Visiting nurses' post-hospital medication management

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BY
METTE GEIL KOLLERUP

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AALBORG UNIVERSITY
DENMARK

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CV

Mette Geil Kollerup graduated as a registered nurse from the Nursing Education in Aalborg in 1994. After, she worked fourteen years in clinical practice with two years in a medical ward at Dronninglund Hospital, two years in a surgical ward at Hobro Hospital and 10 years as a visiting nurse in Støvring Municipality, which is a rural community. While working as a visiting nurse, she held the position of clinical supervisor for the nursing students. After this clinical experience, Mette worked as a coordinator for the skills laboratory at Aalborg University Hospital for two years. After earning a Master's of Science degree in Nursing from Aarhus University in 2010, she worked as a lecturer for the Nursing Education Department at University College of Northern Jutland for four years. Since November 2014, Mette has been employed by the Nursing Department of Aalborg Municipality as a PhD student. Aalborg Municipality commenced a project related to the visiting nurses' management of medication in patients' homes once the patients have been discharged from the hospital. This project was initiated due to perceived and documented problems that existed. The study provided Mette with an ideal situation because it allowed her to optimise and tie together all her previous experience from clinical practice, educational practice, and her research areas of interest.

ENGLISH SUMMARY

Background: Medication management has been identified as the most challenging component of a patient's discharge from the hospital to home, and discrepancies were discovered in up to 94% of the medication lists examined. Visiting nurses have experienced growing problems in post-hospital medication management due to the increase in treatment possibilities as well as the specialisation and acceleration of hospital treatment plans. Patients in need of post-hospital medication management often have complex and unstable care needs, which require continuous observations and adjustments to both the care provided and to the treatment plans. Thus, post-hospital medication management is a complex intervention because of the variability of the patients' situations as well as the many actors and processes involved. Descriptive studies have documented the extent and severity of the existing issues with post-hospital medication management. Studies on transitional care have partly addressed medication management, especially among patients who are self-managing their care. Intervention studies from different healthcare contexts have indicated that home visits conducted by health professionals may improve safe patient medication by solving discrepancies and reducing the number of physician visits that are necessary. However, the actual performance of these visits, with patients who have limited abilities to handle their own basic needs, have been poorly examined. Since post-hospital medication management is a context-specific social situation, there is a need for further development of interventions that are tailored to specific contexts. A participatory approach in the development and implementation may enhance the feasibility and acceptability of these interventions. Furthermore, systematic application of methods and subsequent reporting may allow for the development of evidence-based municipal nursing care.

Aims: The aim of this project was to explore visiting nurses' post-hospital medication management and to develop and implement an intervention to improve safe patient medication. The focus of the thesis was to discuss whether the model for intervention development, which was based on inductive and participatory approaches, would strengthen the implementation of evidence-based municipal nursing care.

Methods: Within the framework for Developing and Evaluating Complex Interventions in Health, different human science approaches were combined in three sub-studies. The project was conducted in a visiting nurses' department within a Danish municipality. In the first study, visiting nurses' post-hospital medication management was explored using an ethnographic approach. Data was collected by the researcher's participant observations and informal interviews during twelve initial

patient visits. Data consisted of field notes that were expanded with information from medication lists and journal notes. A systematic analysis was performed in four steps. In the second study, an intervention was developed using a participatory approach. Data was collected at two workshops with participation of visiting nurses and head-nurses. Data consisted of audio recordings and worksheets. The data analysis relied on means-end hierarchies and Data-Information-Knowledge-schemes. In the third study, a process evaluation of the implementation of the developed intervention was conducted. Data were collected through self-registration and group interviews that were held over the course of three months during the implementation of the intervention. Data consisted of self-registration logs and transcribed audio recordings. A deductive analysis was performed at a descriptive level.

Findings: In post-hospital medication management, visiting nurses strive to improve safe patient medication by mediating their nursing care to available information and to the rules and standard procedures as well as by establishing order in the medication lists and in the physical storage of medications within the home. Safe post-hospital medication management requires knowledge of the patient's basic needs and the performance of context-specific nursing assessment with a focus on preventive care. The developed intervention consisted of three elements: an 'interdisciplinary visit,' 'two scheduled visits' and the 'use of an organising tool.' The implementation of the intervention revealed that the *nurse-patient relationship*, performance of *nursing assessment* and *ethical considerations* are all important factors in safe post-hospital patient medication.

Conclusion: Safe patient medication in visiting nurses' post-hospital medication management is dependent on the *nurse-patient relationship*, which is affected by the organisation of care, on the performance of *nursing assessment* that requires the nurses to possess generalist competencies, and lastly, on *ethical considerations*, which highlight the necessity of evidence-based municipal nursing care. Leadership involvement and facilitation is essential when inductive and participatory approaches are applied to strengthen evidence-based municipal nursing care.

Perspective: In future development of safe post-hospital medication management, emphasised continuity and flexibility of care are suggested. This implies a reconsideration of the existing organisation of municipal healthcare for patients with complex and unstable care needs within the first few days following hospital discharge. Visiting nurses are suggested to be viewed as 'experts in complexity,' which implies an emphasised development of generalist knowledge and competencies. The expansion of evidence-based municipal nursing care requires knowledge sharing and special attention to the patients' private home as the specific context of care.

DANSK RESUME

Baggrund: Når patienter udskrives fra sygehus til pleje i eget hjem, er varetagelse af medicin identificeret som den mest udfordrende del, og der er fundet uoverensstemmelser i op til 94% af medicinlisterne. Hjemmesygeplejersker har oplevet et stigende antal problemer ved varetagelse af patientens medicin efter udskrivelse. Det skyldes dels flere behandlingsmuligheder og dels øget specialisering og acceleration af sygehusbehandlinger. Patienter, som har behov for hjælp til varetagelse af medicin efter udskrivelse, har ofte komplekse og ustabile plejebehov. Det kræver kontinuerlig observation og vurdering med henblik på at sikre justering af pleje og behandling. Varetagelse af patientens medicin efter udskrivelse er en kompleks intervention på grund af patienternes varierende tilstand og på grund af antallet af involverede aktører og processer. Omfang og sværhedsgrad af problemerne er dokumenteret i deskriptive studier. Studier af udskrivelsesprocessen kan omfatte varetagelse af medicin, men oftest for patienter, som selv administrer medicinen. Interventionsstudier fra forskellige sundhedssystemer indikerer, at hjemmebesøg af sundhedsprofessionelle kan forbedre patientens medicinske behandling ved at udrede uoverensstemmelser i medicinkort og dermed reducere behovet for lægebesøg. Selve udførelsen af disse besøg hos patienter med nedsat evne til at varetage egne grundlæggende behov er ikke undersøgt. Varetagelse af patientens medicin efter udskrivelse er en kontekstafhængig procedure, og derfor er der behov for udvikling af interventioner, som er tilpasset den specifikke kontekst. Accept og gennemførlighed af interventionen kan øges ved anvendelse af en deltagerbaseret tilgang til udvikling og afprøvning af interventionen. Endvidere kan systematisk anvendelse af metoder og efterfølgende afrapportering medvirke til udvikling af evidensbaseret hjemmesygepleje.

Formål: Formålet med projektet var at undersøge hjemmesygeplejerskens varetagelse af patientens medicin efter udskrivelse samt at udvikle og afprøve en intervention, som kunne medvirke til at sikre, at patienten fik den rette medicin. Afhandlingens fokus var, hvorvidt en model til udvikling af interventioner, som byggede på induktive og deltagerbaserede metoder, kunne styrke udviklingen af evidensbaseret hjemmesygepleje.

Metoder: Inden for rammen 'Developing and Evaluating Complex Interventions in Health', blev forskellige humanvidenskabelige perspektiver kombineret i tre delstudier. Projektet blev udført i en hjemmesygeplejerskegruppe i en dansk kommune. Studie 1 omfattede undersøgelse af hjemmesygeplejerskens varetagelse af patientens medicin efter udskrivelse fra sygehus undersøgt med en etnografisk tilgang.

Dataindsamling foregik med deltagerobservation og uformelle interviews med hjemmesygeplejersker ved tolv etableringsbesøg i patientens hjem. Data bestod af feltnoter, som blev suppleret med oplysninger fra patientjournalen og patientens medicinkort. Dataanalysen foregik systematisk i fire trin. Studie 2 omfattede udvikling af en interventionen med en deltagerbaseret tilgang. Dataindsamling foregik ved to workshops med deltagelse af hjemmesygeplejersker og ledere. Data bestod af de transskriberede lydoptagelser af workshops samt arbejdspapirer. Dataanalysen omfattede udarbejdelse af mål-middel-skemaer samt transformation af data til information og viden. Studie 3 omfattede procesevaluering af afprøvning af den udviklede intervention. Dataindsamling foregik ved hjemmesygeplejerskernes selvregistreringer af anvendelse af interventionen gennem tre måneder samt ved gruppe interviews. Data bestod af logs over anvendelse af interventionen samt transskriberede lydoptagelser fra gruppeinterviews. Dataanalysen blev udført med deduktiv tilgang på beskrivende niveau.

Fund: I varetagelse af patientens medicin efter udskrivelse brugte sygeplejersken tilpasning og etablering af orden for at sikre patienten den rette medicin. Sygeplejen blev tilpasset til tilgængelig viden om patienten fra patientjournaler, observationer og dialog samt til regler og standardarbejdsgange. Sygeplejersken etablerede orden i medicinlister og medicinen i hjemmet. Vigtige forudsætninger for at sikre patienten den rette medicin var sygeplejerskens viden om patientens grundlæggende behov samt udførelse af sygeplejefaglig vurdering med fokus på forebyggende pleje. Den udviklede intervention bestod af tre elementer: 'Fælles tværfagligt besøg i hjemmet', 'To planlagte besøg' samt 'Ensartet opbevaring af medicin i hjemmet'. Afprøvningen viste, at *sygeplejerske-patient relationen*, udførelse af *sygeplejefaglig vurdering* og *etiske overvejelser* havde betydning for, at patienten fik den rette medicin.

Konklusion: Sygeplejerskens sikring af, at patienten får den rette medicin efter udskrivelse, afhænger af: *patient-sygeplejerske-relationen*, som er påvirket af organiseringen af plejen i hjemmet; udførelse af *sygeplejefaglig vurdering*, som kræver generalistkompetencer samt endelig; *etiske overvejelser*, som viser behovet for udvikling af evidensbaseret hjemmesygepleje. Ledelsesinvolvering og facilitering er afgørende, når induktive og deltagerbaserede tilgange anvendes til udvikling af evidensbaseret hjemmesygepleje.

Perspektivering: I fremtidigt arbejde for at sikre patienten den rette medicin efter udskrivelse anbefales prioritering af kontinuitet og fleksibilitet i varetagelse af de kommunale sundhedsopgaver. Det kræver nytænkning af organiseringen af plejen i hjemmet de første dage efter udskrivelse af de mest sårbare patienter med kompleks og ustabil sundhedstilstand. Hjemmesygeplejersken anbefales som 'ekspert i kompleksitet', hvilket kræver prioritering af generalistviden og kompetencer.

Udvikling af evidensbaseret hjemmesygepleje kræver dokumentation af resultater samt særlig opmærksomhed på udførelse af sygepleje i patientens private hjem.

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LIST OF PUBLICATIONS

(1) Kollerup MG, Curtis T, Laursen BS. Visiting nurses' posthospital medication management in home health care: an ethnographic study. Scandinavian Journal of Caring Sciences. 2018;32(1):222-232. doi: 10/1111/scs.12451

(2) Kollerup MG, Curtis T, Laursen BS. Improving visiting nurses' post-hospital medication management: a participatory approach. Journal of Integrated Care. 2018;26(1):65-76. doi:10.1108/JICA-05-2017-011

(3) Kollerup MG, Curtis T., Laursen BS. Improving post-hospital medication management in a Danish municipality: a process evaluation. (Accepted for publication in Journal of Clinical Nursing, May 2018). doi: 10.1111/jocn.14516

TABLE OF CONTENTS

Chapter 1. Introduction **19**
1.1. Content in the thesis 19
Chapter 2. Background **21**
2.1. Medication management in municipal healthcare 21
2.2. The state of evidence-based municipal nursing care 25
2.3. Summary and aims 28
Chapter 3. Methodology **31**
3.1. Search strategies 31
3.2. Methodological Framework 32
3.3. Conceptual Framework 33
3.3.1. Developing and Evaluating Complex Interventions in Health 33
3.3.2. Definitions 35
3.4. Presentation of studies 1, 2 and 3 37
Chapter 4. Study 1: Exploration **39**
4.1. Methods: study 1 39
4.1.1. Ethnographic approach 39
4.1.2. Setting 39
4.1.3. Data collection 40
4.1.4. Data analysis 41
4.1.5. Ethical considerations 42
4.2. Findings: study 1 43
Chapter 5. Study 2: Development **47**
5.1. Methods: study 2 47
5.1.1. Participatory approach 47
5.1.2. Data collection 47
5.1.3. Data analysis 48
5.1.4. Ethichal considerations 49
5.2. Findings: study 2 49
Chapter 6. Study 3: Process evaluation **53**

6.1. Methods: study 3 53
6.1.1. Process evaluation 53
6.1.2. Data collection 55
6.1.3. Data analysis 56
6.1.4. Ethical considerations 57
6.2. Findings: study 3 57
Chapter 7. Discussion 61
7.1. Discussion of findings 61
7.2. Discussion of pathways towards evidence-based municipal nursing care 64
7.3. Discussion of methodology and methods 67
Chapter 8. Conclusion 71
Chapter 9. Perspectives 73
Literature list 75
Appendices 87

TABLES AND FIGURES

Table 1: Overview of project and the focus for each study

Table 2: Overview of studies 1, 2 and 3

Figure 1: Findings: Study 1

Figure 2: Findings: Study 2

Figure 3: Link between study 1 and study 3

Figure 4: Findings: Study 3

CHAPTER 1. INTRODUCTION

Medication management in patients' homes once the patients have been discharged from the hospital is a complex intervention that involves several actors and processes. In this project, this complexity was explored as well as the processes for the development and implementation of an intervention (Table 1). Three sub-studies were reported in three separate papers (1-3). The papers represent the newly generated knowledge, which is the scientific results of the project. The theoretical framework for the study was the UK Medical Research Councils' framework for Developing and Evaluating Complex Interventions in Health (MRC framework) (4). Within this framework, different human science approaches were combined. The project had a dual purpose: To generate new knowledge about visiting nurses' post-hospital medication management in patients' homes and to bring about change through the development and implementation of an intervention with the aim to improve safe patient medication. This dual purpose is a key feature of participatory-based research (5,6). Hence, the focus of the thesis was to discuss whether the application of a model for intervention development that was based on inductive and participatory approaches would strengthen the implementation of evidence-based municipal nursing care (Table 1). As such, the thesis generates new knowledge on the processes for the development and implementation of evidence-based municipal nursing care as exemplified by the visiting nurses' post-hospital medication management.

1.1. CONTENT IN THE THESIS

In the thesis, the dual purpose of generating new knowledge and of initiating a change in the visiting nurses' post-hospital medication management is addressed by the presentation of the performed project. The presentation emphasises the considerations and choices made during the project in order to address the thesis aim, which is to discuss whether the application of a model for intervention development based on inductive and participatory approaches would strengthen evidence-based municipal nursing care. This model is developed throughout the project, and the key characteristics are summarised fully in Section 3.3.1. As such, the project represents an in-depth examination of systematic efforts in developing and implementing evidence-based post-hospital medication management in municipal nursing care. The thesis aim structures the presentation of the three sub-studies that were conducted, and is addressed as a part of the final discussion (Section 7.2). The thesis consists of nine chapters. Chapter 1 provides an introduction to the thesis. Chapter 2 presents the background and is based on literature searches that were conducted during the project. In Chapter 3, methodology, the search strategies as well as the methodological and

conceptual frameworks are all described. Chapters 4, 5 and 6 describe the applied methods and the derived findings for each sub-study with an emphasis on the process and the connection between the sub-studies. Chapter 7 provides a discussion of the findings across the sub-studies, of the thesis question and of the applied methodology and methods. Chapter 8 presents the conclusion, and in Chapter 9, the perspectives for future practice and for future research are elaborated upon.

	Study 1	**Study 2**	**Study 3**
Project aim	To explore visiting nurses' post-hospital medication management and the processes for the development and implementation of an intervention to improve safe patient medication.		
Study aims	To explore visiting nurses' post-hospital medication management and to identify key elements in safe patient medication	To develop an intervention aimed to improve safe patient medication in visiting nurses' post-hospital medication management	To perform a process evaluation of the implementation of an intervention to improve safe patient medication in visiting nurses' post-hospital medication management
Thesis aim	To discuss whether the application of a model for intervention development that is based on inductive and participatory approaches would strengthen the implementation of evidence-based municipal nursing care.		

