* respectively, in UTAUT2 (Venkatesh et al., 2012). In addition, involvement in development and planning of a technology implementation has proven to be important for motivation to use the technology (Askari et al., 2020; Patiraki et al., 2017; van Ginneken, 2002). Although their organizations had been involved, only one participant in this study had been involved in this development process, and as the nurses criticized the functionalities of the SCPs (Paper III), it would perhaps have been wise to include more end-users in the development process. Perceived usefulness of SCPs was expressed differently by the nurses in this study. While some saw the SCPs as timesaving, others saw them as a means to improve documentation quality, while others again were satisfied with the old documentation system and did not see any usefulness of the SCPs (Paper II). They reported this to have implications for the frequency of their SCP use. As previous studies have shown, a new technology implemented in an existing practice will always have to fight against established routines and resistance to change (Castellà-Creus et al., 2019; Conrad et al., 2012; Wears, 2015). This was a finding in this study as well, but in addition, I found that also those with a positive intention to use the SCPs sometimes ended up not using them. This was at times related to poor technological facilitation (Paper III), and at other times related to the partial implementation of SCPs resulting in nurses forgetting to use them when applicable (Paper II). Regarding poor technological facilitation, this is in UTAUT 2 described as *facilitating conditions* impacting use of the technology even when other factors have led to an intention to use it. Forgetting to use the SCPs can be seen in relation to the construct *habit,* which is explained as automated behavior (Venkatesh et al., 2012). In this case, the automated behavior of constructing care plans the old way functioned as a barrier to actual use. Thus, there is reason to believe that a larger number of SCPs implemented, and access to necessary, well-functioning technological equipment, would have decreased the risk for involuntary non-use.

When it comes to long-term routine use of SCPs, often called normalization (May & Finch, 2009) or regular use as a result of *habit* (Venkatesh et al., 2012), the results from this study indicate that implementation cannot be seen as a short-term project, but rather as a continuing process that requires long-term commitment. Municipal healthcare is characterized by high staff turnover (Gautun et al., 2016), and turnover was an issue highlighted by the participants in this study as well. When nurses trained in using SCPs changed jobs, some of the SCP competency went with them. New employees did not receive the same training as the others had been given, as this was no longer offered by the implementors. Hence, they had to rely on their co-workers to train them in using SCPs, and this training was described as limited. Increased vulnerability occurred when key persons, such as leaders or super-users, left (Paper III). This implies a need for continued external support to act as a safety net, compensating for the loss of key individuals and supporting leaders in their engagement toward normalization of SCP use. In order to ensure a successful implementation of SCPs in other municipalities, the results of this study indicate a need to ensure that the municipalities (1) have access to the required technological equipment, (2) involve end-users in the planning and implementation, and (3) establish resources for training, support, and continuous development on a long-term basis.

To sum up, these findings suggest that management and implementation strategies for a successful implementation of SCPs should involve providing support to leaders so that they feel confident in encouraging and supporting their employees, addressing measures to increase the nurses' perception of the SCPs' usefulness, implementing SCPs at a larger scale to prevent involuntary non-use due to nurses forgetting them, and arranging for facilitating conditions to support the optimal use of the SCPs. In the next section I will describe some of my considerations regarding the methodology that led to these findings.

5.2 Methodological considerations

In this section I will discuss some methodological considerations regarding the design and methods of this study. Specifically, I will discuss my qualifications and pre-understandings coming into this field of study, my role as a researcher, some aspects regarding the design of the study, and the trustworthiness of the study.

5.2.1 The researcher's qualifications and pre-understanding

As the training, skills, reflexivity, and integrity of the researcher are aspects known to influence the trustworthiness of qualitative research (Jootun et al., 2009; Patton, 2015), I will in this section reflect on how my own research skills and pre-understanding have affected this study. At the time I started as a PhD student, I had two years of prior experience in research, as I had been a research assistant in two large research projects. This had given me valuable experience and knowledge, especially regarding interview techniques, that came into good use when conducting this PhD project. I did, however, have no prior experience with doing observations.

Therefore, I trained by performing mock observations of my own family, which above all taught me the importance of narrowing the scope of what to observe and the challenges of simultaneously observing and writing field notes. I read about observational methods in the literature and talked to experienced researchers to be as prepared as possible for conducting participant observations in my own project. Even so, I noticed that my observational skills and my field notes improved in quality as I gained more practical experience. However, experience, or lack thereof, will always be a limiting factor in any research.

Becoming aware of one's own pre-understanding and reflecting on it is an important facet of qualitative research methodology. Through such reflection, researchers can gain *"...a more comprehensive view of the setting being studied, and move beyond their own preconceptions"* (Patton, 2015, p. 335). Coming into the setting and from my experience as a clinical nurse, I had a pre-understanding of municipal healthcare, the role of the RN, and the way that information ought to be handled. This pre-understanding led me to react when my experiences in the field differed from this understanding and was a threat to the reliability and validity of my data. Several of these incidents were written down in a notebook functioning partly as a place to write down ideas and questions for further inquiry and partly as a reflexive diary. One example was that I reacted strongly to nurses who did not read the EPR before they went to see their patients. However, after discussing and reflecting on this subject, I understood that this was a result of several factors, such as the nurses knowing their patients and the content of the EPR well, and that there was a system of oral communication being used to alert others of new information. Through repeated reflections and conversations with my supervisors and peer researchers, I was able to distinguish the results of my studies from my opinions of them. I learned that my role as a researcher is to describe what I see without judging it, and to acknowledge that I do not hold the blueprint of how things ought to be. In qualitative research methodology, this process is known as reflexivity (Jootun et al., 2009). My pre-understanding from being a nurse gave me an *insider* perspective that was an advantage, because it helped me understand what was going on in the setting, the RNs' actions, and the terminology used by the RNs. These are issues that would have taken an *outsider* much longer to comprehend (Patton, 2015; Robson, 2002). However, I acknowledge that my pre-understanding has influenced my work, and that as a researcher I am part of the construction of meaning through the questions I ask, the data I gather, and my interpretation of them (Jootun et al., 2009).

To sum up, my training in research coming into this project was limited, and although I made an effort to prepare myself for the data collection, I acknowledge that lack of experience was a limiting factor. To avoid my pre-understanding influencing the interpretations of the data, I wrote down, reflected on, and discussed several issues that I in some way had reacted to. In the next section I will discuss how challenging it was to go from being a clinical nurse to becoming a researcher.

5.2.2 The role of a researcher

In this section I will discuss how I, through my work with this PhD project, have worked to develop my role as a researcher, and how this role occasionally was challenged. Academic training is known to involve a transition from being a clinical nurse with a practical view, habits, and acquired knowledge to becoming a researcher who is able to set this aside and take on a scientific perspective that critically examines the way that things are done (Mendenhall, 2007). A role is connected to a certain set of behaviors, characteristics, norms, and values, and a transition from one role to another takes both time and effort (Brookes et al., 2007). For example, as a clinical nurse, my role was to identify problems and solve them, while as a researcher my role was to describe what I saw, which meant that I had to have a different focus. For me, this transition was gradual, and in the beginning, it required a great deal of attention. During the data collection period, my role as a researcher was repeatedly challenged both by situations that occurred and by the RNs' view of me as a colleague. When I spent an entire shift with the RNs, they often asked me questions regarding my clinical background. As they so willingly volunteered to share their experiences with me, I felt it unethical not to answer their questions. My clinical expertise is in dermatology, and it appeared as this was a highly valued competence in municipal healthcare. More than once, I experienced that the RNs suddenly asked for my expert opinion, especially regarding the treatment of chronic ulcers. These situations put me quickly back into the role of being a clinical nurse. Even if I experienced it as uncomfortable, I felt ethically obliged to offer my advice, especially in situations where not doing so could potentially be harmful to the patient. In the literature, this is described as a trade that is sometimes necessary to become accepted in the setting, the participants give something to you and expect to get something in return (Fangen, 2004).

On two occasions, I also saw the need to interfere with the nursing care without being asked for advice, in line with ethical approval. Based on my clinical experience I assessed interference as necessary for assuring the patients' safety. In the literature, this is described as a role conflict, where my role as a researcher came into conflict with my inherent role as a nurse (Brookes et al., 2007). These incidents were troublesome, because they broke the RNs' trust in that the purpose of my presence was not to evaluate them. In participant observations, trust is essential to be accepted and included in the social setting (Fangen, 2004; Morse, 2015). After such incidents, I wrote down my reflections of the situation and discussed with more experienced researchers whether I could have done something differently. My conclusion is that I acted correctly according to the ICN code of ethics for nurses, stating that the primary professional responsibility for nurses is to the people in need of nursing care (International Council of Nurses, 2012), but that I perhaps could have engaged in a different, and more subtle, way. Although I stand by my actions, I also acknowledge that this interference may have influenced what the RNs chose to share with me in the remaining time of the observations, and in the following interviews.

To sum up, throughout the course of working with this PhD project I have made concerted efforts to develop my role as a researcher. There were several occasions where this role was challenged and in which the code of ethics was considered more important than maintaining a neutral stance as researcher. This may have influenced what the participants decided to share. In the following section I will discuss some issues regarding the design of this study.

5.2.3 Design

In this section I will discuss some issues regarding the design of this study, the inclusion criteria and sampling procedure, as well as the data collection methods applied. The design of a research project, the methods used to answer a research question, and the lenses through which we analyze the data will always influence the results we obtain (Morse, 2015; Patton, 2015). By choosing interpretive description in my study, I acknowledge that I simultaneously lost other possible lenses that could have provided valuable insight.

My studies followed the implementation of the SCPs in Norwegian municipalities. The intervention of implementing SCPs was controlled by the NNO and the participating municipalities. Hence, I was not involved, and had no control over the planning, the implementation, or the intervention itself. Not being involved also meant that I had no control over any of the variables, such as how the SCPs were developed, the number of SCPs implemented, or how many municipalities and departments within them were involved in the implementation. One consequence of this is that the findings from my studies are unlikely to have any direct impact on the evaluation or further implementation of the SCPs. This may have been different had my studies been part of an intervention project following, for example, the Medical Research Council's framework for complex interventions (Craig et al., 2008). Then, I could have had more control over factors regarding the development and pilot testing, and findings from the evaluation studies could have been used to further develop and refine the SCPs, or other factors related to them, before they were implemented. However, since I was not a part of the team that developed and implemented the SCPs, I did not risk the possible "optimism bias" that can come from evaluating an intervention one has participated in developing (Chalmers & Matthews, 2006; Patton, 2015). The NNO team in charge of the SCP project evaluated the implementation with regard to the specific attributes of the SCPs such as the type of interventions available in relation to a nursing diagnosis, the construction of care plans and usefulness of SCPs in this regard, and the reported quality of the care plans after using SCPs (Stensvold et al., 2017). Hence, my studies complement this evaluation adding important knowledge of the contextual information practice in which the SCPs were implemented, the use of care plans in daily practice, nurses' assessments of the SCPs as a new recording tool, and prerequisites for a successful uptake of SCPs.

Initially, before the data collection started, I had planned for a mixed method design where I would collect a large number of care plans using SCPs from the municipalities where they were implemented, and a large number of traditional care plans from other municipalities. My plan was to use an audit instrument, such as Cat-ch-Ing (Björvell et al., 2000), to compare the two types of care plans in terms of quality and completeness. There were however two main reasons why this was not feasible. The first reason was that SCPs were only partially implemented and were not being widely used at the time of the study, as I have described in my second article (Paper II). The second reason was that the SCPs did not include all elements of the nursing process. Attributes of the EPR system did not allow for ICNP coding of assessments or outcome evaluation (Stensvold et al., 2017). Therefore, the two types of care plans were incomparable. I therefore chose not to proceed with the audit, and rather went for a purely qualitative study which focused on the nurses and their interactions with, and evaluations of the SCPs. Although I acknowledge that an audit would have provided more knowledge on the contribution of SCPs to care plan quality, the nurses' considerations and actual use of the SCPs is also a valuable perspective for their future development and implementation, and the design of this dissertation has contributed to extended knowledge in this regard.

Inclusion criteria and sampling procedure

As pointed out in Paper II, only RNs were included in this dissertation. RNs are a minority among healthcare workers in the municipal healthcare setting, and are not the only users of the SCPs (Gautun & Syse, 2017; Romøren, 2011; Statistics Norway, 2020b). According to the Norwegian Health Personnel Act, all healthcare workers who are responsible for the examination, diagnosis, treatment, and follow-up of recipients of home healthcare and residents in nursing homes are obliged to document in the EPR (Ministry of Health and Care Services, 2001). Even though the word *responsible* can indicate that only those with a formal responsibility for the patient, such as physicians and RNs, are obliged to record in the EPR, this is commonly interpreted differently in municipal healthcare. Therefore, I acknowledge that I could have gained an even broader and comprehensive understanding of the use of SCPs by including other groups of healthcare workers in this study. Of other studies of nursing documentation conducted in this setting, some have chosen to include auxiliary nurses as well as RNs (Vabo et al., 2016). My goal was instead to highlight particularly the challenges and complexity that RNs encounter in their information practice.

When it comes to the sampling procedure, I described my procedure as *convenience sampling* in sub-study I. However, in retrospect I see that it is perhaps more correct to describe the sampling procedure as *purposeful sampling*. Purposeful sampling is described as: *"Selecting information-rich cases to study, cases that by their nature and substance will illuminate the inquiry question being investigated"* (Patton, 2015, p. 264). Only RNs with access to, and knowledge of, the SCPs would be able to describe how they functioned as a part of the information practice in municipal healthcare. At the time of data collection, only RNs working in specific locations in the three municipalities had this knowledge. As all participants recruited were a part of this group, they all had the particular knowledge needed to illuminate the questions in study. As argued by Sandelowski (1995), sample size is not irrelevant in qualitative research even though the results are not intended to be generalizable. There should be enough participants to be able to answer the aim of the study, but not so many that it becomes difficult to dig deeply enough into the material (Sandelowski, 1995). In sub-study I, I recruited RNs from all three participating municipalities at the time, and at least five from each municipality to ensure a variety of perspectives to fulfil the aim of the study (Thorne, 2016). In article 2, I explained that data collection continued until data saturation was reached (Patton, 2015). In retrospect I have, however, discovered that saturation is a debated concept in qualitative research, since it implies that adding more participants will not generate any new variations

(Thorne, 2016). Therefore, I acknowledge that adding more participants could have led to new perspectives, but I simultaneously argue that the data I collected were sufficient to answer the study aim.

Data collection methods

All of the observations in sub-study I were conducted during day shifts. This was chosen because most of the coordination and interaction between nurses and others both internally and externally happened during the daytime. Due to the possible difference in staffing ratio and nursing tasks between day and evening shifts, it is however possible that a combination of day and evening shifts would have extended our insight into the nurses' information practices.

In sub-study II, I used workshops as a data collection method, instead of the more traditional focus groups. A workshop is perhaps an innovative data collection method in healthcare research, but the participatory approach that it represents has a long tradition in action research (MacDonald, 2012; McIntyre, 2008). By choosing this method the participants were first given the opportunity to use their creativity and discuss freely issues regarding SCPs that were important to them. These discussions in the smaller groups laid the foundation for subsequent discussions where the researchers were present. In this way, the participants' opinions and thoughts controlled the discussions. In focus groups, a moderator usually has more control over the discussions and keep them on track with the questions of the interview guide (Then et al., 2014). Hence, by using focus groups the researchers have greater control and possibilities to ensure that the discussions progress and the themes discussed are in line with the study aim. However, by starting the workshops with an introduction that set the agenda and by providing the participants with topics to discuss in the smaller groups, I was able to indirectly guide discussions towards SCPs.

All data collection methods that I have used have their strengths and weaknesses, but by combining methods I have increased the trustworthiness of my findings (Morse, 2015). This is further elaborated in the next section where I discuss the trustworthiness of the studies.