Table 1: Overview of project and the focus for each study

CHAPTER 2. BACKGROUND

Medication management in municipal healthcare following the patient's discharge from the hospital has been widely explored from numerous different perspectives. This section on the background for the research consists of three distinct sections. First, a description of homecare patients' medication related characteristics is provided as well as a presentation of transitional care studies and the visiting nurses' role regarding medication management. Second, a presentation of medication management in Danish municipal healthcare is provided focusing on the context of care and the available knowledgebase. Third, a summary and the motivation for the aims of the project are presented. The background section is based on literature searches that were conducted during the performance of the project (Section 3.1 and Appendix A). In the literature review, the terminology was not always consistent because the authors' words were reproduced. The terminology used in this project is outlined in detail in Section 3.3.2.

2.1. MEDICATION MANAGEMENT IN MUNICIPAL HEALTHCARE

This section concerns the patient population in municipal health care and their medication related characteristics. There is also a presentation of transitional care studies and of the visiting nurses' role in post-hospital medication management.

Post-hospital medication management, the patient population

Because of increasingly accelerated and specialised hospital treatment plans as well as an aging population and new innovative treatment possibilities, many patients are discharged from the hospital and go home with a complex set of instructions for their medication regimen (7,8). Descriptive studies on municipal healthcare patients' use of medications have documented that polypharmacy (> 5 drugs) and hyper-polypharmacy (>10 drugs) are typically the case in 85.9% of the patients (9). This indicates a patient population that possesses multiple chronic conditions. Patients with multiple chronic conditions and/or cognitive impairments are shown to be the most vulnerable to medication errors (8,9). Risk factors for medication errors are polypharmacy, irregular medication schedules, age, inadequate interdisciplinary teamwork, inconsistent medication review as well as specific drugs, such as Warfarin, Prednisolon or Digoxin (10,11). Older persons commonly receive such high-risk medications that, if incorrectly administered, can result in bleeding, falls, strokes, angina pectoris, heart failure or unconsciousness (10,12,13). Potentially inappropriate medications are found in up to 48 percent of the patients (11), and the use of a

combination of 1-2 potentially inappropriate medications are associated with 13-20 percent increased risk of hospitalization (14). As a consequence, the World Health Organization recently initiated their third global patient safety challenge of 'Medication without harm' (15). In summary, homecare patients often receive multiple medications, which places them at risk of adverse drug events (9) as well as at an increased risk of re-hospitalization or needing additional physician visits (7,16,17). Post-hospital medication management is an essential part of the patients' home healthcare. After being discharged from the hospital and going home, the patient's unstable health condition and frequent medication changes can pose special challenges for the visiting nurses (7). This study reflects on the visiting nurses' post-hospital medication management in the patient's home once the patients have been discharged from the hospital, which is a situation where medication discrepancies are common.

Post-hospital medication discrepancies

A patient's transition from the hospital to the home poses special and well-documented risks for medication discrepancies. In 2010, discrepancies were found in 94 percent of medication lists provided at discharge with an average of three discrepancies per patient (18-21). Furthermore, in 2016, at least one discrepancy was found in all of the medication lists for 770 patients at the time of hospital discharge (22). Descriptive studies on the extent and severity of medication discrepancies show that the most common discrepancies are a medication missing from the list, an extra medication being on the list and inaccurate names or frequency errors (19,23). Hence, medication management is identified as the most challenging component of a successful transition from the hospital to the home (18), and several studies have addressed the need for improvements in post-hospital medication management (7,8). The next section presents studies that have been performed to address the problems that exist in medication management during the patients' transitions from the hospital to their homes.

Post-hospital medication management, multi-disciplinary professional interventions

Medication management is an essential part of transitional care, and several studies on hospital-based or multi-disciplinary professional transitional care studies have been performed (24-26). However, only a few identified studies have reported on interventions that are solely related to the medication process (7,27). In a study of patients receiving consultations from a nurse case manager, Setter (7) found significantly lower re-hospitalization rates, planned and unplanned physician visits and a better resolution of medication discrepancies in the intervention group. Likewise, a study of the effect of visiting nurses' telephone follow-ups versus home

visits showed that the latter solved 62 percent more discrepancies (27). These studies documented the positive effect of nurses' home visits. Other studies have encompassed pharmacists' interventions (28-30), which are excluded in this review due to the scope of the project being focused only on visiting nurses' post-hospital medication management. In a multi-disciplinary professional intervention study, Rytter et al. studied the effect of home visits after hospital discharge when conducted by general practitioners (GP) and visiting nurses and found a reduced readmission rate and an improved adherence to the GP's prescriptions in the intervention group (24). In a hospital-based intervention study on nurse-led coordination between the hospital and the home involving geriatric reconciliation of medications, discrepancies were found in one third of all cases, and the need for systematic reconciliations and follow-ups on medication regimens after hospital discharge were highlighted (23). In three of Cochrane's reviews, low evidence was found for evaluated interventions concerning the optimal prescribing practices for older persons in nursing homes (31), for the appropriate use of polypharmacy for older persons (32) and for the reduction of medication errors in primary healthcare (33). Although the first two were mostly medical-oriented, all of these approaches are included in the scope of municipal nursing care. The mentioned possible reasons for low evidence were differences in background practice, culture or delivery of the interventions. As such, these reviews highlight problems in the dissemination of general knowledge about medication management interventions among different healthcare settings. Exploration of adjoining areas to post-hospital medication management are studies on adverse drug events as the causes for readmission (34) or studies on communication and collaboration during medication management processes (35-37). The present project did not suggest specific changes for the hospital sector, and the remaining part of this section concerns the issues specific to post-hospital medication management in the municipal healthcare.

Post-hospital medication management, self-managing patients

Patients' self-care and patient-education are commonly addressed in studies on medication management in relation to municipal healthcare (8,16,18,38). For example, evidence-based recommendations for transitional care stressed the importance of 'teaching' the patients about medications and follow-up appointments as four out of the seven points in effective transitional care (16,18). Less effective therapeutic self-care was associated with unplanned hospital visits, a decline in the activities of daily living, falls, unintended weight loss and non-compliance with medications (39). In self-managed patients, Lang et al. found variable systems for the storage of medications within the homes and systemic challenges to the safe administration of patient medication (40). Self-management is also prominently mentioned in Corbett and Setters' recommendations for successful transitions (16).

The recommendations were to 'improve patient/caregiver knowledge about medications prior to transition, 'provide user friendly medication lists or calendars at discharge', 'follow up post-discharge via telephone calls' and 'assist with scheduling follow up care appointments pre-discharge', all of which were well suited to self-managing patients. The remaining element of 'simplifying post-transition drug regimen and correct discrepancies' is an actual concern for visiting nurses in their post-hospital medication management, which implies that there should be a close collaboration between the nurse, the patient and the general practitioner, who are ultimately responsible for the prescriptions. However, how this is carried out by the visiting nurse in the patient's home, has been poorly explored or described for patients, who are dependent on nursing assistance for their post-hospital medication management. While the focus of this study is on the visiting nurses' post-hospital medication management, the next section concerns the role of the visiting nurses.

Post-hospital medication management, the role of visiting nurses

Although several professional groups are involved in patients' medications, and many patients are able to effectively manage their own medications, this study concerns visiting nurses' post-hospital medication management for patients, who are dependent on nursing assistance. As mentioned, the visiting nurse's role in post-hospital medication management has been poorly explored. However, related studies have been conducted about nurses' roles in mediation management in different geographical contexts, such as in hospitals and in usual municipal healthcare. In the United States, Advanced Nurse Practitioners' (ANP) transitional care interventions were found to promote interdisciplinary collaboration and medication adherence by simplifying the medication regimens and by preventing patient's functional decline (41). While ANPs are nurses that serve a specialist function, the present project examines the role of generalist nurses, who are responsible for providing daily care for their patients (Section 2.2). In Norwegian nursing homes, nurses, medical doctors and pharmacists conducted medication reviews and found an average of 2.6 inappropriate medications per patient (42). The role of the nurses was not described. The present project concerns the continuous post-hospital medication management for patients with unstable health conditions the first few days after hospital discharge and not the medication review that is conducted every year. In an exploration of medication errors in home healthcare, Berland concluded that 'up-to-date information' and 'communication' were important during patient transitions (43). This study raised the concern that 'necessary medication-competencies' must be ensured and that 'routines for preparation, alteration and administration' must be in place (43). The nature of these competencies and routines need further explorations.

In a study on medication competencies among different professional groups, Vogelsmeier found that nurses' medication reconciliation was a complex cognitive process and that nurses were concerned about the accuracy and their patients' safety (44,45). Likewise, Manias highlighted that nurses involved in the hospital medication management needed to possess a good knowledge of medications and an ability to contextualise medication management in relation to the complex and changing needs of their patients. Furthermore, it was discussed that nurses' medication management necessitated effective decision-making processes (46). To support such processes, different tools related to the proper identification of medication-related risks were developed (47,48). In summary, a nurse's role in medication management requires a well-established knowledge of medications, an ability to contextualise medication management in relation to the complex and shifting needs of the patient and complex cognitive and decision-making processes. While nursing care is dependent on the context of care (49), the next section presents the context and the knowledge base for effective medication management in Danish municipal healthcare.

2.2. THE STATE OF EVIDENCE-BASED MUNICIPAL NURSING CARE

This section examines the context and the knowledge base for effective post-hospital medication management in Danish municipal healthcare.

The context of municipal medication management in Denmark

As shown above, the research literature documented major problems in post-hospital medication management despite the fact that only a minor portion of the evidence came from a Danish context. However, medication management problems in Danish municipal healthcare are a well-known problem, which is evidenced by the numerous debates in newspapers, on television and in professional journals (23,50). Health authorities address these problems by outlining legislation, making recommendations, encouraging collaboration agreements (51-53) and by initiating improvement projects (54). Patient safety organisations have emphasised the problems in their reports on patient-safety programmes and in their recommendations (12,13,55,56). Municipalities and Regions have attempted to adapt this material into context-specific guidelines (57,58). Furthermore, a number of local project reports have also addressed the problems (59-61). These materials have shown that the majority (64.8%) of reported adverse events in home healthcare are related to medication management (62) and that medication management is a time-consuming task for home healthcare professionals. In the North Denmark Region, which has 600,000 inhabitants, the

municipal health professionals every year conduct 2 million visits related to medication management, which corresponds to 229,000 work hours (63). A pilot study of visiting nurses' medication reconciliation for eighteen patients showed an average time consumption at 4.25 hours per patient on medication management. Furthermore, it documented multiple professionals involved in the management of the medication. Based on the findings, on average 27.9 different municipal health professionals visited each patient during a five-month period, and 43 different medical doctors were involved in prescribing medication for the eighteen patients (59).

In Denmark, every municipality is obliged to offer nursing care to patients, who are in need (64,65). The care is provided in the patients' homes, in nurse-clinics and in nursing homes. Municipal healthcare includes several departments. This study was conducted in the visiting nurses department only although it involved a collaboration with the homecare department. Employees in the visiting nurses department are nurses, and the employees in the home healthcare department are homecare assistants and homecare aides. In the visiting nurses department, nurses have an undergraduate level of higher education (a Bachelor's degree). They plan, perform and evaluate the care of the patients. Furthermore, they are responsible for managing, teaching and developing the care (66) 24 hours a day seven days a week. Visiting nurses provide and perform healthcare according to the Health Act (65). In the home healthcare department, provision and performance of homecare are separated. Independent authorities provide homecare according to the Social Services Act (67) based on individual assessment of the patient's needs. Home care assistants and home care aides (home care professionals) perform the provided health and social care. Homecare assistants have three years of vocational education and obtain legal authorization. They are eligible to dispense and administer medications to patients, who are in a stable health condition. Homecare aides have two years of vocational education and are eligible to administer medication to patients in a stable health condition. In the setting for this study, the municipal nursing care and homecare departments had separate leaders and separate budgets as well as different geographical locations (detailed descriptions of the study settings are provided in Section 4.1.2). Visiting nurses collaborated with their patients and their relatives, with homecare professionals, with general practitioners, and with hospitals, pharmacies, and other healthcare professionals depending on the patient's health status.

Medication management is comprised of three phases, which are prescription, dispensing and administration (51). In Denmark, medical doctors are responsible for prescribing the medication. Several different medical doctors might be prescribing medication for the same patient. All prescriptions are documented in the 'Fælles medicinkort (FMK)', which is a web-based system that is a 'shared medication list.' This system was initially implemented in 2015. As such, all personnel as well as the

patients themselves can be involved in the patient's medication management by accessing this list. If the patient needs assistance in medication management, the dispensing of the medication can be performed by visiting nurses or by homecare assistants. However, the daily administration is generally overseen by the homecare assistants or the homecare aides. This means that several actors and processes may be involved in the post-hospital medication management.

The knowledge base for municipal medication management in Denmark

Despite the tremendous amount of literature, standards and protocols addressing problems with medication management in municipal healthcare, both the evidence and the visiting nurses' personal experiences indicate that post-hospital medication management remains still a cause for concern among health professionals and may be linked with adverse events among the patients. This led to the question of how to develop and implement evidence-based municipal nursing care.

Municipalities have put significant efforts towards developing medication management in municipal healthcare by implementing rules and regulations, by developing standards and guidelines and by adjusting the recommended work practices. However, only a minor part of this work is scientific and/or published in scientific papers. Hence, the scientific knowledge base on medication management in the Danish municipal healthcare setting is sparse. In 2014, The Danish National Board of Health (68) called for additional research on municipal healthcare services. It was recommended that municipalities both participate in the research, which was typical, but that they also initiate some of the research themselves as well. In response, Aalborg Municipality initiated this project. To grasp an indication of the scientific knowledge related to medication management in Scandinavian home healthcare, a literature search for the updated background section was limited to papers published within Scandinavian countries. Forty-nine studies were identified, the majority of which came from Norway and Sweden; only two came from Denmark, both of which were performed by and focused on medical doctors. In this search, evidence-based knowledge on medication management in Danish municipal nursing care was quite sparse. However, studies may have been performed, which were not captured by this search. The problem of transference of general recommendations and interventions within the context of local healthcare settings was addressed in the Framework for Developing and Evaluating Complex Interventions in Health (4) (MRC framework) (Section 3.3.1). In this framework, an emphasis on the development phase is recommended, which implies a tailoring and modification of interventions to better align the needs of specific healthcare contexts. In the present project, the issue of development for evidence-based municipal nursing care in Denmark was addressed by an application of the MRC framework. Throughout the study, a model for the

development and implementation of evidence-based municipal nursing care was continuously being crafted and adapted. This model was based on both inductive and participatory approaches, and the key features of the model are summarised in Section 3.3.1. As such, the project aligns with Public Health Professor Laurence Green's quote, which states, 'If we want more evidence-based practice, we need more practice-based evidence' (69). Therefore, the practice-based design of this study, which aims to generate new knowledge and to bring about change, is intended to enhance evidence-based municipal nursing care.

2.3. SUMMARY AND AIMS

In summary, medication management problems in the transition of patients from the hospital to their homes and in municipal healthcare are well-documented in descriptive studies that outline the extent and severity of the problems. Multi-disciplinary professional transitional care interventions regarding medication management have provided general recommendations that mostly target self-managing patients. The transference of general recommendations to specific healthcare contexts require additional tailoring and modifications in order to be most effective. Although medication management is a complex intervention that involves several actors and processes, this study concerns the role of visiting nurses in the management of medications once the patient has been discharged from the hospital to their home but is still in need of nursing assistance. Home visits by health professionals have been shown to solve many of the medication discrepancies and to decrease the number of necessary physician visits and hospital re-admissions. How these home visits are performed in the patients' homes when the patient is dependent on nursing care in relation to the management of medication has been poorly explored. Although general nursing medication management competencies have been identified, there is a need for exploration and development of interventions within specific contexts. In Denmark, there is an overall need for evidence-based knowledge in regards to municipal nursing care.

Based on the problems experienced by the visiting nurses and the systematic literature review, the aims of this project were as follows:

Study 1: To explore visiting nurses' post-hospital medication management and to identify key elements in safe patient medication (Paper 1)

Study 2: To develop an intervention aimed to improve safe patient medication in visiting nurses' post-hospital medication management (Paper 2)

Study 3: To perform a process evaluation of the implementation of an intervention to improve safe patient medication in visiting nurses' post-hospital medication management (Paper 3)

To address the issue of the development and implementation of evidence-based municipal nursing care, the focus of the thesis was as follows:

To discuss whether the application of a model for intervention development that is based on inductive and participatory approaches would strengthen the implementation of evidence-based municipal nursing care.

CHAPTER 3. METHODOLOGY

A prerequisite for quality research is that the applied methodology and methods best fits and is most appropriate for the topic being studied (70). The topic for this project was visiting nurses' medication management in patients' homes after a hospital discharge, which, as the background section showed, is a context specific activity that involves many actors. This condition put demands on the derived methodological and methodical choices. In this section, these choices are elaborated upon and explained. In the human sciences, a theoretical foundation concerns both methodological and conceptual frameworks (71,72). Hence, this section consists of four parts. First, a brief presentation of the search strategies that were conducted during the project. Second, the motivation for the methodological choices will be presented. Third, the conceptual framework and definitions will be presented. The last and fourth section will include an overview of the participants, the data collection methods as well as the findings for each of the three sub-studies.