Summing up, in this section I have discussed how not participating in the development and implementation of SCPs has affected this study, how the design had to be changed from what was initially planned, how the inclusion criteria and sampling procedure affected the results, and the strengths and weaknesses of the data collection methods used in this study. In the next section, I will discuss the trustworthiness of the results this study has produced.

5.2.4 Trustworthiness

In this section I will discuss the trustworthiness of my study in terms of credibility, confirmability, dependability and transferability. I have used the term trustworthiness in my papers, even though Morse (2015) claims that *rigor* is a more modern term to use. Trustworthiness has to do with evaluation of the quality of qualitative studies (Polit & Beck, 2016). To ensure trustworthiness in qualitative studies there are a number of criteria that should be addressed, including credibility, confirmability, dependability, and transferability (Lincoln & Guba, 1985; Morse, 2015).

Credibility (internal validity) refers to how trustworthy the interpretations and analysis are (Lincoln & Guba, 1985). Triangulation is a recommended strategy to enhance the credibility of a study. It is possible to triangulate investigators, data, theory or methods, but for establishing credibility, triangulation of methods or data is most commonly used (Morse, 2015). In this dissertation, I used triangulation of methods to get an expanded understanding of nurses' information practice, and their use of SCPs in this context, and to elicit different perspectives. For instance, when observing the nurses, I wrote down questions and observations that I wanted to ask them about in the interviews, and through the interviews I gained new perspectives that I explored further in subsequent observations. I also read the collected patient records to look for examples of what the nurses shared in the interviews. In the analysis, I first coded the transcripts from the observations and interviews separately, before I looked for similarities across the two datasets. In this way, data from different data collection methods were used to inform and confirm the findings of this study, and subsequently enhance the credibility of the results.

Confirmability (objectivity) refers to the degree of objectivity or neutrality in the research. This means that the results of the study are shaped by the participants' contributions, and not by the researchers' motivation or interest (Lincoln & Guba, 1985). Qualitative data may be read in multiple ways, therefore my supervisors were actively engaged in reading, analyzing and discussing the data. An additional resource was that one supervisor did not speak Norwegian and was therefore involved in the analysis at a later stage. This provided an opportunity to reduce potential bias through validation of the interpretations, and identification of possible "group think". Nevertheless, I acknowledge that as we all are healthcare personnel, and two have done an extensive amount of research on nursing documentation, this might have influenced our prior understanding of the field of research. In the relativist paradigm that this study belongs within, it is accepted that the researchers themselves are part of the knowledge creation by being present, by the questions they ask, and by the interpretations they make (Denzin & Lincoln, 2005; Jootun et al., 2009; Levers, 2013; Spradley, 1980). Purely objective research is therefore not possible, but the goal is to have what is referred to as an *emic approach,* where the focus is on presenting the perspectives of the subjects, i.e., the participants, rather than the viewpoint of the researcher (Kivunja & Kuyini, 2017; Levers, 2013; Schwandt, 1994).

With regard to confirmability, it is important to note that the NNO funded my PhD project. As they had translated the ICNP into Norwegian, arranged the development of the SCPs, and had implemented them in the municipalities, it is important to confirm that they have not been involved in either the design, data collection, analysis, or publication of my studies. Hence, the results of this study are not biased by any motivational factors of the NNO.

Dependability (reliability) refers to the stability of data over time and conditions. Dependability can be seen in relation to *transferability* (external validity), which refers to whether the results of the study are transferable to other settings (Lincoln & Guba, 1985; Morse, 2015). When using semi-structured interviews, it is recommended to develop a coding system for all possible answers to the questions in the interview guide. The purpose of this is to enhance dependability through inter-coder agreement (McIntosh & Morse, 2015; Morse, 2015). In my study, I did not develop such a coding system. The reason for this is twofold. Firstly, there was not enough pre-existing knowledge on the themes of the interview guide to make it possible to pre-determine the possible answers. Secondly, the interview guide did not structure or bound the interviews. Instead, I listened actively, asked follow-up questions and let the participants elaborate on the issues that engaged them (Patton, 2015). However, I have taken measures in the papers to be transparent of the methods used by providing examples from the analysis and adding quotes that illustrate the themes of the articles. The themes illustrate issues that may be recognizable and transferable to other settings and populations.

To sum up, several measures have been taken to enhance the trustworthiness of the results from this study, such as using a triangulation of data collection methods, having several people involved in the analysis, and being transparent about how I reached these results. In the following chapter I will present the conclusions from this study, their implications for practice, and my recommendations for further research.

6. Conclusions and implications

In this chapter, I will present the conclusions of this study, their implications for practice, and my recommendations for further research.

The aim of this dissertation was to develop knowledge on the information practice in which SCPs were introduced, discern how this introduction affected the practice in terms of how nurses adopted and used the SCPs, and identify facilitating factors for the SCPs to become routinely embedded in nurses' information practice. To describe how the study reached its aim, I will answer the research questions addressed.

Research question 1: What characterizes nurses' information practice in municipal healthcare into which SCPs are being introduced?

- The information practice is complex and consists of many different information sources. Information sources other than the EPR were used when the EPR system was not accessible or did not offer the desired functionalities. In particular, poor or non-existing accessibility at point of care, lack of functionalities for immediate reminders, and lack of opportunities for real-time communication were identified as challenges with the current EPR system.

- Nurses often knew the patients receiving long-term care so well that they reported that reading the EPR was redundant. The EPR was used as a way of getting caught up on recent events when they had been away from work, or as an information source when the patient was new to them.

- Nurses used the different information sources actively to ensure patient safety. When the regular information sources were considered insufficient, they developed workarounds to further increase the patients' safety.

Research question 2: How do nurses in municipal healthcare adopt and use SCPs as a new recording tool?

- Some nurses experienced that the SCPs functioned as a recording tool that made it more effective to make care plans. Others did not see any need to use the SCPs, as they trusted their own competence more than the SCP content. Even so, they thought the SCPs could be useful and offer educational support to those with less knowledge on a subject.

- The SCPs were only partially implemented, because they at the time of sub-study I were only available in five areas. This meant that nurses had to switch between the old care planning system, and the new SCPs, which had implications for how much the SCPs were used. Some deliberately chose to use the old care planning system, while others had a positive view on SCPs, but forgot to use them when applicable.

- The nurses used the SCPs very differently. While some assessed everything to be relevant and therefore made long, comprehensive care plans, others ticked off only the most relevant interventions. Some nurses did not individualize the SCPs, while others struggled to provide the right amount of detail in the individualizations due to the skill-mix in the healthcare workforce. Simultaneously, there were different views regarding the importance of the SCP content, as the care plans were not regularly used as a guide for care.

Research question 3: Which success criteria facilitate the integration of SCPs as part of nurses' information practice in municipal healthcare?

- Facilitation on a system level, in terms of access to updated, well-working equipment was seen as a prerequisite for an increased and continued use of SCPs. It was also seen as important for the SCPs to have functionalities that supported the nurses' workflow.
- The engagement of leaders was found to be especially important. In settings where the leader was actively engaged in SCPs, they were used on a regular basis, while in settings where the leader had little knowledge or interest in SCPs, they were reported to be used less. However, the leaders also had a need for support to be able to engage and support their employees in SCP use.
- Key individuals with a special interest and competence in SCPs helped the leaders to create a culture for using SCPs in the department. They were important for supporting and encouraging their peers.
- Arranging for ongoing access to support and training was identified as a facilitator for successful integration of SCPs. Due to staff turnover, there were constantly new employees that needed training in SCP use. This was identified as especially vulnerable when engaged leaders or key individuals left, which could lead to low use of the SCPs.

The findings combined reveal that municipal healthcare is a complex context in which to implement SCPs due to the information practice and the composition of healthcare workers. In addition, the findings revealed that evidence-based SCPs do not necessarily lead to an evidence-based practice, given that care plans are not consistently used to guide the provision of care. Furthermore, there is a tension between the legal demands for the patient record content and the nurses' information needs in practice, which makes it challenging to use SCPs as a tool in daily practice. Finally, the study revealed that leaders can have a profound influence on nurses' use of SCPs, but involvement of end-users in the further development of SCPs should also be considered, as it can make the SCPs more compatible with nurses' workflow, which in turn can affect the nurses' evaluations of their usefulness and increase voluntary use as well.

To sum up, nurses' information practice in municipal healthcare is complex. There were large variations between settings as to how much the SCPs were used, and between nurses as to how useful they considered the SCPs to be, as well as how they used them in their daily practice. To facilitate the increased use of SCPs, this study suggests that attention should be paid to supplying the required technological equipment, engaging the leaders, facilitating a continued access to support and training for all, and involving end-users in the further development of SCPs. In the following section, I will describe the implications these findings have for practice.

6.1 Implications for practice

In this section, I will describe the implications of the findings from this dissertation for practice.

This is the first Norwegian study concerned with the introduction, adoption, and facilitation of SCPs in municipal healthcare. Little was known about how these would work as a recording tool for nurses in the municipal healthcare setting. The anticipation was that SCPs could contribute to enhancing the quality of the EPR content, making recording more efficient, contributing to an evidence-based practice, and facilitating data aggregation. However, the findings from this dissertation show that there are several factors acting as barriers and facilitators for a successful uptake of SCPs, and that how the SCPs are used can affect their contribution to practice.

This dissertation shows that the involvement of end-users in the development and implementation of SCPs can contribute to functionalities that support nurses' workflow, which subsequently can affect nurses' perception of their usefulness. Furthermore, municipalities planning to implement SCPs should make sure that the technological equipment is sufficiently available and well working and arrange for ongoing access to support. Measures to increase the availability of SCPs at point of care could further facilitate increased use. Findings from this dissertation also show that active involvement of leaders and key personnel can positively influence nurses' SCP use and create a culture for using SCPs.

This dissertation revealed that nurses used the SCPs very differently. While some used the SCPs as a quick way to make care plans or as a recording aid, both in terms of provision of good formulations and in terms of provision of suggestions for interventions, others saw them as redundant and put more trust into their own clinical experience. This study also revealed a large discrepancy in the amount of information nurses considered to be necessary in a care plan. The discrepancy was related to the actual use of care plans in daily practice. Several nurses reported that factors like comprehensive knowledge of the patients, low accessibility of the EPR at point of care, and SCP functionalities not supporting nurses' workflow, contributed to this. This has implications for the possibilities of SCPs to contribute to an evidence-based practice. Together, these findings show that settings implementing SCPs should discuss and reach a consensus regarding the amount of information a care plan should contain, as well as facilitate the use of SCPs as a guide for practice.

To sum up, the findings from this dissertation show that when implementing SCPs in new settings, the municipalities should include several measures to facilitate a successful uptake of SCPs. There is also a need to reach a consensus regarding the content of the SCPs and how they are to be used in practice. In the next section, I will provide my recommendations for future research in this field.

6.2 Recommendations for further research

In this section, I will provide my recommendations for further research concerning the use of SCPs in municipal healthcare.

This dissertation revealed that the nurses struggled to adapt the content of the SCPs to the different healthcare workers' needs. There is a need for further research to explore how other groups of healthcare workers use the SCPs, how they perceive the usefulness of SCPs, and what information needs they have.

Furthermore, there is a need to investigate how technology can be used to support different users' information needs. As this study showed, information needs can vary on the basis of, for instance, prior knowledge of the patients. Hence, technology that can tailor the display of information to the end-user could possibly enhance the possibilities of SCPs to support workflow. In relation to this, this study showed that there is a tension between the information needed in a care plan for legal purposes and the information needed for nurses in their daily practice. Hence, there is a need to investigate how technology can be used to transform the comprehensive EPR content into smaller amounts of information that is more compatible with the nurses' needs in practice.

Finally, there is a need for future research to explore how it can be possible to achieve evidence-based practice in the municipal healthcare setting. The SCPs were implemented as a measure contributing to evidence-based practice—but as things stand, they are seldomly used as a guide for practice due to several contributing factors.

To sum up, on the basis of the findings from this study, I suggest that further research focus on other groups of healthcare workers, on how technology can support healthcare workers' workflow and information needs, and on how evidence-based practice can be reached in municipal healthcare.

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8. Appendices

Paper I

Paper II

Paper III

Appendix I: Interview guide

Appendix II: Observational guide

Original papers

I. Østensen, E.; Bragstad, L.K.; Hardiker, N.R. & Hellesø, R. (2019) Nurses' information practice in municipal health care—A web-like landscape, *Journal of Clinical Nursing*, 28, 2706–2716. https://doi.org/10.1111/jocn.14873

II. Østensen, E.; Bragstad, L.K.; Hardiker, N.R. & Hellesø, R. (2020) Introducing standardised care plans as a new recording tool in municipal health care, *Journal of Clinical Nursing*, 29 (17-18), 3286-3297. https://doi.org/10.1111/jocn.15355

III. Østensen, E.; Hardiker, N.R.; Hellesø, R. (2021) Facilitating the integration of standardized care plans in municipal healthcare, *CIN: Computers, Informatics, Nursing,* submitted March 2021.

Paper I

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ORIGINAL ARTICLE

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Nurses' information practice in municipal health care—A web-like landscape

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Abstract

Aim: To uncover the characteristics of nurses' information practice in municipal health care and to address how, when and why various pieces of information are produced, shared and managed.

Background: Nursing documentation in the electronic patient record has repeatedly been found unsatisfactory. Little is known about how the information practice of nurses in municipal health care actually is borne out. In order to understand why nursing documentation continues to fail at living up to the expected requirements, a better understanding of nurses' information practice is needed.

Design: A qualitative observational field study. The study complied with the Consolidated Criteria for Reporting Qualitative Research.

Methods: Empirical data were collected in three Norwegian municipalities through participant observations and individual interviews with 17 registered nurses on regular day shifts. The data were analysed through thematic content analysis.

Results: Nurses' information practice in municipal health care can be described as complex. The complexity is reflected in four themes that emerged from the data: (1) web of information sources, (2) knowing the patient and information redundancy, (3) asynchronous information practice and (4) compensatory workarounds.

Conclusions: The complex and asynchronous nature of nurses' information practice affected both how and when information was produced, recorded and shared. When available systems lacked functions the nurses wanted, they created compensatory workarounds. Although electronic patient record was an important part of their information practice, nurses in long-term care often knew their patients well, which meant that a lot of information about the patients was in their heads, and that searching for information in the electronic patient record sometimes seemed redundant.

Relevance to clinical practice: This study provides contextual knowledge that might be valuable (a) in the further development of information systems tailored to meet nurses' information needs and (b) when studying patient safety in relation to nurses' information practice.

KEYWORDS
continuity of care, electronic patient records, information practice, nursing documentation, patient safety

1 | INTRODUCTION

To be able to facilitate patient safety, continuity and quality of care, nurses need information about their patients. Municipal health care in Norway includes care provision in both nursing homes and home health care and is characterised by the involvement of many careers in the provision of care to the same patient (Gjevjon, 2014; Ministry of Health & Care Services, 2008–2009). Continuity of care is defined as “the degree to which a series of discrete health care events is experienced as coherent and connected and consistent with the patient's medical needs and personal context” (Haggerty et al., 2003, p. 1221). In order to ensure continuity of care, communication between caregivers is crucial. This communication can be defined as informational continuity, where continuity is seen as dependent upon the transfer of relevant information to connect one episode of care to the next (Gjevjon, 2014; Haggerty et al., 2003; Meissner et al., 2007).

The various ways in which information is gathered, stored and passed on between nurses and other caregivers differ across settings; these have changed over the last few decades due to the introduction of information and communication technology (ICT) and the electronic patient record (EPR) in health care (Meissner et al., 2007; Olsen, Hellzen, Skotnes, & Enmarker, 2014). Documentation is recognised as an important part of nursing and is mandated by Norwegian law (Keenan, Yakel, Tschannen, & Mandeville, 2008; Ministry of Health & Care Services, 2001). Nurses' recordkeeping does not only have a legal purpose, but it also provides information of high practical value and of importance for communicating about patient care (Blair & Smith, 2012; Hellesø & Ruland, 2001).