3.1. SEARCH STRATEGIES

In order to provide a robust starting point for the proposed intervention, the existing scientific knowledge was systematically assessed (73) (Appendix A). A pragmatic selection of included studies was made due to the amount of studies from adjoining areas. Hence, the literature review is not eligible for publication as a systematic review as recommended by the MRC framework (4).

Literature searches and reviews were an ongoing process during this study. The initial systematic block search concerned the following major topics: 'medication management', 'home healthcare' and 'hospital discharge'. These topics were then expanded to include other related terms or synonyms based on the thesaurus included in each specific database. This initial search based subsequent decisions regarding the direction of the topic, the research design, aims and methods. While the topic was narrowed to visiting nurses' post-hospital medication management, additional searches that concentrated on the terms 'medication management' AND 'home healthcare' were conducted to avoid the exclusion of papers due to the inclusion of the term 'discharge'.

During each study, additional literature searches were conducted related to the findings. For example, findings from Study 1 led to a discussion of 'patient safety in homecare medication management', and the findings from Study 2 led to a further exploration of the concept of 'integrated care'.

Saved searches were repeated during the project to capture any newly-published papers and finally to inform the updated background section of this thesis. To address the thesis question on the development of evidence-based municipal nursing care, a search on medication management in home healthcare was limited to studies from Scandinavian countries. This search served as an indicator of the scientific work and existing knowledge for visiting nurses related to medication management in patients' homes after hospital discharge within the context of Scandinavian countries.

3.2. METHODOLOGICAL FRAMEWORK

Given the topic of visiting nurses' post-hospital medication management, the project focused on the quality of nursing care. The knowledge base for nursing care includes information from the fields of human-, natural- and social sciences (74). In handling the responsibility of managing the patients' medication, nurses draw on this knowledge base with a consideration of the patients' symptoms and the effects of medications (natural science), communication, observations and understandings of reactions (human science) as well as their ability to work in a healthcare system (social science). Hence, numerous perspectives were possible in examining the visiting nurses' post-hospital medication management. The literature review confirmed that medication management in patients' homes after hospital discharge is a context-specific procedure that is dependent on the organisation of the healthcare system, a collaboration between healthcare professionals, treatment possibilities and legislation (33). Due to the context dependencies, the project was conducted within the field of human science, which emphasises contingent knowledge and acknowledges humans as acting, reflecting and interpretative actors with different perspectives on the world (70). This leads to a nuanced and detailed ontology that is best described with words (70,75). In human sciences, the social situation is explored within its context, and a flexible research design and close connection between the researcher and the field under study are critical features (75,76). This aligns well with the UK Medical Research Council's framework for Complex Interventions in Health (MRC framework) (4,73) (see Section 3.3.1), which suggests the necessity for the development of interventions that are tailored to specific contexts and enable answers to the questions of what works, for whom and under which circumstances.

Within the field human science, the project is further inspired by the hermeneutic perspective because of its aim to understand visiting nurses' medication management within its specific context in order to develop an appropriate intervention that will work for the visiting nurses in this context. This aligns well with the hermeneutic perspective, which is well-suited to conducting research on humans and societies or

social situations in their contexts (77,78). The appropriateness of this approach is captured in the quote, 'nothing can be understood in isolation from its context' (73). While the visiting nurses were appreciated as acting, reflecting and interpretive actors, a close connection between the researcher and the field under study was also important to enable the researcher to understand the participants' views (75). In this regards, the researcher's pre-understanding was also essential. The researcher's pre-understanding was explored in an interview during the first phase of the project conducted by a fellow PhD-student. The pre-understanding was shaped by the researcher's nursing background and by the ten years of nursing practice as a visiting nurse in another municipality from the late 1990's. Hence, the researcher's view was shaped by the previous work done with patients in the worst health conditions in a healthcare system that had slightly different practices in regard to organisation, communication and documentation systems and practices.

Within the MRC framework (see Section 3.3.1), different human science approaches were combined to produce a new knowledge of visiting nurses' post-hospital medication management and at the same time to bring about practical changes by developing and implementing interventions. This dual purpose is a key feature of participatory approaches, which arise when people work together to address key problems in their organisations to create positive change on a smaller scale, which is occasionally called 'the action turn' (5). McCormac raised the issue that the methodologies used in the implementation of complex interventions need to be able to handle the dimensions of complexity that exist in every practical setting where the implementation is intended to occur (73). Hence, elements from participatory approaches have inspired the design and performance of this project. This study design provided insight and experiences by combining participation and qualitative research (5). The participatory approach emphasises participation, democracy and action (5), which can help to reduce the gap between research and practice (73). Likewise, this is the purpose of implementation research (79), which guided the discussion of the thesis question (see Section 7.2).

3.3. CONCEPTUAL FRAMEWORK

3.3.1. DEVELOPING AND EVALUATING COMPLEX INTERVENTIONS IN HEALTH

In 2008, a revised edition of the UK Medical Research Councils' Framework for Developing and Evaluating Complex Interventions in Health was published (4,73). The motivation for the first edition was to guide researchers on how to investigate the effects of healthcare interventions that might be regarded as complex (73). The motivation for the second edition was an increased emphasis on the careful

development work and feasibility studies and was due to a recognition of the importance of the context and additional attention being given to non-randomized designs (73). All of this served as recognition of the contributions provided by studies based on human- and social-sciences. In the MRC framework, an intervention is defined as 'any action taken by healthcare workers with the aim of improving the well-being of people with health and/social care needs' (73). This means that the term intervention can encompass terms, such as activities, practices or actions, which can be used to describe the work of nurses (73). The term 'complex intervention' is defined as 'interventions that contain several interacting components'. Complexity may be related to the range of possible outcomes, or it can refer to the variability of the targeted population or the flexibility of the delivery approach (4,73). Based on these definitions, visiting nurses' medication management in patients' homes after hospital discharge can be seen to be a complex intervention because of the number of actors and processes involved, the flexibility of the delivery and the variability and instability of the target population. The MRC framework consists of four phases, which are the development phase, the feasibility/piloting phase, the evaluation phase and the implementation phase (4). These phases proceed in a circular pattern with the possibility of moving back and forth between the phases, which is in alignment with the flexibility inherent in human science research. According to the MRC framework, this project falls within the development phase and the feasibility phase. The development phase encompasses Studies 1 and 2, which are the exploration and the development. The feasibility phase encompasses Study 3 although the execution of Study 3 was also inspired by evaluation and implementation theory, which are the last phases of the MRC framework. A key point in the MRC framework is the recommendation of systematic description of interventions. This may be guided by the TiDIeR framework (80) or theories to classify behavioural change techniques systematically, such as the 'Behaviour Change Wheel' (BCW) (81). Due to the MRC Framework's emphasis on the importance of the testing of an intervention in a feasibility study, further work have resulted in a published guideline for planning and conducting a process evaluation (82). This guideline reflects a recognition of the need to evaluate how interventions are implemented, their possible causal mechanisms and how the effects depend on the context (82). It encompasses guidance on the planning, design, conducting and reporting of the process evaluation for complex interventions. The model for process-evaluation implies the following features: implementation (the structures, resources and processes through which delivery is achieved, and the quantity and quality of what is delivered), mechanisms of impact (how intervention activities and participants' interactions with them might trigger change) and context (how external factors influence the delivery and functioning of the interventions). In this project, this guidance is used for the planning, conducting and reporting that

occurred during Study 3. An overview of the methods and findings for each of the three sub-studies are presented in Section 3.3.4.

In the performance of this project, ethnographic and participatory approaches inspired the applied methods. These approaches emphasise the practitioner's ability to point at important research topics as well as possible solutions (6,83). The methodological and conceptual frameworks that were mentioned above inspired an inductive performance of the project in which a model for the development and implementation of evidence-based municipal nursing care was crafted during the project. The model encompassed the following key features:

- Practitioners raise an important topic.
- Researcher obtains knowledge through literature review, explorations of theories and participant observations in the field.
- Researcher and practitioners collaborate at workshops to craft potential suggestions for changes in practice
- Managers choose an intervention based upon the provided suggestions.
- Researcher plans the implementation in collaboration with practitioners based on both theory and practice-based knowledge.
- Practitioners implement the intervention, and researcher facilitates and supports the process.
- Researcher plans the evaluation, and practitioners participate in the collection of data.
- Researcher ensures the systematic application of scientific methods for data collection and the analysis as well as the reporting process.

The experiences in applying this model for the implementation of evidence-based municipal nursing care will be addressed in the description of each sub-study (Chapters 4, 5 and 6) and discussed in Section 7.7.2.

3.3.2. DEFINITIONS

In this section of the conceptual framework, operational definitions for the central concepts in the project are provided.

Visiting nurses: Terminology for designation of different health professionals is closely connected to the specific healthcare system in which they function. The only 'right' designation is the term used in the context of the study. The Danish term 'Hjemmesygeplejerske' covers a registered nurse, employed in the municipal healthcare system, that has the responsibilities of performing, teaching, managing and developing care (66) for patients in the municipality. In this study, the term 'visiting nurses' was chosen based on the terminology used in various health scientific databases, such as PubMed and Cinahl. Other considered possibilities were homecare nurses, community nurses or district nurses, which were all not selected due to the language connotations in a Danish healthcare setting.

Medication management: Medication management consists of the following phases: prescription, dispensing and administration (51,52). Medical doctors are responsible for the prescription. If the patient need assistance in medication management, nurses or homecare assistants are responsible for the dispensing of the medication, and homecare assistants or homecare aides can be responsible for the administration (see Section 2.2). In addition, medication management includes the maintenance process of ordering, delivering, and storing of medications as well as the monitoring of effects and side effects and the initiation of any necessary adjustments to the medication regimen depending on the patient's actual health status (40,84)

Patient: In this project, patients are newly discharged patients, living in their own homes, who are in need of nursing assistance with medication management.

Safe patient medication: In this project, safe patient medication means that the patient receives the medications, which are the ones that the medical doctors have prescribed. In order for a nurse to effectively manage a patient's medications, the nurse must possess knowledge about medications and have the ability to contextualise medication management in relation to the complex and changing needs of the patient as well as decision-making competencies (46). Following a hospital discharge, the patient's health condition is usually unstable which requires a close collaboration between the patient, the visiting nurse and the medical doctor, who is ultimately responsible for the patient's prescriptions.

Intervention: This concept is used to describe the developed change in practice that aligns with the definition proposed of Hallberg and Richards (73). Complex interventions are characterised by an involvement of multiple actors and processes and by the variability in the target population (73). To achieve stringency in the project's terminology, this term was chosen despite possible naturalistic connotations in the Scandinavian countries. In Paper 1 and Paper 2, the term 'changed practice' was used instead.

Implementation: The term implementation is used to describe the delivery of the intervention during feasibility testing in accordance with complex interventions literature, in which the term is used to describe both the post-evaluation scale-up and the small-scale implementation (82). In the MRC framework, the implementation phase refers to a large-scale implementation following the evaluation phase (4,73). This study involves only the development and the feasibility/piloting phases.

Unfortunately, the terminology regarding the organisation and the employees has evolved during the project and thus are mentioned differently in each of the three papers. In this thesis, the following concepts are used. Municipal healthcare consists of several departments. This project was performed in the Visiting Nurses Department, in which visiting nurses are employed. The project necessitated a collaboration with the Homecare Department, in which homecare assistants and homecare aides are employed (Section 2.2).

3.4. PRESENTATION OF STUDIES 1, 2 AND 3

In the next three chapters, the applied methods and derived findings of each sub-study are presented. The presentation will emphasise the processes and the choices involved as well as the connections between the studies. Before turning to the presentation of each study, an overview of the aims, the participants, the methods and the findings is presented in Table 2. The model for development and implementation of evidence-based municipal nursing care is elaborated on throughout the description of each study and is finally summarised in the discussion (Section 7.2).

	Study 1	Study 2	Study 3
Study aims	To explore visiting nurses' post-hospital medication management and to identify key elements in safe patient medication	To develop an intervention aimed to improve safe patient medication in visiting nurses' post-hospital medication management	To perform a process evaluation of the implementation of an intervention to improve safe patient medication in visiting nurses' post-hospital medication management
Conceptual framework	Framework for developing and evaluating complex interventions in health		
	Development stage		Feasibility stage
Methodological framework	Human science inspired by ethnographic and participatory approaches		
Methods and participants	Participant observations with 12 visiting nurses	Workshops with 6 visiting nurses and 2 head nurses	Process evaluation with 20 visiting nurses
Data collection	Field notes supplemented by journal notes and medication lists	Working sheets and transcribed audio recordings from workshops	Logs (n=40), transcribed audio recordings from group interviews
Findings	Mediating on knowledge of the patient, on information to the patient and on rules and standard procedures Establishing order in medication lists and in mediations in the home	Enable knowledge of the patient's basic needs Enable context specific nursing assessment with preventive focus	Inter-disciplinary Visit revealed importance of nurse-patient relationship Two scheduled visits revealed the importance of nursing assessment and logistics Use of an organising tool revealed ethical considerations

Table 2: Overview of studies 1,2 and 3

CHAPTER 4. STUDY 1: EXPLORATION

This chapter reflects on Study 1, which was originally published in the paper 'Visiting nurses' post-hospital medication management in home healthcare: an ethnographic study' (1). The presentation supplements the paper by emphasizing the motivation that inspired the choices that were made, by encompassing additional data and by addressing the process of creation of the model for development of evidence-based municipal nursing care.

4.1. METHODS: STUDY 1

The presentation of the methods applied in Study 1 includes information on the approach, the setting and the participants, data collection, data analysis and ethical considerations. Limitations of the study will be a part of the presentation.

4.1.1. ETHNOGRAPHIC APPROACH

In Study 1, an ethnographic approach, inspired by Spradley (83), was applied to explore the visiting nurses' post-hospital medication management and to identify the key elements in safe patient medication. The ethnographic approach is a well-known starting point for participatory-based research (6), and Spradley suggested beginning with the participant-expressed needs to determine the most important research topics rather than starting with theoretical problems (83). This aligns well with the intentions of this project, which was initiated by the visiting nurses' department due to already identified problems, as also reccomended by others (85).

4.1.2. SETTING

The setting was a visiting nurses' department in a Danish municipality with approximately 200,000 inhabitants. The visiting nurses' department was organised into five separate geographical areas with two head nurses in each location. The study was conducted in one of these five visiting nurses' departments. The department had two head nurses and two nurse-coordinators, who managed the internal and external collaborations, such as planning for a discharge. Thirty visiting nurses provided nursing care day, evening and night. Twenty day-care nurses were organised into four groups, and each was responsible for providing nursing care for patients in a specific geographical area. Only day-care nurses participated in the study because medication management after a hospital discharge is normally handled during the day. The researcher's access to the field was enabled by the fact that the researcher was

employed by the visiting nurses' department to conduct this research. The head nurses acted as gate keepers by making the arrangements regarding how to plan and execute the data collection. The researcher was physically present at the visiting nurses department for a period of six months. The first period served to allow the researcher to become familiar with the field. This was enabled and challenged simultaneously by the researcher's pre-understandings that were shaped by the researcher's former occupation as a visiting nurse. This was accurately expressed by Spradly in the quote, 'The most difficult task is to set aside the observers beliefs' (83). The nurses were eager to share their experiences on the topic. Often, the nurses reached out to the researcher and said, 'I have a good situation to tell you'. This usually meant that the nurse was about to share information about a situation where massive doubt had existed regarding the prescriptions that posed a potential severe risk for the patient, all of which the nurse had typically already solved. It was an advantage that the topic was one that was interesting to the nurses although the consideration of the possibility of 'skewed' knowledge base was acknowledged.

4.1.3. DATA COLLECTION

The data collection method chosen was participant observations and informal interviews conducted during the visiting nurse's initial visit to the patient's home once the patient was discharged from the hospital. The ethnographic approach was used to explore the social situations, which encompass the elements of place, actors and activities (83). In this study, the place was the patient's home, the actors were the visiting nurse and the patient, and the activity was post-hospital medication management. Hence, the social situations were linked by the similarity of the activity while the actors and places were varied (83). The inclusion of social situations for data collection occurred during a period of four weeks at the visiting nurses' department. The social situations were consecutive included if they concerned a patient in need of visiting nurses care for the management of medication after a hospital discharge. No criteria based on age or illness were applied because visiting nurses care for all patients who are in need of nursing care. The nurses participated voluntarily, and no nurses refused to allow the observer to be present. It might be considered whether or not different nurses were eager or reluctant to engage in the chosen social situations and whether or not their acceptance of participation was influenced by the researcher or the head nurses. The inclusion of social situations resulted in participant observations at twelve initial visits in twelve different patients' homes that were conducted by ten different nurses from the department. When a situation was chosen, the researcher followed the nurse from the office to the home. The researcher wore a uniform similar to that of a visiting nurse and an identification badge that included the researcher's name and occupation. In the home, the researcher did passive to moderately active observations by carefully balancing the dual purpose of observing

and engaging (83). For example, the observer once assisted the nurse in comforting a bedridden patient. Field notes were made during the visit using a pen and paper, consisting of observations, dialogues and considerations. The initial descriptive observations were guided by descriptive questions (83) that focused on observations of the home, such as a withered Christmas tree in late January, which might have indicated a dependent patient. The following focused observations were further guided by structural questions (83) that could concern the various methods used for storing medications in the home. The final selected observations were guided by contrasting questions (83) that could concern whether the necessary medications were available and the different causes and actions taken by the nurse to ensure the availability of the necessary medications. Hence, the research topic of the key elements in safe patient medication was explored through these observations and informal interviews. The topic was further guided and narrowed down after the initial open entrance (83). Descriptive, focused and selective observations were all made simultaneously during the visits although they were described in a linear pattern for clarity (1). At four of the visits, photos were obtained once the participant's consent was granted (see Section 4.1.5). The photos served to illustrate various observations about the setting and the activities of the nurses. After the visit, the field notes (data) were expanded by including additional information from medication lists and journal notes. For example, the number of pages in the journal regarding the discharge instructions as well as the number of prescriptions and high-risk medications. An overview of the patient characteristics based on their age, illnesses, living conditions, and specific data from journal notes and medication lists as well as the duration of the visit and the characteristics of the conversation were made after the observations. Supplemental data that was not included in Paper 1 were the visiting nurses' registrations of all initial visits during two separate months during the project. These registrations were filled out by the visiting nurses to gain insight into their time spent in the home, the time spent on preparation, doubts about the prescriptions, notes about the availability of medications in the home and necessary contacts for solving medication discrepancies. Collection of these registrations were encouraged by the chief of nursing and were facilitated by the researcher's presence at the visiting nurses' department because the nurses were reminded to fill in these registrations when they met with the researcher.

4.1.4. DATA ANALYSIS

Data consisted of field notes, which were systematically analysed using paper and pen, as inspired by Spradley's descriptions (83) (Appendix C). First, the domain analysis was performed, which meant going through the field notes searching for 'semantic relationships', words that seemed to have a certain connection. Semantic relationships consist of a cover term (x) and several included terms (y). For example,

y is a part of x, or y may lead to x (83). The process of going through the field notes searching for semantic relationships helped to break down the text from meaning into words. This process promoted the researchers' ability to set aside own pre-understandings, also. Fifty-one overlapping domains were found that included various amounts of information and had varying levels of importance in regard to safe patient medication (Appendix C). For instance, the domain of 'Kinds of getting access to the patient's home' was excluded to prioritise domains that were assessed as being more relevant to safe patient medication, such as 'parts of observations of the patient' or 'kinds of questions to collaborators'. Second, the taxonomic analysis was performed, which meant scrutinizing the chosen domains to organise the included terms into a hierarchy by searching for similarities and differences. 'Ways to mediate' was hierarchically sorted into types of mediation (Appendix C). Third, the componential analysis was then performed. This required the researcher to ask contrasting questions to the elements that were raised in the taxonomic analyses. For example, the question of 'reasons for mediating' was considered (Appendix C). Spradley describes this level of analysis as being both an art and a science (83). This requires the researcher to follow ideas and try out different solutions until a solution is reached, which is considered to answer the question in a reasonable way. The last step, the theme analysis serves to communicate the findings by covering the broader features as well as the minor details involved in visiting nurses' post-hospital medication management, which is reflected in the findings (1)

4.1.5. ETHICAL CONSIDERATIONS

The study was approved by the Danish Data Protection Agency (journ.nr.2015-55-0585), which covers the necessary regulations for the storage and protection of the collected data (Appendix B). The regional ethics committee stated that no approval was necessary according to Danish law. The participating nurses provided written, informed consent (86,87) prior to their participation in the study (Appendix B). Negotiations made during the morning meetings decided how the visits of the day were going to be divided and who would perform the observed initial visit in order to support the nurses' voluntary participation.

The patients were informed orally by the visiting nurse and had to offer their acceptance of the researcher's presence (86,87). Information to the patients was adjusted based on their situations. Through passive to moderately active observations, the researcher's main concern was to protect the participants by being minimally disruptive to the nurse's activities and to participate only as an assistant if needed.

Photos were obtained by a situated approach that involved a negotiation with the participants to secure consent and to ensure anonymity and confidentiality (88). This

implied a flexible approach, sensitive to the wishes of the participants given the specific situations. While the study concerned organisational processes, the researcher-only photographs were especially well-suited to documenting elements of the environment (89).

4.2. FINDINGS: STUDY 1

The main findings from Study 1 (Figure 1) were the visiting nurses' use of two salient activities of 'mediating' and 'establishing order' throughout the visit, which were found to be the key elements in safe patient medication. The execution of the visits were communicated as twelve stages, to illustrate the various activities and decisions that were made with a consideration given to the risk of over-simplifying the process. During the twelve stages, the salient activities were applied to best meet the specific needs of each patient and their specific home situation. The twelve stages were: 1. Preparing the visit at the office, 2. Arrival at the home, 3. Entry, 4. Greeting the patient, 5. Reading their medication lists and other materials from the hospital, 6. Comparing pre- and post-admission medication lists, 7. Disambiguation of prescriptions, 8. Surveying present and absent medication and remedies, 9. Planning medications, 10. Dispensing medications for 2-4 weeks, 11. Leave-taking, and finally, 12. Documenting and planning the next visit.

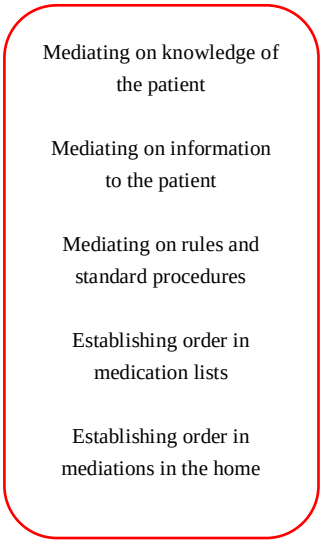

Figure 1: Findings: Study 1

The term 'mediating' is used to refer to the different ways in which the nurse can adjust her approach to best meet the needs of the individual patient given the home conditions. It encompassed mediating nursing care to align with the available knowledge of the patient's conditions. It also included mediating their information shared with the patient. Finally, it included mediating on the rules and regulations that are supposed to guide their practice.

The nurses adjusted their nursing care based on their available knowledge of the patient's conditions. One knowledge source was the electronic patient journal. Notes regarding the discharge plans corresponded on average ten pages of the journal. If a discharge summary was available, the nurse read this summary before the initial visit, trusting that it would summarise any necessary information. Occasionally,

important information was hidden in other pages, which might represent a potential risk for medication errors.

Another important knowledge source was the patients themselves. However, the majority of the patients in this study had difficulties in expressing their conditions, needs and wishes. Thus, the nurse's observation skills became an important knowledge source used to supplement their understanding of their patients. Often, the nurses had to trust their own observations that might contrast to the prior information they had obtained from the electronic patient journal. Occasionally, relatives or home healthcare professionals would be able to provide supplemental information. Extensive and imprecise documentation as well as limited opportunities to directly verbally communicate with the patient could result in the nurses being forced to act despite the fact that they potentially lack essential information.

The nurses mediated on the information that they shared with the patient and by avoiding to communicate their doubt and uncertainty. Calmly and gently, they attempted to solve any discrepancies and uncertainties while at the same time assuring the patients, both with their verbal and non-verbal cues that everything was all right. Either by moving the uncertainty to another location, by calling collaborators from the car or from the office or by withholding uncertain information from the patient. As such, the visiting nurses attempted to convey only confidence to their patients until they were able to resolve their own uncertainties.

The nurses mediated on the rules and standard procedures in their efforts to ensure safe patient medication. Nurses' efforts in the safe maintenance of patients' medications implied that the actual prescriptions were carefully compared to the prescriptions that were given prior to their admission to the hospital and to the patient's actual health condition. Previously prescribed drugs, available in the home, were occasionally dispensed to the patient even with a missing prescription. Sometimes, the nurse knew that this drug was not available at the specific hospital ward and hence the prescription was suspended. Sometimes, the drug had not been necessary during the in-hospital stay, but it was needed once the patient returned home. This was followed by making contact with the general practitioner to ask for a new prescription. The rule, that the actual drug name should always appear on the medication list, posed challenges because the drug stores were obliged to always deliver the cheapest drug available. Hence, there were frequent changes required to the medication lists in order to change a drug name. Sometimes, the patient used vitamins or minerals, which were not included on the medication list. The rule of only dispensing medications if all medications were available was practically impossible to follow because the necessary medications were only available in half of the visits. This finding was supported by the visiting nurses' registrations of all initial visits

during two separate months. Another rule of not making changes to previously dispensed medications was often breached in order to protect the patient's expenditures by avoiding throwing out previous purchased medications.

The term 'establishing order' refers to the nurses' actions in establishing order in the medication lists and in the physical storage of medications in the home. Establishing order in medication lists were the nurses' primary concern during the initial visit. Comparing the pre- and post-hospital prescriptions to the patients' actual condition raised a number of questions, which the nurses attempted to solve by contacting the general practitioner, the hospital, the drug store or the patients' relatives. As such, doubts about the prescriptions were typical. Doubt about prescriptions concerned up to fifteen of the drugs on the medication list, which were either added, skipped or changed in dosage or frequency during the patient's in hospital stay.

Establishing order in the physical storage of medications in the home usually implied looking for medications in closets and boxes all over the house. The nurses often uncluttered a closet containing medication remedies that had been collected over many years. Based on the nurses' experience in medication management, the remedies were resolutely sorted and a lot was thrown out. The private home as a context of care was characterised by the inseparable nature of housekeeping and care, which was visible in the different types of storage methods for medications. The nurses' responsibility for tidying up the older medication remedies remains an area that is unclear.

In summary, the findings of Study 1 showed that key elements in visiting nurses' post-hospital medication management were that the nurses mediated on knowledge of the patient, on information shared with the patient and on the rules and standard procedures. Likewise, they established order in the medication lists and in the physical storage of medications within the home. These findings formed the basis of the planning for Study 2.

CHAPTER 5. STUDY 2: DEVELOPMENT

This chapter reflects on Study 2, which was originally published in the paper 'Improving visiting nurses' post-hospital medication management, a participatory approach' (2). The aim of this study was to develop potential suggestions for interventions that might improve safe patient medication after the patients had been discharged from the hospital. This presentation supplements the paper by emphasizing the motivation for the choices that were made and by elaborating on the connections between Study 1 and Study 2. In addition, the presentation addresses the process of creation of the model for development of evidence-based municipal nursing care.

5.1. METHODS: STUDY 2

5.1.1. PARTICIPATORY APPROACH

In Study 2, a participatory approach, inspired by Simonsen (6), was applied to develop potential suggestions for changes in practice for visiting nurses' post-hospital medication management. The participatory approach was well-suited because it originated as a response to a transformation in workplaces and because it implied a recognition of users as active participants who can articulate desired aims for the future (6). In participatory design, the term design can refer to a practice or a product, and is used to explain the process of developing new solutions for a problem (6). In this study, the aim was to design a practice/an intervention to address the visiting nurses' existing problems in post-hospital medication management. The participatory approach is not defined by strict rules, but instead it is defined by a commitment to adhere to the basic principles of participation, democracy and action (5,6). The method of workshops was inspired by Kanstrup and Berthelsen (90) and by Sanders (91) because they provided detailed guidance in regard to the steps involved and ideas about the possible content and analysis for the workshops. The workshops were conducted at the visiting nurses' department's location (see Section 4.1.2), and the participants were visiting nurses and head nurses.

5.1.2. DATA COLLECTION

Data were collected during two workshops that covered the phases of selection, planning, insight, vision, sketch and present (90). The selection and planning phases were conducted in close collaboration with the head nurses and concerned the questions of 'Who', 'When' and 'What'. 'Who' referred to the selection of the participants, which was considered according to motivation, workload and available

resources. 'When' included pragmatic decisions regarding time and place in order to best balance the duties of performing and developing patient care. 'What' involved the planning of the content for the workshops. Workshop 1 concerned the insight and vision phases (Appendix D). Study 1 informed Study 2 by providing insight into the visiting nurses' post-hospital medication management practices. An initial presentation of the findings from Study 1 and a subsequent roundtable discussion served as the insight phase. Study 1 also informed Study 2 because the researchers created two hypothetical personas and a number of scenarios (91,92) occurring in a hypothetical post-hospital medication management. The development of the personas and scenarios was based on the field notes from Study 1. The head nurses confirmed that the created personas represented the needs of medical patients who require nursing assistance in medication management in the home following their hospital discharge. The vision phase was conducted by an external collaborator, who was experienced in leading creative processes in the healthcare sector, but was from outside of the nursing profession. This created the possibility of obtaining a new perspective on the participants' experiences. For each scenario, a group of nurses would suggest potential practices that might be preferable as wishes for the future (91). The vision phase was closed by the participants' summarising, prioritizing and presenting their ideas for the future and suggesting potential changed practices for visiting nurses related to post-hospital medication management. The researcher produced field notes based on observed interactions and reflexions during the workshops. Workshop 2 covered the sketch and present phases (Appendix D). The aim was, based on the findings from Workshop 1, to sketch out the suggested interventions, which might be implemented by the visiting nurses department. The participants worked in pairs to present suggestions for interventions. After a visualization of the suggestions on the whiteboard, they were further prioritised to indicate the participants' expectations related to the probability of implementation.

5.1.3. DATA ANALYSIS

Data consisted of 124 pages of transcribed audio recordings from the two workshops. Worksheets and the researcher's field notes on the process supplemented the data. The analysis served to bridge the gap between analysis and design by applying different analysis methods to reach the aim and the expected deliverables of the study (91). Although worksheets presented suggested interventions, the transcriptions informed a more-detailed analysis based on the transcribed dialogue that occurred in the groups during the workshops. Hence, the dialogue served as a form of analysis during the workshops, and the researcher performed an analysis after the workshops. This analysis was guided by the aim and the expected deliverables (91), which was to identify possible suggestions for future changed practices. The analysis process consisted of different processes, such as the transformation of data to information and

to knowledge (Appendix C) and the creation of abstraction hierarchies with means-ends relationships by asking 'why' and 'how' questions related to the suggested changed practices (Appendix C) (91).

5.1.4. ETHICHAL CONSIDERATIONS

The study was covered by initial approval from the Danish Data Protection Agency (journ. Nr. 2015-55-085) (Appendix B). The participants provided written, informed consent (86,87) for their participation prior to the workshops. The voluntariness of participation could be questioned because the participants were chosen by the head nurses and hence expected to participate as a part of their job. However, two participants were absent from the second workshop. One head-nurse was absent due to other tasks, and one visiting nurse was not there due to a prolonged visit with a terminal patient. One visiting nurse cancelled her participation in the first workshop due to educational tasks, but the head nurses arranged it such that these tasks could be fulfilled on a different day.

At the workshops, efforts were made to create a safe and informal environment. For example, no one was exposed since the researcher took care to protect the identities of the participants, and the participants were grouped with consideration for creating a safe environment with equal space for the participants' voices.

5.2. FINDINGS: STUDY 2

The result of the workshops and analysis was a list of ten possible suggestions for future changed practices in visiting nurses' post-hospital medication management. The participants suggested the following:

- A health professional, knowing the patient or competent to assess the patient's situation critically, should be available to meet the patient at home once the patient is discharged from the hospital.
- The visiting nurses and homecare professionals should be able to perform primary nursing duties, meaning that one person would be responsible for the whole of the care in order to reduce the number of health professionals coming into the home since that was perceived to increase the potential for errors.
- The possibility of performing flexible home healthcare for the first few days after a hospital discharge to enable a closer observation and adjustment of care and treatment based on the patient's fluctuating needs.
- Performance of an 'interdisciplinary visit' in the patient's home to enable knowledge-sharing between professionals.

- The planning of 'two scheduled visits' by a visiting nurse: Day one would be used to solve prescriptions issues and concerns and to take care of ordering and the delivery of medications as well as the 'use of an organising tool' to create a more uniform method of storage for the medications within the home. Day two would be used to dispense medications and evaluate the patient's current health conditions.
- The visiting nurse would perform context-specific nursing assessments with a focus on preventive care within the first 48 hours after a hospital discharge.
- The visiting nurse should call the hospital nurse the day before discharge to collaborate on the medication reconciliation to reduce any potential confusion about the prescriptions.
- The hospital could send a plan for adjustment and the control of new medications and explanation for any dismissed medications to reduce the confusion related to prescriptions.
- The possibility of clarifying the nursing responsibilities for managing any necessary adjustments of laxatives, mild painkillers and vitamins to reduce less important contacts to the medical doctor
- The primary and secondary healthcare sectors should be more unified to protect their common interests.

These suggestions formed the basis of the selection of an intervention and planning for the implementation during Study 3 (Section 6.6.1). In Study 2, the suggestions were reported as two main findings (Figure 2), which covered the list of suggestions and expressed two intentions for the future intervention. The future intervention should enable visiting nurses to expand their 'knowledge of the patient's basic needs' and enable their 'performance of a comprehensive nursing assessment' with a focus on preventive care. As such, the findings of Study 2 differed from the findings of Study 1 by turning towards possible solutions rather than pointing at key elements or concerns regarding safe post-hospital patient medication.