Nurses need access to relevant patient information to be able to deliver good nursing care (Urquhart, Currell, Grant, & Hardiker, 2009). Hence, information is important for the care and subsequently the safety of patients. Patient safety is defined as “the prevention of errors and adverse effects to patients associated with health care” (World Health Organization, 2018). Because information is of such high importance, many studies have been concerned with the quality of nursing documentation. Studies have repeatedly found the quality of nursing documentation to be unsatisfactory when compared to guidelines and ideals related to content and structure (Ehrenberg & Birgersson, 2003; Gjevjon & Hellesø, 2010; Karkkainen, Bondas, & Eriksson, 2005; Wang, Yu, & Hailey, 2015). It has been reported that nursing documentation lacks important information while containing a large number of routine notes that make it difficult to find important elements (Tornvall & Wilhelmsson, 2008).

There is limited knowledge about why nursing documentation consistently fails to meet expected quality standards. Possible explanations have included heavy workload, staffing shortages, limited competence, disruptions, low motivation, ineffective procedures, too little supervision, insufficient training and ineffective documentation systems (Cheevakasemsook, Chapman, Francis & Davies, 2006; Ouslander et al., 2004; Voyer et al., 2014). Some have suggested that nurses, for example in long-term care, have a substantial amount of accumulated knowledge that is not expressed in their writing, and others have found that not all information about patients is entered into “official” records (Ehrenberg & Ehnfors 2001; Voutilainen, Isola, & Muurinen, 2004).

What does this paper contribute to the wider global clinical community?

- Adds a comprehensive understanding of the complexity of nurses' information practice in municipal health care.
- Makes the challenges with the current EPR solution visible regarding (a) lack of accessibility at point of care, (b) lack of functionalities for immediate reminders at point of care and (c) lack of opportunities for synchronised communication between nurses.
- Grants an extended understanding of how patient safety is ensured through the interplay between the EPR and other information sources.

2 | BACKGROUND

2.1 | Information and information practice

In this study, information refers to both health-related information and information of a coordinating nature. There are variations in different settings both in the practice and the specific information practice of nurses due to locally developed culture and management strategies (Anderson, Issel, & McDaniel, 2003; Jylha, Mikkonen, Saranto, & Bates, 2017). In this study, we see information practice from a social constructionist point of view, where we understand the practice to be socially developed through interactions of individuals belonging to that specific setting (Burr, 1995). A practice can be described as (a) lying in between habit and action, meaning that some actions are repeated habitually while others are of a more purposeful character, and (b) lying in between reproduction and production, meaning that while some actions are constantly being reproduced in a practice, a simultaneous production of results will also occur. When people share a practice, they behave according to certain norms of what is considered to be correct or incorrect, to aesthetic norms and to standards of fairness (Gheradi, 2008). Information practice is therefore considered a socially constructed practice that determines how information is produced, organised, disseminated, distributed, reproduced and circulated in the community and which specific types of information are legitimised (Bonner & Lloyd, 2011). Information practice is context specific. Even though political and legal demands together with available resources will provide some regulations to the information practice, the people in any particular context, such as a nursing home, will over time have their own specific agreed-upon way of acting and speaking about things that may be unfamiliar to an outsider (Tuominen, Talja, & Savolainen, 2006).

Previous studies on specialised care have found that even though the documentation system might be digitised, the EPR is still not a

TABLE 1 Participant demographics (n = 17)

	Range	Mean
Age in years	27–60	40.9
Years as a nurse	2–36	13.6
Years on the ward	1–26	7.6

sufficient source of information for nurses. The EPR cannot easily replace all of the functions of paper-based information systems due to a number of factors, including inaccessibility at the point of care and limited functionalities (Iversen, Landmark, & Tjora, 2015; Saleem et al., 2011). This would resonate also in municipal care, where accessibility remains an issue.

Other forms of communication that augment (or are augmented by) paper-based systems and the EPR include oral communication and whiteboards. Oral communication remains a major currency in health care, for example in handover situations where it not only provides information about a patient, but can also serve as education to other members of the staff and an opportunity for debriefing (Giske, Melas, & Einarsen, 2018). The use of oral information to augment the EPR in municipal health care has been previously described in Obstfelder and Moen (2006), but has to the best of our knowledge not been explored in terms of how it works together with other information sources in an information practice. The use of whiteboards, especially for task administration, has also been described previously in Bost, Crilly, Patterson, and Chaboyer (2012) and Mackintosh, Berridge, and Freeth (2009). Whiteboards are used widely in Norwegian municipal health care, but their use remains under-researched. Although the organisation of activities traditionally has not been viewed as part of patient care, this invisible work is important for care delivery and subsequently patient safety, and thus, we have chosen in this study to include organising activities in our understanding of nurses' information practice (Allen, 2014). Aspects of information practice such as oral handovers or EPRs have been studied previously but separately. However, there is a gap in knowledge about how these independent pieces work together and how the information practice of nurses in municipal health care actually is borne out. The aim of this study was to uncover the characteristics of nurses' information practice in municipal health care and to address how, when and why various pieces of information are produced, shared and managed.

3 | METHODS

3.1 | Design

This observational field study is qualitative in nature and draws on a number of methods, such as participant observation and individual on-site interviews. A qualitative approach is suitable for research in areas where one seeks a deeper understanding of the nature of an area of interest, such as nurses' information practice. Observing and interviewing allows the researcher to record and question features of everyday practice that the nurses themselves may not see as part of the context or worth mentioning (Green & Thorogood, 2014).

By using a qualitative multi-method approach combining observation and interviews, we were able to observe nurses' information practice, to ask questions and have informal conversations with the nurses during the observations, and to follow up with interviews to get a more in-depth understanding of the nurses' opinions and thoughts concerning what was observed. These methods of data collection provided rich data. We used data triangulation to gain a broader understanding of nurses' information practice (Morse, 2015). This study complied with the Consolidated Criteria for Reporting Qualitative Research (COREQ) (see Appendix S1).

3.2 | Setting

This study was set in municipal health care in Norway and included both nursing homes and home health care. Norway is divided into 422 municipalities (as of 1 January 2018). The municipalities are responsible for the delivery of primary health and care services, including both home care services and nursing home care. The Norwegian municipalities vary in size and population, and thus, the number of nursing homes and home health care districts in each municipality vary. The population of the three municipalities included in this study ranged from 10,000–60,000 inhabitants.

Norwegian municipal health care has changed over the last decade with an increased number of patients and an increased responsibility for patients with chronic conditions in need of complex care. A general rise in the older population, combined with national political strategies to handle the ageing population resulting in the Care Coordination Reform and the Norwegian Public Health Act, requires municipalities to assume more responsibility for the medical care of patients (Statstics Norway, 2017; Ministry of Health & Care Services, 2008–2009; Ministry of Health & Care Services, 2011).

3.3 | Context and participants

Participants were selected through convenience sampling in three municipalities. The three municipalities were all piloting standardised care plans using the International Classification for Nursing Practice (ICNP®) as part of another study. Access was gained through leaders of health care services in the municipalities. When initial permission was granted, the leaders of the nursing homes and home health care districts were contacted. Permission to conduct the study in these specific locations was granted. Eligible registered nurses (RNs) received information about the study, and 17 RNs agreed to participate (Table 1). All RNs met the inclusion criteria; they were employed as 0.75 or 1 full-time equivalents and had been employed for over a year in the ward, which meant that they were familiar with local routines and practices. All but one RN were women. To protect the anonymity of the male participant, nurses are described as female (she, her) throughout this paper.

Details related to the type of ward are listed in Table 2.

TABLE 2 Type of ward that participating RNs (*n* = 17) worked in

	Short-term ward	Intermediary ward	Long-term ward	Home health care	Total amount
Municipality 1	2	3	0	0	5
Municipality 2	1	0	4	3	8
Municipality 3	1	0	2	1	4
In total	4	3	6	4	17

3.4 | Data collection

Data were collected from May–October 2016. The first author (E.Ø., M.Sc.) observed 17 registered nurses on a normal day shift that each lasted 7–8 hr. As most of the inter-professional collaboration and care planning takes place during the day, we decided day shifts would provide the most suitable time for studying the nurses' information practice. All nurses were interviewed individually at the end of their shifts. All observations and interviews were conducted by the first author, who is a female Ph.D. candidate with 2 years of prior experience in conducting qualitative research. She is also an experienced nurse, but unfamiliar with the municipal health care setting. Being an experienced nurse gave her the advantage of understanding the language used and the nurses' actions.

3.5 | Observations

The first author participated as an observer for a total of 124 hr and interacted with the people in the setting, but did not interfere with or join in patient care. Participant observation was chosen because it provided a first-hand opportunity to observe the information practice of RNs in municipal health care in situ. An observational guide was developed and used to narrow the scope and guide the gaze of the observer. The guide included questions such as "How does the nurse receive and give information?" and "Where can information be found?" Field notes were written down as keywords or short sentences during the observations. As soon as possible after the observations, the field notes were written down in full sentences. The field notes were descriptions of the conducted observations. Additional reflective notes were produced for questions, feelings, reactions or thoughts that arose during the observations.

TABLE 3 Main themes of the interview guide

1	Receiving and seeking information at the beginning of the shift
2	Use of the EPR—usability, responsibility, and how and when is it used
3	Choices regarding what was documented where
4	Information practice on the ward—sources of information
5	Use of care plans
6	Experiences and evaluations regarding the piloting of standardized care plans

3.6 | Interviews

All interviews were conducted in a room close to the ward at the end of the shift. Each interview lasted approximately 50 min. The interviews were semi-structured with predefined themes regarding information practice. The interview guide was developed based on results of previous studies; for example, we found several studies on the use of different handover styles and thus found it important to explore how the nurses received information at the beginning of their shift (Giske et al., 2018; Meissner et al., 2007). Questions regarding the piloting of standardised care plans were based on the Unified Theory of Acceptance and Use of Technology (Venkatesh, Thong, & Xu, 2012) (see Table 3 for main themes of the interview guide). In addition, the first author added some questions related to observations made that day. The interview guide served as a reminder of topics to be discussed, but did not structure the interviews. This allowed the nurses to share their stories and speak about what engaged them in connection to their information practice. Our approach recognises that the researcher is an active participant in the construction of meaning during the interviews (Jootun, McGhee, & Marland, 2009). Conducting interviews at the end of the day gave a more in-depth understanding of the RNs' information practice.

3.7 | Ethical considerations

The study was approved by the Norwegian Centre for Research Data (ID: 46503). The nurses' participation was voluntary. The observations focused on information management and not on the patient. All patients visited during the observations were asked by the nurse for their acceptance of the researcher's presence in their home or in their room at the nursing home with respect to the principle of autonomy. The first author did not interfere with patient care during the observations. All data were de-personalised before analysis.

3.8 | Data analysis

The interviews were audiotaped and transcribed verbatim by the first author using the software HYPERTRANSCRIBE. The software NVIVO 11 was used as an aid to keep track of codes and categories during the process of analysis. The transcribed interview data and the observational field notes were all printed out on paper and read as a whole by the Norwegian speaking researchers (E.Ø, L.K.B & R.H.). First, a search of patterns and themes that were common across all the interviews and observations was conducted (Patton, 2015). This provided an

TABLE 4 Examples of codes, categories and main themes from the analysis

Transcribed text & field notes	Code	Category	Main theme
The nurse looks at the whiteboard at the base to see today's Modified Early Warning Score (MEWS) values for the patients. She writes them down on her paper list of the patients and goes to the doctor to inform about this. In 20 min, there is going to be a meeting. (OBS NO. 3)	To manage one piece of information, the nurses use a whiteboard, a paper list, and oral information	Several information sources	Web of information sources
"I do work almost full-time, so very often I was here the day before. But if I have been away for a while, I usually log into the EPR and read." (INT NO. 16)	Working full-time gives *knowledge* about the patients; absence creates a need to read the EPR	Reading EPR is not always necessary	Knowing the patients and information redundancy
The nurse starts the day by finalizing old progress notes in the EPR. She explains that they are not finalized because the nurses write a little now and then during the shift. Once the note is finalized and approved, one is not able to write more on the same topic. Thus, the notes are often not finalized on the same shift as they are written. (OBS NO. 8)	The nurses write notes in the EPR several times during the day. The EPR is not *designed* for this. Thus, notes are not finalized	Nurses have a need to record when situations occur	Asynchronous information practice
"Every shift you have to read from the Patient Controlled Analgesia (PCA) pump, how many boluses, how much medication that is given, and things like that. You have to do that in the patients' room. So then we write it on a paper list. But we also have to write it in the EPR. Then you copy what the last person has written and just edit the numbers. […] There should have been a template in the EPR." (INT NO. 9)	The EPR is not *available* where the PCA is. The numbers are documented on paper before the EPR. In the absence of a template they copy text from the nurse before	Nurses have to document twice, but find solutions to do it quickly	Compensatory workarounds

overview of the data as a whole. A thematic content analysis was then conducted. Condensation of the text was done by shortening units of text to more precisely highlight the meaning of the content. This helped us identify codes. Subsequently, the codes were categorised, and similar categories were grouped together and developed into the final themes (Green & Thorogood, 2014). For an example, see Table 4. As part of an iterative process, field notes and interview transcripts were reread several times to make sure the themes were fitting and to examine how they illuminated the data (Patton, 2015).

3.9 | Trustworthiness

All members of the research team are healthcare personnel, and two (N.R.H & R.H) have done an extensive amount of research on nursing documentation; we acknowledge that this might have influenced our prior understanding of the field of research. However, we have taken measures to assure trustworthiness of the results presented in this paper (Jootun et al., 2009; Patton, 2015). In reporting our process of analysis, we have provided information of the software used and examples of the statements, codes, categories and themes in Table 4. In addition, we have added quotes in the presentation of our results to add transparency and illustrate our interpretations. Although we acknowledge that the data may be read in multiple ways, we believe that we have reduced potential bias in our interpretations, with three people reading, analysing and discussing the data, and one non-Norwegian speaking person (N.R.H.) validating and discussing these interpretations later on (not least to identify potential "group think"). Through reflexivity, we account for our part as researchers in the construction of meaning presented in our results (Jootun et al., 2009). Finally, reflections of the dynamics in the observations and interviews were captured in addition to the field notes.

4 | RESULTS

The findings from this study revealed that nurses' information practice in municipal health care is complex. The complexity is reflected in four themes that emerged from the observations and interviews: (1) web of information sources, (2) knowing the patient and information redundancy, (3) asynchronous information practice and (4) compensatory workarounds.

4.1 | Theme 1: web of information sources

It became apparent through our analysis that the nurses used a variety of information sources interchangeably in their daily practice: electronic information, paper-based information, oral information and information written on whiteboards. The information sources together resembled a spider's web (i.e., they were connected to each other), and the same information could be found in several places:

> The nurse had her patient list for the day ready in her basket and said she did not have the need to read about the patients in the EPR because she knew them quite well. […] The nurse knew exactly where to find everything she needed (at the patient's home) and what she should do. I noticed a list that was hung up on one of the cupboard doors in the bathroom. It was a reminder of what the nurses should do while helping

> the patient, such as "wash his face." I was thinking that this is like a detailed care plan. The nurse did not look at this list. (OBS NO. 12)

Just from reading this small part of a field note, we can identify three different sources of information regarding a patient: the patient list, the EPR and the list in the bathroom. The patient list was an A4 sheet of paper with an overview of patients and their condition. The list had some variations in content, but it could be found in all settings. The second source of information, the EPR, was where one could find the majority of health-related information concerning a patient, such as progress notes and the care plan. In the patients' home, there was a third source of information hung up in the bathroom. This list was specific, detailed, of a practical character, and accessible at point of care. Similar informal lists or notes to health care workers could be found across all settings (both home health care and nursing homes). The nurses pointed out that such information ensured accessibility to information and was regarded as useful at point of care:

> You must have a pretty good memory if you are able to remember everything you have read in the care plan (in the EPR) when you are caring for the patient. (INT NO. 12)

Electronic patient record information did not have the same accessibility as a handwritten list or a note placed where the information was needed. This was partly due to limited or no access to mobile EPR devices, although such devices are increasingly being tested in several Norwegian municipalities. Hence, other sources of information were used in addition to the EPR:

> It is a challenge that we don't have access to it [the EPR] in the patient's home. If I have made a detailed care plan in the EPR I don't think it will be followed if it isn't written on the patient list as well. (INT NO. 11)

Additional paper-based information was available in a number of settings, for example, binders with patient-related information of a sensitive character. These binders contained printouts of important information from the EPR, medication lists, other lists, risk assessment forms and information received on paper that was later to be scanned and put in the EPR. In some settings, there was a general scepticism towards the trustworthiness of the EPR, and thus, they printed out information and stored it in a paper record called "the journal."