'Knowledge of the patient's basic needs' was identified as a prerequisite to ensure safe patient medication. As shown in Study 1, documentation habits and patient's difficulties in expressing their own needs could hamper the obtainment of the necessary knowledge by the visiting nurses. Homecare professionals were perceived as an important source of knowledge because they handled the daily care of the patients including the care to meet their basic needs. Occasionally, the home care professionals were the first line of defence and the first to notice changes in the

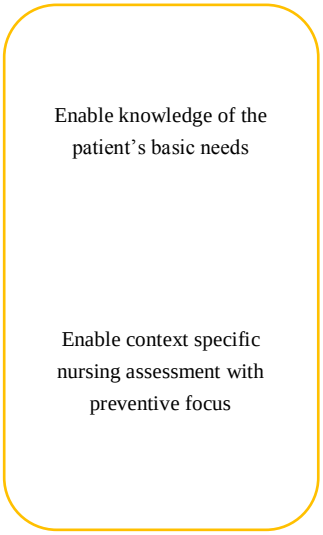

Figure 2: Findings: Study 2

patient's habitual condition by spotting actual care problems, such as changed mobility, eating habits or dyspnoea, which might necessitate adjustments to the care and medication regimens. Knowledge about the patient was appreciated because it helped limit the deficiencies in the documentation and communication problems by making them less important. Ideally, the nurses suggested the performance of primary care, meaning that one person should perform the entire care of the patient, and the possibility for flexible home healthcare during the first few days after hospital discharge so that the care could be more driven by the patients' needs. While these suggestions did not align with the actual activity-based funding for home healthcare, the nurses suggested an interdisciplinary visit in the home might encourage more knowledge-sharing between the visiting nurses and the homecare professionals.

Performance of nursing assessment was raised as an important element in the planning of care for the patient. A comprehensive analysis of the patient's health condition including medication reconciliation based detailed future care plans including observations and nursing interventions. In this assessment, the context of care, the patient's home, and the risk of aggravation were both taken into account. The important nursing assessment was often set aside in deference to other more pressing tasks such as establishing order in the medication lists and ordering and delivery of medications. Hence, the nurses suggested that two scheduled visits to the home rather than one would improve the nurses' abilities to conduct a comprehensive nursing assessment. They also suggested the use of an organising tool to improve the clarity of the storage of medications within the home. The discussions in the group reflected the nurses' preventive perspectives that focused on preventing any potential aggravation of the patient's health condition by taking into account the patient's habits and abilities. The health system, as the context of care, was also considered in attempts to be responsible for the actions taken even by other healthcare professionals.

The list of suggestions covered both long-term and short-term suggestions as well as suggestions within and outside of the scope of change possibilities in this project, which were performed within the visiting nurses' department. As such, it was not possible to implement any of the interventions that would be conducted within the hospitals or by the general practitioners. During the project, it was considered to report the finding of Study 2 as a selected intervention (Section 6.6.1). It was decided to

report the subsequent selection process as a part of the planning phase for Study 3. These considerations showed that the project was performed as a process rather than as three independent studies even though they were reported as such.

In summary, the list of suggestions for changed practices covered multiple possible and unlikely elements for a possible future intervention. The nurses wished the future intervention could enhance their knowledge of the patients' basic needs and enable their performance of a comprehensive nursing assessment with a focus on preventive care to improve safe post-hospital patient medication.

CHAPTER 6. STUDY 3: PROCESS EVALUATION

This chapter covers Study 3, which was reported on in Paper 3, 'Improving post-hospital medication management in a Danish municipality: a process evaluation'(3). This chapter supplements the paper by emphasising the motivation for the choices that were made, elaborating on the connection between the sub-studies and reflecting on the creation of the model for the development of evidence-based municipal nursing care. Going from Study 2 to Study 3 involved numerous planning activities, which are described in Section 6.1.1. The knowledge base for Study 3 encompassed the findings from Studies 1 and 2, which were the key elements in the safe post-hospital medication management and the suggestions for future changed practices, which encompassed a list of ten suggestions communicated by two intentions.

6.1. METHODS: STUDY 3

Implementation of complex interventions requires methodologies, which are able to handle the dimensions of the complexity that exist in the everyday practical settings where the implementation will occur (73). While the participatory approach (6) allows for the generation of new knowledge as well as for bringing about change, this perspective was applied to the implementation of the developed intervention in order to improve the safe post-hospital patient medication.

6.1.1. PROCESS EVALUATION

In Study 3, the participatory approach, requiring a commitment to participation, democracy and action, was the foundation for the performance of a process evaluation. The process evaluation was performed with an aim to inform a future possible implementation of the intervention by exploring the mechanisms of impact and contextual factors that might be of importance to the implementation. The study design was inspired by the MRC guidance on process evaluation (82) encompassing the phases of *planning, conducting, analysing and reporting*. While described as an independent phase (82), the *planning* phase is reported in this section, before to the data collection section. The *conducting* phase compares to the data collection section, and the *analysing* phase compares to the data analysis section. Finally, the *reporting* phase compares to Paper 3 (3).

The planning phase was inspired of the theory of the Behaviour Change Wheel (BCW), a guide to designing interventions (81), in order to facilitate a tailoring of the techniques to the specific context and participants. First, the target behaviours and elements for the intervention were selected (81) in collaboration with a head-nurse to ensure management support. Three elements from the list of ten suggestions for changed practices were ultimately chosen, which were 'interdisciplinary visit', 'two scheduled visits' and the 'use of an organising tool'. Thus, a direct link was established between Study 2 and 3 because the chosen elements were included on the list of suggestions. Likewise, the chosen interventions were linked to the identified key elements in safe patient medication that were identified in Study 1 as illustrated in Figure 3.

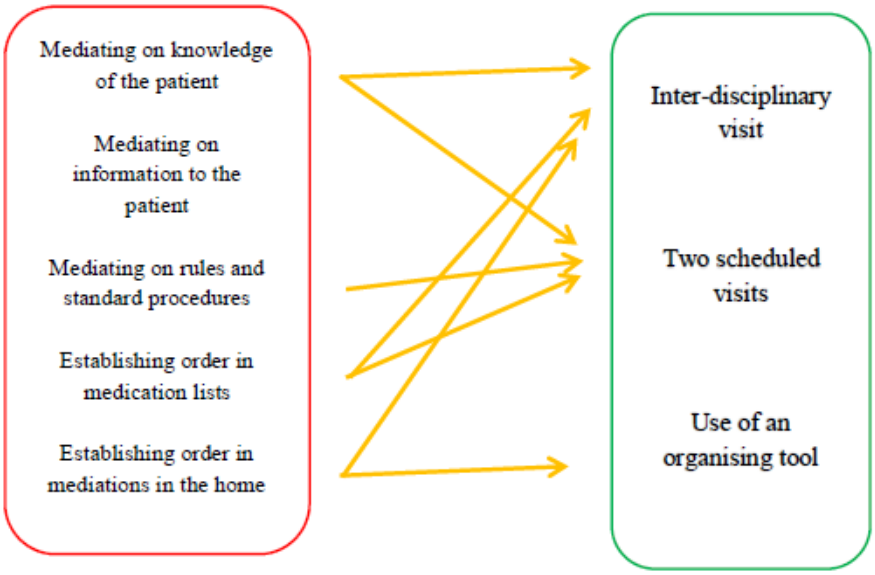

Figure 3: Link between study 1 and study 3

The choice of elements relied on judgements of affordability, practicality, effectiveness, acceptability, safety and equity (81). Hence, pragmatic solutions were prioritised within the scope of possible changes and available resources. Second, an analysis of capability, opportunity and motivation in relation to the visiting nurses' department (81) revealed the aspects of 'reflective motivation' and 'social opportunity' as important areas to address. These aspects guided the choice of behavioural change techniques. For example, the technique 'education' based the choice of regular morning meetings with visiting nurses (participation) and the production of flyers (Appendix E). Likewise, the technique 'environmental

restructuring' based the production of posters. Both techniques supported the aspect of 'reflective motivation'. The technique 'enablement' based the production of logs (Appendix E) for self-monitoring, which supported the aspect of 'social opportunity' (81). At the morning meetings, the intended intervention were shaped through discussions amongst the group (democracy). For example, the organising tool was changed based on the participants' suggestion against storing liquids and acute-care medications in plastic bags. Different organising tools were then considered from boxes to plastic bags, and eventually, the cheaper solution was chosen. Flyers and posters, outlining the aims and key elements of the intervention, served as the technique 'reminders' (81). For example, the posters initiated a debate in the groups even when the researcher was absent and as such, enabled a facilitated discussion without a researcher being present. To get a sense of the possible recruitment, two coordinating nurses registered all discharges in the districts during the month prior to the implementation. The head nurses also considered the participating districts in order to available resources, workloads and readiness for change. Because of the visiting nurses' expressed interest and enthusiasm at morning meetings, the intervention was implemented in all four districts for three months (action).

6.1.2. DATA COLLECTION

Data collection occurred continuously during the three months of the implementation of the intervention. When a patient in need of visiting nurses' assistance for medication management was discharged from the hospital to the home, the coordinating nurse initiated a log by filling out the patient's identification information, the nurse-district and the date for discharge. She scheduled the interdisciplinary visit in collaboration with the homecare leaders and put the visit on the visiting nurses' day plan. This procedure implied more work than usual because the two scheduled visits were registered as six separate nursing activities instead of one as was usual prior to the intervention. This induced enthusiastic discussions between the nurse coordinators and the head nurses that revealed important differences in the perspectives towards the aim of documentation of the nursing activities. The first-day visit was intended to include the 'interdisciplinary home visit', during which the nurse and the homecare professional would meet in the patient's home to coordinate care. This allowed for a shared assessment of the patient's needs and a collaborative outlining of the intended care plans. This process also enabled the nurse to perform the necessary medication reconciliation and to take care of any necessary ordering or delivery of the needed medications as well as the 'use of an organising tool' to clearly store the medications within the home. The tool consisted of coloured plastic bags for each of the following categories: 'medications for dispensing', 'daily, not dispensed medications', 'medications used if needed' and 'medications not in use'. Because of the element 'two scheduled visits', the nurse would then return to the home again on the second

day after the patient's discharge. This visit was intended to include the dispensing of medications and a re-assessment of the patient's basic needs as well as an initiation of necessary adjustments to the treatment and care plans.

In the case of a newly discharged patient being added into the group, the visiting nurse brought the log of the visit to the home and filled out a number of yes-no questions, such as 'Have you performed an interdisciplinary home visit?' (Appendix E). The technique of 'social support' (81) was fulfilled when the researcher provided assistance in filling out these logs. A continuous collection of logs based the technique of 'feedback' (81), which was provided in a weekly newsletter. This was intended to maintain the motivation and participation of the visiting nurses. During the last two weeks of the implementation, group interviews (93) with the participating visiting nurses were conducted. Three interviews including 20 visiting nurses (n = 6+7+7) were planned. Due to the absence of 11 nurses, a nurse leader initiated the planning of a fourth group interview. In conclusion, 14 nurses participated in four separate group interviews (n = 4, 2, 5, 3). The interviews that were conducted were inspired by Morgan (93) and were intended to expand the understanding of the visiting nurses' experiences while they were implementing the intervention. To achieve this intention, a funnel strategy was applied by going from open ended to more narrow questions. This strategy was intended to capture both immediate perceptions and to allow for the possibility of a detailed insight into the participants' experiences.

6.1.3. DATA ANALYSIS

Data consisted of logs collected from the visiting nurses on their performance of the intervention (n=38) and from 73 pages of transcribed audio recordings from the group interviews. The analysis was inspired by Moore's model for process evaluation, which examined 'implementation, mechanisms of impact and contextual factors' (82). The analysis of implementation comprised fidelity, dose and reach and was based on the collected logs. A deductive analysis using a low level of interpretation was applied (94) to identify the mechanisms of impact and contextual factors. This meant searching the transcripts for mediators and unexpected pathways for each element of the intervention (Appendix C). For instance, the implementation of the interdisciplinary visits in two thirds of the cases did not provide information about the visiting nurses' experiences. Searching the interview data for more detailed information about the expressed experiences, served to provide a more nuanced examination of the implementation. Whether group interaction should be analysed in focus groups is a persistent discussion (95). In the performed interviews, the group interaction promoted the conversation, although the interaction was not a part of the analysis. This was the motivation for applying the term 'group interviews' referenced by the book 'Focus groups' (93). The performed group interviews could have

provided insight into group dynamics. However, this was not chosen due to the aim of Study 3, which was to disclose the mediators and unexpected pathways in the implementation of the intervention in order to inform possible future implementation. The deductive analysis using a low level of interpretation ended at the descriptive level, and the identified categories were presented as the findings (94).

6.1.4. ETHICAL CONSIDERATIONS

The study was approved by the Danish Data Protection Agency (journ.nr. 2015.55-085). The participating visiting nurses provided written, informed consent (86,87) although the voluntariness could be debated since they were expected to participate as a part of their job and because nurses' absences resulted in the planning of supplemental group interviews. The interviews revealed the nurses' efforts to protect their patients from harm during the implementation of the intervention, for example by avoiding application of elements, which could harm autonomy or privacy. All participants were anonymised in the reporting.

6.2. FINDINGS: STUDY 3

The process evaluation explored the implementation, the mechanisms of impact (mediators and unexpected pathways) and the contextual factors of importance in the implementation process of the intervention consisting of the elements 'interdisciplinary home visit', 'two scheduled visits' and the 'use of an organising tool' (Figure 3). The fidelity was high because at least one of the elements was applied in 31 out of 38 of the cases. The interview data expanded the understanding of the implementation rates.

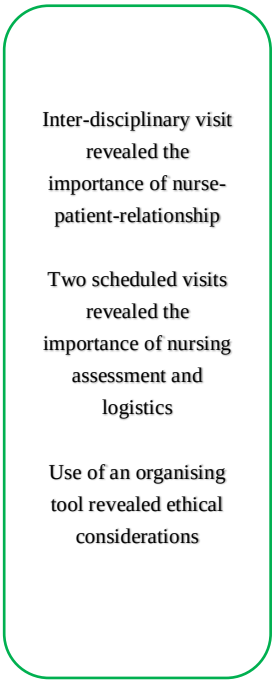

Figure 4: Findings: Study 3

The 'interdisciplinary visit' was performed in two thirds of the cases. Two mediators promoted the implementation of this element. First, patients with complex care needs and difficulties in expressing their needs and wishes promoted the use of this element because these conditions called for interdisciplinary knowledge sharing. Second, health professionals' previous knowledge of the patient also mediated the use of this element. Knowledge of the patient was perceived to enable the nursing assessment and to support the nurse-patient relationship. As such, the risk of harming the relationship building by the implementation of 'interdisciplinary visit' was an unexpected pathway. An important contextual factor was that the 'interdisciplinary visit' could demonstrate to the patients the unity among various municipal healthcare providers and departments. This was important because the organisation of municipal healthcare could imply many different health professionals might be simultaneously in the home but are responsible for different tasks. Another contextual factor was that the interdisciplinary visit could be judged as unimportant, if no instrumental tasks were required.

Two scheduled visits' as an element were implemented in half of the cases. A mediator that promoted the implementation was that the needed medications were not available in the home during the first visit. This led the nurse to need to conduct a careful medication reconciliation. The medication reconciliation implied reflections that promoted the important nursing assessment with a focus on preventive care, which was consistent with the findings from Study 2. Another mediator was the nurses' feelings of pride and relief. The nurses felt proud when they saved the patients from ailments due to the identification of inappropriate medications, and they felt relieved because the two scheduled visits indicated an acknowledgement of the excessive workload involved in safe post-hospital patient medication. An unexpected pathway was the fact that this workload regarding the reconciliation, ordering and delivery of medications could also delay the important nursing assessment by shifting the nurses' attention from conducting their nursing assessment to the more logistical elements of medication management. The contextual factors of importance were the different perspectives of municipal and hospital healthcare providers in regard to IT systems, time perspectives or the assessment of the patients' abilities.

‘Use of an organising tool’ was implemented as an element in one third of the cases. A mediator for the implementation was the nurses’ perceptions of improved clarity, which was promoted in the cases where there was a chaotic storage system for medications within the home. Another mediator was cases, where the home healthcare professionals were responsible for medication administration within the home. In these cases, the nurses’ perceived that a more uniform storage system might lead to an improvement of the safe administration of medication. The identified unexpected pathways were that the ‘use of an organising tool’ could also degrade the clarity and that it was not applicable in situations where the patients were self-administering their medications. A contextual factor was ethical concerns regarding the patients’ private homes as the context of care. The nurses’ expressed concerns about the appropriate level of intrusion in the patients’ private homes, which showed the nurses efforts to protect the patients’ privacy and autonomy, which are a part of the patient’s preferences.

In summary, the implementation of the intervention, consisting of the elements of ‘interdisciplinary visit’, ‘two scheduled visits’ and the ‘use of an organising tool’ was mediated by complex patient situations and the nurses’ prior knowledge about the patient which promoted performance of comprehensive nursing assessment. Unexpected pathways were hampered nurse-patient relationship building and demands in balancing the nurses’ professional responsibilities and protection of the patients’ autonomy and privacy. The process evaluation revealed three factors of importance for future implementation of interventions aimed to improve safe post-hospital patient medication. The important factors were:

- The *nurse-patient relationship* which enhanced the nurse’s knowledge of the patient and enabled performance of nursing assessment
- The nurse’s performance of *nursing assessments*, which enabled the nurse to initiate necessary adjustments to the treatment and care plans based on the patient’s actual condition
- *Ethical considerations* which enabled the nurses’ efforts to balance the professional responsibility to the patient’s preferences as much as possible

CHAPTER 7. DISCUSSION

The aim of this project was to explore the visiting nurses' post-hospital medication management and to develop, implement and evaluate an intervention aimed to improve safe patient medication. The thesis question was whether a research model that was based on inductive and participatory approaches could strengthen the implementation of evidence-based municipal nursing care. In this section, the findings, the thesis question as well as methodology and methods are all discussed. First, the discussion of the findings across the sub-studies will emphasise the understanding and documentation of the visiting nurses' post-hospital medication management. Second, the discussion of the thesis question will emphasise whether the application of a model that is based on inductive and participatory approaches was useful to strengthen the implementation of evidence-based municipal nursing care. Third, the discussion of methodology and methods will emphasise the reflexivity in the project and the transferability of the findings.

7.1. DISCUSSION OF FINDINGS

The overall finding of the project, across the sub-studies (Chapters 4, 5 and 6) was the disclosure of the *nurse-patient relationship,* the *nursing assessment* and *ethical considerations* as important issues for the safe post-hospital patient medication. These issues highlighted the challenges that were faced by the nurses in performing post-hospital medication management as a separated task. Hence, the discussion of the findings addresses the understanding and documentation of medication management activities in municipal nursing care.

This project showed that visiting nurses' post-hospital medication management is closely connected to caring for and knowledge of the patient's basic needs and to their comprehensive nursing assessment with a focus on preventive care. This finding contradicts actual tendencies in documentation that seem to depict nursing care as separated activities (96,97). However, the finding does support the quote that 'what people really do is often very different from the way their activities are described by others, for example in workflow diagrams, or from what people should do or ought to do in theory' (6). This may help in part to explain the persistent problems in medication management in home healthcare despite the established rules and recommendations. Documentation procedures serve to support continuity of care; support development and quality of care and support research purposes (98). Research was the purpose of an analysis of visiting nurses' time consumption that was performed by Vive, the Danish Centre for Social Science Research, which found that

the time spent at medication management had increased by approximately three times from 2002 to 2016 in one Danish municipality (96,99). Further, it questioned whether or not society could afford for the visiting nurses to spend so much time on medication management. Although it is always necessary to critically evaluate time-consumption, this question could indicate that the visiting nurses' medication management was perceived as a separated instrumental task. According to this view, subsequent assumptions could be made that the task might be better performed by machines, by people with other skills or be performed by providers that are more distant from the patient. However, the present project revealed that medication management could not be separated from the entirety of patient care even though the patients included in the project were characterised by their limited ability to maintain or communicate their needs. For example, even transportation to hospital appointments and the changing of a diaper contract could be considered to be included in post-hospital medication management. Kjellberg (99) suggested that a drugstore could dispense medications in a multidose, that municipal nursing care could occur in clinics rather than in the patient's homes and that a rehabilitation culture could be developed. Although these recommendations may fit some patients, they would not fit the patients who were included in this study. For these patients, who were dependent on the nursing assistance in medication management and (the most) were unable to maintain or express their own basic needs, medication management was necessary to be handled by professional nurses based on their assessment and interpretation of the patient's health problems. These findings were supported by Vogelsmeier's (100) study of nurses' medication reconciliation in nursing homes. She found that nurses perceived medication reconciliation as a process in which they had the responsibility of 'pulling the big picture together'. By scrutinizing the transfer documents and making contacts with collaborators, they were able to clarify confusions in the medication regimens for these patients. This lead to a suggestion of development of the nurses' ability to communicate the processes and skills that are involved in effective post-hospital medication management to change the understanding of medication management activities as separate instrumental tasks. This imply that researchers should question the documentation of nursing care as separated instrumental tasks, which could lead to the discussion of time registration for municipal nursing care.

The report on the visiting nurses' time consumption (99) points at the questionable quality of the time registrations for municipal healthcare professionals. Time registrations have been a prevailing issue in municipal nursing care since the New Public Management inspired reforms almost twenty years ago (97). These reforms served to enhance the transparency and accountability in municipal healthcare for example by creating a division between the purchaser's and the provider's responsibilities. Time registration was also a course of concern for the nurse

coordinators and the head nurses in this project. Their dialogue revealed different views on the purpose of the time registration. While the nurse leader prioritised that the time schedule showed the processes that were involved in managing the patients' medications, the nurse coordinators prioritised a smooth working practice that best secured the proper assistance for the patient with no regard for the registration of each individual nursing activity. These conflicting views illustrated the diversity in the purposes of documentation and time-registration (98) as both serving to support continuity of care as well as to support management and research purposes. In their study of nursing care needs in home-dwelling elderly with complex health problems, Næss et al. likewise found that time-registration implied a risk of documenting instrumental activities above the knowledge that was involved in the actual performance of the activities (101). For instance, they found that help with medications were defined as 'delivering prescribed medications to the patient' (101). They stated that medication management should imply observations of the effects and side effects and subsequently concluded that the needs of the patients were not being adequately met (101). Næss' findings documented the need for qualified observations and individually-tailored pro-active treatment adjustments in order to maintain the patients' best possible health and function. Likewise, the findings of this project showed that second visit would not be performed if no instrumental tasks were needed. In addition the findings revealed that the expected activity of 'dispensing medications' after a hospital discharge actually involved twelve stages, which included planning, coordination and reconciliation, which required an analysis and interpretation based on the nurses' professional knowledge. When such complex nursing interventions are documented simply as 'dispensing medications', it may lead to false decisions regarding the development for future municipal nursing care.

The disclosure of '*the nurse-patient relationship'* and '*performance of nursing assessment'* and *'ethical considerations'* may contribute to the future development of the visiting nurses' post-hospital medication management. These issues aligned well with the competencies related to 'disease prevention, ethics, assessment and covering basic needs', which were identified by an expert panel as important competencies in advanced nursing care for older people (102). This leads to considerations about how to develop these competencies, how to evaluate whether visiting nurses' hold them and, if possible, to document the impact of nurses, who do possess them. Regarding the development of nursing care competencies in municipal healthcare, Danish health authorities are developing a speciality education for municipal nursing care professionals (103). According to the preliminary plans for this education, it will among other themes address 'competencies in the care of patients with unstable and complex care needs' and 'knowledge of polypharmacy'. Hence, the preliminary plans indicate a recognition of the visiting nurses as experts in caring for patients with

complex care needs, which was also a suggestion derived from the findings in this project (2). Although the benefit of Advanced Nurse Practitioners was well-documented (41), introduction of specialist functions is suggested to be balanced against generalist functions, in order to promote the continuity and flexibility of care and enable relationship building. This underpinned the suggestion of visiting nurses as 'experts in complexity'.

7.2. DISCUSSION OF PATHWAYS TOWARDS EVIDENCE-BASED MUNICIPAL NURSING CARE

This section encompasses a discussion of whether the model that was based on inductive and participatory approaches (Section 3.3.1) was useful to strengthen evidence-based municipal nursing care. The discussion is structured according to The PARIHS (85) framework (Promoting Action on Research Implementation in Health Services), which maps out elements that need attention before, during and after implementation (67). Hence, this framework is useful in understanding the entirety of the implementation processes (51,69).

The PARIHS framework proposes that successful implementation occurs when the *context* is receptive to change, when the evidence to be implemented is actively *facilitated* and when the *evidence* to be implemented is strong (85). This framework was chosen among several others (104-107) because participatory approaches, which are applied in this project, are suggested to effectively balance the context, facilitation and evidence (73).

In the PARIHS framework, the term *context* refers to the environment in which people receive the healthcare services and the context of getting research evidence into practice and (108). The patient's private home as the *context* of care posed a special challenge regarding the necessary balance of the values of the patient, those of the healthcare professional and those of the organisation. McDonald (109) introduced the concept of homecare professionals as 'strangers in the homes' due to the unique environment, in which the patients has the ultimate authority in the home, and healthcare professionals were the guests. The present project likewise showed that the visiting nurses' raised issues about their wish to protect the patient's preferences in forms of autonomy and privacy, even when this could imply mediating on rules and standard procedures (1,3). Likewise, Young noted the importance of striking a balance between autonomy and eliminating potential risks during the health monitoring involved in medication management (84). The disclosed workload involved in the logistics of medication management corroborated Young's finding that the patients' choices of for example pharmacy and delivery system affected patient safety. Young found limited possibilities to set standards and to dictate system-level solutions for

the primary health care sector (84). Hence, considerations on the blurry lines between where care begins and where the home ends (109) and on how core values of privacy, choice and the least restrictive environment should be weighed against the importance of safety and the avoidance of risk (84). These considerations may be of importance when Danish health authorities consider expanding the inspection of nursing homes to now include home healthcare services, as well (110). Care must be taken when considering the possibility of transferring regulations from institutional-based care to the homecare setting (40). This highlights the necessity of visiting nurses to base their nursing care on both robust knowledge accumulation, such as clinical guidelines, and, at the same time, on their own professional clinical judgement.

The municipal healthcare sector as the context of care is characterised by a large geographical area, fragmentation of care and services and systemic inflexibility (111). Therefore, visiting nurses often must collaborate with multiple different homecare professionals and general practitioners. In a study of patient transitions involving the hospital sector and the municipal healthcare sector, Høgsgaard found that collaboration with the municipal healthcare sector was more challenging due to the larger geographical area and the distant solo work (112,113). The 'solo work' may pose a challenge to knowledge-sharing and teamwork within the organisation (108) and hamper potential opportunities to share the workload. In this project, the absence of 11 out of 20 nurses at the group interviews primarily from one out of the four districts indicated that the workload or the working climate could influence participation. This absence corroborated the fact that municipal healthcare is a task-driven organisation typically with limited resources allocated to participation in projects related to service improvement (108). However, improvement of care is a continuous part of an effective performance of healthcare, and hence, it may be difficult to distinguish project participation from usual patient care. In this project considerations were raised concerning mandatory or voluntary participation in research and/or development activities. The national intentions of municipalities initiating and participating in research (68) might pursue considerations regarding resource allocation at both the managerial- and provider- level of the organisation. Both levels are important to support during efforts in improvement of care. This project showed the importance of leadership throughout the project. Head-nurses played a continuously crucial role by prioritizing different projects, serving as gate-keepers, allocating time for the workshops and interviews, choosing the elements for the intervention and deciding on the appropriate organising tool for the medications within the home.

In the PARIHS framework, *facilitation* is defined as a technique by which a person makes things easier for others (85). In this project, facilitation was a person as well as materials (logs, flyers) and techniques (feedback, support) (81). Purpose, role and

skills were all indicated to influence facilitation (85). Regarding 'purpose', this project aimed to produce new knowledge while a practical organisation might expect solutions for problems at the same time (5,114). This can lead to considerations in negotiating the purposes and the short-term and long-term value of the project for the organisation and the patients in order to find a balance that takes into account both purposes. Regarding 'role and skills', the facilitator in this project was a PhD-student. This implied a scientific purpose of new knowledge through a systematic application of theories and methods and publication of results, which enabled the knowledge accumulation necessary for evidence-based municipal nursing care. This project showed, that continuous facilitation during the project phases enabled the practitioners' motivation and performance, although the researcher's writing phases decreased the practitioners engagement. In future development of evidence-based municipal nursing care, a combination of research and development projects could benefit both the change processes and the building of a scientific knowledge base.

In the PARIHS framework, the term *evidence* is defined as the process of combining different sources of knowledge from research and clinical experience in the clinical decision-making process (85). The initial literature review for this project did not reveal any evidence-based interventions to improve the safe patient medication in the actual context. Hence, the evidence for the chosen intervention, according to evidence hierarchies (115) was low. Also additional data from registrations were not judged as eligible for publication due to the number and the quality. However, the applied model that was based on inductive and participatory approaches promoted that the chosen intervention corroborated clinical experience. Thus, the group reached a consensus regarding the importance and relevance of the interventions based on their experiences (85), which, according to the PARIHS framework, strengthened the evidence. As such, the project aligned well with Green's quote, 'If we want research-based practice, we need more practice-based research' (69). In summary, the model that was based on inductive and participatory approaches did enable an accumulation of a scientific knowledge base for municipal nursing care. The applied model was characterised by efforts to reduce the gap between research and practice; this was accomplished both by exploring questions raised by the practitioners and by the close collaboration with the nurses during the exploration, development and implementation of the intervention. The application of the model highlighted the importance of leadership, and facilitation as well as the necessity of a special attention to flexibility in development of municipal health care interventions due to the patient's private home as the context of care. While flexibility and clinical judgement is a part of evidence-based care (115) the finding of visiting nurses' ethical considerations led to further recommendation of development of evidence based municipal nursing care.

7.3. DISCUSSION OF METHODOLOGY AND METHODS

In this section, the research quality of the project is discussed according to evaluation criteria for humanistic research (78,116). The issues for discussion were selected based on internal and external questions during the performance of the project. The discussion of methodology will focus on the combination of methodological approaches and include a discussion of methods with a focus on reflexivity and transferability. Reflexivity will be emphasised because of the researcher's previous position as a visiting nurse. Transferability will be discussed because of the locally performed nature of the project. Reflexivity and transferability are highlighted by Malterud as important quality criteria for humanistic health research (78).

The choices of the design, methodology and methods were the result of an iterative decision-making process shaped by the project's aims and questions (117). Hence, the intention was that the visiting nurses' post-hospital medication management would remain the focus and that the applied methodology and methods would serve as the means to explore this problem/theme (118). Within the MRC framework, ethnographic and participatory approaches were combined to explore, develop and evaluate an intervention. Since these approaches hold different scientific perspectives, the combination might be questioned. Spradley's ethnographic approach is based on a constructivist perspective (83) and participatory approaches are usually based on emancipatory perspectives (6). Because the perspectives are dynamic and evolving (117) and are not clearly delineated entities (119), Carter recommended a thoughtful rather than a dogmatic approach to methodology (117), which supported the fact that a careful balance between flexibility and rigidity is a challenge in humanistic research (78). Furthermore, Carter suggested the coherence between epistemology, methodology, methods as an alternative quality criterion for research (117). Although the hermeneutic perspective traditionally was connected to text interpretation, the key features of understanding and pre-understanding as well as an emphasis on the parts and the whole were all congruous with the present project. It was decided not to delineate the project as participatory action research because the participants were not viewed as an oppressed group, and the participants did not participate in the analysis or the reporting phases (5,91). Participation, engagement and intersubjectivity are discussed in the next paragraph related to reflexivity.

Reflexivity is suggested as an important quality criterion because a researcher's background and position will affect all aspects of the research process. What the researcher chooses to investigate, the angle of investigation, the methods judged most adequate, the findings considered most appropriate and the framing and communication of conclusions will all be impacted by the researcher's background and position (78). The introduction of reflexivity as a quality criterion disputes the

belief of a natural observer (78,118) and hence it also disputes questions regarding whether the researcher affects the process or how to prevent it. In this project, the position as a novice researcher could cause the researcher to strive for neutrality (75). Thus, a freer interaction with the participants could have resulted in other findings because intersubjectivity implies an exploration of differences rather than striving for, or expecting of common understandings (75). However, the finding of visiting nurses mediating on rules and regulations was an example of maintaining the balance between a trusting relationship and open dialogue and the critical distance that a researcher should strive to maintain. The researcher's concern was to listen rather than to have the 'right' answers in order to encourage the participants to share their knowledge. Afterword, the information was systematically, methodological and theoretical, processed to generate new knowledge.

Reflexivity imply disclosure of undesirable or hidden skewness. The risk of subjectivity rises when the effect of the researcher is ignored (78). The researcher's previous position as a visiting nurse might have contributed to a genuine interest in identifying the best possible variations of the nurses' medication management activities. Likewise, the researcher's profound interest in caring for the most dependent patients, who are unable to express needs and wishes, may have skewed the observations towards post-hospital care for these patients. Similarly, the researcher's scepticism towards the potential inequity in favour of patients who are able to make choices, may have affected the researcher's observations and analyses. The analyses implied flexibility between following the rules and following the wonderings and interests (75). Thus, in the researcher's 'reflective confrontation with the material' (75), efforts were made to manage and be aware of the pre-understandings. For instance, through systematic analysis methods (83,91), conversations with head-nurses and absences from the field during the writing phases, the 'creation of adequate distance' was achieved (78). The conceptual framework was presented as the MRC framework for Developing and Evaluating Complex interventions in Health (4). Other more salient conceptual frameworks could have influenced the project. For example, the researcher's nursing background (72,78) and special interest in nursing theories may have affected the project even though this is only explicated on in Paper 1(1). Failure to acknowledge the effect of the salient theory might be a major threat to objectivity (78). The researcher's interest in nursing theory might have affected the emphasis that was placed on the *nurse-patient relationship*, *nursing assessment* and *ethical considerations*, which are part of several nursing theories (49,74). As such, the researcher's perspective was one of many possible perspectives. Multiple and diverse observations can enrich the description of a phenomenon (78); thus, the knowledge of post-hospital medication management would be enriched by the inclusion of the patients' or homecare professionals'

perspectives as well. Likewise, involvement of users in all stages of the process is recommended within the MRC framework (4). Due to the extent of this project (to explore, develop and implement), only visiting nurses were involved.