The information that was shared was both of a health-related and an organisational and coordinating character. Information that was of an organising character was regularly shared during morning handovers. This information was usually written in a large calendar book called the "black book" that was read aloud each morning. The messages could concern both the patients and the nurses and their working day as in one nursing home:

> The nurse reads from a book with the messages for today. This is what it says: The daughter of a patient is coming today with his antibiotics. There is a researcher coming today (me). One patient has a wheelchair that needs to be repaired. Another patient fell yesterday and is being operated on in the hospital today. (OBS NO. 14)

The book provided a short summary of what was going to happen that particular day and gave a quick overview of things to be aware of. Some of these messages were also written in the EPR, but on this particular ward the nurses found that access to the EPR was limited and time-consuming. Another source of information that nurses used to get a quick overview of patient status and/or tasks to be done was the whiteboard or electronic board that could be found in the nursing station in most settings. The whiteboard was sometimes used as an aid in interdisciplinary meetings. In one ward, it contained information about:

> …patients daily Modified Early Warning Score, risk assessment scores, ability to make informed consent, score in relation to assistance needs, decision regarding resuscitation, living situation, technical aids, responsible nurse, and discharge planning. (OBS NO. 1)

Across all wards, oral information was observed to be in frequent use, both as an organised activity and more ad hoc when situations occurred. Oral handovers took place in most wards, and even in a ward that practiced so called "silent handovers," where everybody read the EPR individually. A nurse described a need for oral exchange of some information:

> We give each other messages orally if there is something special, but it is not organized. […] For instance, if something happened the night before, like if the nurse brought back a dosette from the patient's home to do some changes in the medications, and you have to bring it back in the morning. (INT NO. 11)

In the interview, the nurse confirmed that this information could also be found in the EPR. Thus, oral information in this context does not serve as an alternative to documenting in the EPR, but rather as a supplement and a reminder. For various reasons, not all information could be found in the EPR, and thus, the nurses were reliant on talking to each other to get the necessary information.

We found that information was shared in many different ways and that the same information could be found in several places. Where and how to look for and share information amongst these choices was not necessarily comprehensible to an outsider. Despite this complexity, the nurses were familiar with the web of information sources and had no problem navigating them.

4.2 | Theme 2: knowing the patients and information redundancy

We found that the nurses' information-seeking behaviour was influenced by the nature of long-term care. The nurses expressed that they did not need to read the EPR every day to get an overview of their patients because they knew them well. "Knowing the patients" meant both knowing their care needs and habits, but also knowing anything that had happened over the last period in time. When the nurses had been away from work for a period of time, or the patients' status was significantly changed, the situation was different. One nurse in a nursing home explained it like this:

> I am here pretty often so I don't miss much [of what is going on]. But if I for instance have had several days off, and I am going to a patient that I have not been with in a while, I read to update myself first. To see if something has happened. (INT NO. 2)

The nurses had developed a practice that involved reading the EPR to update themselves when they had been away, but otherwise they did not find it necessary to start their shift by reading the EPR. They often waited until later in the day when their tasks were fewer and they planned to use the EPR for documentation. This was a practice seen across all the wards in this study, and it seemed to be accepted by the nurses. However, some nurses expressed that they thought the EPR should have been used more often than it actually was:

> I think one should read the care plan, maybe not every day if you have been at work and know what is going on [...], but I think you should read the care plan. However, I don't think it's being done. [...] I think it is being used too seldom. (INT NO. 7)

This quote points to a contradiction in the nurses' information practice. On the one hand, the nurses express clearly that when one is present at work full-time, reading the EPR is redundant. On the other hand, they think the EPR should have been used more. They had multiple explanations as to why the EPR was not used that often: In addition to knowing the patients and accessibility at the point of care, lack of time was commonly mentioned.

4.3 | Theme 3: asynchronous information practice

The third theme we found was that nurses had what we interpret as an asynchronous information practice. The information practice did not follow a chronological timeline, but happened when a need for information occurred or an available moment for documentation opened up. Nurses used the EPR to document occurrences of the past as well as messages for the future. Such messages were also written in other places. This was related to the nonuse of the EPR, but it was also in response to the fact that information written in the EPR "disappears" when new recordings are made. Therefore, the EPR was mostly used for information and knowledge of the past; for instance, the patients' medical history or how a wound had looked the last time the dressing had been changed. However, as one nurse explained, there was not always time to read the EPR:

> Not always, because there are quite a few alarms and many patients waiting to get up. They are maybe going to the doctor or joining different activities. (INT NO. 14)

Such accounts show that even when there is a will to read the EPR, a patient in need of help will become the highest priority; the nurses prioritised present needs. The unpredictable nature of working with patients meant that nurses needed to be prepared for the unexpected. For example, in a nursing home:

> The nurse began on the medication round. [...] On her way to patient number two, she was stopped by a phone call regarding one patient at the ward. She talked to the person on the phone, and then she went to give this message to the person in charge of the patient. On her way back through the hallway, she met the son of one of the patients who had been very ill. He told her that his mother had just passed away. The nurse had to talk to this man a little bit before she could go and inform the person in charge of this patient. (OBS NO. 4)

The nurse in this field note was interrupted by unexpected events and had to handle several urgent matters along her way. She received information of new situations orally and had to communicate this information to the right person immediately. In these situations, new information was produced and handled, and such information was often received and communicated orally. A nurse at a nursing home explained it like this:

> Sometimes you need the information earlier, before it has been written down. Then you have to [talk to each other]. Because you are dependent on them doing this and that before you can do this and that. So we must cooperate that way. (INT NO. 2)

Nursing work requires a flexibility to change plans, to handle new information and to give information quickly when needed. This affects the information practice, in particular how information is exchanged and where it can be found. Working with patients means that a continuous stream of potentially new information needs to be managed. Often, we saw that new information was first communicated orally and written in the EPR at a later time; that is, the nurses' information practice was asynchronous and did not necessarily happen according to a specific timeline.

4.4 | Theme 4: compensatory workarounds

In our analysis, we found that when the nurses met an obstacle or a shortcoming to the available information systems, they had developed what we call "workarounds" to overcome this. These nonformalised information practices were in response to issues that nurses evaluated as necessary or useful to overcome. The following two excerpts from field notes are examples of situations when available informational resources did not provide the nurses with the information they wanted. The examples show workarounds where the nurses chose to solve the situation by using their own private cell phones to get information:

> From the medication round: The nurse takes out a dosette where she finds the patients' pills. They need to be double-checked to make sure that the patient receives the right medication. There are many pills, and it is difficult to know which one is which. The nurse takes her cellphone out of her pocket and goes to an online medicine page to search for pictures of the different pills. She compares the pictures and finds out that the pills are the correct ones. (OBS NO. 1)

> From a wound care situation: The nurse shows me that she has pictures of the patients' wound from one and two weeks ago on her private cellphone. She explains that she takes pictures to follow the development of the wound. She does not have access to a camera at work, nor is there a possibility for adding pictures to the EPR. She looks at the pictures and assesses changes in the size of the wound and maceration of the skin around the wound. (OBS NO. 10)

What these field notes exemplify is that the available resources of the workplace are not necessarily the only sources used in nurses' information practice. Where the specific type of information nurses need is not available, they use their creativity and develop workarounds to overcome this obstacle.

5 | DISCUSSION

The primary aim of this study was to reveal the characteristics of nurses' information practice in municipal health care. Our results describe a complex practice where information is produced, shared and tied together in a spiderweb in many different ways. Although this may be a well-known phenomenon for nurses, it has previously not been explored in-depth. Previous studies have focused primarily on the patient record system and the quality of what has been recorded there (Wang, Hailey, & Yu, 2011). It has been suggested that by improving nursing documentation, patient safety will be enhanced (Fossum, Alexander, Ehnfors, & Ehrenberg, 2011; Middleton et al., 2013). However, the results of this study provide an extended and nuanced perspective of this assumption.

Nursing documentation in the EPR is important as a source of a large amount of patient data that is also of legal value (Ministry of Health & Care Services, 2001). The content of the EPR is also important for other purposes, such as aggregating data for health policy, research and the allocation of resources (Hayrinen, Saranto, & Nykanen, 2008). Our results show that in the daily practice of nurses in municipal health care, information is shared in numerous ways. Reading EPR records at the beginning of their shift was considered redundant by nurses who work full-time and who feel they know their patients well. Hence, improvement to EPR content may not influence the care delivery of these nurses. This finding is in line with previous research concluding that better nursing documentation does not necessarily lead to improved patient care (Müller-Staub, Lavin, Needham, & Van Achterberg, 2006). "Knowing the patient" is a concept that has been described in nursing literature as an important aspect of clinical knowledge and has been identified by nurses as a factor facilitating quality of care (Jenny & Logan, 1992; Murphy, 2007). Hence, its importance should not be underestimated.

Our study identified several other parts of nurses' information practice that could be interpreted as initiatives to also promote patient safety. Examples include reminders on patient lists or paper notes, messages communicated orally and compensatory workarounds like controlling patient medication by comparing pills in a dosette box with online pictures found through a private cell phone. The use of patient lists has previously been described as a tool for the immediate recording, retrieving and sharing of patient data in a way that is not supported by the EPR system (Iversen et al., 2015). These findings point to improvement opportunities for the EPR system. However, some studies have already described valuable information as hard to find in the EPR due to a large number of routine notes (Tornvall & Wilhelmsson, 2008). It is important, therefore, that improvements to the EPR system do not add to this difficulty. Elements of the information nurses exchanged in the wards that were investigated could not easily be entered in the EPR system, as they were of an organising character and not necessarily connected to a single patient. There appears to be several good reasons for having an information practice where multiple sources of information are used.

The nurses' information practice was characterised as being asynchronous, where information seeking and sharing happened at different points in time and not necessarily according to a scheduled timeline. This could be seen in relation to the unpredictable nature of working with patients, where unforeseen events often occur. The EPR is, however, developed in a way that supports the chronological recording of events and has thus been previously described as having more of an archiving function, rather than being designed to support the organisation of ongoing activities (Allen, 2013). We found that for situations occurring in the present, nurses very often used oral communication as their preferred source of information. In this way, the person providing the information can be assured that the message is received immediately, which in practice also means an immediate transfer of responsibility.

An interesting finding in our study was that the nurses had developed what we describe as compensatory workarounds. These were used when available information sources did not meet the nurses' information needs. Workarounds, seen as unconventional methods for accomplishing work, have been described in previous studies as recurring events in health care resulting from a combination of the complexity of the setting and problems with the EPR system (Stevenson, Israelsson, Nilsson, Petersson, & Bath, 2018). Although one can argue that not all workarounds should be applauded—for instance, it is not appropriate to take pictures of patients on private cell phones—we argue that the workarounds identified in this study were all done with the intention of providing the patient with the best possible care. From this, we interpret that more knowledge of workarounds is needed for further development of EPR systems to ensure they provide nurses with the tools they need to give patients the best care.

6 | CONCLUSION

In this study, we found that nurses' information practice in municipal health care may be characterised as complex and asynchronous. This affects both how and when information is produced, recorded and shared. When available systems do not have the functions nurses want, they create compensatory workarounds. Although the EPR is an important part of their information practice, nurses in long-term care often know their patients well, which means that a lot of information of the patients is in their heads and that searching for information in the EPR sometimes seems redundant. This has obvious implications both for the uptake of EPRs and the eventual use of the information they contain.

7 | RELEVANCE TO CLINICAL PRACTICE

The results of this study provide contextual knowledge that might be of value (a) in the further development of information systems tailored to meet nurses' information needs and (b) when studying patient safety in relation to nurses information practice.

8 | LIMITATIONS OF THE STUDY

This study's limitations include the relatively small number of municipalities (n = 3) and nurses (n = 17) included, which in itself limits the possibility to generalise findings. However, a smaller number of participants provide the possibility of achieving rich descriptions and continuing data collection until data saturation is met (Morse, 2015). By using qualitative methods in a multi-method approach of data collection and triangulating the results, we have gained a deep understanding of nurses' information practice. We have taken measures to be transparent of the methods used. The themes presented in this study illustrate issues that may be recognisable and transferable to other settings and populations as well. All these steps were taken to enhance rigour, adding to the trustworthiness of the findings of this study (Morse, 2015). All of the observations in the study were conducted during day shifts, and due to the possible difference in staffing ratio and nursing tasks between day and evening shifts, it is possible that a combination of day and evening shifts would have extended our insight into the nurses' information practices. The translation of quotes from Norwegian to English may have caused some of the initial meaning to disappear, and all interpretations will necessarily in some way reflect the researchers' perspectives.

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CONFLICT OF INTEREST

None of the authors have any conflict of interest in this study.

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SUPPORTING INFORMATION

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Introducing standardised care plans as a new recording tool in municipal health care

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Abstract

Aims and Objectives: To explore how nurses use standardised care plans as a new recording tool in municipal health care, and to identify their thoughts and opinions.

Background: In spite of being an important information source for nurses, care plans have repeatedly been found unsatisfactory. Structuring and coding information through standardised care plans is expected to raise the quality of recorded information, improve overviews, support evidence-based practice and facilitate data aggregation. Previous research on this topic has mostly focused on the hospital setting. There is a lack of knowledge on how standardised care plans are used as a recording tool in the municipal healthcare setting.

Design: An exploratory design with a qualitative approach using three qualitative methods of data collection. The study complied with the Consolidated Criteria for Reporting Qualitative Research.

Methods: Empirical data were collected in three Norwegian municipalities through participant observation and individual interviews with 17 registered nurses. In addition, we collected nursing records from 20 electronic patient records.

Results: Use of standardised care plans was influenced by the nurses' consideration of their benefits. Partial implementation created an opportunity for nonuse. There was no consensus regarding how much information to include, and the standardised care plans could become both short and generic, and long and comprehensive. The themes “balancing between the old and the new care planning system,” “considering the usefulness of standardised care plans as a source of information” and “balancing between overview and detail” reflect these findings.

Conclusions: Nurses' use of standardised care plans was influenced by the plans' partial implementation, their views on usefulness and their personal views on the detail required in a care plan.

Relevance to Clinical Practice: The structuring of nursing records is a fast-growing trend in health care. This study gives valuable information for those attempting to implement such structures in municipal health care.

KEYWORDS
care plan, electronic patient records, ICNP, nursing documentation, standardisation

1 | INTRODUCTION

Globally, healthcare services are facing the challenges of an ageing population. As a result, primary healthcare services are increasingly taking over responsibility from hospitals for a growing number of patients with chronic conditions in need of complex care (OECD, 2013). Adding to the complexity of their care needs, a high number of these patients suffer from multi-morbidity and have cognitive impairments, which leaves them in a frail condition with a high risk of adverse outcomes (Bing-Jonsson, Hofoss, Kirkevold, Bjørk, & Foss, 2016). Access to accurate patient information is a prerequisite for ensuring patient safety and these patients' continuity of care, and a care plan is one of the principal sources of information for nurses (Saranto & Kinnunen, 2009). A care plan includes identified problems (nursing diagnosis), goals for the patient's desired outcome, and planning and evaluation of nursing interventions (Thoroddsen, Ehnfors, & Ehrenberg, 2011). Despite their importance, nursing care plans have repeatedly been found unsatisfactory both internationally (e.g. Tuinman, de Greef, Krijnen, Paans, & Roodbol, 2017; Voutilainen, Isola, & Muurinen, 2004) and in the Norwegian long-term care setting (e.g. Gjevjon & Hellesø, 2010; Johnsen, Ehrenberg, & Fossum, 2014).