Scrutinizing research quality implies questioning the analysis, interpretations and findings rather than blindly believing that manuals grant trustworthiness (78). This implies a consideration of the adequate degree of transferability (78). A prerequisite for transferability is publication since that is one of the features that distinguishes this project from quality improvement projects albeit the local and small scale design. In addition, well-prepared and well-documented methods of data collection and analyses characterise a scientific approach. Additional data were presented in the thesis but not in the papers. These data comprised visiting nurses' and coordinating nurses' registrations. Due to the quality of data in these registrations, they were not considered appropriate as presentation of findings in scientific papers.

Although this study did not solve the problems involved in visiting nurses' post-hospital medication management, it did highlight several issues of importance for any future development of safe patient medication. These issues were the *importance of the nurse-patient relationship* (pointing at continuity), the *importance of nursing assessment* (pointing at generalists/experts in complexity) and the *importance of ethical considerations* (pointing at evidence based municipal nursing care). In addition, it provided an example of a systematic application of theory in the development of potential interventions, which may inspire similar work in other contexts. While the organisation of municipal healthcare might differ, the concerns raised by the increasing number of older people living with multiple chronic conditions and accelerated and specialised hospital treatment plans are global. As such, the findings are descriptions and examples rather than facts (78). By publication, the intention was that the communicated findings could be part of future discussions within practical and research communities rather than having the intention of producing general knowledge (75). As such, the understanding created within the intersubjective meetings may be of importance beyond the actual project (75) and understanding may increase when different researchers perform different but equally valid studies of similar topics (78).

CHAPTER 8. CONCLUSION

The aim of this project was to explore visiting nurses' post-hospital medication management and to explore the processes involved in the development and implementation of an intervention aimed to improve safe patient medication. Due to the twofold aim of generating new knowledge as well as bringing about change, the thesis question considered whether the application of a model that was based on inductive and participatory approaches could strengthen the implementation of evidence-based municipal nursing care.

The project provided an in-depth exploration of visiting nurses' post-hospital medication management. The project exposed some of the complexity that is involved and highlighted important issues to consider in any future development of safe patient medication, although it did not provide immediate solutions to practical problems. The interventions that were developed possibly addressed some of these issues while others fell well outside of the scope of the project. Based on the findings, the following conclusions can be drawn:

- Visiting nurses' post-hospital medication management is closely connected to the care of the patient's basic needs, which should be transparent in the nurses' activity- and time-registrations.
- Safe patient medication requires the nurse's knowledge of the patient, which may be enabled by the building of a positive *nurse-patient relationship*. This is further promoted by ensuring continuity among the various healthcare professionals involved in the patients' care.
- A comprehensive *nursing assessment* that relies on professional knowledge is required to effectively and safely adjust patients' medication based on the patient's actual, current health situation in order to prevent additional ailments.
- The patient's private home, as the specific context of care, requires the nurse to take into account *ethical considerations* in order to balance professional responsibilities with the patient's preferences.
- Implementation of evidence-based municipal nursing care requires effective facilitation and leadership involvement due to the solo nature of the visiting nurses' work, the large geographical area and the fluctuating teams of health professionals, who are involved.
- The increasing number of older persons with complex care needs in their homes as well as an increased complexity in medication management are global concerns despite the small-scale design of this project.

CHAPTER 9. PERSPECTIVES

An increasing number of patients with unstable and complex care needs and specialised treatment plans in need of municipal nursing care are global concerns. Thus, the development of municipal nursing care for these patients must be considered, especially during the first few days following hospital discharge. In this project, the nurse-patient relationship, nursing assessment and ethical considerations were raised as important for safe post-hospital patient medication. This section consists of an elaboration on the implications for practice and for research based on the findings of this project. The development of care is an integrated part of nursing care, and the generation of new knowledge and initiation of change can occur simultaneously. Therefore, the implications for practice and for research will be reflected upon together.

The nurse-patient relationship building depends on continuity among the health professionals in the patient's home. Continuity of care is affected by the organisation of the municipal healthcare system. In the development of municipal healthcare, new specialist roles are occasionally introduced, such as acute care nurses. Based on this project, post-hospital medication management is suggested as a general competence that should be maintained by visiting nurses, who build additional knowledge of the patient through continuity in the nurse-patient relationship, which enables the important nursing assessment. Introduction of 'new' roles, such as 'a discharge team' or 'medication experts,' introduces the risk that the patient, who is in need of municipal healthcare, may need to meet with several professionals, who are each responsible for only a minor part of their care. This increased number of roles hampers important relationship building and the nurses' knowledge of the patient. The organisation with visiting nurses employed by the municipality enables effective collaboration and knowledge sharing between the visiting nurses and the homecare professionals, who are more familiar with the patients' habitual and actual health conditions because they are with the patients on a daily basis in their homes. However, the organisation of departments and funding should be considered to ensure continuity. This is especially important for patients with decreased consciousness and/or limited ability to maintain or express their own needs and wishes. In this study, patients with complex care needs were mediators for the implementation of the intervention. This documented the fact that the development of new initiatives for these patients are needed.

The increasing specialisation of healthcare puts additional demands on nursing care as a generalist profession since generalist competencies enable the performance of comprehensive nursing assessment with a focus on preventive care in order to ensure

the best possible well-being for the patient. As such, municipal healthcare comprises something other than transplanting specialised hospital care into people's homes (108). The new specialist education in municipal nursing care (103) is expected to emphasise generalist knowledge and competencies in order to best handle the care of patients with complex healthcare needs in their own home. Thus, in future development of post-hospital medication management, visiting nurses are suggested as 'experts in complexity' which require generalist knowledge and competencies. This could assist in the performance of comprehensive nursing assessment, which might result in safe patient medication. Further studies could explore this area.

Visiting nurses' ethical considerations in balancing their professional responsibilities with the patients' preferences highlighted the necessity of evidence-based municipal nursing care. Municipal healthcare is a challenging context for evidence-based care (111). Evidence-based care includes a robust clinical judgement that takes into account the best available evidence as well as the patient's preferences, previous clinical experience and the available resources (115,120). Municipalities' engagement in the development and implementation of evidence-based municipal nursing care necessitates considerations of both the short-term and long-term benefits for the municipality. A prerequisite for building on existing knowledge is knowledge-sharing that may occur in multiple arenas, such as in scientific papers, at conferences or in professional journals. A shared knowledge base for evidence-based municipal nursing care should result in the best possible health outcomes and well-being for the patients. The building of this knowledge base can be promoted through additional collaboration between research and development-departments in the municipalities.

In this project, efforts were made to reduce the gap between research and practice through the application of a participatory approach and implementation theory. Inductive and participatory approaches may enhance the acceptability and feasibility of future interventions. Although locally developed, the newly-generated knowledge may contribute to the transferability of the specific, like the developed intervention, as well as to the general, such as key considerations for future actions (73). Two key considerations for future actions were derived from this project. First, potential future development for the visiting nurses' post-hospital medication management should emphasise continuity of care and the view of visiting nurses as 'experts in complexity'. Second, the importance of building an evidence-based municipal nursing care system was illustrated. These key considerations for future actions are especially important for the most vulnerable patients with unstable health conditions and complex care needs, especially during the first few days following their discharge from the hospital.

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APPENDICES

Appendix A Literature searches

Appendix B Ethical approvals

Appendix C Analysis examples

Appendix E Workshops, Study 2

Appendix E Flyers and logs, Study 3

Appendix A. Literature searches

Søgning CINAHL 220318, Medication AND Home Health Care AND Discharge

S16	**S10 AND S15**	**201**
S15	S11 OR S12 OR S13 OR S14	63,950
S14	house call* or home care* or home nurs* or visiting nurse*	23,492
S13	(MH "Home Health Care") OR (MH "Home Dialysis") OR (MH "Home Intravenous Therapy") OR (MH "Home Nursing, Professional") OR (MH "Home Nutritional Support") OR (MH "Home Rehabilitation+") OR (MH "Home Respiratory Care+") OR (MH "Psychiatric Home Care")	27,059
S12	(MH "Community Health Nursing+")	24,515
S11	(MH "Home Visits")	4,417
S10	S5 AND S9	3,064
S9	S6 OR S7 OR S8	50,984
S8	discharge or patient transtition* or patient trasfer*	43,475
S7	(MH "Continuity of Patient Care+")	12,587
S6	(MH "Patient Discharge+")	19,120
S5	S1 OR S2 OR S3 OR S4	77,234
S4	medication*	76,624
S3	(MH "Medication Compliance")	10,525
S2	(MH "Medication Errors+")	10,390
S1	(MH "Medication History")	111

Søgning CINAHL 220318, Medication AND Home Health Care

S19	s15 not s16	Limiters - Published Date: 20080101-20181131	693
S18	s15 not s16	Limiters - Published Date: 20080101-20181131	693
S17	s15 not s16		1,332
S16	child* or pediatri* or paediatri* or newborn og infant*		443,640
S15	S9 AND S14		1,504
S14	S10 OR S11 OR S12 OR S13		63,950
S13	house call* or home care* or home nurs* or visiting nurse*		23,492
S12	(MH "Home Health Care") OR (MH "Home Dialysis") OR (MH "Home Intravenous Therapy") OR (MH "Home Nursing, Professional") OR (MH "Home Nutritional Support") OR (MH "Home Rehabilitation+") OR (MH "Home Respiratory Care+") OR (MH "Psychiatric Home Care")		27,059
S11	(MH "Community Health Nursing+")		24,515
S10	(MH "Home Visits")		4,417
S9	S5 OR S6 OR S7 OR S8		77,234
S8	medication*		76,624
S7	(MH "Medication Compliance")		10,525
S6	(MH "Medication Errors+")		10,390
S5	(MH "Medication History")		111
S4	(MH "Medication Management (Iowa NIC)")		2
S3	(MH "Medication Management") OR (MH "Medication Management (Iowa NIC)")		141
S2	(MH "Medication Management") OR (MH "Medication Management (Iowa NIC)")		141
S1	(MH "Medication Management")		139

Søgning, Pub Med 220318, Medication AND Home Health Care AND Discharge

Search	Query	Items found
#1	Search (((((((("Medication Therapy Management"[Mesh]) OR medication[tiab]) OR "Medication Errors"[Mesh]) OR "Medication Adherence"[Mesh])) AND ((((((("Patient Discharge"[Mesh]) OR Discharge*[tiab]) OR "Continuity of Patient Care"[Mesh]) OR patient transport) OR "Patient Transfer"[Mesh]) OR transition*[tiab]))) AND ((((((("House Calls"[Mesh]) OR "Community Health Services"[Mesh]) OR "Nurses, Community Health"[Mesh]) OR (home care[tiab] OR home nursing[tiab] OR visiting nurse*[tiab])) OR "Home Care Services"[Mesh]) OR "Community Health Nursing"[Mesh])	680

Søgning Pub Med 220318, Medication AND Home Health Care

Search	Query	Items found
#1	Search (((((((("Medication Therapy Management"[Mesh]) OR medication[tiab]) OR "Medication Errors"[Mesh]) OR "Medication Adherence"[Mesh])) AND (((((("House Calls"[Mesh]) OR "Nurses, Community Health"[Mesh]) OR (home care[tiab] OR home nursing[tiab] OR visiting nurse*[tiab])) OR "Home Care Services"[Mesh]) OR "Community Health Nursing"[Mesh])) AND (("2004/01/01"[PDat] : "2018/12/31"[PDat]) AND (Danish[lang] OR English[lang] OR Norwegian[lang] OR Swedish[lang])))) NOT ((((((child*[Text Word]) OR pediatri*[Text Word]) OR infant*[Text Word]) OR newborn[Text Word]) OR paediatr*[Text Word]) AND (("2004/01/01"[PDat] : "2018/12/31"[PDat]) AND (Danish[lang] OR English[lang] OR Norwegian[lang] OR Swedish[lang]))) Filters: Publication date from 2004/01/01 to 2018/12/31; Danish; English; Norwegian; Swedish	789

Appendix B. Ethical approvals

DATATILSYNET

Sygeplejerske Mette Geil Kollerup
Gravlevvej 21
9520 Skørping

Sendt til: mgk-aeh@aalborg.dk

22. september 2015

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dt@datatilsynet.dk
www.datatilsynet.dk

J.nr. 2015-41-4163
Sagsbehandler
Anne-Marie Müller
Direkte 3319 3252

Vedrørende overdragelse af dataansvar

Ved e-mail af 22. september 2015 har du efter aftale med Helen Kæstel, Ældre og Sundhed, Aalborg Kommune, anmodet om Datatilsynets tilladelse til, at dataansvaret for projektet "Medicineringspraksis ved udskrivelse fra sygehus til eget hjem", Datatilsynets j.nr. 2015-41-4163, overdrages til Aalborg Kommunes fællesanmeldelse. Projektet ønskes videreført i Aalborg Kommunes regi.

Tilladelse
Datatilsynet kan hermed give tilladelse til den ønskede overdragelse af dataansvaret for ovennævnte projekt til Aalborg Kommune. Det forudsættes, at projektet fremover vil være omfattet af fællesanmeldelsen til Datatilsynet af videnskabelige og statistiske undersøgelser hos Aalborg Kommune, jf. Datatilsynets j.nr. 2015-55-0585.

Datatilsynets tidligere tilladelse til projektet bortfalder hermed, og anmeldelsen med j.nr. 2015-41-4163 vil blive fjernet fra fortegnelsen over anmeldte behandlinger på tilsynets hjemmeside.

Med venlig hilsen

Anne-Marie Müller

Samtykke til deltagelse i projekt om medicineringspraksis i hjemmesygepleje

Kære hjemmesygeplejersker i Sygeplejen XXX Kommune, område XXX.

I forbindelse med ph.d. projektet skal jeg have skriftlig tilladelse fra jer deltagere, til at I vil være med, og jeg må skrive og fortælle om undersøgelsen. Som deltagere, vil I altid være anonyme i præsentationer.

Projektet indeholder en undersøgelse af hjemmesygeplejerskens medicineringspraksis i patientens hjem efter udskrivelse fra sygehus samt udvikling, afprøvning og evaluering af en ændret praksis.

Deltagelse i projektet indebærer:

- At Mette evt. følger dig på besøg hos patienter som lige er udskrevet fra sygehus
- At du bidrager til projektet med oplevelser og erfaringer med medicineringspraksis i eget hjem efter patientens udskrivelse fra sygehus
- At du er anonym i formidling i artikler og præsentationer.
- At du evt. deltager i workshops om udvikling af en ændret praksis i hjemmet
- At du evt. er med til at afprøve den nye praksis i hjemmet

Det er frivilligt at deltage og man kan til enhver tid trække sig uden konsekvenser. Projektet er anmeldt til og godkendt af Datatilsynet (journ. 2015-55-0585).

I er altid velkomne til at kontakte mig ved spørgsmål: mgh-aeh@aalborg.dk eller på telefon xxxxxxxx

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Med din underskrift giver du samtykke til deltagelse:

_____

Underskrift

Tak for at du vil være med!

Venlig hilsen Mette

Samtykkeerklæring workshop

Kære sygeplejersker i område XXX i XXX Kommune.

I har tidligere udfyldt samtykke erklæring til deltagelse i projekt om medicineringspraksis i patientens hjem efter udskrivelse fra sygehus.

Ved deltagelse i workshop gælder den tidligere samtykke erklæring, men der er også brug for i siger ja til følgende:

- At der foretages lydoptagelse af workshoppen. Lydoptagelsen bruges af Mette til analyse og afspilles ikke for andre. Den slettes efter projektets afslutning.
- At der fotograferes under workshoppen og fotos kan bruges i præsentationer.
- At du er anonym i formidling i artikler og præsentationer.

Det er stadig frivilligt at deltage og man kan til enhver tid trække sig uden konsekvenser. Projektet er anmeldt til og godkendt af Datatilsynet (journ. 2015-55-0585).

I er altid velkomne til at kontakte mig ved spørgsmål: mgh-aeh@aalborg.dk eller på telefon xxxxxxxx

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Med din underskrift giver du samtykke til deltagelse:

_____

Underskrift

Tak for at du vil være med!

Venlig hilsen Mette

Samtykkeerklæring fokus gruppe interview

Kære sygeplejersker i område XXX, XXX Kommune.

De fleste af jer har tidligere udfyldt samtykke erklæring til deltagelse i projekt om medicineringspraksis i patientens hjem efter udskrivelse fra sygehus.

Som afslutning på afprøvning af ny praksis holder vi fokus gruppe interview med dagvagter.

Formålet er at få indblik i jeres erfaringer med afprøvningen af ny praksis.

Der foretages lydoptagelse af interviewet. Kun Mette har adgang til optagelserne og de slettes efter afslutning af studiet.

Når undersøgelsen formidles vil alle deltagere være anonyme.