The terms used to describe nursing diagnosis, interventions and outcomes vary greatly in traditional narrative nursing notes. This can lead to misunderstandings, put the patients' safety at risk and make systematic data gathering for quality improvement difficult (Jones, Lunney, Keenan, & Moorhead, 2010; Lee, Jeon, & Kim, 2019). To overcome this problem in Norway, the Norwegian Nurses Organisation has initiated the development of standardised care plans (SCPs) enabled by the International Classification for Nursing Practice™ (ICNP). ICNP consists of a dictionary of terms that can be used to describe and record nursing practices in a systematic way (Coenen, Kim, Bartz, Jansen, & Hardiker, 2012; International Council of Nurses, 2019). SCPs are evidence-based sets of preformulated nursing diagnoses and their related goals, resources, characteristics and interventions that nurses can select from when making a care plan. By using such a structure combined with standardised nursing language, documentation quality is expected to improve by easing the documentation of nursing care, facilitating communication across different settings and supporting systematic data gathering (Johnson, Edward, & Giandinoto, 2018; Park & Lee, 2015; Saranto et al., 2014; Strudwick & Hardiker, 2016). Initially, in 2016 five SCPs were implemented in the electronic patient records (EPR) system of three Norwegian municipalities. Previous research on structuring nursing records has, to a large extent, been conducted in the hospital setting (Saranto et al., 2014); thus, it is not clear how such standardised structures for recording fit into nurses' information practices in the municipal healthcare setting.

What does this paper contribute to the wider global clinical community?

- It provides an understanding of the complexities in the municipal healthcare setting that represent challenges to implementing SCPs.
- It points out the challenges of defining the appropriate amount of information to be included in a care plan.
- It sheds light on the fact that although SCPs can help nurses record more elements of nursing care, the amount of information provided depends on the preference of the individual nurse who is using the SCP.
- It points out the problematic issues of partially implementing a new tool for recordkeeping.

2 | BACKGROUND

2.1 | Nurse recordkeeping

Recordkeeping is well recognised as an important part of nursing (Keenan, Yakel, Tschannen, & Mandeville, 2008). EPRs are expected to provide "the right information at the right place at the right time" by facilitating the continuity of care across time and space (Meum, 2013). In an EPR, there are designated spaces for nurses to record information, and one of these is the nursing care plan.

Studies have evaluated the quality of nursing records in terms of content, completeness, structure and accuracy (De Groot, Triemstra, Paans, & Francke, 2019; Wang, Hailey, & Yu, 2011). Because their quality has repeatedly been found unsatisfactory (e.g. Gjevjon & Hellesø, 2010; Tuinman et al., 2017), several studies have tested interventions aimed at improving the quality of nursing records (e.g. Fossum, Ehnfors, Svensson, Hansen, & Ehrenberg, 2013; Mahler et al., 2007; Muller-Staub, Needham, Odenbreit, Lavin, & van Achterberg, 2007). Even though these interventions have shown quality improvement in nursing records, the reasons why these documentation flaws repeatedly appear is not well understood (Wang et al., 2011). Previous studies have found that recording in EPRs is viewed as a less urgent task, that healthcare workers experience competing interests and that the EPR system does not support their workflow (Vabo, Slettebø, & Fossum, 2016). The EPR system is just one of multiple information sources used in long-term care and does not always support nursing practice due to availability at point of care (Østensen, Bragstad, Hardiker, & Hellesø, 2019). These are all factors that can influence the quality of nursing records and their ability to facilitate the continuity of care.

2.2 | Structuring nursing records

EPR content, including nursing records, has been criticised for being unstructured (OECD, 2014). In addition, different healthcare providers use different EPR systems. This has resulted in fragmented information and created a barrier for information-sharing across settings (Ministry of Health & Care Services, 2012–2013). Standardising the systems' structure has been evaluated as a necessary solution. Structuring and coding the recorded information is expected to raise the information's quality, improve its overview, support evidence-based practices and facilitate information searches and report extractions for quality improvement and research (Kim, Coenen, & Hardiker, 2010; Mykkänen, Miettinen, & Saranto, 2016; Saranto et al., 2014). One way to structure the recorded information is to implement structured nursing language (SNL) in the EPR. Several studies have investigated the impact of SNL and found improvements regarding both the quality of the content and the completeness of the EPR (Park & Lee, 2015; Thoroddsen et al., 2011). Although SNL usage is expanding, it is still a great variation in European countries of how far the implementation process has come (Thoroddsen, Ehrenberg, Sermeus, & Saranto, 2012). In Norwegian municipal health care, this work is still in its infancy, with a gradual implementation of SCPs in EPRs. The term *SCP* has previously been used to describe both clinical pathways and care maps detailing phases of care for patients with a specific diagnosis or undergoing a specific procedure (Nussbaum et al., 2015). In this study, however, SCPs refer to nursing care plans in EPRs where the nursing diagnosis and its associated goals, resources, characteristics and interventions are predefined and can be selected according to applicability to the patient.

Using SCPs has been found to restrict recording, but simultaneously reduce redundant information and make the recording process both easier and quicker (Dahm & Wadensten, 2008; Jakobsson & Wann-Hansson, 2013; Jansson, Bahtsevani, Pilhammar-Andersson, & Forsberg, 2010; Svensson, Ohlsson, & Wann-Hansson, 2012). Previous research has found that whether SCPs are used and how they are used are dependent on organisational, professional and individual factors, such as the culture and traditions in the ward, the available time for recording, and personal opinions (Castellà-Creus, Delgado-Hito, Casanovas-Cuellar, Tàpia-Pérez, & Juvé-Udina, 2019; Conrad, Hanson, Hasenau, & Stocker-Schneider, 2012). None of these SCP studies were conducted in municipal health care, so the results are not directly transferrable to this setting. The SCPs at the time of this study were only pilot-tested and available for five nursing diagnoses: impaired ability to manage medication regime, risk of pressure ulcers, risk of malnutrition, risk of falls and risk of urinary tract infections. Before the SCPs are implemented in a large scale, then, it is important to identify how they are used and evaluated by nurses in this setting. This paper presents the results from a study exploring how nurses in municipal health care used ICNP-enabled SCPs as a new recording tool.

2.3 | Aim

The aim of this study was to explore how nurses use SCPs as a new recording tool in municipal health care, and to identify their thoughts and opinions.

3 | METHODS

3.1 | Design

As most previous SCP studies have been conducted in the hospital setting, little is known about how SCPs are received and used in municipal health care. Thus, we considered an exploratory design suitable for our study because of its ability to provide knowledge and provide understanding in an area where we have little current knowledge (Patton, 2015). In relation to the introduction of SCPs as a recording tool across three Norwegian municipalities, participant observations and semi-structured interviews were conducted with nurses who had access to the SCPs. In addition, a sample of the nursing care plans from patients' EPRs from all three municipalities was collected. These methods of data collection were chosen to generate knowledge on how the SCPs were used in practice in a new setting. This study complied with the Consolidated Criteria for Reporting Qualitative Research (see Appendix S1).

3.2 | Setting

The settings of this study were the three municipalities in Norway that had, at the time of the study implemented ICNP-enabled SCPs. In all municipalities, the implementation was partial because only five SCPs had been developed and pilot-tested at the time of this study. The study sites were limited to those where SCPs had been implemented, which included two nursing homes and two home healthcare districts. The SCPs offered predefined nursing diagnosis, goals, resources, characteristics and interventions. In traditional care plans, nurses formulate everything themselves, while in the SCPs, the only place for individual formulations was under the selected intervention, where the nurses could add an individualised description of what the intervention entailed.

In Norway, municipalities are responsible for the delivery of primary health and care services, including both home care services and nursing home care. In spite of the increased responsibility for patients with complex care needs, municipal health care employs a limited number of registered nurses (RNs) (Gautun & Syse, 2017). The largest group of healthcare workers in this setting are auxiliary nurses who represent up to 60% of the workforce, while approximately 30% of the healthcare workers are assistants without formal healthcare training (Romøren, Torjesen, & Landmark, 2011). Hence, there are many healthcare workers with low levels of education caring for patients.

3.3 | Participants

The participants in this study were recruited through convenience sampling within three Norwegian municipalities. We were granted access to the field through healthcare service leaders in the municipalities. The inclusion criteria were that RNs should hold 75%–100% positions and have been employed for over a year in the ward, which meant that they were familiar with the local EPR system. RNs that met our inclusion criteria received information about the study from a contact person, and 17 agreed to participate. The RNs ranged from 27–60 years in age (mean 40.9), and all but one RN were women. To protect the anonymity of the male participant, all nurses are described as female (she, her) in this article. The participants had used SCPs for a maximum of 8 months at the time of the study. Details regarding the working site of the participants are listed in Table 1. Working sites of participating RNs (n = 17).

3.4 | Data collection

The data were collected between May–October 2016 by the primary researcher (EØ, MSc) who is a female PhD candidate with 2 years of prior experience of conducting qualitative research. To collect data, the primary researcher approached the field by applying participant observations. First, RNs were observed during a normal dayshift, which lasted 7–8 hr, followed by an interview at the end of the shift. Knowledge gained through the observations was used to inform some of the questions the RNs were asked. After each interview, the primary researcher wrote down reflections and new elements to explore further in the following interviews. Data collection continued until all study sites were covered, and data saturation was reached (Patton, 2015). We also collected printouts of the care plans from the EPRs of volunteering patients (*n* = 20). The EPR content was collected to see examples of care plans where the SCPs were used and where they were not used. The care plans provided an understanding of how the SCPs differed from other care plans, how they were used, and provided a better understanding of the nurses' evaluations of the SCPs. The primary data source for the current article was the interview data.

3.4.1 | Interviews

The semi-structured interviews took place in a room close to the ward and lasted approximately 50 min. Because the SCPs represented a new way to record information electronically, elements of the Unified Theory of Acceptance and Use of Technology 2 (UTAUT2) were, together with previous empirical findings, used as a framework guiding some of the interview questions (Venkatesh, Thong, & Xu, 2012). UTAUT 2 brings together alternative theories of technology acceptance and unifies them into one theory. The theory includes seven key constructs that predict behavioural intention: (a) performance expectancy, (b) effort expectancy, (c) social influence, (d) facilitating conditions, that is the resources and support available to perform the behaviour, (e) hedonic motivation, that is the fun or pleasure one experiences from using the technology, (f) price value (for consumers—not applicable in this study) and (g) habit. The users' age, gender and experience function as moderators (Venkatesh et al., 2012). According to our understanding of UTAUT2, whether and how nurses use SCPs were influenced by how they view the benefit and purpose of using them, the training and support they have received to change their habits, and their personal experiences in using them. In the interview guide, UTAUT2-guided questions included "*Can you tell me about what training you have received regarding SCP?*", "*What are your experiences from using SCP?*" and "*How would you evaluate the usefulness of SCP?*" The interview guide's themes covered topics regarding care plans in general and SCPs in particular. We used the interview guide as a reminder of topics to be discussed, but it neither bound nor structured the interviews. As new issues were discovered through the observations and interviews, the interview guide was dynamic and was continually developed to explore these emerging issues further. During the interviews, the primary researcher asked open-ended questions, listened actively to the participant, made notes of issues to explore further and asked follow-up questions to go deeper into the participants' responses, as described by Patton (2015).

3.4.2 | Patient records

We collected data from the EPRs of 20 patients without cognitive impairments who were living in nursing homes or receiving home health care. The nurses in charge of the patients informed them about the study and asked for their consent to talk to the researcher about participation in the study. If the patient consented, the researcher then informed them about the study both orally and in writing. Twenty patients gave their oral and written consent to participate in the study. The data collected from their EPRs consisted of their care plans from the last 30 days or as long as the patient had been receiving care if less

TABLE 1 Working sites of participating RNs (*n* = 17)

	RNs in short-term wards	RNs in intermediary wards	RNs in long-term wards	RNs in home health care	Total RNs
Municipality 1	2	3	0	0	5
Municipality 2	1	0	4	3	8
Municipality 3	1	0	2	1	4
Total	4	3	6	4	17

than 30 days. In total, we collected 319 pages of printouts from the EPRs. The patient records were read to gain a better understanding of how the SCPs were used, how they differed from the traditional care plans, and were used to look for examples of issues mentioned by the nurses, to better understand their comments.

3.5 | Ethical considerations

This study has been noted by the Norwegian Centre for Research Data, project number 46,503. The primary researcher signed a confidentiality form in all three municipalities visited. In accordance with the Declaration of Helsinki, the participants, both nurses and patients, were informed that participation was voluntary and that they could withdraw their consent at any time without any negative consequences. The participating RNs decided which patients could be asked to share data from their EPRs based on their knowledge of the patients' cognitive abilities. No cognitively impaired patients were included. All data were anonymised before analysis.

3.6 | Data analysis

A digital voice recorder was used to audiotape the interviews. The interviews were then transcribed verbatim using the software HyperTRANSCRIBE. First, the transcribed interview data were read as a whole by the Norwegian-speaking researchers (EØ, LKB, & RH). Second, the data relevant to the aim of this paper were extracted. The text was then subjected to a conventional content analysis as described by Hsieh and Shannon (2005). Even though the interview guide was theoretically driven by its influence from UTAUT2, the analysis was inductive, without predefined categories. In the analysis process, the first author read the text several times, and the parts of the text that corresponded with this study's aim were marked, condensed and coded. Similar codes were grouped together in categories, and discussed with the other authors, and together we developed the categories into the final themes; for an example, see Table 2. An iterative process was applied, which meant that we moved back and forth between the interview text and the analysis, making sure that the final themes were representative of the data (Patton, 2015). The EPR printouts were searched for examples of the issues that the nurses brought up in the interviews. This provided a further understanding of how the SCPs were used and how they differed from traditional care plans in content. Through our analysis and after a careful consideration of relevance and accuracy, we found two overarching themes, which are presented in the results section.

3.7 | Trustworthiness

We addressed several quality criteria for qualitative studies to ensure the trustworthiness of our results (Patton, 2015). As all members of the research team are healthcare personnel, and one (NH) has been active in ICNP's development, we were aware that both these issues influenced our preunderstanding of the municipal healthcare setting, the potential usefulness of ICNP, and subsequently how we interpret our data. However, in being aware that we in our preunderstanding may have had positive expectations of SCPs, we were also able to identify situations where our interpretations could have been influenced by this. To facilitate transparency and show how we interpreted our data, we have provided examples of the statements, codes, categories and themes in Table 2 and included quotes as examples in the presentation of our results. To further increase the legitimacy of our interpretation, three of the authors read through the data transcripts, and all four reflected on the interpretations and meaning of our results. These efforts together enhance the trustworthiness of the results we present.

4 | RESULTS

In this study, the nurses' descriptions of their experiences with SCPs were related to three overarching themes: “balancing between the old and the new care planning system,” “considering the usefulness of SCPs as a source of information” and “balancing between overview and detail.”

4.1 | Balancing between the old and the new care planning system

The first theme we identified was that the nurses had to balance between using the old care planning system and the new SCPs as a result of the latter's partial implementation. Using the SCPs required a new way of making care plans. Where the nurses previously had used narrative free text, the SCPs now allowed them to choose between preformulated problems, goals, resources, characteristics and interventions.

The participating nurses all had experience using SCPs, but to a varying and somewhat limited extent. They gave several reasons for this, such as that they forgot to use SCPs when applicable; insecurity on how to use SCPs; reluctance to change; that it was quicker to do it the old way; and not seeing a benefit in SCP use. Partial implementation meant that the nurses had the opportunity to make all care plans the old way, even in areas where they had SCPs available. Because most care plans were made the old way, it was easy to forget to use SCPs when one of the five nursing diagnoses was identified. As one of the nurses explained:

> I wish we had it in all areas. When it's only a few, it is easy to forget that you've got it [the SCP].
>
> (INT NO. 10)

Like this participant, nurses could have a positive attitude towards SCPs but still forget to use them because they were

TABLE 2 Examples of codes, categories and themes from the analysis

Transcribed interview text	Code	Category	Theme
"A reason that they [the SCPs] have not been used that much is that they are only available in five areas. Sometimes you are supposed to use them, other times not, so we tend to forget about them." (INT NO. 3)	Forget to use SCPs because there are so few of them	Partial implementation limits the experience	Balancing between the old and the new care planning system
"I have made some SCPs, but not that many. I absolutely have a potential for improvement when it comes to using them." (INT NO. 13)	Have not made many SCPs; could be better at using them	It takes extra effort to use SCPs	
"There is a lot of useful information and observations [in the SCP] that you maybe had not come up with yourself. That the auxiliary nurses can use." (INT NO. 4)	SCPs provide information useful for auxiliary nurses	SCPs are seen as a source of information	Considering the usefulness of SCPs as a source of information
"If you are newly educated, it is perhaps easier with the SCPs to see that 'okay, this is common.' With experience you have more knowledge on what is typical for a condition." (INT NO. 14)	SCPs give useful information for those with less experience	SCPs' usefulness is connected to experience	
"It is perhaps a bit complicated that there are so incredibly many points that you can tick off [in the SCPs]. Because there are so many things that can be relevant, but that perhaps do not have significance right here and now, you have to choose the most important in a way." (INT NO. 1)	Many relevant interventions in SCPs have to choose the most important	SCPs can become too comprehensive because there are many relevant interventions	Balancing between overview and detail
"In general, care plans can be very long. All the problems are identified. Some problems are real, daily problems, while others are just written there. If you open one of those, then perhaps you do not bother to read it all. The SCP can also become very long." (INT NO. 7)	Care plans, including SCPs, often become too long; then, they are not read	Too long care plans are not used in practice	

so few. Not all participants were able to pinpoint why they had not used SCPs as often as they could and explained the nonuse as unintentional. However, nonuse could also be intentional. Insecurity on how to use the SCPs properly raised the threshold for using them:

> These templates that we have started with, they are still a little new and a little unfamiliar to many. So, they are maybe not used that much yet.
>
> (INT NO. 1)

The nurses had received some initial training on how to use SCPs, but they still felt insecure. It was a challenge to change from using the old and well-known care planning system to using the unfamiliar SCPs. One super-user, trained to offer peer support in SCP use, explained how she experienced her co-workers' reluctance towards using the new care planning system:

> It's one of those things you feel that you are pulling alone. Because it is hard, especially if you have used the system for a long time and you are used to make your own care plans. It is not easy to readjust the whole unit to suddenly use a template instead.
>
> (INT NO. 5)

This nurse found it hard to motivate others to change their habits and start making care plans in a new way. A complicating factor was that the nurses themselves had not requested the implementation of SCPs. As one nurse explained:

> Earlier, we made the care plans ourselves. I think that worked better. [...] I was actually pretty satisfied with the care plans we had.
>
> (INT NO. 14)

Not considering the implementation of SCPs as necessary further affected how much they were used. The nurses struggled to see how using SCPs could be of benefit in their daily practice and were divided in their opinions and expectations of their usefulness. Regardless of their opinions, partial SCP implementation with the old and the new care plans functioning simultaneously led to limited SCP use.

4.2 | Considering the usefulness of SCPs as a source of information

It became apparent through our analysis that the nurses considered SCPs an information source. Whether they considered it beneficial to use SCPs was evaluated against the individual knowledge of the person making the care plan. The nurses saw the SCPs as an information source where they could find suggestions for appropriate interventions and how to formulate a care plan, which provided a learning possibility. As one nurse explained:

> I think that you learn something [from using the SCPs]. That you think in other directions, too.
>
> (INT NO. 9)

As this nurse pointed out, the suggestions in the SCPs also made the nurses think in new ways. It was mentioned that SCPs helped them make care plans with interventions that they otherwise would not have come up with themselves or that they would not have remembered. Even so, for some, the decision regarding whether to use SCPs was connected to whether they believed the information in the SCPs would be useful to them personally. This is illustrated in the following quote:

> I have considerable knowledge on this subject, and I think that what I know is just as good as what you can find in a standardized care plan. [...] Nevertheless, in other areas where my knowledge is lower, it could be that it is useful for me to use SCPs.
>
> (INT NO. 2)

The SCPs were regarded as useful when making a care plan regarding a subject that was unfamiliar or where the level of knowledge was low. In that regard, it was suggested that the information the SCPs provided was perhaps more useful for healthcare workers with a lower level of healthcare education or newly educated nurses with less experience:

> With the SCPs, you get alternatives so that it becomes easier for those who are not that used to making care plans.
>
> (INT NO. 13)

The participating nurses had years of experience from making care plans. When they used the SCPs, they had to search for the interventions they had already planned to put in the care plan when they assessed the patient. If they did not find an intervention that fit, they chose not to use the SCP. If they did find it, however, they agreed that SCPs could be useful. The following quote illustrates this:

> As long as you can find something that fits, I think it [the SCP] becomes concrete and useful.
>
> (INT NO. 11)

The nurses considered the preformulated interventions up against their own knowledge of what best fit the needs of the patient. If they conflicted, they trusted their individual knowledge.

4.3 | Balancing between overview and detail

When the nurses recorded notes in the EPR, they made several deliberations concerning, for instance, meeting legal requirements, considering different readers, and making sure that the information was accurate and understandable. This also applied to making care plans, where they struggled between providing the reader with enough information but not so much that it became difficult to get an overview of the patients' needs. One participant explained:

> There is often so much written in the care plan so that the real problem kind of drowns. I like it better when it is more precise.
>
> (INT NO. 12)

In addition to selecting what is most relevant, all the other underlying considerations behind the written words in a traditional care plan complicated the writing process. The nurses thus considered formulating one in writing as time-consuming and difficult. In this regard, the SCPs were identified as a useful tool:

> The interventions [in the SCPs] are well formulated, so when I know the patient I can just select what is relevant. [...] I use less time because I don't have to formulate the interventions myself.
>
> (INT NO. 8)

For some nurses, the SCPs represented a convenient way to make care plans by just selecting preformulated interventions. Others, however, were concerned that this opportunity to tick off relevant interventions from a list created care plans with too little information. They stressed that the interventions should be individualised to fit the patients' individual needs:

> I think it is wise to individualize because then you get to know exactly what applies to this patient. Because not everybody is standard. Not everybody fits with what is written there, then you can specify more accurately what applies to this patient.
>
> (INT NO. 15)

Several nurses agreed that even though an SCP can function as a recording support, a care plan made from prewritten words and sentences will become superficial and generic if not individualised. One nurse explained that a care plan that is not individualised is *"a care plan that is made just to be there [in the EPR] and not to be used actively in patient care"* (INT NO. 10). To understand the difference between the SCPs that were individualised and those that were not, we searched the patient records. There, we found several examples of care plans of both categories. To illustrate, Table 3 provides an example of a care plan that has not been individualised.

From the care plan in Table 3, we can see that the person who made this care plan chose five interventions from the SCP. Several of these interventions, such as "pressure ulcer prevention," do not provide enough information to guide care because a description of how to perform the intervention is lacking. To create such a description, the user has to use her own words and her own knowledge of, for instance, how to prevent pressure ulcers. To illustrate the difference, Table 4 is an example of a care plan where the SCP is individualised.

As we can see in Table 4, the SCP's individualisation is an explanation of what the person who made the care plan understands about, for example, what "pressure ulcer prevention" entails.

An issue the nurses were concerned about was how much information the care plan should contain. As we showed in Table 3, SCPs could provide an opportunity to make care plans with too little information, but the nurses also frequently mentioned the opposite. The list of possible resources, characteristics and interventions in the SCP were seen as suggestions, and the nurses were tempted to tick off many of these when they made a care plan. However, several nurses explained that SCPs contributed to very long and comprehensive care plans. They experienced that some of the elements that they ticked off in the SCP were redundant and could block the overview of what was important:

> A care plan should give enough information, but it should also be precise and as short as possible. The content of the care plan should as far as possible be updated and sifted for unnecessary information. [...] The SCP can become long. It is not that the content is not applicable, but the really important parts disappear a little.
>
> (INT NO. 13)

Like the nurse in this quote, many struggled to balance the amount of information in the care plan. A complicating factor was that the care plan users were healthcare workers with different information needs. Healthcare workers with different professions worked together with assistants with no education in health care, which meant that the individuals in the group using the care plans had a profoundly different basis for the understanding of a health problem. Hence, it was hard to reach an agreement on the level of detail needed in a care plan.

TABLE 3 Nonindividualised SCP from EPR NO. 11

Problem:	Risk of pressure ulcers
Goal:	No pressure ulcers
Interventions:	Pressure ulcer prevention Monitoring blood pressure* Care of skin Providing pressure-relieving mattress Assessing nutritional status

*This intervention is not a part of this SCP today.

5 | DISCUSSION

The three main themes characterising how nurses used the SCPs were "balancing between the old and the new care planning system," "considering the usefulness of SCPs as a source of information" and "balancing between overview and detail." From these themes, we identified three main challenges to accepting and using SCPs as a new recording tool, namely partial implementation, individual consideration of usefulness and lack of consensus regarding use.

Partial implementation was a result of the development process, where only five SCPs were fully developed and pilot-tested at the time of the study. As a result, the nurses had to switch between the new SCP and traditional care plans and did not use the five fully implemented SCPs as much as they could have. This could be understood in light of habit, which UTAUT2 presents as a key condition for use. Here, habit is seen as an automatic function of doing what one is used to do. To change a habit, one needs a certain amount of repeated experience using the technology (Venkatesh et al., 2012). The participants in this study had limited experience using SCPs, and even though the nonuse was unintentional, the partial implementation made it challenging to form a new habit of using SCPs. Additionally, deliberate SCP nonuse could be understood in light of the implementation process because the nurses had received a limited amount of training and not taken part in the decision to implement SCPs in their workplace. These are factors likely to affect the acceptance and use of a new technology (Strudwick, 2015).

A well-known natural response to an innovation requiring a change of behaviour, such as the implementation of a new care planning system, is resistance, especially if people interpret the change as being imposed on them (André et al., 2008). Therefore, it is understandable that this study's participants were sceptical, preferred the well-known and searched for a benefit of using the SCPs. Studies have suggested that prior to the implementation of a new technology, it is important to examine organisational readiness for change and address this first. If organisational readiness is low, the users have more of an "ought to" than a "want to" motive to use the new technology, which can create a barrier to use (Mogensen, 2019). In this specific study, partial implementation provided an easy opportunity for nonuse for those who were reluctant to use SCPs.

A second challenge identified was that the nurses' decision of whether to use the SCPs or not often came as a result of an individual consideration of how SCPs could benefit them personally. Not seeing a personal benefit is known to make it harder to accept new technology, such as SCPs, and could thus explain deliberate nonuse (Strudwick, 2015). In UTAUT2, *performance expectancy* is a key predictor of intention to use. This has to do with the users' perceived benefits of using the technology (Venkatesh et al., 2012). For their behaviour to change, that is for the nurses to use SCPs, they must be motivated and see use as more beneficial to them than nonuse. In the same way that negative experiences create barriers to use, positive experiences can facilitate use (André et al., 2008). Therefore, the training and support an individual receives in the implementation process is of great importance for the adoption and use of new technology (Kruse, Mileski, Alaytsev, Carol, & Williams, 2015). In this

TABLE 4 Individualised SCP from EPR NO. 17

Problem:	*Risk of pressure ulcers* Because of unilateral paresis, he does not turn in his sleep. He is also incontinent of urine, which means that he periodically is laying on moist skin
Goal:	*No pressure ulcers*
Interventions:	*Care of skin* After help with personal hygiene, one should use a barrier ointment on the skin around the genitals *Pressure ulcer prevention* Use a pressure-relieving mattress in bed, a pressure-distributing cushion in wheelchair and a uridom all day. To prevent pressure ulcers, we must avoid using a sliding cushion because he should sit directly on the pressure-distributing cushion, as he has a tendency to become red on his bottom

study, the participants explained that the initial training they received was limited to an initial course one evening. A few did, however, have a super-user in their department who they could ask for help.

In spite of limited experience, the participants identified that SCPs could function as a reminder of appropriate interventions, in addition to an information source for those with a lower level of healthcare education or experience. The main difference between SCPs and traditional care plans is that in SCPs, the user chooses from a selection of preformulated elements. These elements can raise awareness of the relationship between a problem and evidence-based interventions and thereby be educational. Whether or not the nurses regarded SCPs as a useful tool when making a care plan was influenced by their degree of individual knowledge on the subject. SCPs were regarded as most useful when the degree of knowledge was lower. One aim of structuring nursing records is to assist the development of evidence-based practice (Johnson et al., 2018). In Norwegian municipal health care, nurses are a minority in the workforce (Gautun & Syse, 2017). Hence, there are many healthcare workers with a lower level of formal competence who read and write what is commonly referred to as *nursing* records. Because this has been shown to negatively affect the content and coherence of nursing records in long-term care facilities (Paans, Nieweg, van der Schans, & Sermeus, 2011; Tuinman et al., 2017), recording tools that can contribute to knowledge among the staff are most useful. Even though SCPs raised awareness of appropriate interventions, they did not describe the interventions in further detail. It was thus up to the individual healthcare workers to seek additional information on what the intervention entailed, and the intervention's individualised description would necessarily reflect the knowledge of the person who made the care plan. Hence, SCPs alone cannot be expected to raise healthcare workers' competence or ensure evidence-based practice.

The third challenge we identified was the lack of consensus regarding how SCPs should be used. The nurses disagreed on the detail required in a care plan and struggled to find a balance between providing enough details without clouding the overview. This affected both the nurses' views on whether using SCPs would benefit them (performance expectancy) and the degree to which they perceived whether or not using SCPs would be important to others (social influence). These are both described as important issues in predicting intention to use and actual use in UTAUT2 (Venkatesh et al., 2012). While some participants ticked off all relevant interventions, individualised them and ended up with comprehensive care plans, others narrowed down the interventions to the most essential. For yet another group, an SCP functioned as a recording aid, where they could quickly make care plans just by ticking off relevant interventions. The care plans' function and use in daily practice influenced the amount of detail the participants assessed as appropriate.

The lack of agreement on the comprehensiveness and detail needed in the care plans could have several explanations. One possible explanation is the multiple functions of the care plan. On the one hand, a care plan functions as a legal document describing what care the patient receives (Ministry of Health & Care Services, 2001). On the other hand, it is a tool facilitating continuity of care in providing a guide for the daily practices of nurses and other healthcare workers (Hayrinen, Saranto, & Nykanen, 2008). These two functions are not easily combined. From a legal point of view, all interventions should be documented; otherwise, it is hard to prove that they have been performed, and the general assumption is that they have not been done (Kärkkäinen & Eriksson, 2005). This implies that the care plan should be comprehensive, listing all relevant interventions. Moreover, in line with other studies, our study's results show that for a care plan to function as a care guide, it needs to be specific, that is individualised (Castellà-Creus et al., 2019). However, we also found that the nurses wanted a care plan to provide an overview of what was most relevant. Overview has also previously been described as something healthcare workers consider an important EPR feature (Mogensen, 2019). Hence, a comprehensive care plan describing all interventions for legal purposes does not fit well with nurses' needs in practice. Adding to this complexity, nurses have to consider individual differences in information needs and how the care plan is being used in practice.