Det er stadig frivilligt at deltage og man kan til enhver tid trække sig uden konsekvenser. Projektet er anmeldt til og godkendt af Datatilsynet (journ. 2015-55-0585).

Venlig hilsen Mette

I er altid velkomne til at kontakte mig ved spørgsmål: mgh-aeh@aalborg.dk eller på telefon xxxxxxxx

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Med din underskrift giver du samtykke til deltagelse:

_____

Underskrift

Appendix C. Analysis examples

Study 1: Domain analysis

1. X is a step in Y
   - Steps in afstemning af medicinkort
   - Steps in opfølgning på etableringsbesøg
   - Steps in dispensering

2. X is an attribution of Y
   - Attributions of et hjem med sygepleje til medicinadministration
   - Attributions of patient
   - Attributions of sygeplejerske
   - Attributions of dagsdosetter
   - Attributions of hospital
   - Attributions of personale på arbejde i hjemmet

3. X is a place in Y
   - Places in hospitals

4. X is a place for doing Y
   - Places for dispensering

5. X is used for Y
   - Used for dispensering

6. X is a result of Y
   - A result of manglende medicinrevision/afstemning

7. X is a kind of Y
   - Kinds of ventetid
   - Kinds of ikke at overholde regler
   - Kinds of kontakt til SSA/SSH
   - Kinds of at få adgang
   - Kinds of at administrere laksantia
   - Kinds of at observere patienten
   - Kinds of uoverensstemmelser mellem medicinkort
   - Kinds of samarbejde mellem kommune og sygehus
   - Kinds of familiens opgaver
   - Kinds of afbrydelser
   - Kinds of remedier, der skal kasseres
   - Kinds of patientoplevelser
   - Kinds of spørgsmål til egen læge
   - Kinds of patientkontakt
   - Kinds of spørgsmål til sygehuset
   - Kinds of pårørende
   - Kinds of patientaktivitet
   - Kinds of medicinopbevaring
   - Kinds of sygdomme
   - Kinds of behandling
   - Kinds of bolig

8. X is a part of Y
   - Parts of noget der går anderledes end forventet
   - Parts of sygeplejerskens oplevelser
   - Parts of gøre orden
   - Parts of forskellige retningslinjer for arbejdsgange i forskellige kontekster
   - Parts of problemer med FMK
   - Parts of plejehjem
   - Parts of køkken
   - Parts of patientmedicin
   - Parts of papirer
   - Parts of overvejelser over patientøkonomi
   - Parts of holdninger til medicin
   - Parts of overvejelser over oprydning
   - Parts of spørgsmål til udskrivningsrapport
   - Parts of observationer af patienten
   - Parts of administration
   - Parts of måder at dispensere
   - Parts of ”steder” der skal tages medicin fra

Study 1: Example Taxonomic analysis

GØRE ORDEN	**Sortere**	**Medicin i brug:**	**fast dispenseret, fast ikke dispenseret, pn, Selv adm**
		Medicin ikke i brug	
	Kassere	Gamle tabletter, Gamle papirer, Æsker, mødekort, kuverter,	
	Makulere	Papirer med personnummer	
	Opdele/adskille	Sorteret medicin i kasser/kurve/poser, Dagligt i brug, pn., ikke i brug	
	Systematisere	Navn og cpr på æsker, Præparater i rækkefølge efter medicinliste, 1 præparat ad gangen, Ugedage i rækkefølge, Lineal/låg som "pegepind"	
	Sammenligne	Medicinliste før og efter udskrivelse, Præparater med patientens tilstand, Skriftlig dokumentation med situationen i hjemmet, Præparatnavne – styrke – dosering – adm form, Kategorier i medicinskema (fast disp, fast ikke disp, pn, selv adm)	
	Kontrollere	Sig selv:	tælle tabletter i æsker
		Andre:	er med indtaget, er pn. Anvendt/dokumenteret, mgl ordinationer fra sgh/læge? ,Er medicin ordineret/bestilt/afhentet, Stoler ikke på systemer
	Afklare	Kontakte sygehus – begrundelse for behandling, sep, pause, rp, crec., Dim., Kontakte egen læge – do, Kontakte familie, tilstand, ønsker, levering, afhentning, plan, kontrol, Kontakte plejepersonale/ledelse, adm, tilstand, plejebehov	
	Bringe til veje	Arrangere afhentning/levering af medicin, Arrangere indkøb af æsker	
	Planlægge/Tænke fremad	Tænke fremad: hvordan indtages medicinen? Tilpasse til hverdagsliv/vaner, Planlægge kontrol, observation, pleje, Forklare arbejdsgange, Planlægge daglig pleje, Fordele arbejdsopgaver, Afklare placering af remedier	
	Navigere	Acceptere uorden/uoverskuelighed, Skærme patienten mod tvivl/ Vise ro på overfladen, Grader af indgriben, Grader af involvering	

Study 1: Example Componential analysis:

At tilpasse	**Årsag udefra**	**Kræver Fagligt skøn**	**Hensyn til**	**Risiko for patienten**
Viden om patienten	+	+	Arbejdsflow	+
Information til patienten	+/-	+	Patienten	-
Regler og procedurer	+	+	Arbejdsflow/lægen	+

Study 2: DIKW scheme (Data, Information, Knowledge, Wisdom)

Data	**Information**	**Knowledge**
Hvorfor er hun faldet, fungerer maven, har hun fået noget at spise, hvad sidder hun på, er der behov for træning, er der behov for trykscoreskema, kan hun komme til at tage for meget medicin, hvorfor får hun Contalgin (kritisk stillingtagen til ordinationer)	Sygeplejefaglig udredning med fokus på forebyggelse Forebyggelse af fald, underernæring, tryksår, fejlmedicinering, indlæggelse	Sygeplejerskens ansvar for patientens sikkerhed

Study 2: Abstraction hierarchy

Why (op)			**Pt får den rette medicin**	**How ned**
	Patienten oplever størst velvære	Pt er så sund som muligt, plejebehov nedsættes	Overskueligt for SSA	
	Forebyggelse af gener	Forebygge gener, sikre dokumentation	Disp dag 2	
	Personale kan vurdere situationen kritisk	Afklare basale behov – afklare arbejdsfordeling	Klar til disp dag 2	
	Personale kender patienten, har vaner og rutiner	Prioritere sygeplejefaglig udredning	Afklare ordinationer, organisere levering + skabe sikkerhed v medicin	
	Modtagelse af patient I hjemmet af kompetent personale	Mødes I hjemmet < 24 timer e udskr	Besøg dag 1	

Study 3: Analysis of logs

andet besø	Hjem	Adm		Med 1. dag	Med 2. dag		3. dag
	45	30		1		dgl besøg pga terminal	
	0	0		1			
	40	20		0	0		x
	15	10		1		ern problem	
	90	30		0	0	mgl æsker 2. dag	x
	15	5		0	0	ikke hentet	x
	0	0		0	?	SSA disp	
	80	15		0	0	ikke afh, kun 12 dg	x
	30	10		0	1	ikke lev	
	0	0		1		ej begr	
	20	20		0	1		
	60	30		1	0	Ønsker ikke disp 1. dag, men 2.	
	15	10		0	1	ikke bestilt	
	45	10		1	1	dgl besøg pga terminal	
	0	0		1			
	20	15		0	1		
	20	0		0	0	ikke bestilt/ikke afh	x
	35	10		0	1	ej betale for lev	
	15	15		1		ej begr	
	35	30		0	0	ej best,ej lev	x
	0	0		1			
	0	0		1			
	55	10		0	1	ej lev	
	20	18		1		ej begr	
	0	0		1		med til 1 døgn	
	0	0		1			
	0	0		1			
	60	0		0	0	ej best, ej afh	x
	0	0		1			
	0	0		ikke ført		ønsker ikke hjælp til med	

The excerpt show time-registrations at potential second visit, registration of whether medication was available at the first visit. If medication available at first visit AND second visit performed, reason outlined. If medication not available first day AND second day, reason outlined.

Study 3: Deductive analysis of group interviews

Fælles besøg: Mediators	**Fælles besøg: Unexpected pathways**
også udmærket lige at få afklaret nogen ting, en dame som vi begge to kendte, og det var faktisk rigtig rigtig godt fordi hun vidste helt præcist hvad kommer vi her for, hvilke problematikker er der, og det vidste jeg også, før indlæggelsen, hurtig til at afklare, hvem tager sig af hvad, hvad er nyt her og hvad skal vi sætte ind omkring, efter hånden så har vi ikke så meget samarbejde med hjemmeplejen mere, så det kan godt være lidt vanskeligt….. god mulighed for at vi kommer til at samarbejde lidt mere med hjemmeplejen, der er nogen ting, som du måske ikke kan indhente, være fantastisk at man sender en der er genkendelig for borgeren	den mødte ikke op, det kunne vi faktisk lige så godt have taget hver for sig, jamen jeg kendte jo ikke familien eller patienten, og jeg kendte kun assistenten fra noget triage jeg havde været til nogen få gange ikke, øhh, så, men det jeg sådan lige synes med det der fælles besøg umiddelbart det er det kan være lidt stressende med det der tid, den tid man skal mødes, altså bare tanken om at klokken halv elleve der skal du være der i den anden ende af byen, meget forvirrende for dem, det var tydeligt de var forvirrede over, hvorfor dit og hvorfor dat

Appendix D. Workshops, Study 2

Program for workshop d. 17/5 2016

Deltagere:

Tid:	Emne:	Formål:	Materiale:	Ansvarlig:
12.00 – 12.10	Velkomst	At sætte scenen for workshoppen – Præsentation af deltagere. *(Få ideer til hvad vi kan gøre anderledes ift. arbejdsgang og processer)*	Powerpoint Diktafon Kamera	Mette og Jacob
12.10 – 12.30	Intro til arbejdsmetode	At introducere deltagerne til arbejdsmetode for workshoppen. *(Vi arbejder ud fra dogmet: Det er kun ideer, og ideer er ikke farlige. Dvs. vi arbejder med mulige principper for fremtidige løsninger)*	Powerpoint Diktafon Kamera	Jacob
12.30 – 12.45	Nuværende viden	At deltagerne får indblik i den viden der ligger til grund for afholdelse af workshoppen. *(12 trin i processen)* *(Kompromis og orden – elementer der kan have betydning for sikkerhed/sikkerhedsbrist)*	Powerpoint Diktafon Kamera	Mette
12.45 – 13.00	Opsamling på nuværende viden *(Fri diskussion)*	At få indblik i deltagernes reaktion og syn på nuværende viden	Powerpoint Diktafon Kamera Gule sedler Kuglepenne/tusser	Jacob
13.00 – 14.00	Opgave til deltagerne – intro til personas. Opgave: På baggrund af personas at få ideer anderledes/nye arbejdsgange og processer	At deltagerne i grupper arbejder med forskellige scenarier ift. de uddelte personas. *(hver gruppe får udleveret et "designskema" og provokeres i processen med 3 mulige scenarier relateret til Kompromis og orden – elementer der kan have betydning for sikkerhed/sikkerhedsbrist)*	Powerpoint Diktafon Kamera Gule sedler Kuglepenne/tusser Personas (A3-ark) Design skema	Jacob
	i relation til kompromis og orden, der kan skabe bedret sikkerhed og mindsket sikkkerhedsbrist *(Inddeling af deltagere i to grupper)*	*(Jacob sørger for at grupperne overholder dogmerne for workshoppen)*	Flipover-papir	
14.00 – 14.30	Præsentation af forslag til nye arbejdsgange og processer (grupperne præsenterer for hinanden. 15 min præsentation + reaktioner til hver gruppe.	At deltagerne præsenteret deres forslag til nye arbejdsgange og processer.	Powerpoint Diktafon Kamera Gule sedler Flipover-papir	Jacob
14.30 – 14.50	Opsamling og afrunding *Spørgsmål:* *Hvad har I fået ud af dagen?* *Hvad tager I med herfra?* *Hvordan har det været at arbejde på denne måde?* *(Fri diskussion)*	At afrunde dagen, samt få evalueret hvad deltagerne har lært og hvad de synes om workshoppen som metode.	Powerpoint Diktafon Kamera Gule sedler Flipover-papir	Jacob
14.50 – 15.00	Tak for i dag	At Mette evaluerer på hvad hun tager med fra workshoppen. *Har hun fået nye indsigter?* *Hvad kan hun bruge data til?* *Set med "forskerens øjne" hvad har workshoppen så bidraget med?*	Powerpoint Diktafon Kamera Gule sedler Flipover-papir	Mette

Workshop 08.06.16 – Program

Tid	Indhold	Noter	Materialer
13.00-13.10	Velkommen og plan *Mette sætter rammen*	Tak for sidst, indsats, lydoptagelse, mulige veje og prioritering. Mål, Roller, etik – idéer, ja - og Identificere mulige områder eller konkretendsatser	Diktafoner Kamera
13.10-13.15	Deltagernes opsamling fra workshop 1 *Individuelt fokus*	Individuelt, hvilke tre ting husker du. Gerne mulige indsatser (notere på opgaveseddel 1). Noget der har gjort indtryk, noget du har tænkt over siden, realistiske og urealistiske	Kuglepenne Opgavesedler 1
13.15-13.25	Parvis opsamling fra workshop 1 *Parvis fokus*	Parvis. Dialog om mulige indsatser Par: Lasse – Maria, Lotte S – Lotte K, Annette – Ulla, Vibeke – Lotte V (notere på flipover)	Tusser Flip over papir
13.25-13.35	Præsentation af mulige indsatser *Dele fokus*	Hvert par præsenterer, runde med præsentation på flip over.	
13.35-13.50	Mettes præsenterer opsamling fra workshop 1	Hjemmeplejens betydning Sygeplejefaglig udredning Sygeplejerskens ansvar (Medicin)	Tavle dækket med Flip over papir Tusser til papir + tavle Oversigt over tavle
13.50-14.00	Områder for mulige indsatser	Parvis dialog. Hvordan passer indsatser ind? Evt tilføje/rette?	
14.00-14.15	Fælles dialog om parrenes præsentation af mulige indsatser	Hvert par præsenterer Mette skriver tilføjer på plancher	Tavle på flipoverpapir - tusser
14.15-14.25	Prioritering individuelt eller parvis	Individuelt eller parvis Rød, gul, grøn pos'its med område + evt begrundelser Kriterier: Vil det have effekt på det overordnede mål? Hvordan? Er det muligt?	Post it blokke Rød, gul, grøn mærkater
14.25-14.45	Opsamling af prioritering	Parvis præsentation – post'its konverteres til grøn-gul-rød mærkat som sættes på plancher på tavle.	Husk foto af tavle
14.45-15.00	Afslutning	Fælles afslutning, videre plan	

Appendix E. Flyer and log, Study 3

Projekt:

Ny praksis ved medicinhåndtering efter udskrivelse

Afprøvning april til juni 2017

Sygeplejen Vest

Aalborg Kommune

Projekt: Ny praksis ved medicinhåndtering efter udskrivelse

Formål: At patienten får den rette medicin efter udskrivelse
Afprøvning april til juni 2017, Sygeplejen Vest Aalborg Kommune

Dokumentation af afprøvning

Patient:_____ Distrikt _____ Dato_____

Koordinerende sygeplejerske før udskrivelse			Bemærkning
Aftalt fælles besøg med hjemmeplejen < 24 t. Hvis nej, skriv årsag	Ja	Nej	
Sendt advis til hjemmeplejen om fælles besøg på hjemmeplejens køreliste?	Ja	Nej	
Sat 1. og 2. besøg på kørelisten?	Ja	Nej	
1. besøg af sygeplejerske < 24 timer:			**Dato:**
Behov for udredning af ordinationer? Skriv evt. uoverensstemmelser eller 'se journal dato'	Ja	Nej	
Kan ordinationer udredes? Skriv evt. kontakt til sygehus/egen læge	Ja	Nej	
Er der plan med fra sygehuset for justering og kontrol af nyt medicin? For eksempel blodprøver, lægebesøg, målinger. Skriv aftalt kontrol	Ja	Nej	
Er den nødvendige medicin i hjemmet? Hvis nej, skriv årsag	Ja	Nej	
Har du bestilt medicin og aftalt levering?	Ja	Nej	
Har du organiseret medicin i hjemmet i poser? 1. Fast medicin til dosering (grøn) 2. PN medicin (grå) 3. Ikke i brug (rød)	Ja	Nej	
Har du noteret aftaler om fast ikke doseret medicin på medicinkort? Skriv eventuelt aftale	Ja	Nej	
Har du afholdt fælles besøg med hjemmeplejen? Hvis nej, skriv årsag	Ja	Nej	
Har du startet sygeplejefaglig udredning? Det vitale: Væske, ernæring, udskillelse, mobilitet	Ja	Nej	
Har du sendt advis til hjemmeplejen om nødvendig observation og dokumentation? Ex: væskeskema, afføringsskema, vægt, vejrtrækning, trykspor, kvalme	Ja	Nej	
Tid i hjemmet på 1. besøg	Minutter		
Administrativ tid uden for hjemmet 1. besøg	Minutter		

(2. besøg af sygeplejerske på bagsiden)

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