The individual information needs of healthcare workers differ with experience, formal health education and familiarity with a given patient (Bing-Jonsson et al., 2016; Østensen et al., 2019). It is therefore difficult to decide what level of detail to put into a care plan. A prerequisite for dedicating time and effort to making detailed care plans is that they are read and used in practice. Due to familiarity with patients and other information sources in long-term care, a care plan is not always the preferred source of information (Østensen et al., 2019). This can explain why some nurses thought it unnecessary to individualise care plans and rather treated them as just a legal formality. This finding is similar to what a recent study described as a "lack of interest in individualisation" (Castellà-Creus et al., 2019). We argue that this lack of interest may be connected to the actual use of care plans in practice and the perceived usefulness of individualising them. Moreover, other studies have found that when it comes to decision-making, nurses prioritise their own experience over the care plans' contents

(Jakobsson & Wann-Hansson, 2013; Svensson et al., 2012). This could also affect the nurses' evaluations of how much information they should put in a care plan. A recent systematic review of other systematic reviews described that there is general uncertainty in nursing practice as to what criteria nursing documentation has to meet to be of high quality (De Groot et al., 2019). This could imply that there is a need for a discussion in nursing on how nursing care plans should be used and what information to include in them. If such decisions are left to individual healthcare workers, the large discrepancies that we see today will most likely continue.

6 | CONCLUSION

This study found that nurses' SCP use was limited due to partial implementation. Partial implementation contributed to both deliberate and unintentional nonuse. When deciding whether to use SCPs, the nurses first considered personal usefulness. Not identifying usefulness often led to deliberate SCP nonuse. In addition, this study identified a lack of consensus among the nurses on how to use SCPs and the detail required in a care plan. Lack of consensus was related to individual preferences, different information needs and different care plan use in general. A possible complicating factor related to the amount of detail in a care plan is its different functions as both a legal document requiring comprehensive recording and a working tool required to provide a patient overview. Together, this study's findings represent possible challenges to the use of SCPs as a new recording tool in municipal health care.

7 | LIMITATIONS

We acknowledge that the relatively low number of participants, patient records and municipalities limits our findings' transferability. However, the design, research method, data collection and analysis are described in detail to promote transparency and give the reader the opportunity to consider our results' transferability. Nurses are also a minority among healthcare workers in the municipal healthcare setting; thus, we acknowledge that we could have gained an even broader understanding of the use of ICNP-enabled SCPs by including other groups of healthcare workers in this study. ICNP was, however, created for the nursing profession, so we chose only to include nurses in our study. All interpretations made in the analysis will in some way reflect the researchers' perspectives, and we acknowledge that the translation of quotes from Norwegian to English may have been influenced by our interpretations.

8 | RELEVANCE TO CLINICAL PRACTICE

The standardisation of nurses' recording systems has previously been studied in the hospital setting. SCPs are recommended to improve nursing documentation by facilitating recording for both standardised and individualised care, but previously, little research has focused on how they are used by nurses in the municipal healthcare setting. This study gives insight into the complexity of implementing new recording tools. The results show that partial implementation and a lack of consensus regarding the use and content of a care plan are challenges to the use of SCPs as a new recording tool. This knowledge is of relevance for SCPs' further development and implementation in this setting.

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CONFLICT OF INTEREST

None of the authors has any conflict of interest in this study.

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SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section.

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Paper III

ORIGINAL PAPER

Title: Facilitating the implementation of standardized care plans in municipal healthcare

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Facilitating the implementation of standardized care plans in municipal healthcare

Abstract

Standardized care plans have the potential to enhance the quality of nursing records in terms of content and completeness, thereby better supporting workflow, easing the documentation process, facilitating continuity of care, and permitting systematic data gathering to build evidence from practice. Despite these potential benefits, there may be challenges associated with the successful adoption and use of standardized care plans in municipal healthcare information practices. Using a participatory approach, two workshops were conducted with nurses and nursing leaders (n=11) in two Norwegian municipalities, with the objective of identifying success criteria for the adoption and integration of standardized care plans into practice. Three themes were found to describe the identified success criteria: 1) *"Facilitating system level support for nurses' workflow",* 2) *"Engaged individuals creating a culture for using standardized care plans*", and 3) *"Developing system level safety nets."* The findings suggest success criteria that could be useful to address to facilitate the integration of standardized care plans in municipal healthcare information practice and provide useful knowledge for those working with implementation and further development of standardized care plans.

Keywords: Care planning system; Electronic health record; Standardized nursing terminology; Patient care planning

Introduction and background

Patient safety and continuity of care are dependent upon access to accurate and timely patient information. Although nurses derive information from several sources [1], the electronic health record (EHR) is the primary, and legally regulated information source [2]. Unstructured EHR content, in combination with poor interoperability between different EHR systems, has resulted in fragmented information, which represents a threat to patient safety and continuity of care [3, 4]. In several European countries there has been an increased complexity of tasks and increased responsibilities for nurses in municipal healthcare [5], which has further increased the need for complete patient records in information systems that support nurses' workflow [6]. Structuring the EHR using an integrated standardized nursing terminology has the potential to facilitate continuity of care, improve the quality of EHR content, support workflow, facilitate data reuse for building evidence from practice, and create linkages between nursing care and patient outcomes [4, 7, 8]. However, identified challenges represent barriers to integration of standardized structures in nurses´ information practice.

Across Europe, most countries have implemented some form of EHR system [9], which has facilitated implementation and use of nursing terminologies [10, 11]. Despite these facilitating conditions and the well-documented possible benefits, the adoption of standardized nursing terminologies internationally has been rather sporadic [12-15]. Research has shown that there exist several challenges at individual, organizational and professional levels that represent barriers to the use of standardized documentation structures to become embedded into everyday practice. Individual challenges include a general preference for narrative records [16, 17], resistance to change [18], and low perceived usefulness [19, 20]. On the professional level, challenges include unfamiliarity with the standardized terminology [20], struggles regarding the standard nursing statements not covering diverse patient conditions [21], and a lack of consensus on how standardized structures should be used [19]. Organizational challenges include lack of training [22], lack of managerial support [4, 23], multiple information systems in use [1], and information systems not supporting nurses' workflow [4, 13]. While they may describe the benefits and challenges associated with the implementation of structuring nursing records, few studies provide possible practical solutions to allow the structures to become an integrated part of nurses' information practice.

Implementing standardized care plans (SCPs) is a way to standardize the documentation structure, and thereby increase the quality of the record content [4, 24]. In this study the term SCP refers to structured nursing care plans that use terms and concepts from a nursing terminology in the formulation of nursing diagnoses and their associated goals, resources, characteristics, interventions and outcome. The SCPs are evidence based, meaning that the interventions associated with a nursing diagnosis are based on empirical evidence and expert knowledge, and thereby they provide a means to disseminate research evidence into practice [25]. Furthermore, SCPs facilitate the use of uniform and unambiguous language, which can reduce the risk of misinterpretation; and may be coded to facilitate information exchange and data aggregation for research and evaluation purposes [10, 25].The SCPs to which this study refer were constructed by using the International Classification for Nursing Practice (ICNP™) to formulate all elements of the nursing process, except for patient outcome. The ICNP is a standardized nursing terminology developed by the International Council of Nurses to support nurses in describing and reporting their practice [26].

Studies on patient records in municipal healthcare have largely been concerned with aspects of quality, completeness and comprehensiveness, and despite some interventions showing positive results, the overall quality of the records remains variable [27-30]. As a means to enhance the quality of the records, SCPs were implemented in Norwegian municipal healthcare, but there have been issues with integrating them into clinical practice [19].

The integration of technologies in healthcare practices has been viewed as a sociotechnical issue, where the investment of both individuals and groups of people are as important to success as the technology in itself, and where the interaction between people and technology is crucial [31]. Several theoretical frameworks have been developed to increase the understanding of successful technology implementation, e.g. the Unified Theory of Acceptance and Use of Technology [32]. Such theories focus largely on the implementation process, attributes of the technology, and other factors that increase or decrease the probability of acceptance and use. Other theories have also addressed problems with technology implementations related to the difficulty of reaching normalization, meaning that the technology become an embedded part of the practice [33], and difficulties of reaching widespread use and sustainability over time [31]. Together, these theories inform us that technology implementation is a complex process requiring a substantial amount of work and engagement from designers, developers, policy makers, managers and end-users.

In this study we engaged the end-users, nurses, and the nursing leaders in municipalities with over three years of access to SCPs, with the aim of identifying success criteria for the adoption and integration of SCPs into practice.

Methods

Design

This exploratory, qualitative study took a participatory approach to data collection. The participatory approach is collaborative in nature and directly involves participants with the opportunity to engage in changes to their own practice [34, 35]. This approach was taken to enhance the acceptability and transferability of any identified solutions. Workshops were underpinned with a generative research design, in which potential end users engage in creative thinking and the generation of ideas that influence the development of a product [36].

Setting and participants

Norway is divided in 356 municipalities with great variations in both size and inhabitants. The municipalities are responsible for the delivery of nursing home care and home care services. During the last decade the municipalities have assumed an increased responsibility for patients with chronic conditions requiring complex care [37], but the proportion of registered nurses among healthcare workers in this sector has remained low [38]. This study was conducted in two large Norwegian municipalities. Both municipalities had SCPs implemented in their EHR-system, and had previously engaged in identifying challenges regarding use of SCPs [19]. In both municipalities, all healthcare workers providing nursing care, e.g. registered nurses, auxiliary nurses and nursing assistants, were expected to read and record progress notes in the care plan. Constructing the care plans was however a task that in some settings was restricted to registered nurses, while in other settings, it was a task for auxiliary nurses as well.

The participants in this study were recruited through purposeful sampling of nurses and nursing leaders, to ensure a diversity of opinions and perspectives. We recruited three nurses and three nursing leaders for each workshop (six has been identified as an 'ideal' number of participants in a workshop [36]). Due to acute illness, one workshop was limited to four participants. An additional facilitator also participated in one workshop. The workshops comprised a total of nine women and two men. All participants were registered nurses, and five of these held a leader position.

Data collection

The workshops took place in May and June 2019, and lasted two hours each due to a careful consideration of available resources, and eligible persons' motivation to participate. The topics for discussion were based on findings from two previous studies (Table 1) [1, 19]. Each workshop consisted of three phases: 1) introduction; 2) group-work; and 3) discussion [36]. In the introduction phase, the agenda was set, and the participants received a presentation of previous findings [1, 19], followed by a roundtable discussion of these. In the group-work phase the participants were divided in two smaller groups mixing nurses and nursing leaders. The groups were given 20-30 minutes to discuss the predetermined topics regarding SCPs and were asked to write down their groups' answers on sticky notes. To avoid undue influence, the researchers were not present in this phase. In the discussion phase the two groups presented their answers to each other for general discussion. The researchers were present for the discussions and asked questions to stimulate further elaboration and to clarify understanding. All discussions both in groups and plenary were audiotaped and transcribed verbatim, which together with the sticky notes made up the data generated from the workshops. Participants respectfully declined the opportunity for further discussion due to other obligations and a general agreement that they had little more to contribute.

Table 1: Topics for discussion in workshops (translated from Norwegian)

1. Discuss your thoughts, opinions and experiences with standardized care plans? (An "Ice-breaker" for the group-work).
2. Discuss additional functionality that should be included in SCPs that you lack today to get accurate and sufficient information to guide your care.
3. Nurses in the municipalities use many information sources in addition to the SCP in the EPR-system. Discuss what and how this information could be integrated into the EPR-system in general and SCP in particular.
4. Suggestions for the SCPs to become the preferred way to handle information.

Ethical considerations

The study was approved by the Norwegian Centre for Research Data - project number 46503. Participation was voluntary, and participants gave their written informed consent to participate in the study. The participants were anonymized in the transcripts and in the presentation of the findings.

Analysis

Data was analyzed using a qualitative content analysis [39, 40]. The transcripts were read several times, coded using the software NVivo 12, and categorized in an inductive manner. Data from the smaller group discussions were used to get more background information on the issues discussed in the larger groups. The analysis was an iterative process where we constantly went back to the original transcribed text to make sure that the themes were representative for the data collected [41]. The first part of the analysis was conducted by the Norwegian speaking authors, as all transcripts were in Norwegian. The quotes, codes and categories that were considered relevant to the aim of the study, were then translated to English by the Norwegian speaking authors. The final themes were developed through a continuous discussion between all the authors. Table 2 provides an example of the transcribed text, codes and themes from the analysis.

Table 2: Example of transcribed text, codes and themes from the analysis

Quote from the transcribed text	Code	Theme
"I know that there is a lot of oral communication in my department, but it is because the ICT works the way it works. Or doesn't work." (Leader no. 5)	Problems with EPR lead to oral communication	Facilitating system level support for nurses' workflow
"Previously we used to have a paper with the names of the patients, and some short information about them. Small, simple messages that gave you a quick overview. Instead, you now have to use time to log on to the EPR every time you are going to a new patient." (Leader no. 3)	Complicated to get overview in the EPR	
"Due to time pressure, there are several healthcare workers who would prefer to have a paper list with short information about the patients instead of having to go to the care plan." (Nurse no. 2)	Using the care plan is time-consuming	
"We have a standard text on the "work plan" saying that "as responsible for this patient you also have to document and read the care plan". The text was written to force auxiliary nurses and nursing assistants to read the care plan." (Nurse No. 5)	Putting effort into making the staff use SCPs	Engaged individuals creating a culture for using SCPs
"When we started using the "work plan" we just removed all message books, reminding notes and lists. (…) They are unnecessary and shall not be used" (Leader No. 4)	A leadership strategy to remove the element of choice	

"If I do not talk to the others, I do not get any input either (…). If the department had SCPs as a topic for discussion in different fora, we could perhaps achieve a common understanding." (Leader No. 2)	Arranging for discussions of SCP use	
"We don't have anybody that is in control of this [the SCPs] anymore (…) We have not received any new plans in a long time. (…) Nobody knows when they come or where they come from." (Nurse No. 5)	Lost key individual for SCPs	Developing system level safety nets
"We have no one that we can give feed-back to [regarding the SCPs]." (Leader No 6)	Have no-one to contact	
"I think that they should teach ICNP in nursing schools. Because if there is no choice, you get good at using it. But if there are too many choices, or it is accepted that you start formulating interventions yourself, then you don't get anywhere" (Leader No. 5)	Teaching ICNP in nursing education increases familiarity and use	

Results

Despite the focus of the workshops being on identifying success criteria, the participants were still very much concerned about challenges. The challenges they discussed in the smaller groups were brought up in the large groups where they were encouraged to reflect beyond these challenges and identify what it takes to overcome them. The analysis resulted in three themes describing different success criteria for the adoption and integration of SCPs in municipal healthcare information practices. These are expounded below with selected supporting examples drawn from the data.

Theme 1: Facilitating system level support for nurses' workflow

The first success criteria identified was to have an EHR system that supported nurses' workflow in terms of accessibility when they needed to record or read information, and usability of the way information was presented in the system. While there were some isolated positive findings, like one department that was in the middle of installing new computers, these were in the minority and were not useful in formulating success criteria – the focus of this study.

Some participants reported that limited technological facilitation impaired their possibilities for optimal use of the EHR system, and consequently the SCPs. They reported not having access to the EHR-system when they needed information or wanted to record an event. Reasons included no computers by the bedside, few computers at the nursing station, and low capacity for multiple users of the system simultaneously:

> *"We do not even have a nurses' station. We have two laptops, and they are a bit slow. So to make everyone log in [to the EHR] and read – it is not that easy."* (Leader no. 3)
>
> *"If you are dumb enough to try around two thirty – three o'clock it just crashes. The computer just hangs and it takes forever."* (Nurse no. 3)

As the quotes illustrate, the problem with limited access to the EHR made it difficult for some leaders to require their employees to use the EHR for information gathering, and low system capacity impaired the nurses' possibilities for accessing the EHR system when they needed to. While some waited until they had access to do their reading and writing, for others, limited access resulted in substitutional use of immediate available tools such as information on paper and oral communication. The participants therefore suggested that by ensuring adequate availability of, and accessibility to technological equipment it would be easier for leaders to require an active use of the EHR-system, and for nurses to fit reading and recording in the EHR into their work schedule.

System level facilitation also included assuring that the construction and user-interface of the EHR-system and the SCPs supported nurses' workflow. The nurses' reported that they experienced time-constraints and therefore, looked for a quick way to orientate themselves to the patients' situation. The SCPs were in their current form hard to use for this purpose, as they were detailed, comprehensive and required several steps to find exact information. The headings of the interventions in the SCPs were wide and general, as opposed to the more specific headings of interventions in traditional care plans (see Table 3 for an example).

Table 3: An example of the difference between traditional care plans and SCPs

Traditional care plan	**SCP**
Nursing diagnosis: Reduced appetite	Nursing diagnosis: Risk of malnutrition
Goal: Maintain current weight	Goal: Weight within normal limits
	Resources:
	- Able to feed self
	- Able to swallow
	- Effective sense of taste
	- Effective memory
Interventions:	Interventions:
- Weight control x1/week	- Weighing patient
- Enrich food with butter/cream/oil/sugar	- Assessing dietary need
- Add 2 spoons of maltodextrin carbohydrate powder (= 40 kcal) to drinking fluids	- Administering nutritional supplement
- Administer intravenous fluids as ordinated	- Assessing fluid intake

TABLE 3 LEGEND: Table 3 provides a comparison of a traditional care plan versus an SCP to illustrate the difference in specificity of interventions between the two.

Having to click on the specific intervention to see if it had an individualized description connected to it created an extra step to find the information:

> *"Isn't it better to have a more specific intervention? (...) That you save some time by seeing the intervention right away."* (Nurse No. 4)

The participants suggested several ways to enhance overview in the SCPs, such as alerts when interventions were individualized, reducing the amount of visible text, and removing *resources* and *characteristics* from the SCPs. As long as the SCPs were unchanged, some used other information sources to achieve an overview:

> *"We have the IPLOS[1] evaluation that we have to do, and all the areas of how the patient is functioning are described there. If nothing is written about an area, you know that there is nothing special there. The IPLOS gives a good overview of the patient, so if I had a new patient, I would look at that first."* (Leader No 6)

As this quote shows, short and concise information that connects smaller elements of information into a more complete picture of the patient can provide the overview that nurses need. It was also suggested that the language used in the SCPs could be made easier to facilitate understanding and use:

> *"It should be a tool that I can use, and if I don't understand it (the language in SCPs), it becomes difficult. Not that I don't understand it, but we have many staff members without an education in healthcare. They are also trained in SCPs and are expected to use them."* (Nurse No. 5)

By addressing such usability issues like overview and language in the SCPs, it was believed that one could facilitate increased use of SCPs as a preferred information source, also when nurses experience time constraints. By ensuring accessibility and usability of the SCPs, the system can support nurses' workflow, which in turn can make it easier for them to use SCPs in daily practice.

Theme 2: Engaged individuals creating a culture for using SCPs

The participants expressed different attitudes towards SCPs and reported large variations in use. Engaged individuals characterized the settings where SCPs were reported to be routinely used. These individuals could be either nurses or leaders, or preferably both. The leadership strategy applied seemed important for the recording practice in the department. One approach

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[1] IPLOS is an abbreviation for individual based statistics of care services (NO: Individbasert PLeie- og OmsorgsStatistikk). Municipalities are required to report monthly evaluations of all patients according to these scores; the scores are saved in the EPR-system.

was to take a proactive stance where it was expected that the staff used SCPs whenever possible, and where it was unacceptable to choose the old care planning system instead:

> *"The way we have worked to get it into our department is to get rid of the old. To be a little tough about it. If we have too many systems, we easily fall back to the old and familiar. This way you force it through. It is a little bit like "the hard way", but I believe in it."* (Leader No. 2)

An alternative approach was to not really interfere with the recording practice of the staff. The leaders themselves did not have very much knowledge of the SCPs, despite having them available in their EHR system. One leader explained why some of the staff had limited knowledge of SCPs and therefore were unsure about using them:

> "*We did have a nurse who was like our guru in SCPs, but she has retired. Now we have got some new nurses who needs training. And I would like some training myself. So, we have talked about maybe booking a meeting."* (Leader No. 1)

The leader in this quote referred to a former employee who had extensive knowledge of SCPs and was engaged in training others in the department. Some of the nurses participating in the workshops also reported to have taken a similar responsibility for motivating and helping their peers in using SCPs:

> *"It is difficult to get everybody on board when something new has come. Even small, easy things become difficult if you have never used them before. So, I try to make them see that it is an aid instead of an obstacle. To make everybody see that it is possible."* (Nurse No. 4)

The engagement of nurses like her, seemed to affect the others in the department positively. Such engagement could lead to a change in the recording culture in the department:

> *"Some people seem like they are very competent in using these plans [the SCPs], and they manage to bring an attitude [to the department], that it becomes a culture for using the SCPs." (Nurse No. 3)*

Both proactive leaders and engaged nurses affected the recording culture in the department. However, to fully change the culture in a department the participants believed collaboration to be a key to success. Collaboration between co-workers was believed to be a means for improving staff confidence in the use of SCPs and facilitate for a greater shared understanding of how to use them:

> *"We discussed that it could be helpful, to start with, to be a team and discuss. To be more people, even if it is with the doctor or a colleague. That you are not sitting alone with it [making care plans]."* (Leader No. 2)

Confidence and understanding were believed to be important issues that could affect the possibilities for SCPs to become embedded in information practice. To facilitate collaboration, participants explained that new arenas needed to be created for this purpose, like teams making care plans together, or meetings where selected care plans were discussed. To arrange for such collaborative arenas was considered a leadership responsibility. Hence, the participants believed that success criteria for increased SCP use could be: a) to have engaged leaders with clear expectations of SCP use in their department who arranged for collaborative arenas for SCP use, and b) to have nurses who were engaged and knowledgeable of SCPs to support and motivate their peers. Together, engaged individuals have the possibility to affect the recording culture in the workplace, and thereby facilitate the adoption and integration of SCPs.

Theme 3: Developing system level safety nets

Some participants noted that they had lost internal support (engaged individuals) and/or external support after the initial implementation period was over, which had resulted in reduced use of SCPs. As changes in staffing occurs naturally in all healthcare settings, the participants pointed towards vulnerability in the implementation of the system. They explained that changes in staffing, both internally and externally had led to a lack of individuals to drive the implementation and training further:

> *"It used to be a colleague of ours in charge of this (the SCPs), but she is not with us anymore. (…) It would have been nice to have someone on the house to contact."* (Leader No. 4)

The consequence of losing key individuals was that both nurses and leaders who were hired after the implementation of SCPs risked receiving limited or no training in using them. They expressed insecurity of how to use the SCPs:

> *"I don't know well enough how to use the SCPs. It was shown to me for like seven and a half minute and then… go ahead. It was too much to deal with, so I have made care plans the old way instead."* (Nurse No. 3)

Even those who were comfortable in using SCPs expressed insecurity regarding who to contact for SCP-related issues. They did not know who developed the SCPs, or how new and updated SCPs became a part of their own EHR-system:

> *"We do not make the new plans, so they come from outside somewhere. But who they are… well…"* (Leader No. 6)

Uncertainty about who was in charge of driving the SCPs further was shared by many of the participants. This led to discontinuity in training and use of SCPs, which was an obstacle for SCPs to become routinely embedded in their information practice. This speaks to the need for a safety net on a system level, such as continued access to external training and support, to ensure that any loss of individuals does not lead to a termination of SCP-use. This could facilitate the sustained and wide-spread use of SCPs.

Discussion

The aim of this study was to identify success criteria for the adoption and integration of SCPs into practice. The findings of this study suggest three success criteria that can help SCPs become an integrated part of nurses' information practice - the practice of how information is produced, organized, disseminated, distributed, reproduced and circulated within the setting [42]. These success criteria include system level facilitation, engaged individuals in the setting, and the development of safety nets to reduce the vulnerability of being dependent on single individuals to provide support and training.

Regarding system level facilitation, our results emphasize that SCP implementation not only involves the training of nurses to use it correctly, but also a supporting technical infrastructure that enables its use. Although it is widely known that such facilitating conditions are pivotal for technology acceptance [32], this continues to be an overlooked or underestimated criterion for a successful technology implementation. As municipal healthcare managers today struggle with low budgets [43], policy makers wanting to implement new technology in this setting should allocate more resources to facilitate a technological upgrade. As things stand, slow and outdated technology may be impeding the possibility of SCPs to function as a tailored decision support system at the point of care.

Another factor identified as important for the use of SCPs is to address their functionality. The participants felt that the way that SCPs were designed and presented in the EHR did not support their workflow. Nurses are often subjected to time constraints [44], which means that they need to quickly get an overview of the patients and their needs. This has been described in the literature for decades [45], yet vendors of EHR systems have often failed to provide this feature. When it is complicated and time-consuming to find important information in the EHR, nurses tend to use other information sources [1]. Thus, by addressing functionalities to enhance an overview in the SCPs, one potentially facilitates increased use. Greenhalgh [31] refers to this as penetration, meaning that the degree to which the technology integrates with the end-users' workflow is a predictor for adoption and sustained use. Usability is a well-known predictor for use of a technology [32]; and low usability of EHR systems leading to dissatisfaction and low adoption rates is a recognized problem [46]. EHRs are seldom designed to support nurses' workflow, and this may increase nurses' workload unnecessary [47]. As also suggested in other studies [48], these findings speak to a need to involve end-users in technology development and design to make it compatible with the practice in which it is implemented. System level facilitation, i.e. providing a sound technical infrastructure and adjusting functionalities to nurses' needs in daily practice, cannot alone guarantee increased use of SCPs, but it can maybe prevent system level issues from becoming an obstacle for use.

Regarding engaged individuals, we found that in the settings where SCPs were commonly used, there were key persons and active leaders engaged in the use of SCPs. The participating leaders that were actively engaged in SCPs showed a proactive strategy, where the staff were given little room for choice and were expected to use SCPs. Other leaders expressed a need for support and training to be able to have an active role in encouraging their staff to use SCPs. While it is common to emphasize that support from leaders is important in an implementation process [31, 32], our findings suggest that leaders also have a need for support to be able to drive the technology development further. A recent scoping review found that even though leaders have an important role in technology implementation in healthcare, they struggle to fill this role and express insecurity and a need for support [49]. This points towards an extended need to focus on supporting leaders in implementation processes.

Engaged nurses who supported and encouraged the other staff members to use SCPs, were also present in the settings where they were actively used. Together with the proactive leaders, these nurses created a culture for using SCPs. This accounts for normalization of SCPs as a collaborative effort requiring several engaged individuals. Collaboration was also seen as a possible facilitator for increased use of SCPs. Traditionally, making care plans has been an individual task, resulting in large discrepancies in outcome, where individual nurses have had different views of which interventions best suit the patients' needs, and their knowledge and self-efficacy regarding SCP use have varied greatly [19]. The findings of this study suggest that collaboration between co-workers in developing care plans could reduce insecurity and contribute to a more uniform understanding of how to use the SCPs. Previous studies on care planning have tended to focus on inter-professional collaboration, rather than collaboration within a more homogenous group of healthcare workers within a setting. One of these studies highlight that collaboration requires personal motivation, mutual trust and respect, allocated time, and organization of meetings [50], which are findings that can easily be translated to collaboration on SCPs as well. Hence, we believe that it is a management responsibility to facilitate collaboration by allocating time and creating arenas for this purpose; while engaged nurses could be important for the peer support provided in such arenas.

Regarding the development of safety nets, we found that settings losing the external support or losing their engaged individuals who drove the normalization of SCPs further, were left in a kind of limbo where they did not know where to go for training or support. As there was no safety net developed for such events, the further development of the SCPs had stopped, and in some settings new staff members did not use SCPs at all. This highlights the risks associated with engaging just a few key persons in an implementation process. While it is widely accepted that training and support of intended users is necessary when a new e-health initiative is implemented in practice [31], it is less well-described that this need can still be present several years after the initial implementation. The present study reinforces the potential benefits of viewing this as an ongoing process, beyond the piloting and implementation phase. Even though this study took place three years after the initial implementation, it identified a need for access to training and to super-users to ensure further development and use of SCPs. This finding suggests that developing a system level safety net to reduce vulnerability, instead of building a new practice entirely on individuals' engagement, is a success criterion for integration and adoption of SCPs in municipal healthcare information practices.

5. Conclusion

The results of this study indicate that the integration of SCPs in municipal healthcare information practices is an ongoing effort. The successful implementation of SCPs may require system level facilitation of a sound technological infrastructure and the provision of functionality that supports nurses' workflow. Engaged individuals, both leaders and nurses, are pre-conditions to adoption, but this also reveals a vulnerability. Therefore, there appears to be a need for continued access to training and support that can function as a safety net when key individuals move on. These issues could be of relevance in the future implementation and further development of SCPs and other standardized documentation structures.

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Appendices

I. Intervjuguide

II. Observasjonsguide

Appendix I

Intervjuguide

Innledende spørsmål om hvordan dagen har vært. Informasjon om tema for intervjuet.
Bakgrunnsopplysninger: Alder, Stillingsprosent, Hvor lenge sykepleier, Hvor lenge på denne arbeidsplassen, Type avdeling

Tema 1: Forberedelser - motta og søke informasjon

- Hvordan sykepleier forbereder seg til å gå inn til en pasient
- Hva mener sykepleier det er viktig å vite noe om før hun møter pasienten
- Hvordan får sykepleier informasjon om en pasient (EPJ eller annen informasjonskilde)

Tema 2: Bruk av EPJ-systemet og andre informasjonskilder

- Evaluering av EPJ systemet (hva er bra/dårlig - hvorfor)
- Hvordan vurderes brukervennligheten (finne informasjon)
- Hvordan vurderer sykepleier generelt dokumentasjonen hun finner i EPJ (tilstrekkelig/mangelfull, rotete/oversiktlig)
- Hvem har ansvar for å dokumentere pleie og lage/oppdatere pleieplaner i EPJ?
- Finnes det funksjoner sykepleier savner i EPJ? Evt. Hvordan løses det?
- Blir noe informasjon delt på en annen måte enn via EPJ? - evt. hvorfor?

Tema 3: Vurdering av pleieplan og dokumentasjonsbehov etter pasientbesøk

- Fantes det en pleieplan for pasienten?
    - Beskriver pleieplanen det sykepleier gjør/vurderer? (hvorfor/hvorfor ikke)
    - Behov for endring av pleieplan? Hvis ja: Ble den endret? (evt. hvorfor ikke)
    - Vurdering av ulike yrkesgruppers mulighet til å følge pleieplanen
- Deling av pasientinformasjon
    - Hva ble dokumentert i EPJ – hva ble delt på andre måter – hvorfor?

Tema 4: Standardiserte veiledende planer (SVP)

- Kunnskap om SVP
    - Hvordan fikk sykepleier kjennskap til SVP?
    - Fortell om opplæringen
- Bruker sykepleier SVP? (hvorfor/hvorfor ikke)
    - Hvordan bruker du SVP?
    - Forventes det at SVP blir brukt i avdelingen?
- Enkelhet i bruk
    - Noen å kontakte ved problemer / tilbakemeldinger?
- Vurdering av brukbarhet
    - For å beskrive sykepleieprosessen
    - Forståelige begrep/beskrivelser?
- Vurdering av nytte
    - Påvirket dokumentasjon (kvalitet/tid) eller pleie?
- Ville du anbefalt andre å ta i bruk SVP? (hvorfor/hvorfor ikke)

Avslutning: Er det noe annet du vil si noe om eller noe du vil kommentere?
Takk for at du ville delta!

Appendix II

Observasjonsguide

Beskriv settingen (hvem er der og hva foregår)

Hvor finnes det informasjon?

Hvordan gir/mottar sykepleier informasjon?

Hvordan forbereder sykepleier seg til å gå til pasienten?

Hvordan bruker sykepleier informasjonen i sitt arbeid?

Når og hvordan blir pleieplaner brukt?

Brukes de standardiserte veiledende planene?

  Hvordan brukes de?

  Hva sier sykepleier om dem?

Er det noe jeg ikke forstår eller noe jeg vil diskutere med sykepleier i intervjuet?

Skriv ned ideer og refleksjoner som oppstår i løpet av dagen.